

PatBase - Search results 15 August 2019

Search query (8): (FN=(6493017 OR 3060022 OR 424026 OR 8603027 OR 2843033 OR 21117036 OR 4828041 OR 47432042 OR 22940058 OR 21271066 OR 48790074 OR 2508082 OR 11377092 OR 34163097 OR 4763112 OR 52603115 OR 12122 OR 57357123 OR 6113139 OR 30356140 OR 10697142 OR 14994155 OR 1517157 OR 48201180 OR 7177208 OR 21692209 OR 58397219 OR 5094226 OR 4516239 OR 21838254 OR 49934267 OR 3307267 OR 67172270 OR 22421272 OR 50014273 OR 54588283 OR 59313288 OR 21986316 OR 43684321 OR 46149337 OR 3812339 OR 14737342 OR 22785345 OR 6499360 OR 57433364 OR 31455384 OR 7229386 OR 59067388 OR 17728389 OR 21053394 OR 14440402 OR 50072413 OR 1540415 OR 25199419 OR 112432 OR 3528441 OR 63003444 OR 56435460 OR 10657464 OR 7810467 OR 53167468 OR 20868471 OR 7535477 OR 30618486 OR 16912496 OR 4621514 OR 65364520 OR 56777527 OR 22636529 OR 47897543 OR 11172546 OR 728550))

Results: 72**Search history**

Search FT=(actuator* and hydraulic* and cylinders* and pull*) (Results 23870)

1:

Search (1) AND IPC=(E02 OR F15 OR F01) (Results 3625)

2:

Search 2. holes* and stem* (Results 615)

3:

Search 3. fluid* and inverse* (Results 1265)

4:

Search 3. hollow* (Results 4841)

5:

Search 2. wire* (Results 22714)

6:

Search 3. wire* (Results 15852)

7:

Search (FN=(6493017 OR 3060022 OR 424026 OR 8603027 OR 2843033 OR 21117036 OR 4828041 OR 47432042 OR 22940058 OR 21271066 OR 48790074 OR 2508082 OR 11377092 OR 34163097 OR 4763112 OR 52603115 OR 12122 OR 57357123 OR 6113139 OR 30356140 OR 10697142 OR 14994155 OR 1517157 OR 48201180 OR 7177208 OR 21692209 OR 58397219 OR 5094226 OR 4516239 OR 21838254 OR 49934267 OR 3307267 OR 67172270 OR 22421272 OR 50014273 OR 54588283 OR 59313288 OR 21986316 OR 43684321 OR 46149337 OR 3812339 OR 14737342 OR 22785345 OR 6499360 OR 57433364 OR 31455384 OR 7229386 OR 59067388 OR 17728389 OR 21053394 OR 14440402 OR 50072413 OR 1540415 OR 25199419 OR 112432 OR 3528441 OR 63003444 OR 56435460 OR 10657464 OR 7810467 OR 53167468 OR 20868471 OR 7535477 OR 30618486 OR 16912496 OR 4621514 OR 65364520 OR 56777527 OR 22636529 OR 47897543 OR 11172546 OR 728550)) (Results 72)

1) Family number: 6493017 (DE3710634C1)

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Title: Loading bridge

Abstract: The subject of the invention is a loading bridge for ramps, having a bridge plate (1) which is linked to the ramp, can be lifted by means of a lifting cylinder (8) and has, at its free end, an extension (2) which can be retracted and extended (folded in and out) by means of a push-action cylinder (10), a hydraulic control exhibiting the principle of a dead man's control in its lifting movement, the lowering movement being initiated by a feeler, then, however, being continued as a result of the dead weight until the bridge plate (1) meets a mechanical stop (7) and actuates a re-ascend switch (3). In order to provide a simply designed loading bridge, in which an undesired return of the bridge plate to its initial position during a loading or unloading operation and thereafter is prevented by means of a mechanical interlock device, it is proposed to provide a blocking wedge (4) which can be inserted between the bridge plate (1) and the mechanical stop (7) in order to keep the re-ascend switch (3) free, and a pressure switch (11), which is arranged in the line (13) of the lifting cylinder (9), as a signal transmitter for actuating the blocking wedge.

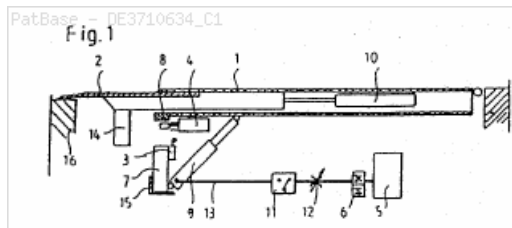
Classifications:

International (IPC 8-9): B65G69/28 (Advanced/Invention);
B65G69/00 (Core/Invention)

International (IPC 1-7): B65G69/28 F15B11/08

CPC: B65G69/2829

European: B65G69/28B2B4

**Family:**

Publication number	Publication date	Application number	Application date
DE3710634 C1	19880428	DE19873710634	19870331

Priority:

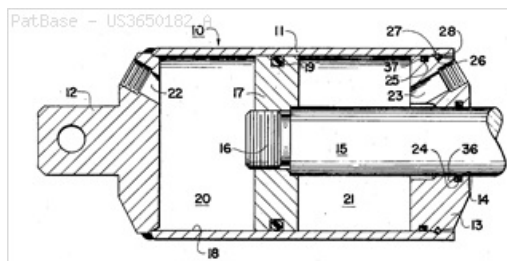
DE19873710634 19870331

Probable Assignee: MEYER TONNDORF KLAUS**Assignee(s):** (std): MEYER TONNDORF KLAUS**Assignee(s):** MEYER TONNDORF KLAUS 4048 GREVENBROICH DE**Inventor(s):** (std): MEYER TONNDORF KLAUS**Inventor(s):** MEYER TONNDORF KLAUS 4048 GREVENBROICH DE**2) Family number: 3060022** (US4844196A)

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Title: SEAT BELT INTERLOCK FOR LOADERS

US: 220/315 220/55AN 285/321 287/52 292/256.6 403/109.7
403/375 403/377 92/128 92/164 92/165 92/165R 92/169 92/169.1



Family:

Publication number	Publication date	Application number	Application date
AU197014881 A1	19711118	AU19700014881	19700511
AU207014881 A1	19711118	AU19700014881	19700511
DE2045528 A1	19710325	DE19702045528	19700915
DE2045528 B2	19780921	DE19702045528	19700915
DE2045528 C3	19790517	DE19702045528	19700915
FR2060548 A5	19710618	FR19700026178	19700716
GB1268617 A	19720329	GB19700039227	19700814
JP52001456 B4	19770114	JP19700080099	19700914
SE359628 B	19730903	SE19700006658	19700514
US3650182 A	19720321	US19690858801	19690917

Priority:

US19690858801 19690917

Probable Assignee: CESSNA AIRCRAFT CO

Assignee(s): (std): CESSNA AIRCRAFT CO

Assignee(s): CESSNA AIRCRAFT CO THE ; CESSNA AIRCRAFT CO US ; CESSNA AIRCRAFT CO WICHITA KAN V ST A ; CESSNA AIRCRAFT CY ; EATON CORP ; EATON EATON CENTER CLEVELAND OH 44114 2584 AN OH CORP CORP ; THE CESSNA AIRCRAFT CO WICHITA KAN V ST A ; THE CESSNA AIRCRAFT COMPANY

Inventor(s): (std): PHILLIPS JOHN F ; PHILLIPS J

Inventor(s): PHILLIPS JOHN F HUTCHINSON KAN V ST A ; JOHN F PHILLIPS ; JOHN FROST PHILLIPS ; PHILLIPS J US

4) Family number: 8603027 (US4343153A)

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Title: Anti-supercharge pressure valve

Abstract: Means are disclosed for dissipating supercharge pressure in a hydraulic system including a reversible pump (18) directly connected to a hydraulic cylinder (22). Supercharge pressure results from unequal areas on either side of a piston (24) of a single-ended hydraulic cylinder (22). When the piston moves towards the blind end of the cylinder (22), more fluid is displaced from the cylinder than is admitted to the cylinder on the opposite side of the piston. Means responsive to a pressure at a first port (82) of the pump (18) opens a passage between the second port (76) of the pump (18) and a fluid reservoir (16), allowing fluid in excess of the pump's intake requirements to pass to the reservoir (16). In a first embodiment of the invention, a rocker mechanism (60) is actuated by a piston (66) responsive to pressure at the first port (82) pressing against a first end (20) of the rocker mechanism (60), the second end (74) of the rocker mechanism (60) displacing a check ball (38) of a keep-full valve. In a second embodiment of the invention, passages (126, 128) are provided in a pilot piston (106) for pilot-operated check valves (42, 44), so that when the piston (106), in response to pressure at the first port (82), opens a check valve (42), to allow fluid to return from the cylinder (22), passages (126, 128) in the piston (106), opening upon the face (129) of the pilot piston (106) adjacent the check valve, become aligned with a passage (130) to the reservoir (16), allowing excess or supercharge oil to flow to the reservoir (16).

Classifications:

International (IPC 8-9): F15B7/10 (Advanced/Invention);

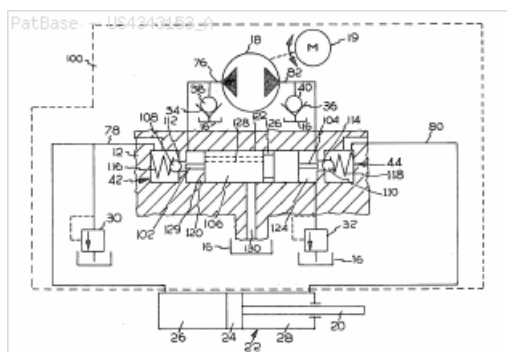
F15B7/00 (Core/Invention)

International (IPC 1-7): F15B13/042

CPC: F15B7/10 F15B2211/20561 F15B2211/3051

European: F15B7/10 R15B211/205D30 R15B211/305B10

US: 60/460 60/475 60/476



Family:

Publication number	Publication date	Application number	Application date
US4343153 A	19820810	US19800132555	19800321

Priority:

US19800132555 19800321

Probable Assignee: PRESTOLITE ELECTRIC INC

Assignee(s): (std): ELTRA CORP

Assignee(s): PRESTOLITE ELECTRIC INC ; PEI 1991 ACQUISITION INC ; ALLIED CORP ; CITICORP INDUSTRIAL CREDIT INC ; CONGRESS FINANCIAL

Inventor(s): (std): KERN CALVIN V ; MITTON BRUCE W

Title: VARIABLE CAMSHAFT PHASING MECHANISM

Abstract: PCT No. PCT/GB89/00459 Sec. 371 Date Oct. 22, 1990 Sec. 102(e) Date Oct. 22, 1990 PCT Filed May 2, 1989 PCT Pub. No. WO89/10469 PCT Pub. Date Nov. 2, 1989. A variable camshaft phasing mechanism is described comprising concentric drive and driven members (12, 10) rotatable respectively with a drive pulley (12) and a camshaft (14). The members (10, 12) are coupled to one another by means of an eccentric cranking element (18) on one of the members (12) engaged by two hydraulic jacks (28, 30) on the other member (10). Valves (36) are provided for controlling the flow of the hydraulic fluid from the chamber of the hydraulic jack (28, 20) to lock the members (10, 12) against rotation relative to one another in different relative angular positions of the members and to permit flow from either of the cylinders of the jacks to the other.

Classifications:

International (IPC 8-9): F01L1/344 (Advanced/Invention);

F02B3/06 (Advanced/Non-invention);

F01L1/344 (Core/Invention);

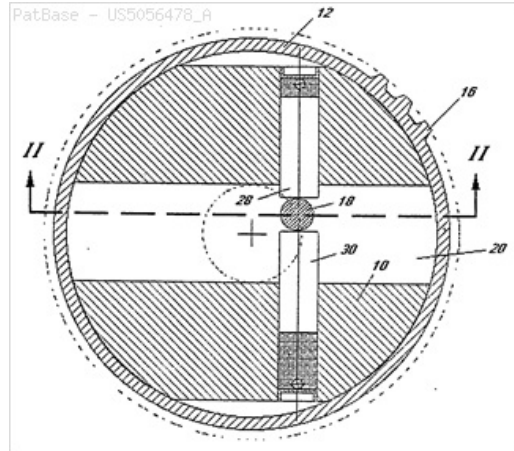
F02B3/00 (Core/Non-invention)

International (IPC 1-7): F01L1/34 F16D3/10

CPC: F01L1/344 F01L1/34409 F02B3/06

European: F01L1/344 F01L1/344B R02B3/06

US: 123/90.17 123/90.31



Family:

Publication number	Publication date	Application number	Application date
DE68910532 D1	19931209	DE19896010532	19890502
DE68910532 T2	19940331	DE19896010532T	19890502
EP0448560 A1	19911002	EP19890905726	19890502
EP0448560 B1	19931103	EP19890905726	19890502
GB2217812 A1	19891101	GB19880010345	19880430
GB8810345 A0	19880608	GB19880010345	19880430
US5056478 A	19911015	US19900598739	19901022
WO8910469 A1	19891102	WO1989GB00459	19890502

Priority:

GB19880010345 19880430 WO1989GB00459 19890502

Probable Assignee: FORD GLOBAL TECHNOLOGIES INC

Assignee(s): (std): FORD FRANCE ; FORD WERKE AG ; FORD MOTOR CO

Assignee(s): FORD MOTOR CO LTD ; FORD MOTOR COMPANY ; FORD MOTOR COMPANY LIMITED ; FORD WERKE AKTIENGESellschaft ; FORD WERKE AG 50735 KOELN DE ; FORD FRANCE S A ; FORD FRANCE SA ; FORD GLOBAL TECHNOLOGIES INC

Inventor(s): (std): MA THOMAS ; MA THOMAS T ; MA THOMAS TSOI HEI

Inventor(s): THOMAS TSOI HEI MA ; MA THOMAS TSOI HEI CHELMSFORD ESSEX GB

Designated states: AT BE CH DE FR GB IT LI LU NL SE US

Title: PERFECTIONNEMENTS APPORTES AUX PELLES MECANIQUES IMPROVEMENTS TO MECHANICAL SHOVELS (Machine translation)

Abstract: Source: FR1533762A [FR] [Source: Claim 1] 1 Une machine excavatrice et chargeuse qui comporte une fleche montee de facon a pouvoir s'abaisser et se relever sous la commande d'un verin hydraulique de fleche et qui comporte un godet, ou instrument analogue, monte pivptaut sur ladite fleche de facon a pouvoir etre deplace par un verin hydraulique de godet entre une position de chargement et une position de dechargement, ladite machine etant caracterisee en ce qu'elle est pourvue d'un levier de com mande relie fonctionnellement audit verin de godet pour en commander le pivotement et en ce qu'elle est pourvue d'un systeme de remise en position du godet qui est interpose entre ledit godet et ledit levier, ledit systeme entrant automatiquement en action pour ramener ledit levier en position neutre lorsque le godet atteint une position predeterminee au cours de son mouvement entre sa position de dechargement et sa position de chargement; **Machine translation:** [Source: Claim 1] 1 An excavator and loader machine which has an arrow buildup way has to stoop and rise again under the control of a hydraulic cylinder of arrow and includes a bucket, or similar instrument, pivptaut mounted on said boom so as to be movable by a hydraulic cylinder cup between a loading position and an unloading position, said machine being characterized in that it is provided with a com control lever operatively connected to said actuator bucket for controlling the pivoting and in that it is provided with a bucket position delivery system which is interposed between said bucket and said lever, said system automatically coming into action for returning said lever to the neutral position when the bucket reaches a predetermined position during its movement between its unloading position and the loading position;

Classifications:

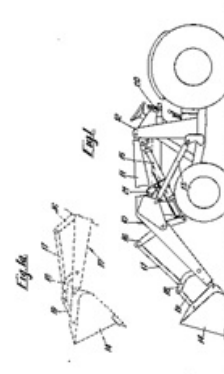
International (IPC 8-9): E02F3/43 E02F9/20 (Advanced/Invention);

E02F3/42 E02F9/20 (Core/Invention)

International (IPC 1-7): E02F3/85 E02F9/20

CPC: E02F3/432 E02F9/2004

European: E02F3/43B2 E02F9/20A

**Family:**

Publication number	Publication date	Application number	Application date
FR1533762 A	19680719	FR19670117172	19670808

Priority:

FR19670117172 19670808

Probable Assignee:

MASSEY FERGUSON SERVICES NV

Assignee(s): (std):

MASSEY FERGUSON SERVICES NV

Assignee(s):

MASSEY FERGUSON SERVICES N V

7) Family number: 4828041 (EP0108347A1)

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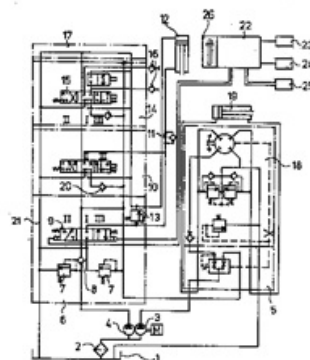
Title: Hydraulic system for a tractor or equivalent.

Abstract: A hydraulic system for a tractor, comprising hydraulic pumps (3,4) driven by the tractor's engine (M), their intake sides connected over an intake filter (2) to an oil tank (1). The system comprises a valve mechanism (5, 7, 8, 9, 10, 11, 13, 14, 15) by mediation of which the hydraulic pumps (3,4) have been connected to the lifting cylinder (12) of the tractor's three-point lifting attachment. The hydraulic system comprises at least two hydraulic pumps (3, 4), which have been connected to be in parallel. Of these hydraulic pumps, one is a mini-pump (4) and the other is a bigger main pump (3) with an output several times the output of the mini-pump (4). The output (Q0) of the mini-pump (4) is about 15 to 30 percent of the output (Q1) of the larger pump (3). The functions controlled by the control automatics (22,23,24) and/or the functions (25) based on lifting attachment manipulation from the rear of the tractor and/or the leakage compensation of the lifting cylinder (12) have been arranged to take place under control by an electric directional valve with two magnets and using exclusively the output of the mini-pump (4). The combined outputs of both pumps (3,4) can through the main governor valve (10) be directed to the lifting cylinder (12) of the tractor's lifting attachment.

Classifications:**International (IPC 8-9):** A01B63/10 E02F9/22
F15B11/17 (Advanced/Invention)**International (IPC 1-7):** A01B63/10 B60K F15B13/09**CPC:** A01B63/1013 E02F9/2239 E02F9/2292 F15B11/17
F15B2211/20584 F15B2211/3116 F15B2211/327 F15B2211/4053
F15B2211/40584 F15B2211/455 F15B2211/46 F15B2211/473
F15B2211/7142 F15B2211/78**European:** A01B63/10A2 E02F9/22F6 E02F9/22Z8 F15B11/17
R15B211/205F10 R15B211/310B20 R15B211/320D R15B211/405F10
R15B211/405L10 R15B211/455 R15B211/460 R15B211/470B
R15B211/710H R15B211/780

0108347

1/1



Family:

Publication number	Publication date	Application number	Application date
BRPI8306012 A	19840605	BR1983PI06012	19831031
DK501383 A	19840502	DK19830005013	19831101
DK501383 A0	19831101	DK19830005013	19831101
EP0108347 A1	19840516	EP19830110758	19831027
FI823729 A	19840502	FI19820003729	19821101
FI823729 A0	19821101	FI19820003729	19821101
FI823729 L	19840502	FI19820003729	19821101
NO833947 A	19840502	NO19830003947	19831028
NO833947 L	19840502	NO19830003947	19831028

Priority:

FI19820003729 19821101 FI19820003729 19821101

Probable Assignee: VALMET OY

Assignee(s): (std): VALMET OY

Inventor(s): (std): MANTTARI ERKKI ; MAENTTAERI ERKKI

Inventor(s): ERKKI MAENTTAERI ; ERKKI MANTTARI

Designated states: DE FR GB SE

8) Family number: 47432042 (CH700790A)

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Title: HYDRAULIC ACTUATOR FOR ACTUATING E.G. COMPUTER NUMERICAL CONTROL LATHE, HAS MECHANICAL INTERFACE REALIZING DECOUPLING BETWEEN LINEAR MOVEMENT AND ROTATING MOVEMENT WHILE PERMITTING WHOLE FREEDOM TO ROTATING MOVEMENT

Abstract: The actuator has a hydraulic cylinder (3) maintained on a fixed part of a machine tool and including a piston (1) for carrying out required linear movement. The piston includes a mechanical interface constituted by a rolling bearing (11) for transmitting the linear movement to a rotating part (8) by a concentric master axle or tube (7), where the axle or tube axially slides in the rotating part and turns with the rotating part. The mechanical interface realizes decoupling between the linear movement and rotating movement while permitting whole freedom to the rotating movement. An independent claim is also included for a combination of a hydraulic actuator and a hydropneumatic converter.

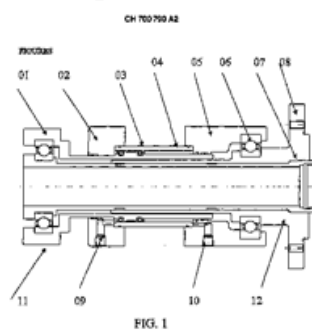
Classifications:

International (IPC 8-9): B23Q5/02 F15B15/04 (Advanced/Invention)

CPC: B23Q1/4876 F15B15/06

European: B23Q1/48G F15B15/06

PatBase - CH700790_A2

**Family:**

Publication number	Publication date	Application number	Application date
CH700790 A2	20101015	CH20090000542	20090402

Priority:

CH20090000542 20090402

Probable Assignee: NEMA ERCIO MIGUEL

Assignee(s): (std): NEMA ERCIO MIGUEL

Assignee(s): ERCIO MIGUEL NEMA

Inventor(s): (std): NEMA ERCIO MIGUEL

9) Family number: 22940058 (US3325146A)

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Title: Mold raising mechanism

Abstract: 1,130,325. Lifting-jacks. B. AHL. 12 Jan., 1966 [5 May, 1965], No. 1445/66. Heading B8J. [Also in Division E2] Climbing apparatus 1 for raising sliding moulds on climbing poles 2 for the production of concrete structures by the slide-

moulding system includes an upper grab-head 3, a lower grab head 4 and lifting apparatus between the two grab-heads 3, 4. The lifting apparatus comprises two hydraulic rams 5, 6 each with a cylinder 7 with a piston 8 and fluid openings 9, 10. The rams 5, 6 each terminate in lugs 14, 15 pivoted by bolts 16, 17 to lugs 18, 19 on the grab-heads 3, 4. Each piston 8 has a pistonrod 8a whose upper end 8b is attached to a threaded bush 12 on whose thread 12a an adjustable ring 13 is screwed which co-operates with a conical part 11 to provide adjustment for the stroke of the ram 7. Spring-loaded grabs 21, 22 eccentrically mounted on bolts 23, 24 are located in housings 20 of the grab-heads 34 so that alternate introduction of pressure fluid medium through the openings 10 or 9 causes continual step-by-step upward movement of the climbing-apparatus 1, thereby raising a mould (not shown) attached to the grab-head 3. When irregular clamping of the grabs 3, 4 and thus irregular slipping movements arise, mainly due to rust on the climbing pole 2 or the presence of dirt on or wear of the grabs 3, 4 the adjusting- ring 13 can be adjusted according to the amount of slip to attain regular and controllable raising of the mould. Holes 29, 30, Fig. 3, parallel to the climbing rod 2 are formed in a headpiece 20a attached to the upper grab 3 and bolts 31, 32 slidable in the holes 29, 30 contact offset-surfaces 33, 34 on the grabs 21, 22. Above the bolts 31, 32 is a fixing ring 35 which can be screwed down by a screw 36 on to the climbing- pole 2. Up to a hundred or more climbing- devices may be associated with one mould and the fixing rings 35 allow control of the devices. The fixing-rings 35 are levelled between themselves or horizontally balanced by hose-levelling. In raising the upper grab-head 3 the bolts 31, 32 strike the fixing-ring 35 and press the grabs 21, 22 downward, whereby they are released from the climbing pole 2. In this way the grabs 21, 22 cannot clamp when the pressure fluid is withdrawn and the grab-head 3 with its attached mould moves back to its original position. The raising can be carried out until release of the upper grabs 21, 22 by the bolts 31, 32 is effected in all the climbing-devices. In addition up and down movement of the mould without actually climbing may be carried out until the concrete is set by means of electromagnetic control of the alternating introduction of the pressure fluid through the openings 9, 10.

Classifications:

International (IPC 8-9): B66F1/08 C07D295/112 E02B17/08

E04G11/22 E04G11/24 (Advanced/Invention);

B66F1/00 C07D295/00 E02B17/00 E04G11/00 (Core/Invention)

International (IPC 1-7): B66F1/00 E04G11/24 E04G11/28

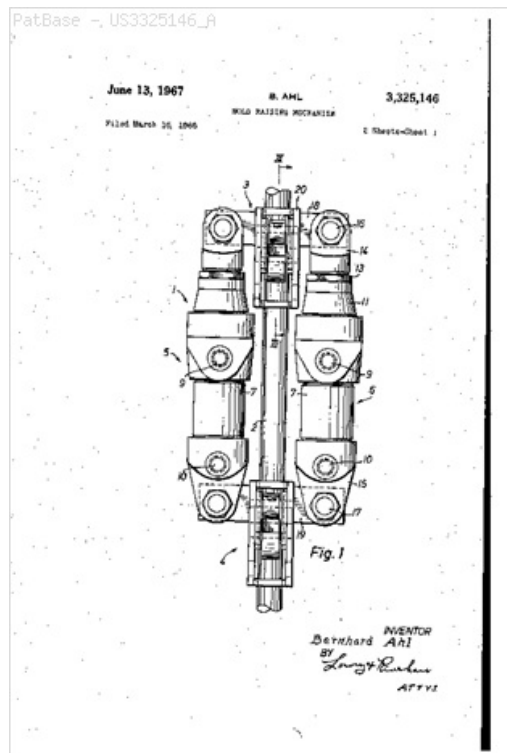
CPC: C07C255/00 C07D295/112 E02B17/0854 E04G11/24

European: 124BG17B 124BG6B2 124BG8B4B1C3 124BG8B4B1C4

124BG8B4B1D2 124BG8C 124BG8C2 124BG8C4B C07C255/00

C07D295/112 E02B17/08D4 E04G11/24

US: 254/106 425/63 92/13.5 92/13.8



Family:

Publication number	Publication date	Application number	Application date
AT267837 B	19690110	AT19660003465	19660412
BE680586 A	19661107		19660505
BR6679272 A0	19730816	BR19660179272	19660505
CH438677 A	19670630	CH19660005561	19660413
CS170493 B2	19760827	CS19660002913	19660430
DE1534858 A1	19691002	DE19651534858	19650505
DE1534858 B2	19741205	DE19651534858	19650505
DE1534858 C3	19750710	DE19651534858	19650505
GB1130325 A	19681016	GB19660001445	19660112
JP50007341 B4	19750325	JP19660028691	19660506
NL6606111 A	19661107	NL19660006111	19660505
US3325146 A	19670613	US19660534775	19660316

Priority:

DE1965A049113 19650505

Probable Assignee:

AHL BERNHARD

Assignee(s): (std):

AHL B ; AHL BERNHARD ; BERNHARD AHL

Assignee(s):

AHL BERNHARD 5000 KOELN

Inventor(s): (std):

AHL B ; AHL BERNHARD ; BERNHARD AHL

Inventor(s):

AHL BERNHARD 5000 KOELN

10) Family number: 21271066 (US3382676A)

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Title: MINIMUM TRAVEL HAND-OR FOOT-OPERATED POWER BRAKE ACTUATOR

Abstract: 1,157,222. Fluid-pressure brakes; handbrake mechanism. FORD MOTOR CO. Ltd. 7 Dec., 1966 [21 Dec., 1965], No. 54659/66. Headings F2E and F2F. In an hydraulic braking system for a vehicle of the kind having a servo-operated master cylinder (28, Fig. 1, not shown), the servo being of the vacuum suspended type and being controlled by a manually operated valve of the follow-up type, the movable valve plunger 64¹, which is slidable within the power piston (54, Fig. 1), is

operated by a linkage which is so arranged that initial movement of the linkage causes plunger 64¹ to be moved to a position relative to the servo piston such that air is admitted to the power chamber (50, Fig. 1) to cause the servo piston to move, after which the plunger and servo piston move together so as to maintain their relative positions, without further movement of the manually operated member controlling the linkage being necessary. In the embodiment of Fig. 2 (Fig. 1, does not disclose the invention), the linkage comprises a first lever 78¹, which is pivoted at 80¹, is connected conventionally by a link 82¹ to a pedal, not shown, and has a lost-motion connection 90, 98 with a rod 66¹ engaging the plunger 64¹, and a second lever 100, which is pivoted to the lever 78¹ on the pin 101 by which the link 821 is connected, the lower end of the lever 100 being connected by a rod 104 to a pull type control knob on the dashboard of the vehicle, and the upper end having an arcuate surface 102 which engages the slotted end 98 of the rod 66¹. A sleeve 92 surrounds the rod 66¹, is pivoted to the pin 90, and has spaced circumferential fingers 94 arranged to engage an insert 96 in a sleeve-like extension 56¹ of the power piston when pressure is not being applied to the pedal. In pedal operation, the initial movement moves plunger 64¹ to the position in which air is admitted to the power chamber and the consequent movement of the servo piston causes follow-up movement of the pedal as usual, the fingers 94 moving away from the insert 96 and only re-engaging the latter when pressure is removed from the pedal. If, however, the dashboard control is operated, the resulting relative pivotal movement of the levers 78¹, 100 causes the clearance 106 in the lost-motion connection 90, 98 to be taken up simultaneously with movement of the plunger 64¹ to the position in which air is admitted to the power chamber, so that the "feel" which reacts on the plunger 64¹ as a result of the provision of a conventional resilient reaction disc (62, Fig. 1) is absorbed by the insert 96 and does not react on the pedal linkage, whilst further movement of the dashboard control to maintain servo operation during subsequent follow-up movement of the plunger 64¹ is substantially eliminated by the location of the point at which rod 104 is connected to the lever 100 being close to the pivot 80¹, since during follow-up movement the two levers 78¹, 100 pivot together about the pivot 80¹. In a second embodiment, Fig. 3, the dashboard control is eliminated and the second lever 100¹¹ is operated, through link 82¹¹, by the pedal 84¹¹ so that follow-up movement of the pedal is substantially eliminated as a result of pivoting of the two levers about pivot 80¹¹ during follow-up movement of the valve plunger. In this embodiment the two levers are pivoted together at 110 and an arcuate edge 112 of lever 100¹¹ engages a corresponding surface on the slotted end 114 of the rod 66¹¹, since the direction of rotation of lever 100¹¹ is reversed, operation otherwise being similar to that for dashboard operation in the first embodiment with the exception that, should a vacuum failure occur, the lower end portion of the lever 100¹¹ is able to contact a stop 113 to enable direct pedal operation of the master cylinder without excessive pedal movement in that event.

Classifications:

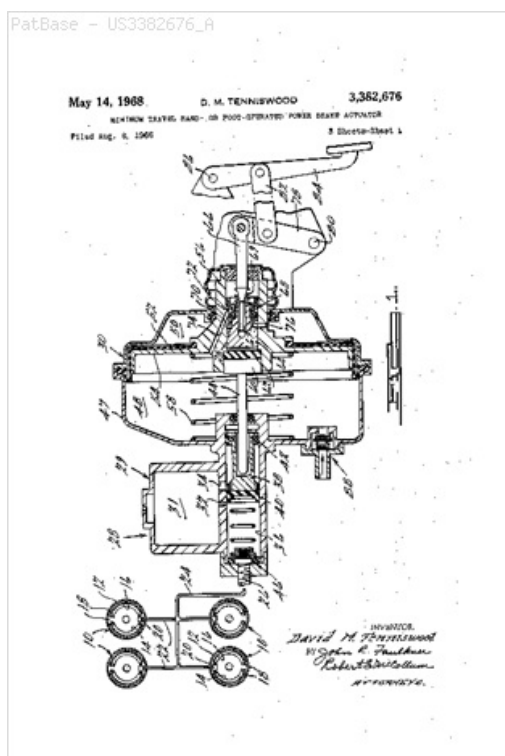
International (IPC 8-9): B60T13/52 B60T13/56 B60T7/02 B60T7/04 G05G1/14 G05G1/46 G05G7/04 (Advanced/Invention); B60T13/52 B60T13/56 B60T7/02 B60T7/04 G05G1/14 G05G7/00 (Core/Invention)

International (IPC 1-7): B60K23/00 B60T11/08 B60T13/24 B60T13/72 B60T7/02 B60T7/04 F15B9/12

CPC: B60T7/04 Y10T74/2022 Y10T74/20558 B60T13/52 G05G1/46 B60T7/02 G05G7/04

European: B60T13/52 B60T7/02 B60T7/04 G05G1/14V G05G1/46 G05G7/04

US: 188/106F 60/54.6 60/546 60/550 60/551 60/554 60/567 60/594 74/481 74/516 91/377



Family:

Publication number	Publication date	Application number	Application date
BR6683593 A0	19730215	BR19660183593	19661012
DE1555375 A1	19701022	DE1966F050556	19661027
DE1555375 B2	19751113	DE1966F050556	19661027
DE1555375 C3	19760624	DE1966F050556	19661027
DE1971890 U	19671102	DE1967F032522U	19670717
FR1505216 A	19671208	FR19660088090	19661220
FR1533648 A	19680719	FR19670116882	19670804
GB1157222 A	19690702	GB19660054659	19661207
GB1183735 A	19700311	GB19670032193	19670713
JP52027413 B4	19770720	JP19670050565	19670808
US3356189 A	19671205	US19650515404	19651221
US3382676 A	19680514	US19660570925	19660808

Priority:

US19650515404 19651221 US19660570925 19660808 FR19670116882 19670804

Probable Assignee: FORD FRANCE

Assignee(s): (std): FORD MOTOR CO ; FORD FRANCE ; FORD WERKE AG

Assignee(s): FORD MOTOR CO LTD ; FORD WERKE AKTIENGESSELLSCHAFT ; FORD FRANCE S A ; FORD FRANCE SA ; FORD MOTOR COMPANY ; FORD MOTOR COMPANY LIMITED ; FORD MOTOR CO DEARBORN MICH V ST A

Inventor(s): (std): MERLE TENNISWOOD DAVID ; TENNISWOOD DAVID M ; TENNISWOOD DAVID MERLE DETROIT MICH ; TENNISWOOD DAVID MERLE

Inventor(s): FORD MOTOR CO ; TENNISWOOD DAVID MERLE DETROIT MICH V ST A ; TENNISWOOD DAVID MERLE DETROIT MICH VSTA

11) Family number: 48790074 (US2011095213A)

© PatBase

Title: HYDRAULIC APPARATUS, HANDLE, AND METHOD OF PROVIDING AN EXTENDABLE HANDLE

Abstract: Handles, extendable handles, and linkage mechanisms are examples of apparatuses that include a body; a pivotably attached head; cylinder, actuator, or hydraulic actuator; a fluid passage or hose; and a valve, blocking means, or hydraulic control device. The valve, blocking means, or hydraulic control device may be normally open and may close only when held closed, and may be connected on one side to the fluid passage or hose and on another side to atmosphere. An operator may use a tool, such as a drywall flat box attached to the head, by holding the handle and controlling pivoting of the head by operating the valve. Methods include providing for an operator to control a tool on a handle, and include providing the handle and instructing the operator to actuate the blocking means to hold the tool in a constant orientation relative to the handle.

Classifications:

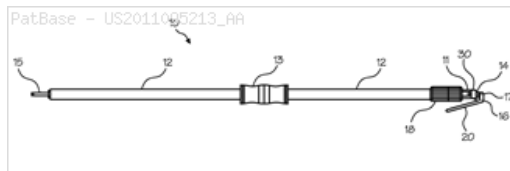
International (IPC 8-9): F15B15/16 F16K31/12 (Advanced/Invention);

B25G1/00 (Advanced/Non-invention)

CPC: F15B15/16 F16K31/46 Y10T16/473

European: F16K31/46

US: 15/144.1 16/429 251/12 251/12P 92/117A 92/261



Family:

Publication number	Publication date	Application number	Application date
US2011095213 AA	20110428	US20090605658	20091026
US2013139680 AA	20130606	US20130745906	20130121
US8356548 BB	20130122	US20090605658	20091026

Priority:

US20090605658 20091026 US20130745906 20130121

Probable Assignee: COLUMBIA TAPING TOOLS LTD

Assignee(s): (std): CINTA TOOLS INC ; CINTA TOOLS LLC ; ROMAN DAVID T

Assignee(s): COLUMBIA TAPING TOOLS LTD

Inventor(s): (std): ROMAN DAVID T

Agent(s): SNELL AND WILMER LLP

12) Family number: 2508082 (DE2559243A1)

© PatBase

Title: DOUBLE ACTING HYDRAULIC SWIVELLING GEAR - HAS SOLENOID OPERATED PISTON STROKE REVERSING VALVE FOR ANGLES GREATER THAN 90 DEGREES

Abstract: The hydraulic swivelling mechanism is intended for turning gate leaves. It consists of a hydraulic cylinder with block containing the hydraulic control elements fitted on the upper end of the cylinder. A block solenoid operating slide valve is fitted and provided with handle for manual emergency operation. The upper end, the control block is extended into an eyelet. The cylinder contains a double acting piston with piston rod penetrating its lower end. The operation of the cylinders involves a pulling action of the rod on the crank arm of the working attachment. After passing the upper dead centre a pushing action follows achieving a 180 deg. travel of the crank arm pin.

Classifications:

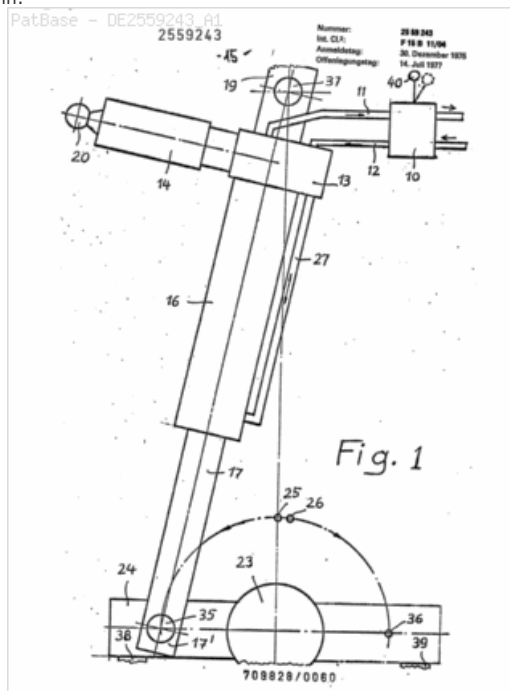
International (IPC 8-9): A01B3/421 (Advanced/Invention);

A01B3/00 (Core/Invention)

International (IPC 1-7): F15B11/04

CPC: A01B3/421

European: A01B3/421



Family:

Publication number	Publication date	Application number	Application date
DE2559243 A1	19770714	DE19752559243	19751230

Priority:

DE19752559243 19751230

Probable Assignee:

AUERBACH BRUNO

Assignee(s): (std):

AUERBACH BRUNO

Inventor(s): (std):

AUERBACH BRUNO

13) Family number: 11377092 (US5092733A)

© PatBase

Title: TOOL CONTROLLING MECHANISMS FOR EXCAVATOR WITH TELESCOPIC ARM

Abstract: An excavator comprising a movable body, a boom mounted on the movable body, first hydraulic cylinders, an outer arm pivotally mounted on the boom, a second hydraulic cylinder mounted on a rear surface of the boom, an inner arm inserted into the outer arm and movable telescopically relative to the outer arm, a bucket connected to one end of the inner arm, a bucket cylinder provided between the bucket and a guide mechanism, the guide mechanism being slidably mounted on guide plates fixed to the outer arm, a third hydraulic cylinder connected to a base end of the outer arm and having a rod connected to a central portion of the inner arm for moving the inner arm relative to the outer arm, and a synchronizing device for moving the base end of the outer arm for a length corresponding to the distance the inner arm moves relative to the outer arm. A hook mechanism can be mounted at a front portion of the inner arm. An interlocking device can be connected between the guide mechanism and the front portion of the inner arm.

Classifications:

International (IPC 8-9): B66C1/62 B66C1/68 B66C23/36 B66C23/68 B66C23/88 E02F3/30 E02F3/34 E02F3/36 E02F3/39 E02F3/40 E02F9/14 (Advanced/Invention); B66C1/00 B66C1/62 B66C23/00 E02F3/28 E02F3/36 E02F3/40 E02F9/14 (Core/Invention)

International (IPC 1-7): B66C1/68 B66C23/00 B66C23/36 B66C23/68 B66C23/88 E02F3/28 E02F3/32 E02F3/34 E02F3/36 E02F3/38 E02F3/39 E02F3/40 E02F9/14

CPC: Y10S414/125 E02F3/306

European: E02F3/30K

US: 212/268 212/348 212/349 414/694 414/718 414/912 52/118

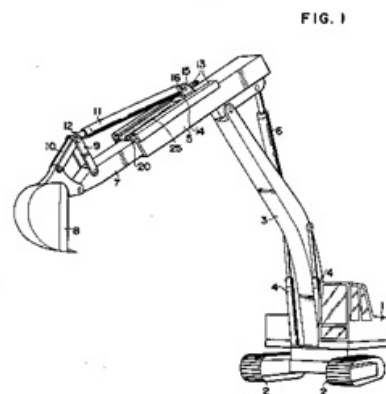
PatBase - US5092733_R

U.S. Patent

Mar. 3, 1992

Sheet 1 of 24

5,092,733

**Family:**

Publication number	Publication date	Application number	Application date
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CA2014164 AA	19901026	CA19902014164	19900409
CA2014164 C	19951212	CA19902014164	19900409
DE69019876 D1	19950713	DE19906019876	19900419
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EP0395305 A2	19901031	EP19900304213	19900419
EP0395305 A3	19920122	EP19900304213	19900419
EP0395305 B1	19950607	EP19900304213	19900419
JP1885300 C3	19941110	JP19890107990	19890426
JP1990512 C3	19951108	JP19890247005	19890922
JP2027694 C3	19960226	JP19890125443	19890518
JP2027720 C3	19960226	JP19900212366	19900810
JP2285112 A2	19901122	JP19890107990	19890426
JP2304123 A2	19901217	JP19890125443	19890518
JP3110220 A2	19910510	JP19890247005	19890922
JP4097026 A2	19920330	JP19900212366	19900810
JP5008994 A2	19930119	JP19910313743	19911031
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JP7015173 B4	19950222	JP19890247005	19890922
JP7045736 B4	19950517	JP19890125443	19890518
JP7049663 B4	19950531	JP19900212366	19900810
KR19900016554 A	19901113	KR19900005906	19900426
KR950005004 B1	19950517	KR19900005906	19900426
US5092733 A	19920303	US19900506690	19900409
US5267824 A	19931207	US19910742756	19910808

Priority:

JP19890107990 19890426 JP19890125443 19890518 JP19890247005 19890922
CA19902014164 19900409 US19900506690 19900409 JP19900212366 19900810
US19910742756 19910808 JP19910313743 19911031

Probable Assignee: NIKKEN CORP

Assignee(s): (std): JAPANIC CORP ; HIKOMA SEISAKUSHO KK

Assignee(s): JAPANIC (ENGLISH TRADENAME) CORP ; JAPANIC CO ; JAPANIC CO LTD ; JAPANIC CORP ASHIKAGA TOCHIGI JP ; JAPANIC D B A JAPANIC CORP KK ; JAPANIC MINAMIMACHI KK ; NIKKEN CORP ; JAPANIC KK ; JIYAPANITSUKU KK ; JAPANIC MINAMIMACHI 3704 ASHIKAGA SHI TOCHIGI KEN ; JAPANIC ENGLISH TRADENAME CORP ; KISHI MITSUHIRO ; JAPANIC MINAMIMACHI 3704 ASHIKAGA SHI TOCHIGI KEN KK

Inventor(s): (std): KISHI MITSUHIRO

Inventor(s): KISHI MITSUHIRO ASHIKAGA SHI TOCHIGI KEN 326 JP ; MITSUHIRO KISHI

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; MARKS AND CLERK

Designated states: DE FR GB

14) Family number: 34163097 (EP1748194A1)

© PatBase

Title: PRESSURE AMPLIFICATION DEVICE FOR A HYDRAULIC ACTUATOR IN AN INTERNAL COMBUSTION ENGINE AND ENGINE INCORPORATING SUCH DEVICE

Abstract: The device (10) has a differential piston cylinder (12) with a differential piston (18) sliding between low pressure chambers (22a, 22b), and a high pressure chamber (28a). A control hydraulic fluid distributor (34) present control positions selectively controlling the refilling or the emptying of the low pressure chambers. A mechanical coupling unit mechanically couples a valve spool (38) and the piston so as to control the commutation of the position of the spool using the piston. An independent claim is also included for a heat engine comprising a hydraulic actuator and a pressure amplification device.

Classifications:

International (IPC 8-9): F02D15/02 F15B3/00 (Advanced/Invention); F02D15/00 F15B3/00 (Core/Invention)

CPC: F04B9/113 F15B3/00 F15B21/12

European: F04B9/113 F15B21/12 F15B3/00

PatBase - EP1748194_A1

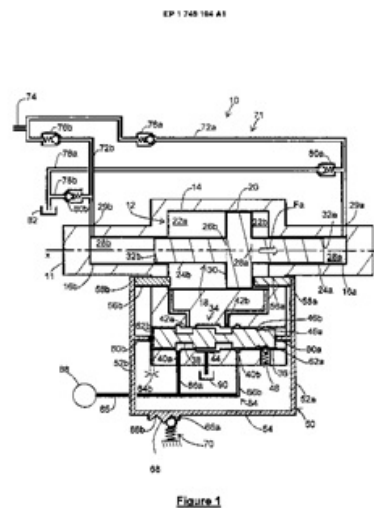


Figure 1

Family:

Publication number	Publication date	Application number	Application date
EP1748194 A1	20070131	EP20060300590	20060614
FR2889265 A1	20070202	FR20050008007	20050727

Priority:

FR20050008007 20050727 FR20050508007 20050727

Probable Assignee: RENAULT SA

Assignee(s): (std): RENAULT SA ; RENAULT SAS ; RENAULT SAS SOC PAR ACTIONS SI

Assignee(s): RENAULT SAS SOC PAR ACTIONS SIMPLIFIEE ; RENAULT SAS SOCIETE PAR ACTIONS SIMPLIFIEE

Inventor(s): (std): OBERT JACQUES ; FAVENNEC GWENNAEL ; DEVAUD EMMANUEL

Inventor(s): FAVENNEC GWENNAEEL

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

15) Family number: 4763112 (US5048274A)

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Title: APPARATUS AND METHOD FOR CONTROLLING MULTIPLE FUNCTIONS OF AN AGRICULTURAL IMPLEMENT

Abstract: Apparatus for controlling multiple functions of an agricultural implement such as a baler or a harvester includes first, second and third hydraulic cylinders which are operated to control first, second and third functions, respectively, of the implement. A shuttle valve is mechanically coupled to the first hydraulic cylinder by a rock shaft so that when the first hydraulic cylinder is retracted and extended, the shuttle valve selectively connects either the second or the third hydraulic cylinder to an independent source of hydraulic fluid. The first hydraulic cylinder is connected to another independent source of hydraulic fluid. In a baler having a bale case, a pickup, a tongue and a bale thrower, the first hydraulic cylinder raises and

lowers the pickup, the second hydraulic cylinder moves the tongue between a transport position and an operating position, and the third hydraulic cylinder adjusts the bale thrower relative to the bale case.

Classifications:

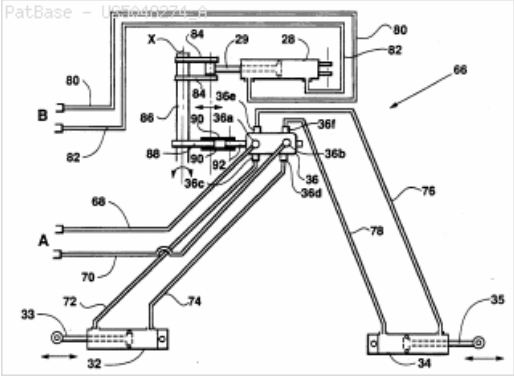
International (IPC 8-9): A01F15/08 (Advanced/Invention);
A01F15/00 (Core/Invention)

International (IPC 1-7): A01D37/00 F01L33/00

CPC: Y10S56/02 A01F15/08

European: A01F15/08

US: 172/324 56/10.2 56/10.2R 56/341 56/DIG.2 91/189 91/189R



Family:

Publication number	Publication date	Application number	Application date
US5048274 A	19910917	US19900538612	19900615

Priority:

US19900538612 19900615

Probable Assignee: BLUE LEAF IP INC
Assignee(s): (std): FORD NEW HOLLAND INC
Assignee(s): BLUE LEAF IP ; BLUE LEAF IP INC
Inventor(s): (std): JENNINGS RICHARD E

16) Family number: 52603115 (US2014109567A)

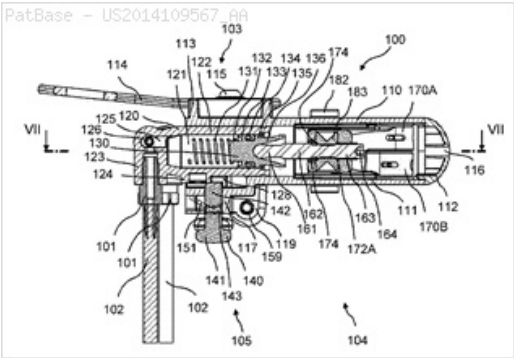
© PatBase

Title: HYDRAULIC CONVERTER AND HYDRAULIC BRAKE

Abstract: A hydraulic converter for a hydraulic brake system or clutch system, in particular, of a handlebar-steered vehicle, in particular of a bicycle, includes at least one hydraulic master device and a mechanical slave device for actuating the hydraulic master device. The hydraulic master device comprises a cylinder with a pressure chamber, a piston arranged in the cylinder displaceably along the axis of the cylinder, and the hydraulic converter having an adjustment device for adjusting the volume of the pressure chamber of the cylinder.

Classifications:

International (IPC 8-9): B60T11/04 B60T11/10 B60T11/18
B60T11/20 B60T11/224 B60T7/10 B62L3/00 B62L3/02 F15B3/00
F15B5/00 (Advanced/Invention)
CPC: B60T11/102 B60T11/18 B60T11/203 B60T11/224 B60T11/10
B60T7/10 B62L3/023
US: 188/151R 60/445 60/594



Family:

Publication number	Publication date	Application number	Application date
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TW201305007 A	20130201	TW20120123095	20120627
US2014109567 AA	20140424	US20130141515	20131227
WO13000780 A1	20130103	WO2012EP61799	20120620

Priority:

DE201110078153 20110627 WO2012EP61799 20120620

Probable Assignee: MAGENWIRTH GMBH AND CO GUSTAV KG

Assignee(s): (std): COCONCELLI JOCHEN ; HUIER JOACHIM ; MAGENWIRTH GMBH AND CO GUSTAV KG ; MAGENWIRTH GMBH AND CO KG GUSTAV
Assignee(s): GUSTAV MAGENWIRTH GMBH AND CO ; GUSTAV MAGENWIRTH GMBH AND CO KG
Inventor(s): (std): COCONCELLI JOCHEN ; HUIER JOACHIM
Agent(s): FRIESE MARTIN ET AL
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

17) Family number: 12122 (GB1194198A)

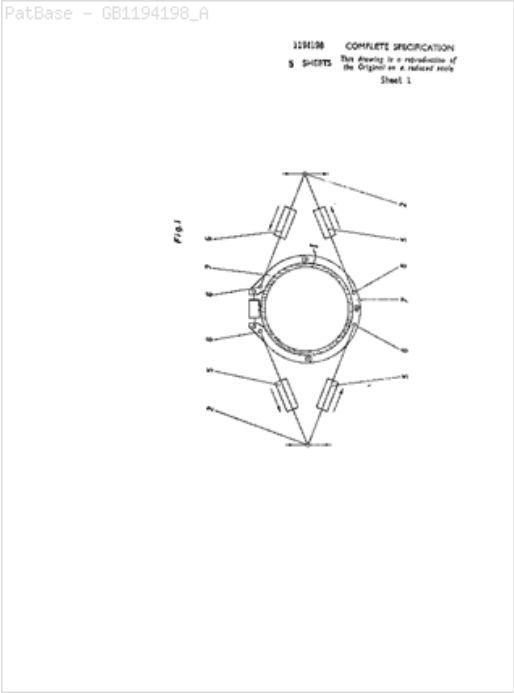
© PatBase

Title: Hydraulic Drive for Very Large Torques.

Abstract: 1,194,198. Friction clutches. BADE and CO. G.m.b.H. 2 Oct., 1967 [6 Oct., 1966], No. 44769/67. Heading F2C. [Also in Divisions E1 and F1] An hydraulic drive for large torques, e.g. for large hole drilling machines and tool plates of mechanical drifting shields, comprises hydraulic piston and cylinder units 4, 5 pivoted on stationary pins 2 and on an hydraulically-actuated clamp 7, 7¹ surrounding the shaft to be driven, the piston and cylinder units being operated to oscillate the shaft or to rotate it stepwise, the clamp being released for the return stroke for stepwise rotation. The clamp comprises pivoted elements 7, 7¹, and is operated by an hydraulic piston and cylinder unit 10, 12. To increase the gripping area of the clamp on the output shaft, the shaft may be formed with circumferential tapered grooves for engagement by correspondingly shaped clamping elements, Fig. 3 (not shown).

Classifications:

International (IPC 8-9): E21B3/025 F15B15/06 F16H31/00 F16H43/00 (Advanced/Invention); E21B3/00 F15B15/00 F16H31/00 F16H43/00 (Core/Invention)
International (IPC 1-7): E01G3/03 E21C27/22 F15B15/06 F16D49/16 F16H13/00 F16H27/02 F16H27/10 F16H43/00
CPC: E21B3/025 F15B15/061 F16H31/006 F16H43/00
European: E21B3/025 F15B15/06B F16H31/00C3 F16H43/00



Family:

Publication number	Publication date	Application number	Application date
AT289185 B	19710413	AT19670008813	19670928
CH481322 A	19691115	CH19670013606	19670929
DE1301684 B	19690821	DE1966B089220	19661006
GB1194198 A	19700610	GB19670044769	19671002

Priority:

DE1966B089220 19661006

Probable Assignee:

BADE AND CO GMBH

Assignee(s): (std):

BADE AND CO GMBH

Assignee(s):

BADE AND CO G M B H

Inventor(s): (std):

FRANZ BADE ; WERNER WIPPIG

Inventor(s):

WIPPIG WERNER ; BADE FRANZ

18) Family number: 57357123 (US2014251648A)

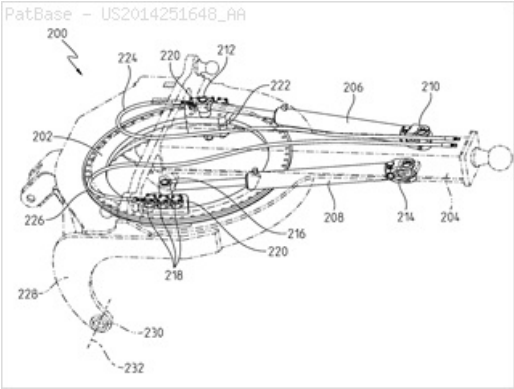
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Title: MOTOR GRADER CIRCLE DRIVE ASSEMBLY

Abstract: The present disclosure provides a circle drive assembly for a motor grader. The circle drive assembly includes a circle member being rotatable about a rotation axis, a first hydraulic cylinder and a second hydraulic cylinder for rotatably driving the circle member, and a first and second coupling mechanisms. The first hydraulic cylinder has a first end coupled to the first coupling mechanism and the second hydraulic has a second end coupled to the second coupling mechanism. The first coupling mechanism and second coupling mechanism can be controllably moved between a clamped position and an unclamped position. The first hydraulic cylinder rotatably drives the circle member when the first coupling mechanism is in the clamped position and the second hydraulic cylinder rotatably drives the circle member when the second coupling mechanism is in the clamped position.

Classifications:

International (IPC 8-9): E02F3/76 E02F3/815 E02F3/84 E02F3/85 (Advanced/Invention)
CPC: E02F3/7668 E02F3/844 E02F3/764 E02F3/7654
US: 1/1 172/796 701/50

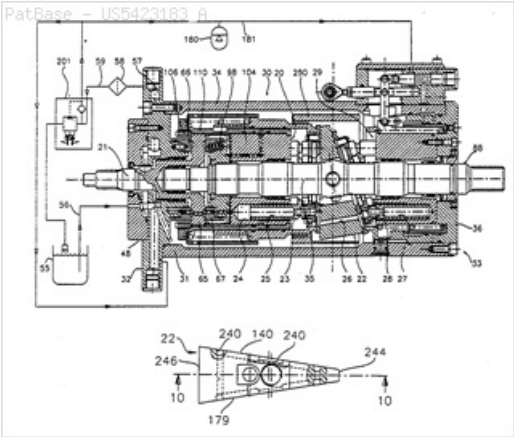


Family:

Abstract: A continuously variable transmission includes a pump (258) driven by an input shaft (256) against a wedge-shaped swashplate (260). Hydraulic fluid pressurized in the pump flows through ports (402) in a pump cylinder block (422) into kidney-shaped slots (406) in the swashplate (260), and from there flows into and pressurizes a series of cylinders (394) in a motor cylinder block (366). The pump and motor exert first and second components of torque on a swashplate (260) in the rotational direction on the input shaft (256), and the hydraulic system pressure in the swashplate slots exerts a third component of torque in the same direction on the swashplate (260). The third torque component is a product of the hydraulic system pressure and the differential area of the two ends of the high pressure slot (406P) at the narrow and thick sides of the wedge-shaped swashplate (260). The swashplate (260) drives an output shaft (266) through an output sleeve (264) pinned to the outside peripheral edge (416) of the swashplate (260). The input/output ratio of the transmission is controlled by controlling the tilt angle of the swashplate (260) with a control sleeve (268), coupled at one end to the swashplate (260) through a coupling mechanism (267) and coupled at the other end through a bearing (528) to an axially movable control cylinder (270). The axial position of the control cylinder (270) is hydraulically controlled by a follower valve system (269) which moves the control cylinder (270) to positions uniquely corresponding to positions of a manually or automatically positioned control rod (636).

Classifications:

International (IPC 8-9): F04C 14/20 F16D 39/00 F16H 39/10 F16H 39/14 F16H 39/32 (Advanced/Invention); F04C 14/00 F16D 39/00 F16H 39/00 (Core/Invention)
International (IPC 1-7): F01B 13/04 F01C 21/16 F01C 5/00 F03C 2/00 F03C 2/22 F03C 4/00 F04C 15/04 F04C 2/00 F04C 2/344 F04C 29/00 F04C 5/00 F16D 31/02 F16D 39/00 F16H 39/14
CPC: F04C 14/20 F16H 39/10 F16H 39/32 F16H 2039/105
European: F04C 14/20 F04C 15/04B6 F16H 39/10 F16H 39/32 R16H 39/10A
US: 418/156 418/31 60/413 60/414 60/487 60/488 60/491 60/492 92/12.2 92/71



Family:

Publication number	Publication date	Application number	Application date
AT163992 E	19980315	AT19920906345T	19920114
AU199213755 A1	19920817	AU19920013755	19920114
AU199663274 A1	19961230	AU19960063274	19960607
AU663487 B2	19951012	AU19920013755	19920114
BRPI9205492 A	19940301	BR1992PI05492	19920114
CA2100461 AA	19930713	CA19922100461	19920114
DE69224738 D1	19980416	DE19926024738	19920114
DE69224738 T2	19981001	DE19926024738T	19920114
EP0567598 A1	19931103	EP19920906345	19920114
EP0567598 A4	19931201	EP19920906345	19920114
EP0567598 B1	19980311	EP19920906345	19920114
JP3294265 B2	20020624	JP19920505680T	19920114
JP6505327 T2	19940616	JP19920505680T	19920114
KR100259405 B1	20000615	KR19930702116	19920114
KR19937003551 A	19931130	KR19937002116	19920114
KR937003551 A	19931130	KR19930702116	19930714
RU2101586 C1	19980110	SU19930051181	19920114
RU2101586 C1	19980110	RU19930051181	19920114
RU93051181 A	19960727	RU19930051181	19930714
US5423183 A	19950613	US19930093192	19930713
US5575152 A	19961119	US19950465631	19950605
US5630318 A	19970520	US19950481802	19950607
US5655369 A	19970812	US19950481032	19950607
US5655370 A	19970812	US19950480772	19950607
US5657629 A	19970819	US19950483997	19950607
US5839889 A	19981124	US19950478947	19950607
WO9212357 A1	19920723	WO1992US00259	19920114
WO9641067 A1	19961219	WO1996US09849	19960607

Priority:

US19910640645 19910114	WO1992US00259 19920114	US19930093192 19930713
US19950465631 19950605	US19950481805 19950607	US19950478947 19950607
US19950481802 19950607	US19950483997 19950607	US19950480772 19950607
US19950481032 19950607	WO1996US09849 19960607	

Probable Assignee: FOLSOM TECHNOLOGIES INC

Assignee(s): (std): ADVANCED POWER TECHNOLOGY ; ADVANCED POWER TECHNOLOGY INC ; EHDVEHNST PAUEHR TEKNOLODZHI I ; EHDVEHNST PAUEHR TEKNOLODZHI INK ; FOLSOM LAWRENCE R ; FOLSOM TECHNOLOGIES INC ; TUCKER CLIVE ; MARTIN MARIETTA CORP

Assignee(s): LOCKHEED MARTIN CORP ; GENERAL DYNAMICS LAND SYSTEMS INC ; L 3 COMMUNICATIONS CORP ; GENERAL DYNAMICS DEFENSE SYSTEMS INC ; ADVANCED POWER TECHNOLOGY INC ATLANTA GA US

Inventor(s): (std): FOLSOM LAWRENCE ; FOLSOM LAWRENCE R ; TUCKER CLIVE ; CLIVE TUCKER ; LAWRENCE R FOLSOM ; LORENS RFOLSOM ; LORENS R FOLSOM

Inventor(s): LORENS R.FOLSOM[US]

Agent(s): MACRAE AND CO

Designated states: AL AM AT AU AZ BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IS IT JP KE KG KP KR KZ LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TR TT UA UG US UZ VN

Title: Actuator cylinder with mechanism to reduce stiction

Abstract: A linear actuator cylinder reduces the stiction otherwise present during initiation of rod extension or retraction. The actuator cylinder includes a cylinder assembly having a piston that slides longitudinally through a cylinder barrel. A rod is connected to the piston and extends from the cylinder barrel. A rotator mechanism is connected to the rod to rotate the piston and rod with respect to the cylinder barrel. The rotator mechanism typically includes a hydraulic or electric motor connected to the rod by, for example, a chain engaged with a pair of sprockets.

Classifications:

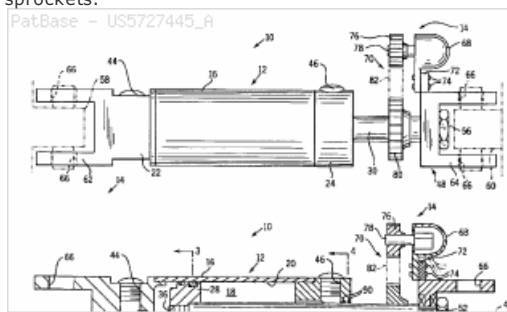
International (IPC 8-9): F15B15/20 (Advanced/Invention);
F15B15/00 (Core/Invention)

International (IPC 1-7): F01B21/00

CPC: F15B15/20

European: F15B15/20

US: 92/168 92/2 92/31



Family:

Publication number	Publication date	Application number	Application date
US5727445 A	19980317	US19960746081	19961106

Priority:

US19960746081 19961106

Probable Assignee: SHELDON VAN SOMEREN INC

Assignee(s): (std): SHELDON VAN SOMEREN INC

Inventor(s): (std): SHELDON PAUL C

Title: Multiple RAM assembly and recuperative drive system for hydraulic lift

Abstract: PCT No. PCT/AU93/00447 Sec. 371 Date Feb. 28, 1995 Sec. 102(e) Date Feb. 28, 1995 PCT Filed Aug. 31, 1993 PCT Pub. No. WO94/05583 PCT Pub. Date Mar. 17, 1994A multi-stage hydraulic ram assembly for the accumulator drive system of an elevator assembly includes a plurality of piston-cylinder arrangements connected hydraulically in parallel and mechanically in series. The piston-cylinder arrangements are disposed in substantial side-by-side relationship, constituting adjacent or successive stages of the ram assembly. A bracket is fixed to one of the cylinders and is slidably connected to the adjacent cylinder, for interconnecting adjacent cylinders of the piston-cylinder arrangements, and a drive system is provided for operating the ram assembly. Steps are taken to control the direction and speed of movement of adjacent stages of the assembly, and to ensure that all of the stages of the assembly move at substantially the same speed.

Classifications:

International (IPC 8-9): B66B9/04 F15B1/02 F15B15/14 F15B15/16
F15B21/14 (Advanced/Invention);

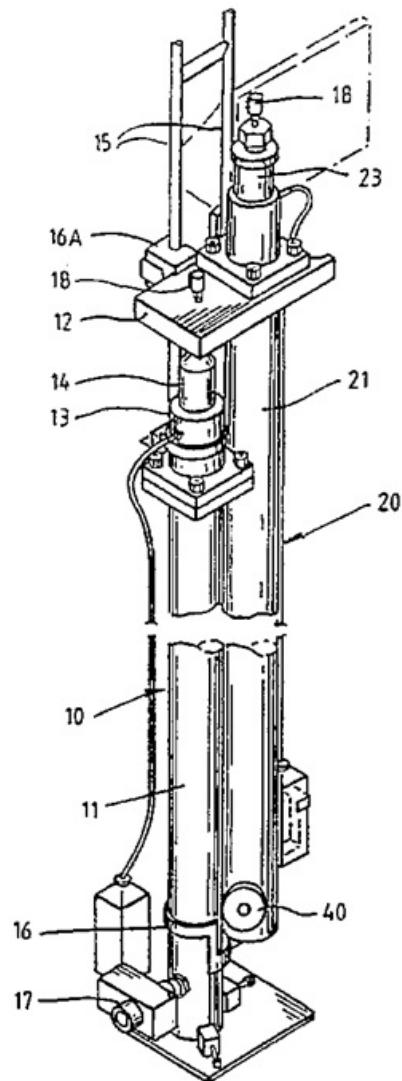
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International (IPC 1-7): B66B9/04 F15B1/02 F15B15/14 F15B21/14

CPC: Y02B50/146 B66B9/04 F15B15/16 Y02B50/148

European: B66B9/04 F15B15/16 Y02B50/14F Y02B50/14H

US: 187/226 187/274 187/275 91/170.00R 91/170R 91/508

**Family:**

Publication number	Publication date	Application number	Application date
AU199349351 A1	19940329	AU19930049351	19930831
AU673196 B2	19961031	AU19930049351	19930831
EP0660799 A1	19950705	EP19930918793	19930831
EP0660799 A4	19970625	EP19930918793	19930831
JP8500569 T2	19960123	JP19940506676T	19930831
US5636713 A	19970610	US19950392785	19950228
WO9405583 A1	19940317	WO1993AU00447	19930831

Priority:

AU1992PL04385 19920831 AU19930049351 19930831 WO1993AU00447 19930831

Probable Assignee: OTIS ELEVATOR CO

Assignee(s): (std): CAPTINE PTY LTD ; ESSEN FREDERICK HUBERT VAN ; PERKINS REX HENLEY

Assignee(s): SANSORD PTY LTD ; VAN ESSEN FREDERICK H ; OTIS ELEVATOR CO ; PERKINS REX H

Inventor(s): (std): ESSEN FREDERICK HUBERT VAN ; PERKINS REX H ; PERKINS REX HENLEY ; VAN ESSEN FREDERICK H ; VAN ESSEN FREDERICK HUBERT

Inventor(s): REX HENLEY PERKINS ; FREDERICK HUBERT VAN ESSEN

Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON

Designated states: AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US VN

23) Family number: 1517157 (US4018350A)

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Title: Hydraulic cylinder systems with safeguarded float action

Abstract: The invention may be used with a boom or the like which is raised and lowered by double-acting hydraulic cylinder means provided with a pilot-actuated safety valve at its bottom such that the boom can only go down when pilot pressure (normally from the downthrust line) is applied to this safety valve. The main manual valve has a four-position spool which provides a float position reached by moving through the lowering position. As the main valve is moved to the float position, its manual actuation mechanism actuates an auxiliary valve to supply pilot pressure to the safety valve to open the safety valve to allow the cylinder to achieve the desired floating action. This pilot pressure supply is through a shuttle valve which alternatively lets pilot pressure be applied to this safety valve as here stated or, from the downthrust, without ever

connecting the two sources.

Classifications:

International (IPC 8-9): B60P1/16 B66C13/18 B66C23/00 E02F9/20 E02F9/22 F15B11/16 (Advanced/Invention); B66C13/18 B66C23/00 E02F9/20 E02F9/22 F15B11/00 (Core/Invention)

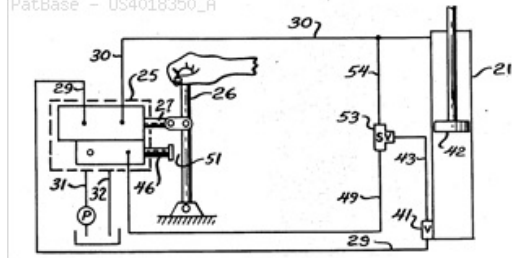
International (IPC 1-7): B66C23/00 E02F3/70 F15B11/16

CPC: E02F9/2004 E02F9/2203 B66C13/18

European: B66C13/18 E02F9/20A E02F9/22C

US: 212/288 214/140 414/680 414/697 91/447 91/519

PatBase - US4018350_A



Family:

Publication number	Publication date	Application number	Application date
CA1049376 A1	19790227	CA19760246343	19760223
CA1050395 A1	19790313	CA19760256014	19760629
US4018350 A	19770419	US19750558782	19750317
US4033468 A	19770705	US19750593374	19750707

Priority:

US19750558782 19750317 US19750593374 19750707

Probable Assignee: PETTIBONE CORP

Assignee(s): (std): PETTIBONE CORP

Assignee(s): SECURITY PACIFIC BUSINESS CREDIT INC ; BROWN WILBURN K ; CONTINENTAL BANK NA ; FIRST NATIONAL BANK OF CHICAGO

Inventor(s): (std): BROWN WILBURN K ; BROWN WILBURN KELLY

24) Family number: 48201180 (US2012124990A)

© PatBase

Title: SUPPORT CYLINDER FOR A SELF-ENERGIZING HYDRAULIC BRAKE

Abstract: A pressure generating device generates a hydraulic pressure as a result of a tensile or compressive load. The device has connections, one of which can be rigidly connected to a frame by way of a mechanism for introducing a mechanical tensile or compressive load, a pressure cylinder and a piston unit extending at least partially and flexibly in the pressure cylinder and bounding a hydraulic chamber filled with hydraulic fluid jointly with the pressure cylinder. The chamber has a simple and inexpensive construction. The connections are connected to the pressure cylinder or the piston unit by way of a coupling device that is configured such that the same hydraulic chamber has pressure applied thereto under tensile load and under compressive load.

Classifications:

International (IPC 8-9): B60T11/16 B60T8/52 F01B13/00 F01B7/20 F01B9/00 F04B1/00 F16D55/46 F16D65/14

F16D65/18 (Advanced/Invention);

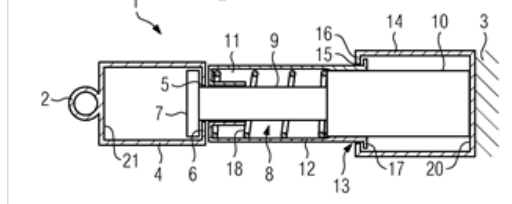
B60T13/02 F16D127/08 (Advanced/Non-invention)

CPC: B60T11/16 B60T13/02 B60T8/52 F16D65/14 F16D2127/085

European: B60T8/52 F16D65/14 R16D127/08B

US: 1/1 60/533 60/533P 92/140 92/140S

PatBase - US2012124990_AA



Family:

Publication number	Publication date	Application number	Application date
CN102470842 A	20120523	CN201080032969	20100707
CN102470842 B	20141210	CN201080032969	20100707
DE102009034522 A1	20110203	DE200910034522	20090721
DE502010006281 D1	20140410	DE201050006281T	20100707
EP2456645 A1	20120530	EP20100735233	20100707
EP2456645 B1	20140305	EP20100735233	20100707
IN00081KN2012 A	20160826	IN2012KN00081	20120113
RU2012106135 A	20130827	RU20120106135	20100707
RU2550411 C2	20150510	RU20120106135	20100707
US2012124990 AA	20120524	US20100386504	20100707
US9114787 BB	20150825	US20100386504	20100707
WO11009722 A1	20110127	WO2010EP59721	20100707

Priority:

DE200910034522 20090721 EP20100735233 20100707 WO2010EP59721 20100707

Probable Assignee: SIEMENS AG

Assignee(s): (std): EWALD JULIAN ; LIERMANN MATTHIAS ; SIEMENS AG ; STAMMEN CHRISTIAN

Assignee(s): SIMENS AKTSIENGEZELL SHAFT ; SIEMENS AKTIENGESELLSCHAFT

Inventor(s): (std): STAMMEN CHRISTIAN ; LIERMANN MATTHIAS ; EWALD JULIAN ; JULIAN EWALD ; MATTHIAS LIERMANN ; CHRISTIAN STAMMEN ; LIERMANN MATTHIAS ; SHTAMMEN KRISTIAN ; EHVAL D JULIAN

Agent(s): LAURENCE A; RALPH E; WERNER H; SIEMENS AKTIENGESELLSCHAFT

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: ACTUATOR WITH LOCKING VALVES

Abstract: A hydraulic actuator having two balanced area actuator pistons, each controlled by the movement of a primary servo sleeve to supply pressurized fluid from a pressure fluid source to one side of the actuator piston and to allow return flow from the opposite side of the piston. Piston movement is reversed by translation of the primary servo sleeve. A blocking valve is in each flow line between the servo sleeve and the cylinders in which each piston moves. A flow channel from the pressure fluid source applies pressure to the shut off valves to maintain the valves normally open for flow of control fluid to and from the actuator pistons. Means, operable upon loss of fluid pressure, are provided for closing the shut off valves to maintain existing pressure on both sides of the actuator pistons automatically to maintain reactive loads in each actuator half. Upon pressure loss, disengagement of the shut off valves may be accomplished by stroking a secondary spool associated with the primary servo spool and responsive to over travel of the primary servo spool to displace a ball which in turn mechanically displaces the shut off valves to allow passage of fluid to and from the actuator cavities thereby permitting an equalization of pressure on both sides of the actuator piston.

Classifications:

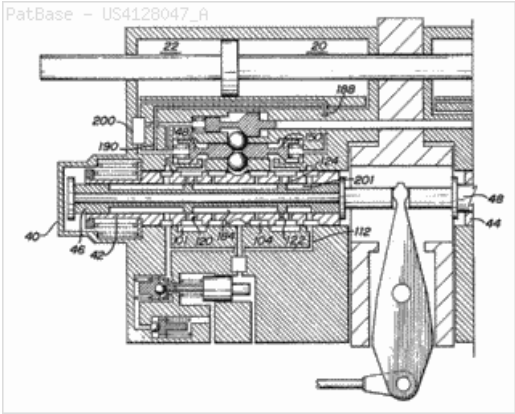
International (IPC 8-9): B64C13/44 F15B13/01
F15B18/00 (Advanced/Invention);
B64C13/00 F15B13/00 F15B18/00 (Core/Invention)

International (IPC 1-7): F15B11/08 F15B13/04

CPC: F15B13/01 F15B18/00 Y10T137/86485 B64C13/44

European: B64C13/44 F15B13/01 F15B18/00

US: 137/624.27 91/391R 91/420 91/437 91/445 91/508



Family:

Publication number	Publication date	Application number	Application date
US4128047 A	19781205	US19770815675	19770714

Priority:

US19750604625 19750814

Probable Assignee: TEXTRON INC

Assignee(s): (std): TEXTRON INC

Assignee(s): BELL HELICOPTER TEXTRON INC ; BELL HELICOPTER TEXTRON INC A CORP OF DE

Inventor(s): (std): CAERO JOSE G

Title: HYDRAULIC OPERATOR

Abstract: I claim: ' 1. A hydraulic motor having in combination, a hydraulic cylinder, a hydraulic piston slidable operatively in said cylinder, a valve housing secured on one end of said hydraulic cylinder, a central aperture in said valve housing, said central aperture being of substantially cylindrical conformation and extending in substantial alignment with the axis of said hydraulic cylinder, a ported cylinder of smaller diameter than said aperture, a plurality of sets of port holes opening through the side walls of said ported cylinder, the 'port holes of each set being spaced axially around said ported cylinder and the respective sets of port holes being spaced axially at different axial positions in said ported cylinder, spacing rings disposed in the space between the ported cylinder and the side walls of said aperture for supporting said ported cylinder in a concentric spaced relation therein and corresponding in number to the number of sets of port holes in the ported cylinder, said spacing rings being spaced axially along the peripheral outer wall of said ported cylinder at distances or positions coinciding with the axially spaced sets of port holes in the ported cylinder, each spacing ring having a groove or cut out portion provided with ports in conductive connection with all the port holes of an adjacent set in the ported cylinder, a valve slidable in snug fitting relation in said ported cylinder, a groove in the outer peripheral wall of said valve, said groove extending circumferentially around said valve and being of sufficient axial length to simultaneously overlap for conductively interconnecting the port holes of two adjacent sets of port holes in the ported cylinder, fluid conducting passages extending from opposite ends of said hydraulic cylinder into said valve housing and connecting into the conductive grooves defined by two different spacer rings, an inlet port in said valve housing opening into another groove in another one of the spacer rings for applying a high pressure working fluid therein for working the hydraulic piston, an exhaust port opening from said housing and connecting from another one of the grooves defined in another spacer ring, said ports being so related that the valve by moving to either one of two extreme positions connects the inlet port to apply fluid pressure on either respective side of the hydraulic piston while connecting the other side thereof to exhaust, and valve operating means for actuating the valve to either extreme position substantially as the hydraulic piston completes a stroke in either direction. 2. A hydraulic motor comprising the combination defined by claim number 1 and having yieldable gaskets between said spacing rings for sealing between the walls of the central aperture and the ported cylinder. / 3. A hydraulic motor having in combination, a hydraulic cylinder, a hydraulic piston slidable operatively in said cylinder, a valve housing mounted on one end of said hydraulic cylinder, a central aperture in said valve housing, said central aperture being of substantially cylindrical conformation and extending in substantial alignment with the axis of said hydraulic cylinder, a ported cylinder of smaller diameter than said aperture, four sets of port holes opening through the side walls of said ported cylinder, the port holes of each set being spaced circumferentially around said ported cylinder and the respective sets of port holes being spaced axially at different axial positions in said ported cylinder, four spacing rings disposed in the space between the ported cylinder and the side walls of said aperture for supporting said ported cylinder in a concentric spaced relation therein, said spacing rings being spaced axially along the peripheral outer wall of said ported cylinder at distances or positions coinciding with the axially spaced sets of port holes in the ported cylinder, a D8 ring having a groove or cut out portion provided with ports in conductive connection with all the port holes of an adjacent set in the ported cylinder, a valve slidable in snug fitting relation in said ported cylinder, a groove in the outer peripheral wall of said valve, said groove extending circumferentially around said valve and being of sufficient axial length to simultaneously overlap for conductively interconnecting the port holes of two adjacent sets of port holes in the ported cylinder, fluid conducting passages extending from opposite ends of said hydraulic cylinder into said valve housing and connecting into the conductive grooves defined by two different spacer rings being the top ring and the third from the top, an inlet port in said valve housing opening into the groove in the second spacer ring from the top for applying a high pressure working fluid therein for working the hydraulic piston, an exhaust port opening from said housing and connecting from the groove defined in the bottom spacer ring and also opening from the space in said central aperture above said spacer rings and valve, said ports being so related that the valve by moving to its uppermost extreme position connects two uppermost sets of ports applying fluid pressure in

the connected end of the hydraulic cylinder while connecting the other end of the cylinder to exhaust. and the valve by moving to the other extreme position, which is its lowermost position, connects the second and third sets of port holes to the space in the central aperture above the valve for exhaust therethrough to the exhaust port. and valve operating means for actuating the valve to either extreme position substantially as the hydraulic piston completes a stroke in either direction. , 4. A hydraulic motor comprising the combination defined by claim number 3 and having yieldable gaskets between said spacing ring; for sealing between the walls of the central aperture and the ported cylinder. 5. A hydraulic motor having in combination, a. a hydraulic cylinder. a hydraulic piston slidable operatively in said hydraulic cylinder, a valve housing mounted on one end of said hydraulic cylinder, an inlet port in said valve housing for receiving a working fluid under pressure for actuating said hydraulic piston. an exhaust port in said housing for discharging working fluid from said hydraulic cylinder, fluid conducting passages extending from opposite ends of said hydraulic cylinder into said valve housing, a valve in said housing movable to either one of two extreme positions, fluid conducting ports and passages so arranged in combination with said valve that in one position thereof conductive connection is established from said inlet port and from said exhaust port through said passages to opposite ends of said cylinder for moving the hydraulic piston in a predetermined direction and in the other position of the valve the conductive connections are reversed for moving the piston in the opposite direction, 9. hollow piston rod extending from said hydraulic piston for transmission of power to a device to be operated, a valve rod extending from said valve into said hollow rod, cooperative engageable means actuated by said hydraulic piston, 2,258,493 , 7 mm and the hollow piston rod for reciprocating the valve rod when the hydraulic piston approaches either end of its stroke for throwing the valve to either alternate extreme position for reversing as the piston approaches the end of a stroke in either direction, and snap action means associated with said valve actuating means for moving the valve to either extreme position with a quick snappy action just as the piston has substantially completed its stroke. 6. A snap action valve operating mechanism comprising, a valve having an aperture extending axially therethrough, a valve rod extending slidably through the aperture in the valve, a spring concentrically disposed on an extending end of said valve rod, retaining members spaced apart on said rod for engaging the opposite ends of said spring for holding the spring compressed, obstruction means on said rod for limiting the axial movement of said retaining members apart from each other, either of said retaining members being movable toward the other for further compressing the spring, a. cam spool having an aperture extending axially therethrough, said cam spool being disposed concentrically on said rod over said spring, the ends of the axial aperture in the spool being reduced to engage the retaining members compressing the ends of the spring, means connecting the cam spool operatively with the valve, the outer surface, of said cam spool having camming irregularities, and resilient snapover means engaging said camming irregularities for moving the cam spool in either direction with a quick snappy action when it has been moved a predetermined distance in either direction by said rod. 7. A snap action valve operating mechanism comprising, a valve having an aperture extending axially therethrough, a valve rod extending slidably through the aperture in the valve, a spring noncentrically disposed on an extending end of said valve rod, retaining members spaced apart on said rod for engaging the opposite ends of said spring for holding the spring compressed, obstruction means on said rod for limiting the axial movement of said retaining members apart from each other, either of said retaining members being movable toward the other for further compressing the spring, a cam spool having an aperture extending axially therethrough, said cam spool being disposed concentrically on said rod over said spring, one end of the axial aperture in the spool being reduced to engage one retaining member compressing one end of the spring, the other end of said aperture being internally threaded, 9. plug threadably disposed in the threaded end of said aperture and having an aperture of reduced diameter for passing the rod freely therethrough while engaging the other remaining member for compressing the other end of the spring, means connecting the cam spool operatively with the valve, the outer surface of said cam spool having camming irregularities, and resilient snapover means engaging said camming irregularities for moving the cam spool in either direction with a quick snappy action when it has been moved a predetermined distance in either direction by said rod.

Classifications:

International (IPC 8-9): F15B11/15 (Advanced/Invention);

F15B11/00 (Core/Invention)

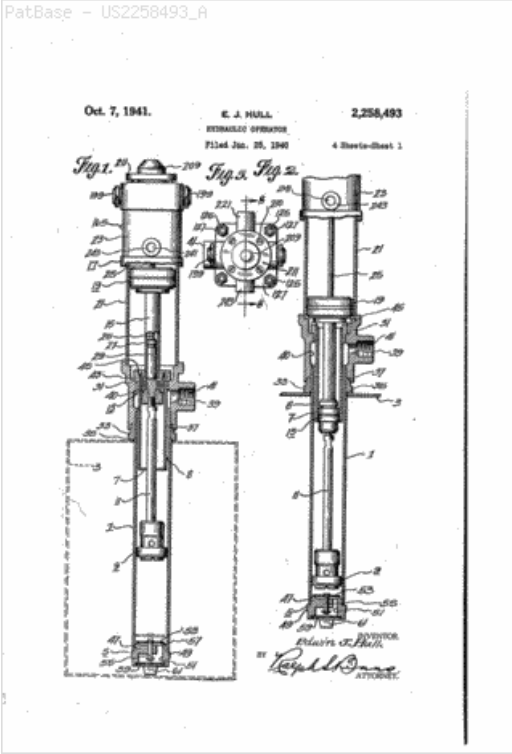
International (IPC 1-7): F04B9/10

CPC: F15B11/15

European: F15B11/15

US: 184/29 417/548 425/562 91/337 91/342 91/346

PatBase - US2258493_A



Family:

Publication number	Publication date	Application number	Application date
US2258493 A	19411007	US19400315563	19400125

Priority:

US19400315563 19400125

Probable Assignee:

TRABON ENGINEERING CORP

Assignee(s): (std):

TRABON ENGINEERING CORP

Inventor(s): (std):

HULL EDWIN J

27) Family number: 58397219 (DE102013107853A1)

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Title: HYDRAULIKZYLINDER, INSBESONDERE HUBZYLINDER EINES FLURFOERDERZEUG-HUBMASTES, MIT EINEM

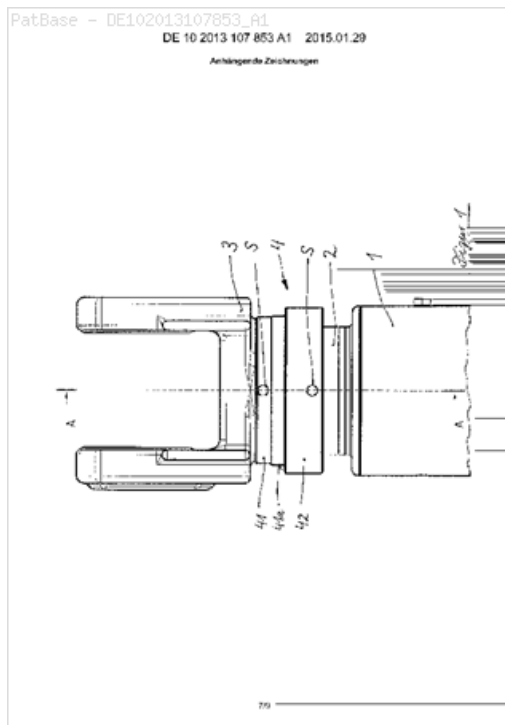
ZYLINDERROHR, EINER KOLBENSTANGE UND EINER MECHANISCHEN EINFABRBEGRENZUNG HYDRAULIC CYLINDER, ESPECIALLY AN ACTUATOR FLURFOERDERZEUG-mast, WITH A TUBE, A ROD AND A MECHANICAL EINFABRBEGRENZUNG (Machine translation)

Abstract: Source: DE102013107853A1 [DE] Die Erfindung betrifft einen Hydraulikzylinder, insbesondere Hubzylinder eines Flurfoerderzeug-Hubmastes, mit einem Zylinderrohr (1), einer Kolbenstange (2) und einer die Kolbenstange (2) koaxial umfassenden, mechanischen Einfahrbegrenzung (4) zwischen einem Aussenende der Kolbenstange (2) und einer dazu nahen Stirnseite des Zylinderrohrs (1), wobei die Laengsabmessung der Einfahrbegrenzung (4) einstellbar ist. Um eine einfache, funktionssichere und Platz sparende Einfahrbegrenzung (4) zu des Hydraulikzylinders schaffen, umfasst die Einfahrbegrenzung (4) erfindungsgemaess zwei rotationssymmetrische, einteilige Gewindebuchsen (41, 42), von denen eine erste Gewindebuchse (41) mit einem Aussengewinde (41a) versehen ist, das in ein Innengewinde (42a) einer zweiten Gewindebuchse (42) eingreift, die einen sich nach radial innen zur Kolbenstange (2) erstreckenden Stuetzabschnitt (42b) aufweist, der direkt oder - ueber einen radial zwischen dem Innengewinde (42a) und der Kolbenstange (2) angeordneten, axialekraftuebertragenden Abstandshalter (5) - indirekt an einer benachbarten Stirnseite (41b) der ersten Gewindebuchse (41) abstuetzbar ist. **Machine translation:** The invention relates to a hydraulic cylinder, especially lifting cylinder of a Flurfoerderzeug-mast, with a cylinder tube (1), a piston rod (2) and a piston rod (2) coaxially surrounds, mechanical Einfahrbegrenzung (4) between an outer end of the piston rod (2) and to close a front side of the cylinder tube (1), wherein the Laengsabmessung the Einfahrbegrenzung (4) is adjustable. To provide a simple, functionally reliable, space-saving Einfahrbegrenzung (4) of the hydraulic cylinder, comprising the Einfahrbegrenzung (4) erfindungsgemaess two rotationally symmetric, one-piece threaded bushes (41, 42), one of which provided a first threaded bushing (41) with an external thread (41a) is that in an internal thread (42a) of a second threaded bushing (42) engages having a radially inwardly to the piston rod (2) extending Stuetzabschnitt (42b), which directly or - by a radially between the internal thread (42a) and piston rod (2) is arranged, transmitting axial forces spacer (5) - indirectly, to an adjacent end face (41b) of the first threaded bush (41) is supportable .

Classifications:

International (IPC 8-9): B66F9/22 F15B15/24 (Advanced/Invention)

CPC: B66F9/22 F15B15/24 B66F9/08



Family:

Publication number	Publication date	Application number	Application date
DE102013107853 A1	20150129	DE201310107853	20130723

Priority:

DE201310107853 20130723

Probable Assignee: LINDE MATERIAL HANDLING GMBH

Assignee(s): (std): LINDE MATERIAL HANDLING GMBH

Inventor(s): (std): AULBACH HOLGER ; HOESSBACHER JOHANNES

28) Family number: 5094226 (GB2060742A)

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Title: DRIVING SHEET PILES

Abstract: An apparatus for driving sheet piles into the ground. The apparatus has a drive assembly (18) movable along upstanding guide rails (17) which rotates an auger screw (19) extending downwardly therefrom. Releasably holding the opposite ends of a deep-arch steel pile P to be driven, a tubular enclosure (20) is loosely sleeved around the auger screw (19) and is suspended from the drive assembly via a pair of hydraulic cylinders (22), the sheet pile being normally introduced into the ground by the revolving auger screw (19). For penetration into and through a hard formation or for final embedment of the sheet pile the hydraulic cylinders (22) are operated to exert a downward thrust on the tubular screw enclosure (20).; A swivel union mechanism (21) connecting the screw enclosure (20) to the cylinders (22) permits the enclosure (20) to rotate around the auger screw (19) so that successive deep-arch sheet piles can be alternately turned in opposite directions as they make up a wall.

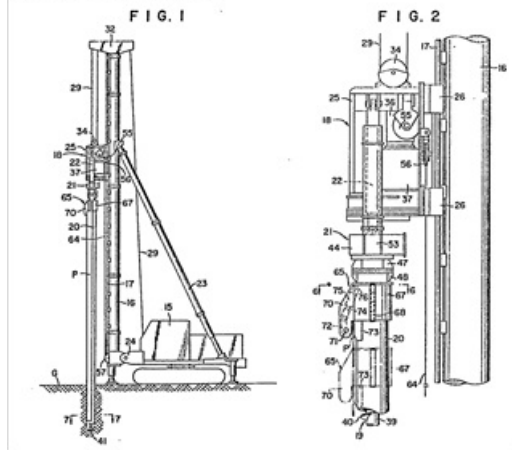
Classifications:

International (IPC 8-9): E02D7/20 E02D7/26 (Advanced/Invention);
E02D7/00 (Core/Invention)

International (IPC 1-7): E02D7/26

CPC: E02D7/20 E02D7/26

European: E02D7/20 E02D7/26

**Family:**

Publication number	Publication date	Application number	Application date
GB2060742 A1	19810507	GB19790035508	19791012
GB2060742 B2	19830525	GB19790035508	19791012

Priority:

GB19790035508 19791012

Probable Assignee:

SANWA KIZAI CO LTD

Assignee(s): (std):

SANWA KIZAI CO LTD

Assignee(s):

SANWA KIZAI KK

29) Family number: 4516239 (US5003780A)

© PatBase

Title: FLUIDIC VALVE MECHANISM

Abstract: A fluid flow sensitive valve mechanism is positioned in a valve chamber between first and second inlet-outlet ports and controls the opening and closing of a third inlet-outlet port in response to the flow of fluid to and from the valve chamber through two or more of the ports. The valve mechanism includes a valve member and a valve positioning device. The impingement of fluid flow acts on various surfaces of the valve mechanism so that (1) when fluid flows from the first port into the valve chamber the valve mechanism is moved to close the third port and to keep the third port closed so long as there is thereafter no fluid flowing from the second or third port into the valve chamber, and (2) when fluid flows through the first port from the valve chamber, whether from the second port or the third port or both, the valve mechanism is moved to open the third port. The valve mechanism is shown as being embodied in a master cylinder, in a generic push-pull hydraulic cable arrangement, and in a vehicle parking brake system where the valve mechanism is in a hydraulic substitute for the Bowden wire type of parking brake cable.

Classifications:**International (IPC 8-9):** B60T11/10 B60T11/22

B60T11/28 (Advanced/Invention);

B60T11/10 B60T11/16 (Core/Invention)

International (IPC 1-7): B60T11/20 B60T11/26 F15B7/08**CPC:** Y10T137/2559 Y10T137/7754 B60T11/22 B60T11/102

B60T11/28

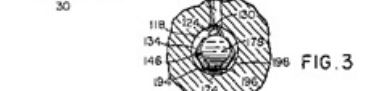
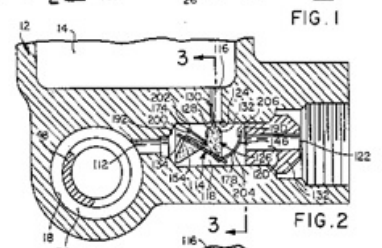
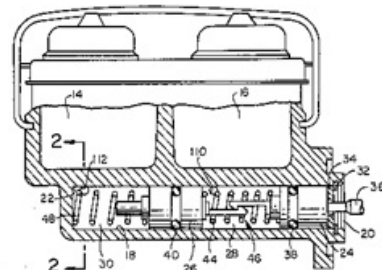
European: B60T11/10C B60T11/22 B60T11/28**US:** 137/109 137/484.2 60/585

U.S. Patent

Apr. 2, 1991

Sheet 1 of 4

5,003,780

**Family:**

Publication number	Publication date	Application number	Application date
DE69017626 D1	19950413	DE19906017626	19901214
DE69017626 T2	19951012	DE19906017626T	19901214
EP0435110 A1	19910703	EP19900124235	19901214

EP0435110 B1	19950308	EP19900124235	19901214
US5003780 A	19910402	US19890458315	19891228

Priority:

US19890458315 19891228

Probable Assignee: RMS ENGINEERING INC

Assignee(s): (std): RMS ENG INC ; SHELLHAUSE RONALD L

Assignee(s): RMS ENGINEERING INC ; RMS ENGINEERING INC VANDALIA OHIO US

Inventor(s): (std): SHELLHAUSE RONALD L

Inventor(s): SHELLHAUSE RONALD L VANDALIA OHIO 45377 US

Designated states: DE FR GB IT

30) Family number: 21838254 (FR1542057A)

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Title: PERFECTIONNEMENTS AUX ENGINS DE TERRASSEMENT ET NOTAMMENT AUX DECAPEUSES IMPROVEMENTS TO EARTH GEAR INCLUDING THE SCRAPERS (Machine translation)

Abstract: Source: FR1542057A [FR] [Source: Claim 1] 1.RESUME L'invention concerne notamment 10 'Un engin de terrassement et notamment un scraper ou decapeuse qui comprend un corps muni d'une benne de chargement ouverte a l'avant et comportant une lame pour guider les materiaux dans ladite benne pendant que le scraper se deplace -vers l'avant, un mecanisme pour faciliter le chargement et d'autres ope rations, ledit engin comprenant, en combinaison, un tablier dispose transversalement par rapport a sa benne, un support de tablier particulier ayant une premiere et une seconde sections reliees par un premier pivot, un second pivot reliant ledit tablier a ladite premiere section de support, un troisieme pivot reliant la seconde section du support au corps du scraper, un pre mier dispositif d'actionnement pour faire pivoter ledit tablier par rapport a ladite premiere section de support autour du second pivot, un second dispositif d'actionnement pour faire pivoter la premiere section dudit support par rapport a sa seconde section autour du premier pivot et un troisieme dispositif d'actionnement pour faire pivoter la seconde section de support par rapport au corps du scraper autour du troisieme pivot. 20 Des modes de realisation de cet engin caracterises par les points suivants pris isolement: ou en combinaisons diverses a. Le troisieme pivot est situe au-dessus de ladite lame et en arriere de celle-ci b. La premiere et la seconde sections dudit support ont une longueur totale superieure ala distance separant le troisieme pivot de ladite lame, de sorte que ledit tablier peut etre deplace en avant de cette derniere; c. La premiere et la seconde section dudit. support ont une longueur totale superieure a la hauteur de ladite benne d'une quantite au moins egale a la hauteur dudit tablier, de sorte que ce dernier peut etre leve au-dessus de la benne;; d. La seconde section du support du tablier se compose de deux bras s'etendant de part et d'autre de ladite benne et qui sont relies a celle-ci par le troisieme pivot; e. Une traverse s'etend entre lesdits bras, aux extremités de ceux-ci situees a l'oppose dudit troisieme pivot et le bord superieur des parois laterales de ladite benne presente un profil arque dont le rayon de courbure corres pond a la trajectoire parcourue par ladite traverse quand lesdits bras pivotent, ce qui augmente au maximum la capacite de charge ment de ladite benne, tout en assurant un maximum de man#uvrabilite dudit tablier; f. La premiere section du support du tablier est une charpente s'etendant transversalement sur pratiquement toute la largeur de ladite benne, de sorte que cette premiere section peut etre placee, conjointement avec ledit tablier, pour retenir des materiaux dans la benne, a l'extremite anterieure ouverte de celle-ci; g. Le premier, le second et le troisieme dispo- sitifs d'actionnement sont des verins a action- nement par fluide a double effet; h. La premiere section du support du tablier se compose de deux elements lateraux dont chacun est relie audit tablier par un second pivot, la seconde section du support du tablier etant constituee par deux bras s'etendant d and part et d'autre de ladite benne et qui sont relies a l'un des elements lateraux de la premiere section par iua premier pivot; i. Le premier dispositif d'actionnement comprend une premiere paire de verins hydrau liques a double effet dont chacun est monte entre ledit tablier et l'un desdits elements lateraux de ladite premiere section du support du tablier, le second dispositif d'actionnement etant constitue par une seconde paire de verins hydrauliques a double effet dont chacun est monte entre l'un desdits bras et l'un desdits elements lateraux de la premiere section du support du tablier; j. Le troisieme dispositif d'actionnement com prend une troisieme paire de verins hydrauliques a double effet dont chacun est monte entre l'un desdits bras et le corps du scraper. Societe dite **Machine translation:** [Source: Claim 1] 1.Summary Provided including 10 'A earthmover including a scraper or Scrapers includes a body having an open loading bucket at the front and having a blade to guide materials in said body while the scraper moves -to the front, a mechanism to facilitate loading and other ope rations, said device comprising, in combination, an apron has transversely to its bin, particular apron holder having a first and second sections connected by a first pivot, a second pivot connecting said deck to said first support section, a third pivot connecting the second section of the support the body of the scraper, a first-mentioned device actuator for pivoting said deck relative to said first support section about the second pivot, a second actuation device for pivoting the first section of said support relative to the second section about the first pivot and a third actuating device for pivoting the second support section relative to the body of the scraper around the third pivot. 20 Some embodiments of this machine characterized by the following points taken alone: or in various combinations a. The third pivot is located above said blade and rear thereof b. The first and second sections of said support continue for a total length ala distance separating the third pivot of said blade, so that can be said apron moves ahead of the latter; c. The first and second section of said. support have a superior total length to the height of said body of an amount at least equal to the height of said apron, so that it can be lifted above the dumpster;; d. The second section of the deck of the support consists of two arms extending on either side of said body and which are connected to it by the third pivot; e. A cross extends between said arms, at the ends thereof has LOCATED opposes said third pivot and the upper edge of the side walls of said body presents a profile arches which corre radius pond is the path traveled by said through when said arms pivot, increasing the maximum carrying capacity of the said skip ment, while ensuring maximum man # uvrabilite said apron; f. The first section of the deck of the carrier is a framework is extending transversely over virtually the entire width of said body, so that the first section can be placed together with said apron to retain materials in the bucket, at the tip open anterior thereof; g. The first, second and third pro- sitifs actuating cylinders are a actuating fluid has double effect; h. The first section of the deck of the carrier consists of two lateral Elements each of which is connected to said deck by a second pivot, the second section of the deck of the support being constituted by two arms extending from and on either side of said body and which are connected to one of the lateral Elements of the first section by IUA first pivot; i. The first actuating device comprises a first pair of cylinders hydrau lic double-acting each of which is fitted between said apron and one of said side members of said first section of the deck of the support, the second actuating device being constituted by a second pair of hydraulic cylinders double acting each of which is mounted between one of said arms and one of said lateral Elements of the first section of the deck of the carrier; j. The third com actuator takes a third pair of hydraulic cylinders double acting each of which is mounted between one of said arms and body of the scraper. Societe called

Classifications:

International (IPC 8-9): E02F3/64 (Advanced/Invention);

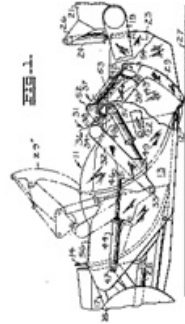
E02F3/64 (Core/Invention)

International (IPC 1-7): E02F3/64

CPC: E02F3/6481 E02F3/657

European: E02F3/64T6 E02F3/65H6

N° 1.542.057 Publié le 1 3 feuilles - PL 1
Dépôt le 19681011 Detachable Tractor Co.

**Family:**

Publication number	Publication date	Application number	Application date
FR1542057 A	19681011	FR19670126271	19671027

Priority:

FR19670126271 19671027

Probable Assignee: CATERPILLAR INC**Assignee(s):** (std): CATERPILLAR INC ; CATERPILLAR TRACTOR CO**31) Family number: 49934267** (US2011278068A)

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Title: REGENERATIVE DRIVE MECHANISM FOR HYDRAULIC FEED CYLINDERS IN HYDROSTATIC OR HYDRAULIC CIRCUITS

Abstract: Methods and systems for storing kinetic energy in a fluid-base power circuit. A regenerative control valve manifold diverts fluid flow from a hydraulic device performing a first operation into an accumulator. The accumulator stores a fluid volume sufficient to perform a second operation. The regenerative control valve manifold connects the accumulator to the power circuit providing a fluid flow and charge pressure sufficient to perform the second operation.

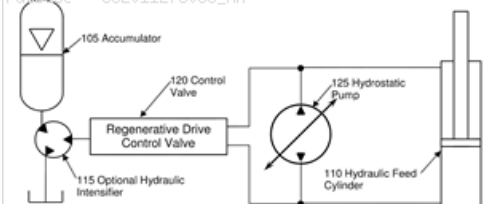
Classifications:**International (IPC 8-9):** E21B7/00 F15D1/00 (Advanced/Invention)

CPC: E21B19/086 F15B1/02 F15B21/14 F15B2211/20546
F15B2211/20561 F15B2211/20569 F15B2211/214 F15B2211/27
F15B2211/625 F15B2211/88 Y10T137/0396

European: E21B19/086 F15B1/02 F15B21/14 R15B211/205D20
R15B211/205D30 R15B211/205D40 R15B211/210D R15B211/270
R15B211/625 R15B211/880

US: 137/14 137/14S 175/107 175/162 175/217 175/57 175/57P

PatBase - US2011278068_AA



PARALLEL HYDROSTATIC DRIVE UTILIZING
FEED CYLINDER

Family:

Publication number	Publication date	Application number	Application date
US2011278068 AA	20111117	US20100755928	20100407
US8453762 BB	20130604	US20100755928	20100407

Priority:

US20100755928 20100407

Probable Assignee: EPIROC DRILLING SOLUTIONS LLC**Assignee(s):** (std): ATLAS COPCO DRILLING SOLUTIONS INC ; ATLAS COPCO DRILLING SOLUTIONS LLC ; LAW ARNOLD ; SKOOG NEIL**Assignee(s):** EPIROC DRILLING SOLUTIONS LLC**Inventor(s):** (std): LAW ARNOLD ; SKOOG NEIL**Agent(s):** ROBERT O**32) Family number: 3307267** (FR2263443A)

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Title: HYDRAULIC COUPLING MECHANISM FOR LARGE DIAMETER CONDUIT - HAS INFLATABLE COLLARS WHICH GIVE

Abstract: One conduit terminates in a bell mouth (T1), with an interval annular seal, inside which fits the other conduit (T2). Inside each pipe is a circular frame (a, b) on the outside of which is an inflatable collar (4), the two frames being connected by three hydraulic cylinders (U, V, W). A toroidal sealing ring (10) is mounted on an extension block (A) on the internal face of one frame. The pipes are offered together, probably with a small angular discrepancy. The inflatable collars are expanded and clamp on the pipe walls. The cylinders are contracted and pull the pipes together. By a process of deflation, cylinder expansion, inflation and cylinder contraction the tubes are pulled together till the sealing ring seals the frames.

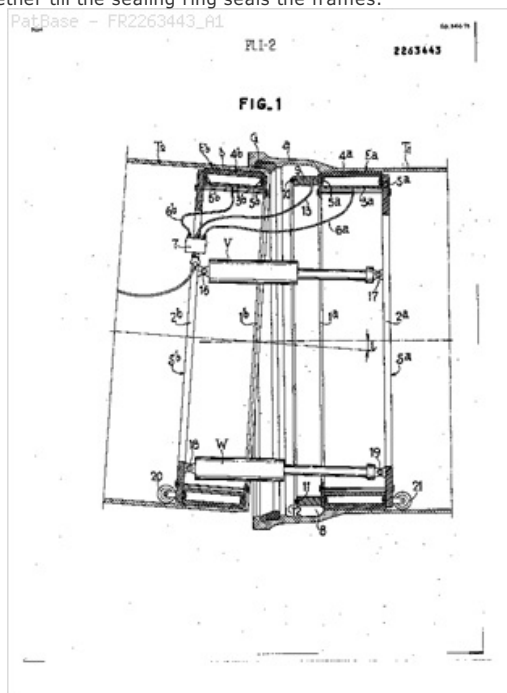
Classifications:

International (IPC 8-9): E03F3/06 F16L1/09 (Advanced/Invention); E03F3/00 F16L1/06 (Core/Invention)

International (IPC 1-7): E03F3/06 F15B15/02 F16L1/00 F16L21/00 G01M3/02

CPC: E03F3/06 F16L1/09

European: E03F3/06 F16L1/09



Family:

Publication number	Publication date	Application number	Application date
FR2263443 A1	19751003	FR19740007267	19740304
FR2263443 B1	19770916	FR19740007267	19740304

Priority:

FR19740007267 19740304

Probable Assignee: PONT A MOUSSON

Assignee(s): (std): PONT A MOUSSON

Assignee(s): PONT A MOUSSON FR SA ; PONT A MOUSSON SA ; PONT A MOUSSON SA FR

33) Family number: 67172270 (US2017292245A)

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Title: PLOW LIFT AND DOWN PRESSURE CONTROL MECHANISMS, SYSTEMS, AND METHODS

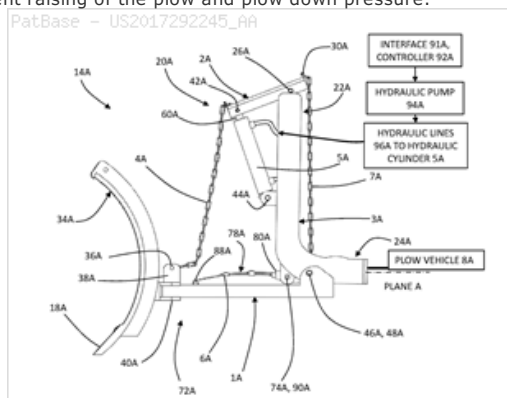
Abstract: A low cost plow lift and down pressure system comprising a lift frame having a lift end and a mount end for securing to a plow vehicle. A lever beam articulates with a lift end of the lift frame. The system further comprises a; lift tension line, down pressure tension line, hydraulic pump, hydraulic cylinder, push frame, down pressure arm, and plow. A push frame extends between a plow and a lift frame. A lift tension line extends between a plow receiver near the plow and a lift receiver on the lever beam. A down pressure tension line extends between a first down pressure receiver on the lever beam to a second down pressure receiver located on a down pressure arm that is coupled to the push frame. Active extension and retraction of a first hydraulic cylinder causes consequent raising of the plow and plow down pressure.

Classifications:

International (IPC 8-9): E01H5/06 E02F3/76 E02F3/84

E02F9/22 (Advanced/Invention)

CPC: E02F3/844 E01H5/061 E02F9/2271 E02F9/2235 E02F3/7631



Family:

Publication number	Publication date	Application number	Application date
US2017292245 AA	20171012	US20170482608	20170407
US2018371720 AA	20181227	US20180059231	20180809
US10066361 BB	20180904	US20170482608	20170407

Priority:

Probable Assignee: 906 ENG CORP**Assignee(s):** (std): 906 ENG CORP**Assignee(s):** 906 ENGINEERING CORP**Inventor(s):** (std): LANG STEPHEN ROBERT ; JEWELL MATTHEW P ; MENZE PETER CARL**Agent(s):** DEVICE PATENT LLC**34) Family number: 22421272** (US2646754A)

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Title: HYDRAULIC FLUID MECHANISM

Abstract: (Claim 1) I claim: 1. In a fluid displacement machine, a rotatable cylinder block having radially directed cylinder openings therein, pistons in the cylinders, an annular member surrounding the cylinder block and engaged by the pistons, the member being mounted for motion with respect to the cylinder block so as to vary the displacement of the machine by varying the eccentricity of the central axis of the member with respect to the axis of rotation of the cylinder block, the effect of fluid pressure in the cylinder block normally tending to reduce the displacement to zero, opposed means responsive to fluid pressure within the machine tending to move the member in an opposite direction, the means tending to decrease displacement having the greater effect, and initially stressed resilient means increasingly stressed as the displacement is decreased.

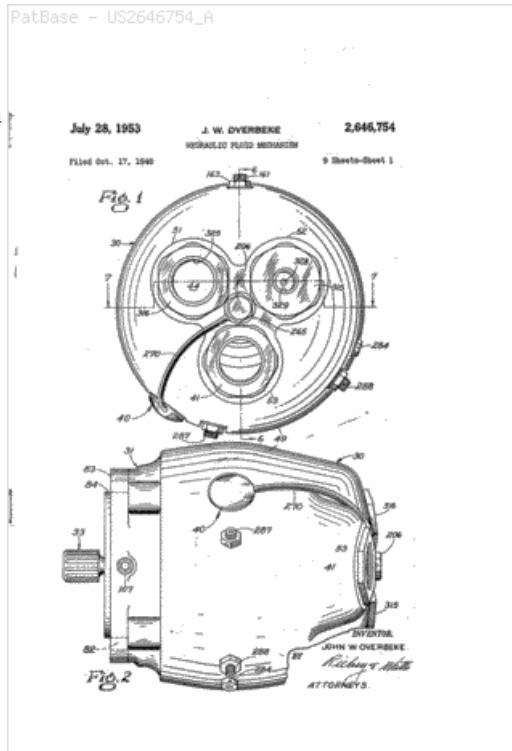
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F04B23/10 (Advanced/Invention);

F01B1/00 F01B13/00 F03C1/00 F04B23/00 (Core/Invention)

International (IPC 1-7): F04B1/04 F04B1/10 F04B1/20**CPC:** Y10S285/918 F01B1/0689 F01B1/0672 F01B13/065 F03C1/0444 F04B23/103**European:** F01B1/06K10 F01B1/06N6B F01B13/06A2B

F03C1/04K15V F04B23/10B

US: 285/918 417/203 417/219 417/239 91/475 91/484 91/496**Family:**

Publication number	Publication date	Application number	Application date
US2646754 A	19530728	US19460703733	19461017

Priority:

US19460703733 19461017

Probable Assignee: OVERBEKE JOHN W**Assignee(s):** (std): OVERBEKE JOHN W**Inventor(s):** (std): OVERBEKE JOHN W**35) Family number: 50014273** (US2011290514A)

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Title: MECHANICALLY CONTROLLED HYDRAULIC SYSTEM FOR AN AGRICULTURAL IMPLEMENT

Abstract: A hydraulic control apparatus for a foldable farm includes first hydraulic control system is used to control weight transfer to ground engaging tools mounted to a stationary and foldable wing frame sections. A second hydraulic system is used to fold and unfold the wing sections. A hydraulic control is provided that interfaces with both hydraulic systems to control sequencing of the functions provided by the first and second hydraulic systems. The first and second hydraulically systems have mechanically controlled valves to control the flow of hydraulic fluid to various lifting, folding, and down pressure cylinders.

Classifications:**International (IPC 8-9):** A01B63/00 A01B63/32 A01B73/00

A01B73/02 A01B73/04 A01D93/00 F15B11/16 (Advanced/Invention)

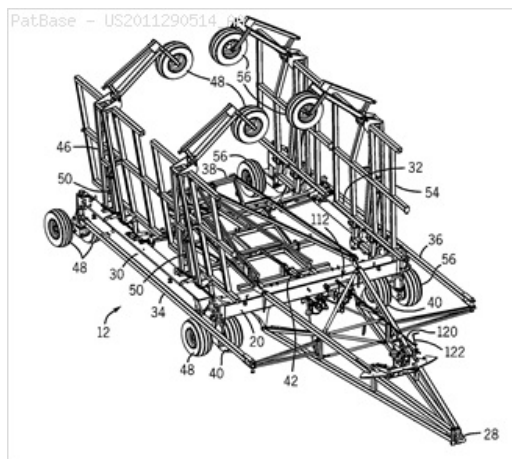
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F15B2211/50554 F15B2211/7121 F15B2211/7128 F15B2211/783

European: A01B73/04T A01B73/06F F15B11/20 R15B2211/505B10

R15B2211/505D R15B2211/710D10 R15B2211/710D20 R15B2211/780F

US: 172/311 172/452 172/459 60/484 60/484S



Family:

Publication number	Publication date	Application number	Application date
CA2721977 AA	20111128	CA20102721977	20101122
CA2721977 C	20160209	CA20102721977	20101122
RU2011121699 A	20121210	RU20110121699	20110527
RU2556401 C2	20150710	RU20110121699	20110527
US2011290514 AA	20111201	US20100789656	20100528
US8636078 BB	20140128	US20100789656	20100528

Priority:

US20100789656 20100528 CA20102721977 20101122

Probable Assignee: CNH INDUSTRIAL CANADA LTD

Assignee(s): (std): CNH CANADA LTD ; SIEHNEHJCH BELDZHIUM N V ; YUEN CORY

Assignee(s): SIEHNEHJCH BELDZHIUM NV ; CNH INDUSTRIAL CANADA LTD

Inventor(s): (std): YUEN CORY ; JUEHN KORI A

Agent(s): GOWLING LAFLEUR HENDERSON LLP; REBECCA L

36) Family number: 54588283 (ES1088229Y)

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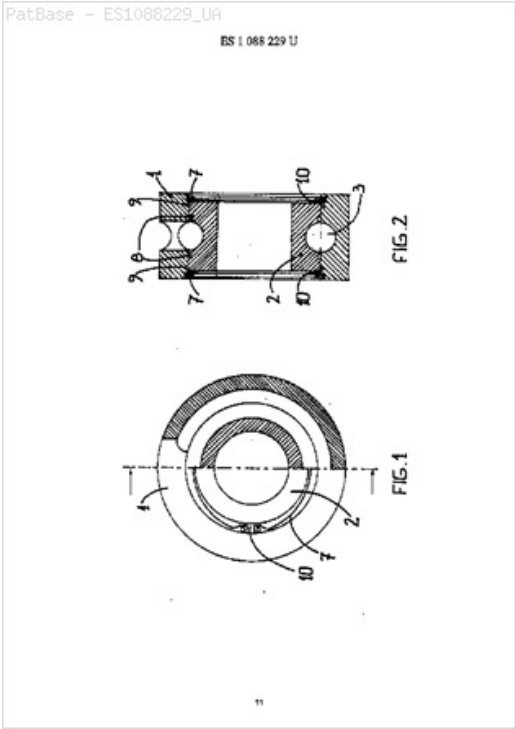
Title: ACTUADOR HIDRAULICO ROTATIVO

Abstract: Source: ES1088229U [ES] 1. El actuador hidraulico rotatorio que comprende: - Una carcasa (1) en forma de cilindro concéntrico con un canal interior semicircular centrado, donde se ha previsto una abertura (18) para el armado del conjunto. - Un eje hueco (2) en forma de cilindro concéntrico con un canal exterior semicircular centrado, y a cada lado, de forma proxima y paralela, un cajeado circunferencial (8) donde se alojan sendas juntas de estanqueidad. - Un piston (16) configurado para interactuar con el canal interior semicircular de la carcasa (1), y dotado de un cajeado circunferencial (12) en el centro y perpendicular a su eje donde se aloja un reten y unos orificios (13) en los extremos para su fijacion en el eje hueco (2). - Una tapa (17), que esta configurada de forma que sella la abertura (18) mediante una pestana exterior y extendiendose al interior tiene una superficie que se ha disenado para interactuar con la camara (3), estando previsto en dicha superficie dos cajeados (14) perpendiculares al canal centrado exterior del eje hueco (2), que se extienden por los laterales formando media circunferencia perpendicular y axial a la abertura (18) donde se alojan sendos retenes, para sellar las camaras definidas a cada lado del piston (16) en donde actua el fluido hidraulico que se comunica a traves de los conductos (15). Se caracteriza porque el eje hueco (2) esta alojado dentro de la carcasa (1) conformando una camara (3) central cilíndrica esferica que es estanca por medio de retenes colocados en cajeados (8) y en cuyo interior actua un piston (16) introducido por la abertura (18) montado solidariamente en el eje hueco (2) que realiza la funcion de desplazarse por la camara (3) para producir el movimiento rotatorio arrastrando el eje hueco (2) que hace de soporte del piston y camara a la vez, y con el fin de sellar todo el conjunto es introducida la tapa (17) en la abertura (18) que es fijada a la carcasa (1) por medio tornillos en orificios destinados para tal efecto. 2. El actuador hidraulico rotatorio de la reivindicacion 1, caracterizado porque para evitar el desplazamiento perpendicular de los cuerpos (1, 2) la carcasa (1) esta provista de un canal interior semiesferico (11) a cada lado de la camara (3). Paralelo a esta y en el eje hueco (2), coincidiendo con los anteriores, un canal exterior semiesferico (11), formando así dos canales circulares por donde se alojan una corona de bolas, introducidas una vez armado el mecanismo por medio de un orificio roscado (19), ubicado en la carcasa (1) y sellado por medio de un tornillo calibrado para no entorpecer el libre movimiento de las rodaduras. El mecanismo es sellado por un segundo par de retenes, ubicado en cajeados circunferenciales (9) en la carcasa (1) proximos al borde exterior de la union de los cuerpos (1, 2). 3. La articulacion actuador hidraulico rotatorio de la reivindicacion 1, caracterizado porque para evitar el desplazamiento perpendicular de los cuerpos (1, 2), esta previsto dos cajeados circunferenciales (7) ubicados en la cara interior de la carcasa (1) y paralelos a la camara (3) donde se alojan sendos anillos seeger, acompanado de sus respectivos separadores (10) para evitar el roce del eje hueco (2) con los anillos seeger. El mecanismo es sellado por un segundo par de retenes, ubicado en cajeados circunferenciales (9) en la carcasa (1) y proximos al borde exterior de la union de los cuerpos (1, 2). 4. La articulacion actuador hidraulico rotatorio, de acuerdo con una cualquiera de las reivindicaciones 1 y 3, caracterizado porque para evitar el desplazamiento perpendicular de los cuerpos (1, 2), esta previsto dos cajeados circunferenciales (7) ubicados en la cara exterior del eje hueco (2) y paralelos a la camara (3) donde se alojan sendos anillos seeger, acompanado de sus respectivos separadores (10) para evitar el roce de la carcasa (1) con los anillos seeger. El mecanismo es sellado por un segundo par de retenes, ubicado en cajeados circunferenciales (9) en la carcasa (1) proximos al borde exterior de la union de los cuerpos (1, 2). 5. La articulacion actuador hidraulico rotatorio de cualquiera de las reivindicaciones anteriores, caracterizado porque el conjunto es sellado por un segundo par de retenes, ubicado en cajeados circunferenciales (9) en el eje hueco (2) proximos al borde exterior de la union de los cuerpos (1, 2). 6. La articulacion actuador hidraulico rotatorio de cualquiera de las reivindicaciones anteriores, caracterizado porque la camara (3) es conformada cuadrada con bordes redondeados. 7. La articulacion actuador hidraulico rotatorio de cualquiera de las reivindicaciones anteriores, caracterizado porque la camara (3) es conformada rectangular con bordes redondeados.

Machine translation: 1. The hydraulic rotary actuator comprising: - a housing (1) into a cylinder concentric with an inner channel centered semicircular where there is provided an opening (18) for assembling the set. - A hollow shaft (2) in the form of a cylinder concentric semicircular outer channel centered on either side of and parallel proximate a circumferential recess (8) which house seals paths. - A piston (16) configured to interact with semicircular inner channel of the housing (1) and provided with a circumferential recess (12) in the center and perpendicular to its axis housing a and retainer holes (13) the ends for fixing the hollow shaft (2). - A cover (17), which is configured so that seals the opening (18) by an outer flange and extending to the interior has a surface which is designed to interact with the chamber (3), provided in said surface two recesses (14) centered perpendicular to the outer channel of the hollow shaft (2), which extend from the sides and forming

half circumference perpendicular to the axial opening (18) which houses two separate seals for sealing the chambers defined on each side of the piston (16) in which the hydraulic fluid acts which communicates through ducts (15). Characterized in that the hollow shaft (2) is housed inside the casing (1) forming a chamber (3) spherical cylindrical core that is sealed by seals arranged in recesses (8) and acts within which a piston (16) introduced through the opening (18) integrally mounted on the hollow shaft (2) that performs the function of moving through the chamber (3) to produce the rotary motion dragging the hollow shaft (2) does support the piston and chamber time, and in order to seal the entire assembly is inserted the cover (17) in the opening (18) which is fixed to the housing (1) by screws in holes intended for this purpose. Two. The hydraulic rotary actuator of claim 1, wherein perpendicular to avoid displacement of the bodies (1, 2) the housing (1) is provided with a hemispherical inner channel (11) on each side of the chamber (3). Parallel to this, and the hollow shaft (2), coinciding with the above, a hemispherical outer channel (11), thereby forming two circular channels which are accommodated by a ring of balls, once armed introduced mechanism through a hole screw (19) located in the housing (1) and sealed by means of a calibration screw to not hinder the free movement of the rolling. The mechanism is sealed by a second pair of detents located in circumferential recesses (9) in the housing (1) next to the outer edge of the union of bodies (1, 2). Three. The hydraulic rotary actuator joint of claim 1, wherein perpendicular to avoid displacement of the bodies (1, 2), this provided two circumferential recesses (7) located on the inside of the casing (1) and parallel to the cam (3) which houses two separate circlips, accompanied by their respective separators (10) to prevent chafing of the hollow shaft (2) with the circlip. The mechanism is sealed by a second pair of detents located in circumferential recesses (9) in the housing (1) and next to the outer edge of the union of bodies (1, 2). April. Rotary hydraulic actuator articulation according to any one of claims 1 and 3, wherein perpendicular to avoid displacement of the bodies (1, 2), this provided two circumferential recesses (7) located on the outer face of the hollow shaft (2) and parallel to the camera (3) which houses two separate circlips, accompanied by their respective separators (10) to prevent chafing of the housing (1) with circlip. The mechanism is sealed by a second pair of detents located in circumferential recesses (9) in the housing (1) next to the outer edge of the union of bodies (1, 2). May. Rotary hydraulic actuator articulation any of the preceding claims, wherein the joint is sealed by a second pair of seals, located in circumferential recesses (9) into the hollow shaft (2) next to the outer edge of the joining of the bodies (1, 2). June. Rotary hydraulic actuator articulation any of the preceding claims, wherein the chamber (3) is square shaped with rounded edges. July. Rotary hydraulic actuator articulation any of the preceding claims, wherein the chamber (3) is formed rectangular with rounded edges.

Classifications:
International (IPC 8-9): F15B15/08 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
ES1088229 UA	20130821	ES20130000533U	20130610
ES1088229 Y1	20131115	ES20130000533U	20130610

Priority:

ES20130000533U 20130610

Probable Assignee: PINEIRO SPECIALE PABLO
Assignee(s): (std): PINEIRO SPECIALE PABLO
Assignee(s): PABLO PINEIRO SPECIALE
Inventor(s): (std): PINEIRO SPECIALE PABLO
Inventor(s): PABLO PINEIRO SPECIALE

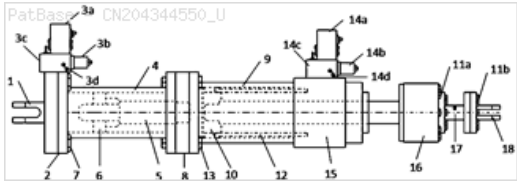
37) Family number: 59313288 (CN204344550U)

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Title: PULLING AND TWISTING TEST ACTUATOR

Abstract: The utility model provides a pulling and twisting test actuator. The pulling and twisting test actuator comprises a pulling and pressing hydraulic cylinder (4), a twisting hydraulic cylinder (9), a servo valve mechanism, a flange disc (16) and a piston rod (5) fixed to the flange disc, wherein the pulling and pressing hydraulic cylinder (4) is connected with the twisting hydraulic cylinder (9), cylinder bodies is of a hollow and cylindrical structure, the piston rod (5) on the flange disc extends into the two hydraulic cylinders through cylinder covers and are fixed into the two hydraulic cylinders, and a pulling and twisting system is controlled through a loading control system and an electric hydraulic control element inside the servo valve mechanism according to the twisting information of a pulling and twisting sensor (17). When pulling pressure is applied, the loading requirement of any torque within the measuring range is met, a test clamp and a test installation amount are simplified, and the test accuracy is effectively improved.

Classifications:
International (IPC 8-9): F15B11/00 G01N3/08



Family:

Publication number	Publication date	Application number	Application date
CN204344550 U	20150520	CN201420781771U	20141211

Priority:

CN201420781771U 20141211

Probable Assignee: CN HELICOPTER RES AND DEV INST

Assignee(s): (std): CN HELICOPTER RES AND DEV INST

Assignee(s): CHINA HELICOPTER RESEARCH AND DEVELOPMENT INST

Inventor(s): (std): CAO FASHENG ; CHEN QINGTONG ; CHEN SHUPING ; ZHAN SHENGMEI ; YU LUCHANG ; LU JINGSHENG

38) Family number: 21986316 (US3296936A)

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Title: FLUID MOTOR ACTUATORS

Abstract: (Claim 1) 1. In a synchronized plural actuator system, a plurality of similar extensible actuators adapted to be connected at one end to a part or parts to be actuated, each actuator comprising a cylinder, a piston reciprocative in said cylinder, an actuator piston rod fixed to said piston and extending out through said end of said cylinder in sealed relation adapted to be connected to said part to be actuated, common high pressure hydraulic fluid supply conduit means connected into each of said cylinders at the actuator rod ends thereof, a constant low pressure hydraulic fluid pump connected to said supply conduit means for supplying a uniform high pressure hydraulic constant fluid flow into said supply conduit means, identical fixed area flow restriction means in said conduit means for each cylinder, a flow outlet in the opposite end of each cylinder, a fluid return conduit connecting said flow outlets of all of said cylinders with the inlet side of said pump, a flow restriction in said fluid return conduit having a fixed flow restriction area for maintaining similar fluid pressures in each of said cylinders between the opposite ends thereof, variable area flow restriction means between the opposite ends of each of said cylinders located between the aforesaid fixed flow restrictions, for varying the relative pressure of the pressure fluid in each cylinder at the opposite sides of the piston therein. mechanical adjusting means connected for simultaneously varying the flow areas of said variable area flow restriction means in all of said cylinders to simultaneously vary the differential pressure at opposite sides of the pistons in all of said cylinders, and means operable by the piston in each cylinder for varying the area of said variable area flow restriction means in predetermined ratio to the relative movement of the pistons in said cylinders responsive to the differential pressures on the opposite sides of said pistons.

Classifications:

International (IPC 8-9): F02K1/15 F15B11/22

F15B18/00 (Advanced/Invention);

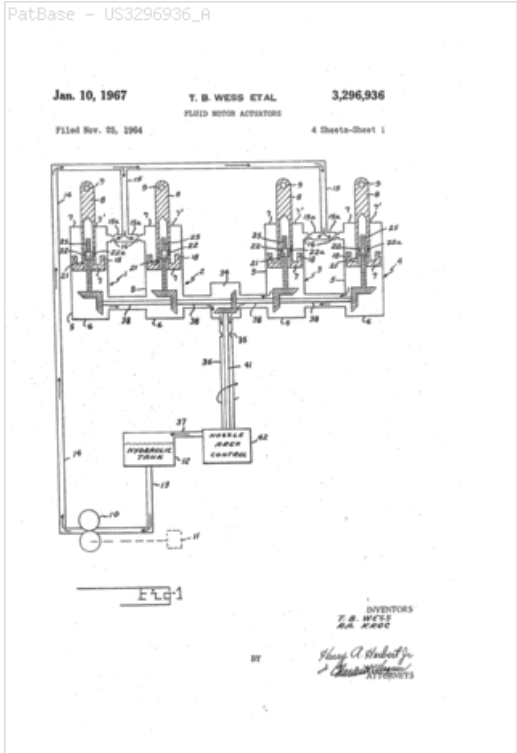
F02K1/00 F15B11/00 F15B18/00 (Core/Invention)

International (IPC 1-7): F15B11/22

CPC: F02K1/15 F15B11/22 F15B18/00

European: F02K1/15 F15B11/22 F15B18/00

US: 91/376R 91/380 91/422 91/49 91/512 91/513 92/110 92/114



Family:

Publication number	Publication date	Application number	Application date
US3296936 A	19670110	US19640414037	19641125

Priority:

US19640414037 19641125

Probable Assignee: KROC RICHARD A

Assignee(s): (std): KROC RICHARD A ; WESS THOMAS B

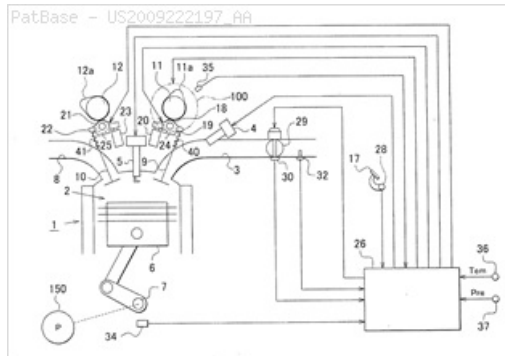
Inventor(s): (std): WESS THOMAS B ; KROC RICHARD A

Title: CONTROL APPARATUS AND CONTROL METHOD FOR INTERNAL COMBUSTION ENGINE

Abstract: A control apparatus for an internal combustion engine is employed for a multi-cylinder internal combustion engine. The control apparatus includes a variable valve operating mechanism which changes a valve characteristic of an engine valve; a valve stop mechanism which stops opening/closing of the engine valve in at least one cylinder; and a controller which executes a variable valve control that makes an actual value of the valve characteristic match a target value by executing a hydraulic pressure control for the variable valve operating mechanism, and which operates the valve stop mechanism so that a reduced-cylinder operation is performed when an engine operating state is in a preset reduced-cylinder operation region. If it is determined that a pressure of hydraulic fluid supplied to the variable valve operating mechanism satisfies a preset condition when the engine operating state is in the reduced-cylinder operation region, the controller prohibits the variable valve control.

Classifications:

International (IPC 8-9): B60T7/12 F01L1/34 F01L13/00 F01L9/02 F02D13/02 F02D13/06 F02D17/02 F02D41/00 F02D7/00 G05D1/00 G06F17/00 G06F7/00 (Advanced/Invention); F01L1/34 F01L13/00 F02D13/02 F02D13/06 F02D41/00 (Core/Invention)
CPC: F01L1/344 F01L1/3442 F01L13/0005 F01L2800/00 F02D41/0087 F02D2041/0012
European: F01L1/344 F01L1/344E F01L13/00B F02D41/00H6 R01L800/00 R02D41/00D6D
US: 123/198F 123/481 123/90.12 123/90.120P 123/90.15 123/90.150S 701/103 701/105 701/105P

**Family:**

Publication number	Publication date	Application number	Application date
JP2009203900 A2	20090910	JP20080047410	20080228
JP4792478 B2	20111012	JP20080047410	20080228
US2009222197 AA	20090903	US20090395769	20090302
US2012167848 AA	20120705	US20120421138	20120315
US8498797 BB	20130730	US20090395769	20090302
US8505505 BB	20130813	US20120421138	20120315

Priority:

JP20080047410 20080228 US20090395769 20090302 US20120421138 20120315

Probable Assignee: TOYOTA JIDOSHA KK

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Inventor(s): (std): MORIYA YOSHITO ; MORIYA YOSHIHITO

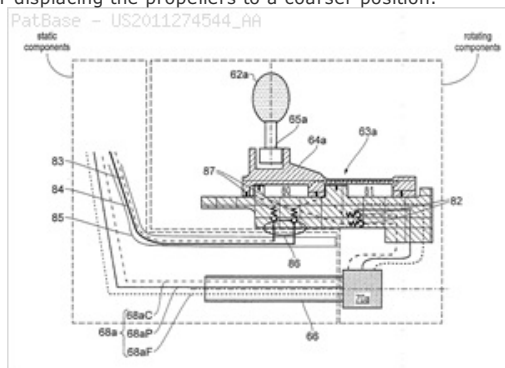
Agent(s): GIFFORD KRASS SPRINKLE ANDERSON AND CITKOWSKI PC

Title: PITCH CONTROL MECHANISM

Abstract: A pitch control mechanism for controlling the pitch of propeller assembly propellers has a hydraulic actuator, main hydraulic fluid supply lines, first back-up hydraulic fluid supply lines, and second back-up hydraulic fluid supply lines. The hydraulic actuator has first and second hydraulic cylinders that each angularly displace the propellers between fine and coarse positions. The main hydraulic fluid supply lines supply fluid to the first and second hydraulic cylinders for operating the hydraulic cylinders. The first back-up hydraulic fluid supply lines supply fluid to the hydraulic cylinder for displacing the propellers to a coarser position. The second back-up hydraulic fluid supply lines supply fluid to the second hydraulic cylinder for displacing the propellers to a coarser position. When the main hydraulic fluid supply lines supply inadequate fluid, the first and/or second back-up hydraulic fluid supply lines can supply fluid for displacing the propellers to a coarser position.

Classifications:

International (IPC 8-9): B64C11/38 F01D7/00 (Advanced/Invention)
CPC: B64C11/385 B64D2027/026 Y02T50/66
European: B64C11/38B L64D27/02C Y02T50/66
US: 416/147 416/147P

**Family:**

Publication number	Publication date	Application number	Application date
DE602011031124 D1	20161124	DE201160031124T	20110414
EP2384968 A2	20111109	EP20110162473	20110414
EP2384968 A3	20151216	EP20110162473	20110414
EP2384968 B1	20161012	EP20110162473	20110414

GB201007565 A0	20100623	GB20100007565	20100506
US2011274544 AA	20111110	US20110086880	20110414
US8757975 BB	20140624	US20110086880	20110414

Priority:

GB20100007565 20100506 EP20110162473 20110414

Probable Assignee: ROLLS ROYCE PLC

Assignee(s): (std): MORGAN ANTONY ; ROLLS ROYCE PLC ; SWIFT ANDREW

Inventor(s): (std): MORGAN ANTONY ; SWIFT ANDREW

Inventor(s): SWIFT ANDREW UTTOXETER ; MORGAN ANTONY WOLVERHAMPTON

Agent(s): WHITE KEVIN ANDREW; ROLLS ROYCE PLC; OLIFF PLC

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

41) Family number: 3812339 (US4381695A)

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Title: HYDRAULICALLY OPERATED PUMP JACK WITH HOLDING VALVES AND CONTROL ASSEMBLY

Abstract: A hydraulically operated pump jack utilizing dual hydraulically operated piston and cylinder assemblies for pivoting the beam of the pump jack and including a unique control arrangement associated with a reversing valve for controlling operation of the piston and cylinder assemblies. The control arrangement includes a hydraulically operated holding valve incorporated into each of the conduits between the reversing valve and the hydraulically operated piston and cylinder assemblies combined with a control piston and cylinder assembly for controlling the operation of the holding valves. A manually operated valve assembly is also incorporated into each conduit to enable conversion of either or both of the piston and cylinder assemblies from double acting to single acting. The control arrangement also includes a unique mechanism for operating the reversing valve automatically with this mechanism including a structure enabling manual disengagement of the automatic operating mechanism for the reversing valve with the reversing valve being capable of manual operation after such disengagement.

Classifications:

International (IPC 8-9): F04B47/02 (Advanced/Invention);

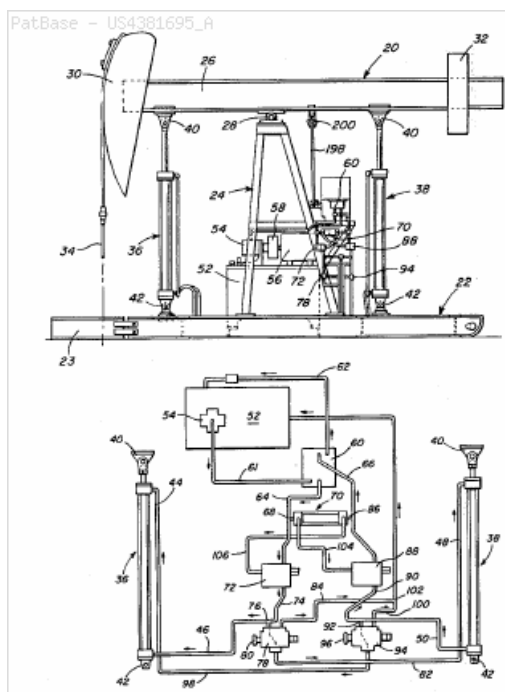
F04B47/00 (Core/Invention)

International (IPC 1-7): F01L15/00 F01L31/00

CPC: F04B47/022 Y10T74/20582

European: F04B47/02D

US: 60/369 74/519 91/178 91/350 91/351 91/447



Family:

Publication number	Publication date	Application number	Application date
US4381695 A	19830503	US19800174589	19800801

Priority:

US19800174589 19800801

Probable Assignee: KOPCYNski WINK H

Assignee(s): (std): KOPCYNski WINK H

Assignee(s): EF OGLES

Inventor(s): (std): OGLES ETHRIDGE F

42) Family number: 14737342 (NO313559B)

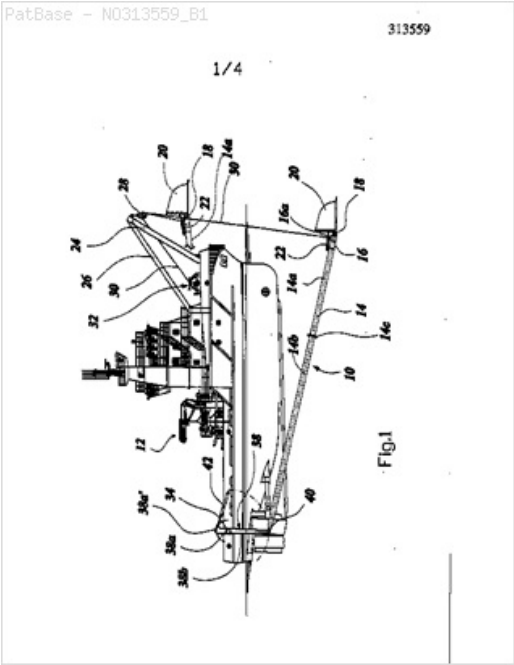
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Title: GRAVEMASKIN FOR UNDERSJOEISKE GRAVEARBEIDER Excavator FOR UNDERSJOEISKE DIGGING WORK (Machine translation)

Abstract: Source: NO313559B [NO] 13 313559 Patentkrav Gravemaskin for undersjøiske gravearbeider for installasjon om bord på et overflatefartøy (12), for eksempel en slepebåt, omfattende et bomverk (10) som ved den ene ende er svingbart opplagret akter om minst én stort sett hori- sонтal akse (34) og ved den annen ende bærer en graveskuffe (20), fortrinnsvis med egenbevegelse i form av relativ svingebevegelighet i forhold til det svingbare bomverket (10), og hvor bomverkets og skuffens (20) svingeakser er i det vesentlige parallelle, hvilket bomverk (10) omfatter to langsgående, i bruksstilling i det vesentlige i fartøy- ets lengderetning forløpende bomarmer (14) hvis fremre ender som i bruksstilling rekker frem foran baugen, fort- rinnsvis er forbundet med hverandre ved hjelp av et tverrgående åk (16), som på midten

muliggjør opplagring av graveskuffen (20), karakterisert ved at graveskuffens (20) bomverk/bomarmer (10; 14,14) er opplagret svingbart om en/hver sin i høyde- retningen og i bomverkets (10) lengderetning begrenset forflyttbar, stort sett horisontal akse (40) som strekker seg på tvers av og befinner seg i et område akter på over- flatefartøyet (12). Gravemaskin ifølge krav 1, karakterisert ved at akterendene av bomverkets (10) bomarmer (14, 14) via hver sin tverrgående svingeakse (40) er leddforbundet med én fri ende av en leddarm (38) som via en felles, i forhold til fartøyet (12) tverrgående og stasjonær svinge- akse (34), er opplagret som en toarmet vektstang hvis andre frie ende er kraftoverførende leddforbundet med en aktuator (42), fortrinnsvis en lineært forleng-/forkort- bart utformet, trykkfluidrevet transmisjonsmekanisme. 14 313559 Gravemaskin ifølge krav 2, karakterisert ved at hver, så som toarmet vektstang (14) svingbart opplagret leddarm (38), har en lang hevarm (38b) til hvis frie ende tilstøtende bomarms (14) ende er leddforbundet via bomverkets/bomarmenes begrenset forflyttbare, stort sett horisontale, tverrgående svingeakse (40), og en korte hevarm (38a) hvis frie ende, som fortrinnsvis har et avvinklet ytterendeparti (38a'), er innrettet til å påvirkes ved hjelp av nevnte aktuator (42). Gravemaskin ifølge et hvilket som helst av de foregående krav, karakterisert ved at hver bomarm (14) omfatter minst to langsgående armdeler (14a, 14b) som er ikke-forskyvbart, men relativt dreibart anordnet om nevnte felles, rette lengdeakse i deres sammenføyingsområde hvor det er anordnet en sivelinnretning (14c). Gravemaskin ifølge krav 1, karakterisert ved at monteringsselementet (16) for opplagring av graveskuffen (20), i form av nevnte tverrgående forbindelse- såk mellom bomarmenes (14) fremre ender, er utstyrt med to fester (16a, 16a') for to heisetau (vaiere, kjettinger) som fører til hvert sitt heisespill (32). Gravemaskin ifølge krav 2 eller 3 og 5, karakterisert ved at nevnte aktuatorer (42) inngår i et hydraulisk kretsløp og omfatter en stempel-/teleskop- sylinder som indirekte er tilordnet hver bomarm (14). Gravemaskin ifølge krav 6, karakterisert ved at det i det hydrauliske kretsløp er innmontert en eller flere akkumulatorer. 15 313559. Gravemaskin ifølge krav 7, karakterisert ved at nevnte aktuatorer/trykksylindrer (42) utgjøres av dobbeltvirkende stempelsylindrer, idet hver av sistnevnte stempelstangender angriper på respektive frie ende av den toarmete vektstangens/leddarmens (38) ene hevarm (38a), idet hver dobbeltvirkende sylinder (24) er tilordnet en av nevnte akkumulatorer (44). **Machine translation:** 13 313 559 Claims excavator underwater excavation work for installation aboard a surface vessel (12), such as a tugboat, comprising a boomverk (10) which at one end is pivotally mounted aft of at least one substantially horizontal axis (34) and at the other end carries a graveskuffe (20), preferably with own movement in terms of relative pivotal movement relative to the swivel boomverk (10), and wherein boomverkets and bucket (20) pivot axes are in the substantially parallel, which boomverk (10) comprises two longitudinal, in the position of use substantially in vessel etch longitudinally extending boom-arm (14), the front one in which, in use position will reach the bow, still preferably are interconnected by means of a transverse yoke (16) as the center facilitates mounting of the digging bucket (20), characterized in that the graveskuffens (20) bomverk / boom-arm (10, 14,14) is mounted pivotably about one / each in the height direction and in boomverkets (10) longitudinally displaceable limited, substantially horizontal axis (40) extending across and is located in an area aft of the surface vessel (12). Excavator according to claim 1, characterized in that the aft ends of boomverkets (10) boom-arm (14, 14) via their respective transverse pivot axis (40) is articulated to a free end of one link arm (38) which via a joint, relative to the vessel (12) transverse and stationary pivotal axis (34), is mounted as a two-armed lever if the second free end force transmitting articulated to an actuator (42), preferably a linear forleng-/forkort- bare designed, pressurized fluid operated transmission mechanism. 14 313559 excavator according to claim 2, characterized in that each, so that two-armed lever (14) pivotally articulated arm (38), a long lever arm (38b) to the free end adjacent boom-arm (14) end is articulated via boomverkets / boom-arm restricted displaceable, substantially horizontal transverse pivot axis (40) and one shorter lever arm (38a) whose free end, which preferably has an angled outer end portion (38a') is adapted to be affected by said actuator (42). excavator as claimed in any one of the preceding claims, characterized in that each boom-arm (14) comprises at least two longitudinally extending arm portions (14a, 14b) which is non-displaceable but relatively rotatable about said common, straight longitudinal axis in their sammenføyingsområde-where there is provided a sivelinnretning (14c). excavator according to claim 1, characterized in that the mounting element (16) for supporting the graveskuffen (20) by means of said transverse connecting-see an appropriate medium boom-arm (14) front end, is provided with two fasteners (16a, 16a') for two rope from twisting (cables, chains) leading to each their drawworks (32). excavator according to claim 2 or 3, and 5, be characterized in that said actuators (42) are part of a hydraulic circuit and comprises a cylinder stempel-/teleskop- indirectly associated with each boom-arm (14). excavator according to claim 6, characterized in that in the hydraulic circuit are mounted one or more accumulators. 15 313 559. Excavator according to claim 7, wherein said actuator / pressure cylinder (42) comprises double-acting piston cylinders, each of the latter piston rod ends attack on respective free ends of the toarmete weight rod / link arm (38) one lever arm (38a), each double acting cylinder (24) are connected to one of said accumulator (44).

Classifications:
International (IPC 8-9): E02F3/88 (Advanced/Invention);
E02F3/88 (Core/Invention);
E02F (Subclass/Invention)
International (IPC 1-7): E02F E02F3/88



Family:

Publication number	Publication date	Application number	Application date
NO20005472 A	20020502	NO20000005472	20001031
NO20005472 A0	20001031	NO20000005472	20001031
NO20005472 L	20020502	NO20000005472	20001031
NO313559 B1	20021021	NO20000005472	20001031

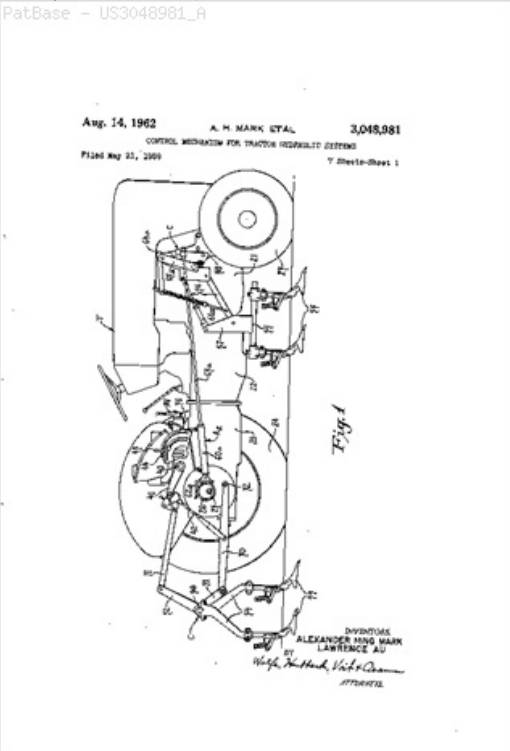
Priority:
NO20000005472 20001031

Probable Assignee: HYSTAD LEIF ARNE
Assignee(s): (std): HYSTAD LEIF ARNE

Title: CONTROL MECHANISM FOR TRACTOR HYDRAULIC SYSTEMS

Abstract: 949,677. Tractor power lifts. MASSEY-FERGUSON Inc. May 23, 1960 [May 21, 1959], No. 18046/60. Heading A1P. An auxiliary valve mechanism for a tractor power lift system incorporating laterally disposed lift arrangements and wherein the hydraulic system comprises a main ram, a fluid pump, a main valve regulating the supply of fluid to and from the main ram, is disposed in the supply conduit to the main ram and controls the flow of fluid to an auxiliary ram and to the main ram in conjunction with the main valve. There may be several auxiliary rams and a further auxiliary valve. As shown, the power lift system comprises a main cylinder A and auxiliary cylinders AA. The main cylinder actuates the three point linkage comprising upper arms 31 and lower arms 30 through lift arm 41 and crank 39. The auxiliary cylinders are disposed one on each side of the tractor and each acts upon parallel links 56, to which an implement frame 55 may be attached, through the piston rod, bell crank and tension links. The hydraulic system is supplied with fluid from a sump S by a pump P, the main cylinder being supplied under the control of a main valve V operated manually by lever 45 or through a weight transfer linkage whose effective length is adjustable by a lever 4A, through pipe 43 and passages 65, 66 and 67 in an auxiliary valve assembly. The auxiliary valve assembly for controlling the cylinders AA and the main ram A comprises two parallel bores 70a and 70b in the same horizontal plane and provided with spools 80a and 80b respectively. A second pair of bores 71a and 71b is disposed above the first pair and comprise the two portions L and R. (The suffices a apply to the unit seen in Fig. 3 and b to the other on numerals where the parts correspond, the arrangements being largely identical). The upper and lower bores are connected by the passages 112a and 114a which are always open and 113a which is controlled by a shuttle 108a. The chambers L and R are connected by a passage 100a controlled by a spring loaded valve 105a, the movement of which to the left is limited by an adjustable stop member 115a. The movement of shuttle 108a to the left is induced by fluid pressure in chamber R and by a projection 109a opens the valve 105a. The movements of the valve spools 81a and 81b are controlled by levers 90a and 90b, having spring loaded detents (90a) to give three positions for each lever. The valve assembly receives fluid from the pump via pipe 43 passage 63 and port 64. A discharge 62 to the sump is provided. Connections 102a, 102b and 104a and 104b lead to the auxiliary cylinders and are all used when the cylinders are double acting, under which circumstances the passage 113a is kept closed. For single acting cylinders the connections 104 are removed and the corresponding ports 103 closed by plugs. The non-return valve 105b may be bypassed by passages 117, 118 and 119 controlled by a needle valve 120 (Fig. 9) so that control of the left hand auxiliary cylinder may be transferred to the main valve V. The bores 80a and 80b have interconnecting passages as shown in Fig. 4 and annular chambers 74b, 75b and 77b are connected by a passage 126. The levers 97 are moved to the left (Fig. 3) for "raise" -the valve spool being shifted to the right. A reduced portion 135a, Fig. 11 of each spool is fitted with a sleeve 136a having a flange 137a against which bears a spring 84a. The spool has bores 141a and 142a controlled by a spring loaded ball 144a. When the spool is moved to the right, the spring 84a exerts a returning force counter-balanced by the spring loaded detent 89a. When the pressure of the fluid trips the valve 144a, fluid pressure assists the spring to return the spool to "neutral." To operate the auxiliary rams with the main rams locked, the main valve V is moved to the position "raise" by the lever 44, the manual control lever being moved to the lower end of the position control range. In the "neutral" position of the auxiliary valves, the pressure fluid flows through the passages and chambers 62, 125, 77b, 126, 127, 75a, 133 and 133 to the sump. Both auxiliary valves can be operated simultaneously except when the right hand unit is set for a single acting cylinder and the valve spool is shifted to the "lowering" position. A third valve unit of similar construction, the corresponding parts being numbered with the suffix c, Fig. 12, may be added to the auxiliary valve unit for controlling an additional cylinder, the added unit replacing the cover 131 in which is formed the passage 130. Various methods for operating one or more of the auxiliary cylinders and/or the main cylinder are described. To allow the auxiliary rams to be lowered simultaneously, each valve port 103a, 103b and 103c is formed with a conical seat at its inner end (Figs. 3 and 8). Interposed in each port is a thin flat disc 147a, b and c which has a small central hole and a notched edge to allow unrestricted fluid flow in one direction but upon reversal of the flow, the disc is forced against the fitting 104 and the flow is restricted to the central hole. Specification 839,689 is referred to.

Classifications:
International (IPC 8-9): A01B63/10 F15B13/08 (Advanced/Invention); A01B63/10 F15B13/00 (Core/Invention)
International (IPC 1-7): A01B63/10 A01B65/08
CPC: Y10T137/87185 A01B63/1006 F15B13/08
European: A01B63/10A F15B13/08
US: 137/596.13 172/302 172/307 172/9 60/462 91/508



Family:

Publication number	Publication date	Application number	Application date
GB949677 A	19640219	GB19600018046	19600523
US3048981 A	19620814	US19590814816	19590521

Priority:

US19590814816 19590521

Probable Assignee: MASSEY FERGUSON INC

Assignee(s): (std): MASSEY FERGUSON INC

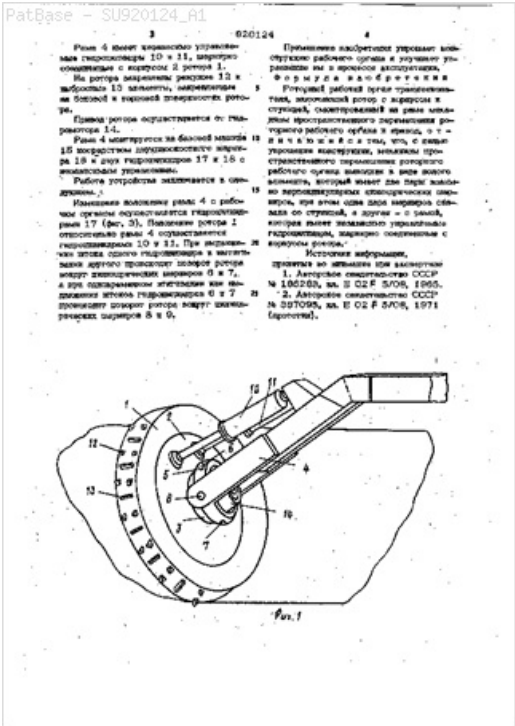
Inventor(s): (std): LAWRENCE AU ; HING MARK ALEXANDER
Inventor(s): AU LAWRENCE ; MARK ALEXANDER HING

44) Family number: 6499360 (SU920124T) © PatBase

Title: ROTARY WORKING MEMBER OF TRENCHER

Abstract: Source: SU920124T **Machine translation:** 1 Invention relates to earthmoving equipment, and more particularly to a continuous rotary excavator for digging and clearing channels. known rotary working rrgan, suspension to the frame which provides reguptfovanie depth and tilt angles of the walls of the ditch G13. also known rotary working op gan, comprising a housing and a rotor hub mounted on the apparatus frame by means of a spatial movement of the rotary operating element, and the actuator 21. disadvantage of the known working oj gana is design complexity. object of the invention - to simplify the design. aim is achieved in that a rotary operating element, vkluchayuigem rotor stugoshey housing and mounted to the frame of the spatial movement of the gear operating element and a rotary drive mechanism configured as a hollow element which has two pairs of mutually perpendicular cylindrical scharnirov at This one pair of hinges bonded to the hub, and the other - with a frame which 1gmeet independently controllable hydraulic cylinders: scharnirno connected to the rotor housing. On VNG. 1 shows a working body, side view; Fig. 2 - the same, rear view; 10 in Fig. 3 - Scheme excerpts schirokoy trench plan view; Fig. 4 - the same, side view. working body composed of the rotor 1, 15 of the housing 2 with the hub 3, which are mounted on the frame 4 by means of a mechanism of the spatial displacement of the rotor 1 is configured as a hollow element, such as a ring 5, which 20 has a cylindrical hinges 6 and 7 for connection with the hub 3 and perpendicularly-arranged cylindrical hinges, ry 8 and 9 for connection with the frame 4. frame 4 has independently controllable hydraulic cylinders 10 and 11 pivotally connected to the rotor 1 korggusom 2. secured to the rotor 12 and the exhaust rezhupgae elements 13 attached to the side and the end poverhnost5Gh; rotor. rotor drive is carried out on g-guide-romotora 14. Rama 4 is mounted on the base machine IS dvuhllskostnogo by hinge 16 and two gidrotsipindrov 17 and 18 independently controlled. Job apparatus is following. FOLLOWS.; Changing positions frame 4 with a working body is carried gidrotsilindrami 17 (Fig. 3). 1 position of the rotor relative to the frame 4 is effected by hydraulic cylinders 10 and 11. With the nomination of one-NII gidroshshindra rod is pulled and the other rotates the rotor around the cylindrical hinges 6 and 7, and while retracting or extending the rods of hydraulic cylinders 6 and 7 rotates the rotor around shoshndricheskih hinges 8 and 9. Application invention simplifies the design of the working body and improves its management during the operation. CLAIMS Rotary working body trencher comprising a housing and a rotor hub mounted on the frame of the spatial movement of the gear operating element and a rotary drive, characterized in that in order to simplify the design of the spatial movement of the rotary mechanism of the working organ is made in the form of a hollow member which two pairs of mutually perpendicular cylindrical hinges, wherein one pair of joints bonded with the hub, and the other - with a frame, which has independently controllable hydraulic cylinders, pivotally connected to the rotor housing. Sources of information received into account in the examination 1. USSR Author's Certificate number 185283, cl. B 02F 5/08, 1965. 2. USSR Author's Certificate number 387095, cl. E 02 f 5/08, 1971 (prototype). pt/1.5 90 Figl

Classifications:
International (IPC 8-9): E02F5/08 (Advanced/Invention);
E02F5/02 (Core/Invention)
International (IPC 1-7): E02F5/08



Family:

Publication number	Publication date	Application number	Application date
SU920124 A1	19820415	SU19792860672	19791227
SU920124 T	19820415	SU19792860672	19791227

Priority:
SU19792860672 19791227

Probable Assignee: KI INZH STR INST

Assignee(s): (std): KI INZH STR INST ; KIEV ORDER OF LABOUR OF RED BANNER CIVIL ENGINEERING UNIV
Assignee(s): KI INZH STR INSTITUT
Inventor(s): (std): BALADINSKIY VADIM L ; GARNITSKIY NIKOLAJ P ; KOSTENYUK ALEKSANDR A ; MARICH VALERIY N ; VARENIK SERGEJ A ; VOLTERS ALEKSANDR YU
Inventor(s): VOLTERS ALEKSANDR YU SU ; VARENIK SERGEJ A SU ; MARICH VALERIY N SU ; KOSTENYUK ALEKSANDR A SU ; GARNITSKIY NIKOLAJ P SU ; BALADINSKIY VADIM L SU

Title: GASWECHSELSTEUERUNG VON VERBRENNUNGSMOTOREN MIT HYDRAULISCH BETAETIGTEN GASWECHSELORGANEN
GAS EXCHANGE CONTROL OF INTERNAL COMBUSTION ENGINES WITH HYDRAULIC OPERATED GAS EXCHANGE AGENCIES (Machine translation)

Abstract: Source: DE102013004723A1 [DE] Verbrennungsmotoren, deren Gaswechselorgane hydraulisch angesteuert werden, erlauben in der hier beschriebenen Ausfuehrung einen Wechsel der Arbeitszyklen zwischen Zweitakt, Viertakt oder weiteren Taktzahlen waehrend des Motorlaufes. Die verschiedenen Taktverfahren werden erreicht durch eine nockenlose Ansteuerung von hydraulischen Aktuatoren, welche auf die Gaswechselorgane einwirken und deren oeffnen und Schliessen ermoeglichen. Die Ansteuerung kann hierbei durch einen mechanischen Verteiler erfolgen, der den Hydraulikdruck aus einem angeschlossenen Druckbehaelter auf die Aktuatoren verteilt, je nach der erforderlichen Abfolge der Steuerzeiten. Alternativ kann dies auch mittels Solenoidventilen erfolgen, das mit Hilfe eines elektronischen Steuergeraetes beliebige Steuerzeiten erlaubt und damit auch die Erweiterung der Taktzahlen ueber Zweitakt und Viertakt hinaus auf nachfolgende Leertakte ohne Einbringung und Zuendung des Kraftstoffes ermoeglicht. Waehrend dieser durch Aussetzen von Arbeitstakten entstehenden Leertakte koennen die Gaswechselorgane geschlossen bleiben. Dies kann anstelle einer Abschaltung von Zylindern sinnvoll sein. Alternativ koennen die Gaswechselorgane waehrend der Leerhuebe als Ventile zum Pumpen eines Gasvolumens angesteuert werden. Daraus ergeben sich zahlreiche Kombinationen und Varianten zur Optimierung der Motoreigenschaften; beispielsweise kann damit Abgas oder Frischgas in einen Speicher gepumpt werden, das dann bei Bedarf zwecks Aufladung oder Abgasrueckfuehrung wieder genutzt werden kann. Die Erfindung ist zur Anwendung bei Gegenkolbenmotoren und anderen Motoren mit hydraulisch bewegten Schiebebuechsen entwickelt worden, gilt jedoch im Prinzip fuer alle Arten von Gaswechselorganen, welche sich hydraulisch ansteuern lassen. In Betracht gezogene Schriften: DE 42 24 988 A1 DE 10 2004 032 452 A1 DE 10 2009 053 723 A1 US 2008/0115771 A1 **Machine translation:** Combustion engines, their gas exchange organs are controlled hydraulically, allowing the execution described here, a change of operating cycles between two-stroke, four-stroke or other clock speeds while the engine is running. The various clock method are achieved by a camless actuation of hydraulic actuators, which act on the gas exchange organs and their oeffnen and allow closure. The control can take place here by a mechanical distributor which distributes the hydraulic pressure of a pressure vessels connected to the actuators according to the required sequence of timing. Alternatively, this can also be done by means of solenoid valves, which allows arbitrary timing by means of an electronic control unit, and thus the expansion of the bar numbers by two-stroke and four-stroke also allows for subsequent idle cycles without introduction and ignition of the fuel. During this idle cycles generated by exposure of working cycles can the gas exchange organs remain closed. This can be useful instead of deactivating cylinders. Alternatively, the gas exchange organs during the idle strokes can be controlled as valves for pumping a gas volume. This results in numerous combinations and variations to optimize the engine characteristics; for example, can thus be pumped into a storage exhaust or fresh gas, which can then be used in order to charge or Abgasrueckfuehrung when needed. The invention has been developed for use in opposed piston engines and other engines with hydraulically operated Schiebebuechsen, however, applies in principle for all types of gas exchange organs, which can be controlled hydraulically. Contemplated publications: DE 42 24 988 A1, DE 10 2004 032 452 A1, DE 10 2009 053 723 A1 US 2008/0115771 A1

Classifications:

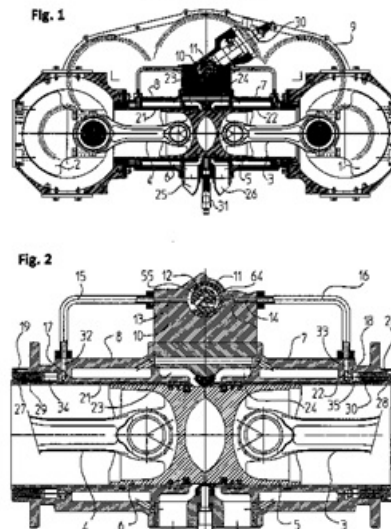
International (IPC 8-9): F01L9/02 F02B69/06 (Advanced/Invention)

CPC: F02B69/06 F01L5/06 F01B7/14 F01L9/02 F02B75/282

PatBase - DE102013004723_A1

DE 10 2013 004 723 A1 2014.09.25

Anhängende Zeichnungen



Family:

Publication number	Publication date	Application number	Application date
DE102013004723 A1	20140925	DE201310004723	20130320

Priority:

DE201310004723 20130320

Probable Assignee:

ELSBETT GUENTER

Assignee(s): (std):

ELSBETT GUENTER

Inventor(s): (std):

ELSBETT GUENTER

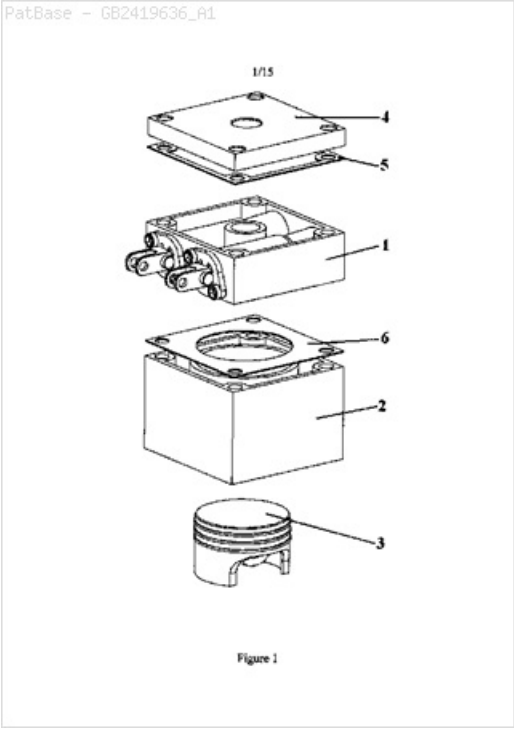
Title: I.c. engine cylinder head with laterally sliding valves

Abstract: A cylinder head 7, with attachment means for attaching to the cylinder or engine block, has valves 8 operated by lateral means and regulated by displacement means in relation to the rotation of camshaft or crankshaft of the engine. The valve 8 may be sealed by a ring 10 and may have a deflector attachment 9. The valve 8 may be opened against the force of spring 11 by a mechanical system attached to a pull-rod 13. Alternatively, the valve may be actuated by hydraulic, pneumatic, electric or magnetic means. The inlet and exhaust valves may operate in one direction, opposing directions or

both directions.

Classifications:

International (IPC 8-9): F01L5/04 F01L7/10 (Advanced/Invention)
CPC: F01L1/047 F01L1/18 F01L7/10 F01L9/02 F01L9/026 F01L9/04
European: F01L7/10 R01L1/047 R01L1/18 R01L9/02 R01L9/02D R01L9/04



Family:

Publication number	Publication date	Application number	Application date
GB200423997 A0	20041201	GB20040023997	20041029
GB2419636 A1	20060503	GB20040023997	20041029

Priority:

GB20040023997 20041029

Probable Assignee:

WIN THIHA K T

Assignee(s): (std):

WIN THIHA K T ; WIN THIHA KYAW THU

Assignee(s):

THIHA KYAW THU WIN

Inventor(s): (std):

WIN THIHA KYAW THU

Inventor(s):

THIHA KYAW THU WIN

47) Family number: 7229386 (US3719238A)

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Title: COMPACT ROTARY WELL DRILLING RIG WITH HYDRAULIC SWIVEL PULL DOWN MECHANISM

Abstract: A compact, mobile, portable rotary drilling rig which enables the use of II pipe of a length slightly less than the height of the mast. The drilling rig has a power driven swivel or drilling head connectable to a drill pipe, which swivel may be pulled down by a hydraulic cylinder-plunger arrangement, which cylinder is about one-half the length of the distance which the swivel is to be pulled down, and which cylinder is so constructed that no hoses are connected directly to the movable hydraulic cylinder. The hydraulic cylinder exerts tension on cables to perform the pull down action. Provision is made to mount the present compact, mobile, rotary drilling rig, including the mast, on a vehicle which may be enclosed in a van-like structure, if desired, which van-like structure may be so insulated that men can work within an insulated enclosure when the outside temperature is well over 100 degrees or they can work therein when the outside temperature is subzero without injury to the machinery and without discomfort to themselves.

Classifications:

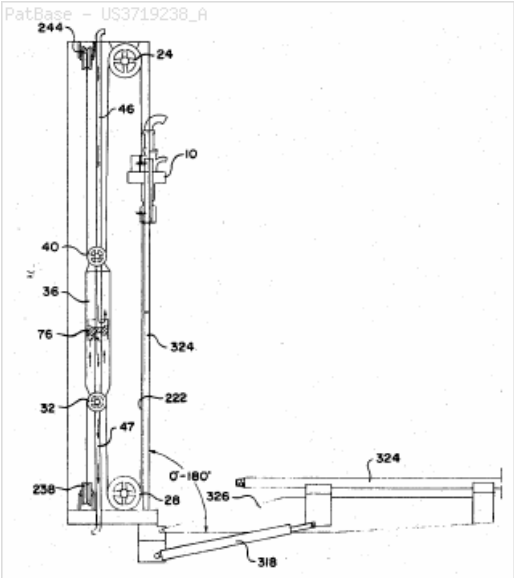
International (IPC 8-9): E21B19/084 (Advanced/Invention);
E21B19/00 (Core/Invention)

International (IPC 1-7): E21C5/06 F01B29/08

CPC: E21B19/084

European: E21B19/084

US: 173/147 173/28 175/122 175/203



Family:

Publication number	Publication date	Application number	Application date
US3719238 A	19730306	US19710173009	19710819

Priority:

US19710173009 19710819

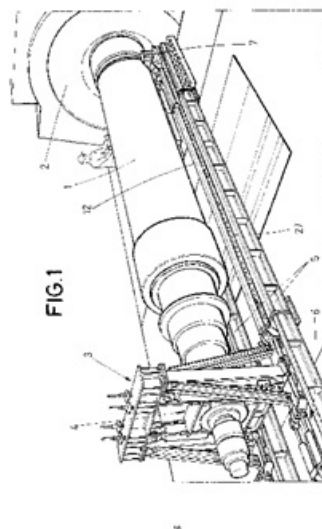
Probable Assignee: SMALL BUSINESS ADMINIST**Assignee(s):** (std): SMALL BUSINESS ADMINIST ; DYKEMA C**Assignee(s):** DYKEMA C US ; SMALL BUSINESS ADMINISTRATION US ; WALKER NEER MANU CTURING FA ; WALKER NEER MFG**Inventor(s):** (std): MC CANN R ; CAMPBELL J**Inventor(s):** MC CANN R US ; CAMPBELL J US**48) Family number: 59067388** (ES1138641Y)

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Title: PLATAFORMA DE EXTRACCION DE ROTOR DE GENERADOR ELECTRICO

Abstract: Source: ES1138641U [ES] 1. Plataforma de extraccion de rotor de generador electrico que esta concebida para la extraccion del rotor (1) del estator (2) o para la introduccion del rotor (1) en el estator (2), caracterizada porque comprende: - un portico frontal (3) de extraccion deslizante que esta dotado de elementos de amarre y apoyo (4, 14) destinados a soportar y amarrar el rotor (1) en las proximidades de uno de sus extremos, - unos carriles de guiado (5) sobre los que desliza este portico frontal (3), - un soporte trasero (7) en el que apoya el segundo extremo del rotor (1) que asimismo desliza sobre los carriles de guiado (5), - un trineo (8) deslizante que esta montado sobre los carriles de guiado (5), y esta destinado a acoplarse con el primer extremo del rotor (1) para contrarrestar el esfuerzo del movimiento inicial del rotor (1) y evitar el giro del rotor (1), - un mecanismo de empuje y tiro (6) acoplable sobre los carriles de guiado (5) que facilita el deslizamiento del portico frontal (3) o del trineo (8). 2. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 1 caracterizada porque el portico frontal (3) comprende una estructura (9) que esta montada sobre unos patines (10) destinados a deslizar sobre los carriles de guiado (5), asi como incorpora unos cilindros hidraulicos (11), vinculados a la estructura (9), cuyo movimiento determina la aproximacion o alejamiento de los elementos de amarre y apoyo (4, 14) y por tanto el amarre o liberacion del rotor (1). 3. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 2 caracterizada porque los elementos de amarre (4, 14) comprenden una abrazadera movil (4) vinculada a los cilindros hidraulicos (11) y una abrazadera fija (14) vinculada a la estructura (9) y enfrentada a la abrazadera fija (14) destinadas a amarrar el primer extremo del rotor (1) entre ambas. 4. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 3 caracterizada porque los elementos de amarre (4, 14) comprenden adicionalmente un inclinometro. 5. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 1 caracterizada porque comprende asimismo unas barras de union (12) que vinculan el portico frontal (3) con el soporte trasero (7) para solidarizar el avance de ambos. 6. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 1 caracterizada porque el trineo (8) deslizante comprende un bastidor (13), unos patines deslizantes (15) sobre los que se monta el bastidor (13) que desliza sobre los carriles de guiado (5), un contrapeso (16) que descansa sobre el bastidor (13), y un mecanismo antiguo (17) montado sobre el bastidor (13) que constituye el medio de acoplamiento con el primer extremo del rotor. 7. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 6 caracterizada porque el mecanismo antiguo (17) comprende un cabezal de acople (18) que se monta con posibilidad de regulacion en altura sobre el bastidor (13), un eslabon biarticulado (19) asociado por un extremo al cabezal de acople (18), y una brida (20) vinculada al otro extremo del eslabon biarticulado (19) que esta destinada a su union con el primer extremo del eje del rotor (1). 8. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 7 caracterizada porque el mecanismo antiguo (17) comprende adicionalmente un dispositivo de desplazamiento en altura (21) que cuenta con una placa (22) sobre la que se vincula el cabezal de acople (18), unas guias (23) situadas sobre el bastidor (13) sobre las desliza verticalmente la placa (22) y un actuador lineal (24) fijado al bastidor (13) y cuyo vástago esta vinculado a la placa (22) para ocasionar su movimiento vertical. 9. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 1 caracterizada porque cada uno de los carriles (5) incorporan un perfil (26) y un nervio central (27) que se prolonga longitudinalmente sobre cada perfil (26) que esta dotado de ranuras inclinadas (28), que facilitan el encaje momentaneo del mecanismo de empuje y tiro (6) que determina el avance paso a paso del portico frontal (3) o del trineo (8). 10. Plataforma de extraccion de rotor de generador electrico de acuerdo con la reivindicacion 9 caracterizada porque el mecanismo de empuje y tiro (6) comprende unos cilindros (29) cuyos vástagos estan destinados a asociarse al bastidor (13) del trineo (8) o a la estructura (9) del portico (3) para empujar o tirar de estos, y cuyo cuerpo se vincula a un util de anclaje (30) que esta dotado de unas cartelas (31) y un bulon (32) destinado a encajar en las ranuras (28) del nervio central (27) del carril (5). **Machine translation:** 1. Extraction platform electric generator rotor which is designed for the extraction of the rotor (1) of the stator (2) or for the introduction of the rotor (1) in the stator (2), characterized by comprising: - a front porch (3) extraction slider which is provided with clamping and support elements (4, 14) intended to support and anchor the rotor (1) in the vicinity of one end, - guide rails (5) which slides on this front porch (3), - a rear support (7) which supports the second end of the rotor (1) which also slides on the guide rails (5), - a sliding sledge (8) which is mounted on rails guiding (5), and is adapted to engage with the first end of the rotor (1) to counteract the efforts of the initial movement of the rotor (1) and prevent rotation of the rotor (1), - a mechanism push pull (6) engageable on the guide rails (5) which facilitates the sliding of the front porch (3) or sled (8). 2. Platform extraction electric generator rotor according to claim 1 characterized in that the front portal (3) comprises a frame (9) which is mounted on skids (10) intended to slide on the guide rails (5) as well as incorporates hydraulic cylinders (11), linked to the structure (9), whose movement determines the approach or departure from the laneyards and support (4, 14) and therefore mooring or release the rotor (1). 3. Platform extraction electric generator rotor according to claim 2 characterized in that the anchoring elements (4, 14) comprise a movable clamp (4) linked to the hydraulic cylinders (11) and a fixed clamp (14) linked the structure (9) and facing the fixed clamp (14) intended to anchor the first end of the rotor (1) therebetween. 4. Platform extraction electric generator rotor according to claim 3 characterized in that the anchoring elements (4, 14) further comprises an inclinometer. 5. Platform extraction electric generator rotor according to claim 1 characterized in that it further comprises tie rods (12) linking the front porch (3) with the back support (7) for advancing both in solidarity. 6. Platform extraction electric generator rotor according to claim 1 characterized in that the sledge (8) comprises a sliding frame (13), a sliding shoes (15) on which is mounted the rack (13) sliding on the guide rails (5), a counterweight (16) resting on the frame (13) and a rotation mechanism (17) mounted on the frame (13) constituting the coupling means to the first end of the rotor. 7. Platform extraction electric generator rotor according to claim 6 characterized in that the rotation mechanism (17) comprises a coupling head (18) is mounted with possibility of height adjustment on the frame (13), a link biarticulated (19) associated by one end to the coupling head (18) and a flange (20) connected to the other end of the bi-articulated link (19) that is destined to its junction with the first end of the rotor shaft (1). 8. Platform extraction electric generator rotor according to claim 7 wherein the rotation mechanism (17) further comprises a vertical displacement device (21) it has a plate (22) on which the head is linked coupling (18), guides (23) located on the frame (13) moves vertically on the plate (22) and a linear actuator (24) fixed to the frame (13) and whose rod is connected to the plate (22) to cause vertical movement. 9. Platform extraction electric generator rotor according to claim 1 characterized in that each of the rails (5) incorporating a profile (26) and a central rib (27) extending longitudinally on each profile (26) is provided with inclined grooves (28), which facilitate the momentary fit of the push-pull mechanism (6) which determines the stepper front portico (3) or sleigh (8). 10. Platform extraction electric generator rotor according to claim 9 characterized in that the push-pull mechanism (6) comprises a cylinder (29) whose rods are destined to be associated to the frame (13) of the sledge (8) or structure (9) of the portico (3) to push or pull them, and whose body is linked to a useful anchor (30) is provided with a gusset (31) and a pin (32) designed to fit into the slots (28) of the central rib (27) of the rail (5).

Classifications:

**Family:**

Publication number	Publication date	Application number	Application date
ES1138641 UA	20150422	ES20150030379U	20150401
ES1138641 Y1	20150713	ES20150030379U	20150401

Priority:

ES20150030379U 20150401

Probable Assignee: IBERDROLA GENERACION S A U**Assignee(s):** (std): IBERDROLA GENERACION S A U**Assignee(s):** IBERDROLA GENERACION SAU**Inventor(s):** (std): GARCIA SICILIA JUAN JOSE ; TORRENTS ALBELLA JORGE**Inventor(s):** JORGE TORRENTS ALBELLA ; JUAN JOSE GARCIA SICILIA**Agent(s):** PONS ANGEL**49) Family number: 17728389** (US5012773A)

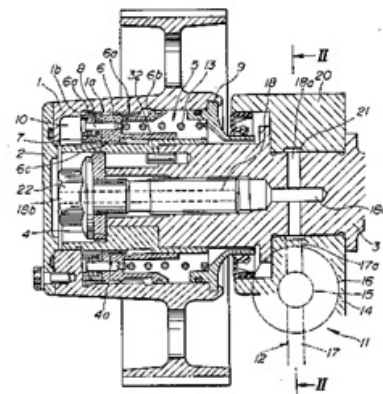
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Title: Intake- and/or exhaust-valve timing control system for internal combustion engine

Abstract: An intake- and/or exhaust-valve timing control system for internal combustion engines in which a ring gear mechanism is provided between a timing pulley and a cam shaft for adjusting the phase angle between the pulley and the cam shaft. A drive mechanism is also provided for driving the ring gear mechanism depending upon the operating state of the engine. The drive mechanism includes a hydraulic circuit having oil supply and exhaust passages, a flow control valve having a spool valve for controlling the amount of working fluid flowing through the hydraulic circuit, a controller for monitoring the operating state of the engine, and an electromagnetic actuator having a plunger rod for actuating the flow control valve in response to the control signal from the controller. The flow control valve and the actuator are integrally mounted in the cylinder head. Therefore, relative friction between the facing ends of the spool valve and the plunger rod is avoided.

Classifications:**International (IPC 8-9):** F01L1/34 F01M1/06 (Advanced/Invention)**International (IPC 1-7):** F01L1/34 F01M1/06**CPC:** F01L1/34406 F02F7/006**European:** F01L1/344A1 R02F7/00D**US:** 123/90.17 123/90.31

FIG. 1

**Family:**

Publication number	Publication date	Application number	Application date
DE68904842 D1	19930325	DE19896004842	19890818
DE68904842 T2	19930527	DE19896004842T	19890818
EP0356162 A1	19900228	EP19890308390	19890818
EP0356162 B1	19930210	EP19890308390	19890818
JP2031309 U1	19900227	JP19880108490U	19880818
JP2101805 Y	19970122	JP19880108490U	19880818
JP7027365 Y2	19950621	JP19880108490U	19880818
US5012773 A	19910507	US19890395582	19890818

Priority:

JP19880108490U 19880818

Probable Assignee: ATSUGI UNISIA CORP**Assignee(s):** (std): ATSUGI MOTOR PARTS CO LTD ; ATSUGI UNISIA CORP**Assignee(s):** ATSUGI UNISIA CORP ATSUGI KANAGAWA JP**Inventor(s):** (std): AKASAKA AKIO ; FUKUDA YASUO ; SAWADA TAKANORI ; SUGA SEIJI**Inventor(s):** SAWADA TAKANORI ATSUGI SHI KANAGAWA KEN JP**Designated states:** DE FR GB**50) Family number: 21053394 (FR1378268A)**

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Title: SYSTÈME AMPLIFICATEUR DE PRESSION POUR SERVOMECHANISME, ET SERVOMECHANISME DOTE DUDIT SYSTÈME
PRESSURE BOOSTER SYSTEM servo, servo AND WITH THAT SYSTEM (Machine translation)

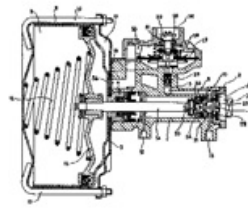
Abstract: (Claim 1) SUMMARY The present invention provides a system for amplification of pressure SERVOMECHANISM type has depression or compressed air, in le.circuit intercalates between the pump and the brake cylinders and uses the pressure difference as existing between two chambers separated by said un.piston, pneumatic, to exert a force, in the intermediate of said piston rod, a second piston, said hydraulic, or when the liquid is venant.du main cylinder, is VOYE to the brake cylinders, remarkable for the following items taken alone or in combination sounds a **It** Agency is one that occurs mentation increased pressure on time, production par.re the active section of the hydraulic piston that closes when the valve that connects directly la.pompe organs and hy drauliques.de or starts and braking action of the servo; 2 The reduction of active section of the piston hy draulic is a reduction of the area @ the face of said piston, due to the, presence of a coaxial rod diameter wanted, fixed on said face, it wallows with ci.communicant face.du led by a piston provided with an inner valve which closes automatically when said duct begins to produce the proper action of the servo; 3 axis that produces the reduction of one-surface side of the piston is the same axis which joins the piston has one who is subjected to the action of pressure or vacuum controls the operation of the mechanism, and transmits said first tone worse, by traction, the effort required, the actuator includes a 4, auxiliary piston control of ciliary valve, causing the operation, pneumatic piston when the pressure of a hydraulic system will reach their determined; 5 The hydraulic piston moves in a cy-linder which connect le.conduit arrival of the liquid pump and conduit -starting to use the bodies, the inlet duct adjoining the end of the cylinder opposite to that which is adjacent to the pneumatic piston; b is the inlet duct; extends in the cylinder wall, by a conduit leading to a cylindrical dre: containing the auxiliary piston actuation du.piston pneumatic ducts between 7 La.communication: et.de arrival of departure within the cylinder is ensured by le.passage in household the hydraulic piston fond.du that thanks to a resiliently biased valve on its seat and pulled off his seat by a rod mounted on the bottom of the cylinder opposed to the bottom adjacent to the pneumatic piston; 8 The face of the hydraulic piston situee.du side of the duct.

Classifications:**International (IPC 8-9):** B60T13/24 (Advanced/Invention);

B60T13/24 (Core/Invention)

International (IPC 1-7): B60T13/24 F15B9/12**CPC:** B60T13/245**European:** B60T13/24B2D

N° 1.378.268 Inventeur(s) : PL, unique
Talleres Cataluna, S.A. (ES,CA)

**Family:**

Publication number	Publication date	Application number	Application date
FR1378268 A	19641113	FR19630949596	19631004
NL300962 A	00000000		00000000

Priority:

FR19630949596 19631004

Probable Assignee:

TALLERES CATALUNA

Assignee(s): (std):

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Assignee(s):

TALLERES CATALUNA S A

51) Family number: 14440402 (US5636602A)

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Title: Push-pull valve assembly for an engine cylinder

Abstract: A push-pull valve assembly for an engine cylinder includes an engine defining a gas passageway in fluid communication with a hollow piston cylinder via a first opening and a second opening. An inward valve seat is positioned in the first opening adjacent the hollow piston cylinder. An outward valve seat is positioned in the second opening adjacent the gas passageway. A first valve member has a first stem and a first enlarged portion with an inward valve face positioned in the hollow piston cylinder. A second valve member has a second stem and a second enlarged portion with an outward valve face positioned in the gas passageway. The first valve member and the second valve member are operably coupled via a mechanical or hydraulic linkage. A spring is utilized to bias the inward valve face against the inward valve seat to close the first opening and the outward valve face against the outward valve seat to close the second opening.

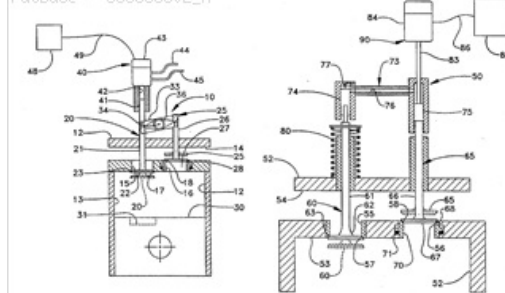
Classifications:**International (IPC 8-9):** F01L1/26 F01L1/30 F01L3/20

F01L9/02 (Advanced/Invention);

F01L1/00 F01L1/26 F01L3/00 F01L9/00 (Core/Invention)

International (IPC 1-7): F01L1/18 F01L1/26 F01L1/30 F01L9/02**CPC:** F01L1/26 F01L3/20 F01L9/02 F01L2003/258**European:** F01L1/26 F01L3/20 F01L9/02 R01L3/25E**US:** 123/188.8 123/90.12 123/90.22 123/90.4 123/904

PatBase - US5636602_R

**Family:**

Publication number	Publication date	Application number	Application date
DE19780486 T	19981126	DE19971080486T	19970403
DE19780486 T1	19981126	DE19971080486T	19970403
GB2315097 A1	19980121	GB19970022768	19970403
GB2315097 B2	19990630	GB19970022768	19970403
GB9722768 A0	19971224	GB19970022768	19970403
JP11509601 T2	19990824	JP19970538093T	19970403
US5636602 A	19970610	US19960636619	19960423
WO9740263 A1	19971030	WO1997US05592	19970403

Priority:

US19960636619 19960423 WO1997US05592 19970403

Probable Assignee: CATERPILLAR INC**Assignee(s):** (std): CATERPILLAR INC

Assignee(s): CATERPILLAR INC PEORIA ILL US
Inventor(s): (std): MEISTER STEVEN F
Inventor(s): MEISTER STEVEN F CHILLICOTHE ILL US ; STEVEN F MEISTER
Designated states: DE GB JP

52) Family number: 50072413 (US2011297773A)

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Title: CONCRETE PULVERIZER

Abstract: A concrete pulverizer adapted for mounting on an arm of an excavator including a lower jaw having a first pivot pin mechanism and a crushing surface. The crushing surface on this jaw is formed with concrete waste apertures. An upper jaw has a rear end section connectible to an end of the arm and has crushing teeth mounted on a lower side. This jaw is pivotably connected to the lower jaw by the pivot pin mechanism. The upper jaw is pivotably connected to a hydraulic cylinder actuator on the arm and can be pivoted between an upper position and a crushing closed position. There is a power mechanism for pivoting the lower jaw between a horizontal scooping position and a dumping position and this mechanism can hold the lower jaw in a crushing position while the upper jaw is being pivoted by the hydraulic cylinder actuator.

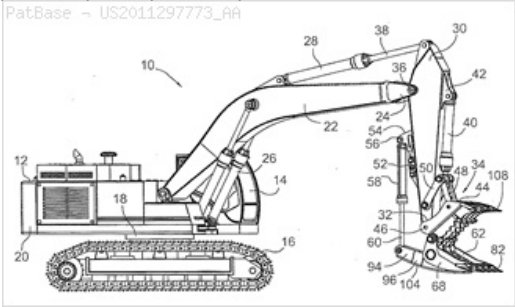
Classifications:

International (IPC 8-9): B02C1/06 B02C1/10 B02C21/02 E02F3/36 E04G23/08 (Advanced/Invention)

CPC: E04G23/082 E02F3/965 E04G23/08

European: E02F3/96F E04G23/08

US: 241/101.73 241/101.730P 241/266 241/266S



Family:

Publication number	Publication date	Application number	Application date
CA2706174 AA	20111202	CA20102706174	20100602
US2011297773 AA	20111208	US20100861006	20100823
US8464972 BB	20130618	US20100861006	20100823

Priority:

CA20102706174 20100602

Probable Assignee: NYE MFG LTD

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Assignee(s): NYE MANUFACTURING LTD

Inventor(s): (std): NYE MARK ; NYE JOHN CHARLES

Agent(s): RIDOUT AND MAYBEE LLP; GIFFORD KRASS SPRINKLE ANDERSON AND CITKOWSKI P C; GIFFORD KRASS SPRINKLE ANDERSON AND CITKOWSKI PC

53) Family number: 1540415 (US4180238A)

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Title: VALVE ACTUATOR HAVING A ROTARY BI-DIRECTIONAL APPARATUS WITH A DUAL RATCHET MECHANISM

Abstract: The present invention is a bi-directional valve actuator with a ratchet mechanism for use in combination with a control valve which includes a stem which, when turned, adjusts the flow through the control valve. The bi-directional valve actuator includes a frame which is mechanically coupled to the control valve adjacent to the other end of the stem of the control valve. The valve actuator also includes a shaft which is disposed within the frame and which is rotatably coupled thereto with the shaft being mechanically coupled to the stem of the control valve so it can turn the stem thereof, a first ratchet wheel and a second ratchet wheel. Each ratchet wheel is coaxially aligned with the shaft and is fixedly coupled thereto. The valve actuator further includes a pair of pawls, each of which is coupled to one of the ratchet wheels so that when the pawl is driven forward it becomes coupled to the teeth of one of the ratchet wheels and when the pawl is pulled backward it becomes uncoupled from the teeth of one of the ratchet wheels. Each pawl is mechanically coupled to and driven forward by a hydraulic cylinder with a piston, which is fixedly coupled to the pawl and it is also mechanically coupled to and driven backward by a pair of springs mechanically coupled to the frame. The pawl is coupled to the wheel of the ratchet wheel by a collar which is disposed about the peripheral edge of the ratchet wheel and which has a slot and a radially disposed hole with a pin and spring assembly therein. The pin and spring assembly is mechanically coupled to the pawl by a pin.

Classifications:

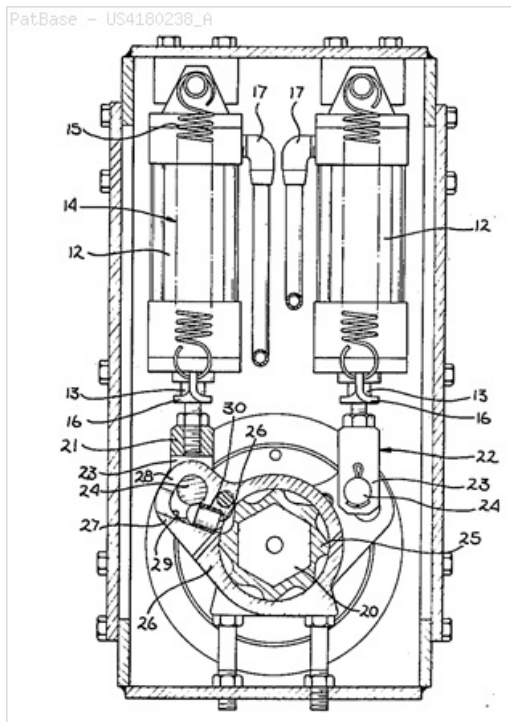
International (IPC 8-9): F16D19/00 F16D21/04 F16D43/02 F16K31/00 F16K31/16 F16K31/52 H01H33/34 (Advanced/Invention); F16D19/00 F16D21/00 F16D43/00 F16K31/00 F16K31/16 H01H33/28 (Core/Invention)

International (IPC 1-7): F15B15/06 F16K31/00 F16K31/16 F16K31/52 H01H33/34

CPC: Y10T74/1529 Y10T74/2141 F16D19/00 F16D21/04 F16D43/02 F16K31/16

European: F16D19/00 F16D21/04 F16D43/02 F16K31/16

US: 251/230 251/58 74/128 74/578

**Family:**

Publication number	Publication date	Application number	Application date
CA1102296 A1	19810602	CA19790326816	19790502
GB2028923 A1	19800312	GB19790015819	19790508
GB2028923 B2	19821201	GB19790015819	19790508
MX5034 U	19830222	MX19790100963U	19790508
US4180238 A	19791225	US19780935767	19780822

Priority:

US19780935767 19780822 CA19790326816 19790502 MX19790177569 19790508

Probable Assignee: VALVE CONCEPTS INT

Assignee(s): (std): MUCHOW J ; MUCHOW JOHN D ; VALVE CONCEPTS INT

Assignee(s): VALVE CONCEPTS INT INC ; VALVE CONCEPTS INTERNATIONAL INC ; JOHN D MUCHOW

Inventor(s): (std): MUCHOW JOHN D

Inventor(s): JOHN D MUCHOW

Agent(s): GEORGE H RICHES AND ASSOCIATES

54) Family number: 25199419 (ES347014A)

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Title: SISTEMA DE PENETROMETRO DE PRECISION.

Abstract: Source: BE706256A [FR] [Source: Claim 1] Revendication 1 Penetrometre de precision, caracterise par la combinaison soit d'un element de pointe (37), de manchon (29) et de 1) Penetrometre selon la revendication I, caracterise encylindre termine par un cone, sans solution de continuite. en ce que l'element de pointe (37) est forme de plusieurs, par ex. trois parties (24, 26, 28), et que l'element de pointe (37) est forme par une enveloppe de pointe (26) sailliee dans un moment determine. 4) Penetrometre selon la revendication I et la sous- revendication 3, caracterise en ce que l'element enveloppe complete par la pointe (24) de la sonde centrale (25) permettait ' la poursuite du sondage apres le blocage de la sonde. revendication 3, caracterise en ce que la sonde centrale (41) a une pointe elargie (42), formant par ex. une piece separee. en ce que le carottier (fig. 11, 12, 13) pour l'extraction d'echantillons de terrain peut se monter en lieu et place de la sonde. 9) Penetrometre selon la revendication 1 et les sous- revendications 2 et 8, caracterise en ce que le tube de a l'interieur, un epaulement (67a) sur lequel viennent reposer la pointe-pieu (70) ou le oarottier (fig. 12) permettant par plusieurs, par ex. quatre, verins mecaniques, hydrauliques, electriques ou pneumatiques servant- au controle de la position des elements pointe, manchon et qui en resulte, et tout en donnant la possibilite de determiner la valeur de ce flambage; les deux autres elements restant ou non sous pression (verins B, C, D)- a reposer sur ses cales la charge, camion ou autre, pouvant se soulever et a absorber la deformation de l'appareil central (94) jusqu'a concurrence de la mise a egalite de la Sous-revendication: 11) Tableau selon la revendication II, caracterise par trois appareils de mesure (94, 103, 110) par ex. des anneaux dynamometriques, enregistrant les efforts separees des divers elements et d'une facon continue par rapport a la progression, sans mouvements alternatifs. 12) Tableau selon la revendication II, caracterise par un dispositif permettant la liaison de chaque element de sonde a son appareil respectif. 13) Tableau selon la revendication II caracterise par des centrale sous pression, plusieurs heures ou plusieurs jours, afin de pouvoir etudier la relaxation du terrain qui sera suivie sur les appareils (94, 103, 110). 14) Tableau selon la revendication II, caracterise par un tableau de mesure a l'appareil permettant les mesures soit a la penetration, soit a l'arrachage des sondes centrales. en ce qu'il est monte sur une charpente (fig. 1, 2, 3). moyens de mettre en oeuvre les sondes et le tableau de mesure (fig. 14, 15). cette charpente est munie d'une partie fixe (1, 2, 3, 4, 7, 8, 9, 10) montee par ex. au centre de gravite d'un camion tout terrain permettant des deplacements et des mises en place rapides 17) Charpente selon la revendication III, caracterisee en ce que cette charpente est munie d'une partie mobile (11, 12, 13, 14, 15, 16, 18, 19, 20), montee dans la partie fixe, et se repliant vers l'arriere en fin de course des verins hydraulique (3) liberant ainsi l'espace au-dessus des sondes. 18) Charpente selon la revendication III, caracterisee en ce que cette charpente est prevue pour la mise en oeuvre des sondes, ou des sondes centrales, statiquement ou dyna- 19) Charpente selon la revendication III, caracterisee par des moyens de battage automatique (fig. 9, 10) contenant un mecanisme entrainant d'un mouvement rotatif continu deux cation 19, caracterisee en ce que ces rouleaux d'adherence (55) sont montes de facon a exercer une pression sur deux faces sous un embrayage permanent, libereront celui-ci qui retombera de la hauteur prevue. **Machine translation:** [Source: Claim 1] Claim 1 penetrometer precision, is characterized by the combination of an advanced element (37), sleeve (29) 1) penetrometer according to claim I, cylinder ends with a cone without continuity solution. In that the tip element (37) is form of several, eg. three parts (24, 26, 28) and the tip element (37) is formed by a top shell (26) sailliee within a specified time. 4) penetrometer as claimed in claim I and

the sub-claim 3, characterized in that the casing element supplemented by the tip (24) of the central tube (25) allow ' continuing the survey after the blocking of the probe. Claim 3, characterized in that the central tube (41) has an enlarged tip (42) forming eg. a separate room. In that the core barrel (fig. 11, 12, 13) for the extraction of ground samples can be mounted instead of the probe. 9) penetrometer according to claim 1 and dependent claims 2 and 8, characterized in that said tube on the inside, a shoulder (67a) to which come to rest the tip-pile (70) or oarottier (fig. 12) allowing several, eg. four jacks mechanical, hydraulic, electrical or pneumatic used - to control the position of the tip Elements, sleeve and that results, and while giving the possibility to determine the value of this buckling; the other two remaining Elements or not under pressure (cylinders B, C, D) - a rest on its holds the load, truck or other, that can raise and absorb the deformation of the device Central (94) up to a maximum of putting equality of Sub claim: 11) Table II claim, characterized by three measuring devices (94, 103, 110) eg. dynamometric of rings, recording separated efforts of various components and a way continuous with respect to progression, without reciprocating. 12) Table as claimed in Claim II, characterized by a device for connecting each sensor element has its respective device. 13) Table II claim characterized by of central pressure, hours or days, to study the relaxation of the field which will be followed on the devices (94, 103, 110). 14) Table II claim, characterized by a measuring table has the apparatus measures either a penetration or a pulling of the central sensors. In that it is mounted on a frame (Fig. 1, 2, 3). Ways to implement the probes and the measuring table (fig. 14, 15). This frame is provided with a fixed part (1, 2, 3, 4, 7, 8, 9, 10) montee eg. the center of gravity of an all-terrain truck allowing deplacments and fast set up 17) Frames claim III, CHARACTERIZED in that the frame is provided with a mobile part (11, 12, 13, 14, 15, 16, 18, 19, 20), montee in the fixed part, and falling back towards the rear end stroke hydraulic cylinders (3) thus freeing space above probes. 18) Frames claim III, CHARACTERIZED what that framework is scheduled for implementation probes, probes or central, statically or dynamic 19) Frames claim III, characterized by the automatic threshing means (fig. 9, 10) container. A mechanism causing a rotary movement cation 19, characterized in that the rollers of adhesion (55) are mounted in a way to exert pressure on under permanent clutch will release this that will fall from the height provided for.

Classifications:

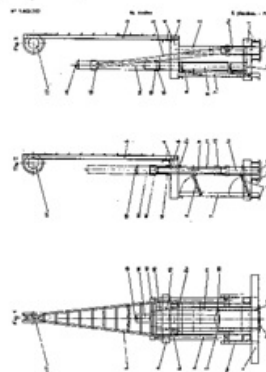
International (IPC 8-9): E02D1/02 (Advanced/Invention);
E02D1/00 (Core/Invention)

International (IPC 1-7): E02D1/02 G01N11/12

CPC: E02D1/02 E02D1/025

European: E02D1/02 E02D1/02B2

PatBase - FR1553707_R



Family:

Publication number	Publication date	Application number	Application date
BE706256 A	19680318		19671108
CH466154 A	19681130	CH19660016297	19661111
ES347014 A1	19690516	ES19670347014	19671110
FR1553707 A	19690117		19670607

Priority:

CH19660016297 19661111

Probable Assignee:

ANDINA

Assignee(s): (std):

ANDINA ; ANDINA RAYMOND

Inventor(s): (std):

RAYMOND ANDINA

Inventor(s):

ANDINA RAYMOND

55) Family number: 112432 (US3604683A)

© PatBase

Title: JACKING MECHANISMS

Abstract: 1288663 Hydraulic jacks J R SUTTON 24 June 1970 [10 July 1969] 30637/70 Heading B8J Jacking apparatus for effecting relative vertical movement between a barge with decks 2, 3 and a support leg 5 comprises a head 13 connected step-by-step with the leg 5 by hydraulically actuated pins 20 engaging through the head and holes 19 in a track 6 on the leg 5. A single-acting hydraulic cylinder 30 is attached to the deck 3 and has a threaded ram 21 attached to the head 13. A pair of double-acting hydraulic rams 7 is attached between the deck 2 and the head 13. A head 18 with a threaded ram 22 and rams 8 is similarly arranged on a track 6¹. In operation the cylinder 30 is pressurized to apply a downward thrust to the head 13 being assisted by the rams 7 acting in tension. A nut 32 threaded on the ram 21 is arranged to follow-up the movement of the head 13 so as to act as a safety device in case of hydraulic failure. The ram 21 is retracted at the end of its working stroke by the rams 7 while the ram 22 performs its working stroke assisted by the rams 8 to provide continuous operation.

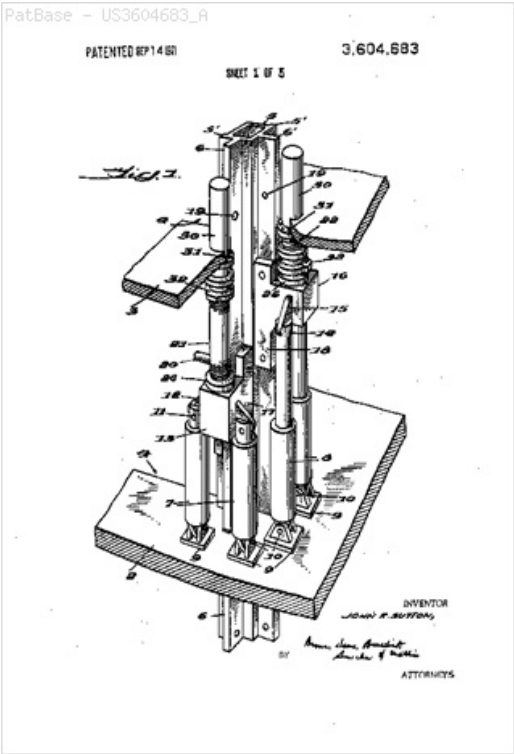
Classifications:

International (IPC 8-9): B66F1/08 E02B17/08 (Advanced/Invention);
B66F1/00 E02B17/00 (Core/Invention)

International (IPC 1-7): B66F1/08 B66F3/30 B66F7/16 E02B17/00
E02B17/04 E02B17/08 E02D21/00

CPC: E02B17/0836

European: E02B17/08D



Family:

Publication number	Publication date	Application number	Application date
AU197017142 A1	19720106	AU19700017142	19700703
BE753325 A	19701216		00000000
BE753325 A1	19701216	BE19700753325	19700710
CA929927 A1	19730710	CA19700086043	19700619
DE2033635 A1	19710211	DE19702033635	19700707
FR2063898 A5	19710709	FR19700025473	19700709
GB1288663 A	19720913		19700624
JP50025704 B4	19750826	JP19700059533	19700709
NL7010225 A	19710112	NL19700010225	19700710
US3604683 A	19710914	US19690840807	19690710

Priority:

US19690840807 19690710

Probable Assignee: SUTTON JOHN

Assignee(s): (std): SUTTON J ; SUTTON JOHN ; SUTTON JOHN R ; SUTTON JOHN RANDOLPH

Assignee(s): JOHN R SUTTON ; JOHN RANDOLPH SUTTON ; SUTTON JOHN R P O BOX 32 BEAUMONT TEXAS 77701 E U ; SUTTON JOHN R P O BOX 32 BEAUMONT TEXAS 77701 E U A

Inventor(s): (std): SUTTON J ; SUTTON JOHN R ; SUTTON JOHN RANDOLPH

Inventor(s): JOHN R SUTTON ; JOHN RANDOLPH SUTTON

56) Family number: 3528441 (DE3312807A1) © PatBase

Title: Hydraulic cylinder, in particular rotary actuator for implements such as reversible ploughs or the like

Abstract: The invention proposes a hydraulic cylinder which can be used, in particular, as a rotary actuator for implements such as reversible ploughs or the like. The particularly simple switchover of the piston from a pulling movement into a pushing movement is accomplished by the displacements of a longitudinal slide, displaced mechanically via the piston, by a control unit in such a way that a control flow acts on the longitudinal slide and displaces the control edges in such a way that a reversal of flow of the hydraulic fluid occurs. The longitudinal slide is held until the hydraulic fluid is cut off. The end position of the piston in the cylinder space is achieved by closure of the cylinder space by means of a hydraulically pilot-controlled mechanical non-return valve.

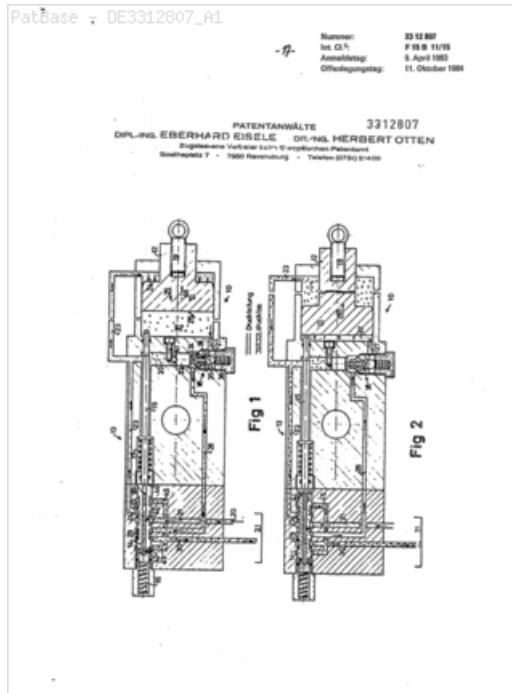
Classifications:

International (IPC 8-9): A01B3/421 F15B11/15 (Advanced/Invention); A01B3/00 F15B11/00 (Core/Invention)

International (IPC 1-7): A01B3/42 F15B11/15 F15B15/26

CPC: A01B3/421 F15B11/15

European: A01B3/421 F15B11/15



Family:

Publication number	Publication date	Application number	Application date
DE3312807 A1	19841011	DE19833312807	19830409

Priority:

DE19833312807 19830409

Probable Assignee:

FIT FISCHER INGENIEUR TECHNIK

Assignee(s): (std):

FIT FISCHER INGENIEUR TECHNIK

Assignee(s):

FIT FISCHER INGENIEUR TECHNIK GMBH

Inventor(s): (std):

OBERT HERBERT

57) Family number: 63003444 (US2017356163A)

© PatBase

Title: HYBRID CONSTRUCTION MACHINE

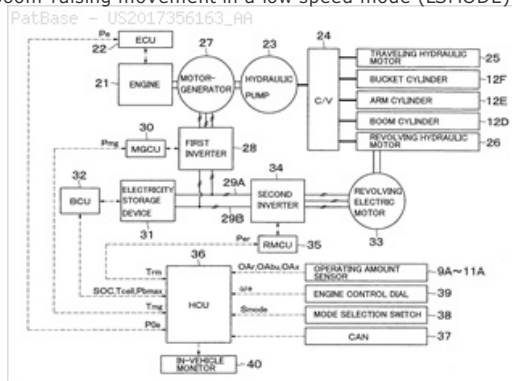
Abstract: A motor-generator (27) is connected mechanically to an engine (21) and a hydraulic pump (23). The hydraulic pump (23) delivers pressurized oil to cylinders (12D) to (12F) in a working mechanism (12), a traveling hydraulic motor (25) and a revolving hydraulic motor (26). The revolving hydraulic motor (26) drives a revolving device (3) in cooperation with a revolving electric motor (33). An HCU (36) reduces outputs of the revolving electric motor (33), the revolving hydraulic motor (26), the boom cylinder (12D) and the like such that a ratio of a revolving speed of an upper revolving structure (4) and a movement speed of raising a boom (12A) is held to a ratio in a normal mode (NMODE) at the time of performing a compound movement of a revolving movement and a boom-raising movement in a low speed mode (LSMODE).

Classifications:

International (IPC 8-9): E02F3/42 E02F9/00 E02F9/08 E02F9/12 E02F9/20 E02F9/22 E02F9/26 F15B11/00 F15B11/16 (Advanced/Invention); E02F3/30 E02F3/32 (Advanced/Non-invention)

CPC: E02F9/123 E02F9/2058 E02F9/26 E02F9/08 E02F3/425 F15B11/16 E02F9/2203 Y10S903/93 F15B2211/75 E02F3/301 E02F3/32 F15B2211/7058 E02F9/20 E02F9/2037 E02F9/2075 F15B11/00

US: 180/53.4



Family:

Publication number	Publication date	Application number	Application date
CN107208400 A	20170926	CN201680006597	20160119
EP3249116 A1	20171129	EP20160740154	20160119
EP3249116 A4	20180829	EP20160740154	20160119
JP2016135951 A2	20160728	JP20150011173	20150123
JP6243857 B2	20171206	JP20150011173	20150123
KR101942674 B1	20190125	KR20177020465	20160119
KR20170098297 A	20170829	KR20177020465	20160119
US2017356163 AA	20171214	US20160545527	20160119
US10364549 BB	20190730	US20160545527	20160119
WO16117547 A1	20160728	WO2016JP51414	20160119

Priority:

JP20150011173 20150123 WO2016JP51414 20160119

Probable Assignee: HITACHI CONSTRUCTION MACHINERY CO LTD

Assignee(s): (std): HITACHI CONSTRUCTION MACH CO ; HITACHI CONSTRUCTION MACHINERY

Assignee(s): HITACHI CONSTRUCTION MACHINERY CO ; HITACHI CONSTRUCTION MACHINERY CO LTD ; HITACHI CONSTR MACH CO LTD

Inventor(s): (std): AMANO HIROAKI ; HIDA MASASHI ; HITA MASAFUMI ; IZUMI SHIHO ; IMURA SHINYA ; MORIKI HIDEKAZU ; MORIKI SHUICHI

Agent(s): MERH IP MATIAS ERNY REICHL HOFFMANN PATENTANWALTE PARTG MBB; HIROSE KAZUHIKO; CROWELL AND MORING LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

58) Family number: 56435460 (US2015240671A)

© PatBase

Title: VARIABLE VALVE DEVICE FOR INTERNAL COMBUSTION ENGINE

Abstract: Provided is a variable valve device for an internal combustion engine, capable of improving engine characteristics by increasing the maximum valve lift of an intake valve to a large valve lift while preventing excessive lost motion operation of lost motion mechanisms. The variable valve device includes intake- and exhaust-side swing arms that pivot to open and close intake valves (3a, 3b) and exhaust valves (61a, 61b) in two cylinders #1, #2, intake- and exhaust-side hydraulic lash adjusters (10a, 10b, 65a, 65b) that serve as pivot points of the respective swing arms, a variable valve system that continuously varies valve lift characteristics of the intake valves and lost motion mechanisms (11) that stop opening and closing of the intake exhaust valves by lost motion of the intake- and exhaust-side hydraulic lash adjusters on the cylinder #1. The maximum valve lifts of the intake valves are set larger than valve lifts of the exhaust valves. The minimum valve lifts of the intake valves are set smaller than the valve lifts of the exhaust valves.

Classifications:

International (IPC 8-9): F01L1/10 F01L1/255 F01L1/26 F01L1/34 F01L1/344 F01L1/46 F01L13/00 F02D13/02

F02D13/06 (Advanced/Invention);

F01L1/24 (Advanced/Non-invention)

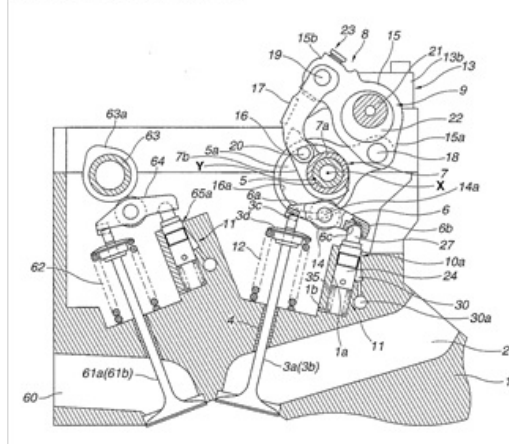
CPC: F01L1/267 F01L1/462 F01L13/0005 F01L2001/2433 F01L1/10

F01L1/255 F01L13/00 F01L13/0026 F01L13/0063 F02D13/0211

F02D13/0246 Y02T10/18

US: 1/1 123/90.15 123/90.16

PatBase - US2015240671_AA



Family:

Publication number	Publication date	Application number	Application date
CN104685169 A	20150603	CN201380048745	20130903
DE112013005305 T5	20150806	DE201311005305T	20130903
JP2014073259 A1	20160908	JP20140545598T	20130903
JP6072063 B1	20170201	JP20140545598T	20130903
US2015240671 AA	20150827	US20130427114	20130903
US9382819 BB	20160705	US20130427114	20130903
WO14073259 A1	20140515	WO2013JP73614	20130903

Priority:

JP20120244999 20121107 WO2013JP73614 20130903

Probable Assignee: HITACHI AUTOMOTIVE SYSTEMS LTD

Assignee(s): (std): HITACHI AUTOMOTIVE SYSTEMS LTD

Inventor(s): (std): NAKAMURA MAKOTO

Agent(s): KOBAYASHI HIROMICHI; FOLEY AND LARDNER LLP; KOBAYASHI HIROMICHI ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

59) Family number: 10657464 (US5718196A)

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Title: Lubrication and camshaft control system for engine

Abstract: An internal combustion engine having a variable valve timing mechanism with a hydraulic control that is mounted on the front of the cylinder head for ease of accessibility and for ease of conversion of the existing engine. The engine includes an oil filter, oil cooler, and coolant pump, which are disposed and driven in a way so as to maintain short flow paths and permit internal conduits to be formed in the engine so as to avoid the possibility of leakage. The variable valve timing mechanism is controlled by hydraulic pressure supplied by the lubricating system, and a control valve assembly is mounted

on the cover for the variable valve timing mechanism with the control passages being formed integrally in this cover. In addition, one of the timing chains may be easily accessed for adjustment without removing the cover through the removal of a bolt that holds an accessory mounting bracket to the engine.

Classifications:

International (ipc 8-9): B60K5/12 F01L1/02 F01L1/26 F01L1/34 F01L1/344 F01L1/46 F01M11/02 F01M5/00 F01M9/10 F01P11/08 F01P5/10 F02B67/00 F02B67/06 F02B77/00 F02F7/00 (Advanced/Invention);

F02B67/06 F02F7/00 (Advanced/Non-invention);

B60K5/12 F01L1/00 F01L1/02 F01L1/26 F01L1/34 F01L1/344

F01M11/02 F01M9/00 F02B67/06 F02B77/00

F02F7/00 (Core/Invention);

F02B67/06 F02F7/00 (Core/Non-invention)

International (ipc 1-7): B60K5/12 F01L1/02 F01L1/26 F01L1/34 F01L1/344 F01L1/46 F01M1/00 F01M5/00 F01P11/08 F01P5/10 F02B67/00 F02B67/06 F02B77/00 F02F7/00

CPC: F01L1/265 F01L1/34406 F01L2001/34433 F01M9/102

F01M9/108 F01M11/02 F02F7/006 F02F2007/0063 F02B67/06

F02B2275/18 F01L2001/0537

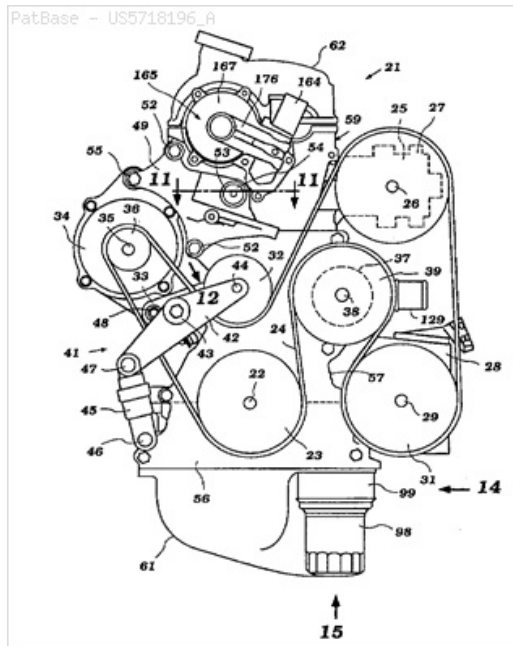
European: F01L1/26B F01L1/344A1 F01M11/02 F01M9/10C

R01L1/053D R01L1/344E1A2 R01M9/10T R02B275/18 R02B67/06

R02F7/00D R02F7/00D1

US: 123/195.00C 123/195C 123/196AB 123/196R 123/41.33

123/41.44 123/90.17



Family:

Publication number	Publication date	Application number	Application date
DE69530962 D1	20030710	DE19956030962	19950929
DE69530962 T2	20040513	DE19956030962T	19950929
EP0704605 A2	19960403	EP19950115427	19950929
EP0704605 A3	19961127	EP19950115427	19950929
EP0704605 B1	20030604	EP19950115427	19950929
JP3141339 B2	20010305	JP19940261824	19940930
JP3375433 B2	20030210	JP19940261825	19940930
JP8100611 A2	19960416	JP19940261826	19940930
JP8100655 A2	19960416	JP19940261825	19940930
JP8100670 A2	19960416	JP19940261824	19940930
US5718196 A	19980217	US19950534566	19950927

Priority:

JP19940261824 19940930 JP19940261825 19940930 JP19940261826 19940930

Probable Assignee: YAMAHA HATSUDOKI KK

Assignee(s): (std): YAMAHA MOTOR CO LTD

Assignee(s): YAMAHA HATSUDOKI K K ; YAMAHA HATSUDOKI K K IWATA ; YAMAHA HATSUDOKI KABUSHIKI KAISHA ; YAMAHA HATSUDOKI KK

Inventor(s): (std): UCHIYAMA SHIGENOBU ; YOSHIKAWA MASAACKI ; TAKAHASHI HIRONAO ; TAKAHASHI HIROHISA ; UCHIYAMA SHIGEATSU

Designated states: DE FR GB IT

60) Family number: 7810467 (DE3930998A1)

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Title: Centrifugal pressure-generating mechanism - has rod from weights to plunger passing through drive motor

Abstract: The mechanism generates pressure by centrifugal force. It is esp. for a hydraulic braking system, in which fluid is supplied via a master cylinder (34) to wheel cylinders. Weights (5) coupled to a driving motor (2) act via an inner rod (14) on a plunger (17) generating pressure in a chamber (22) with an inlet and outlet (38). The motor is mounted between the hydraulic section (1) containing plunger and chamber and the adjusting system (3) with the weights. The rod passes through the motor, and acts via a bearing (19) on the plunger. USE/ADVANTAGE - Pressure generating mechanism for vehicle hydraulic braking system is very compact, particularly in the lengthwise direction.

Classifications:

International (ipc 8-9): B60T13/06 B60T8/44 B60T8/48

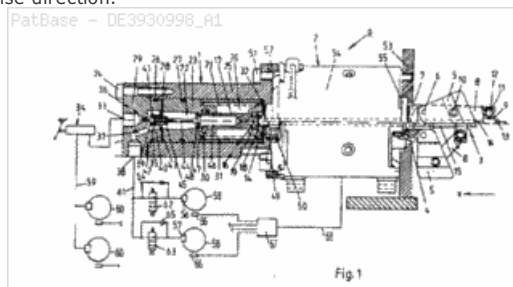
B60T8/74 (Advanced/Invention);

B60T13/00 B60T8/44 B60T8/48 B60T8/72 (Core/Invention)

International (ipc 1-7): B60T13/06 B60T13/12 B60T8/32 F15B5/00

CPC: B60T8/441 B60T8/489 B60T8/74 B60T13/06

European: B60T13/06 B60T8/44B B60T8/48B4F B60T8/74



Family:

Publication number	Publication date	Application number	Application date
DE3930998 A1	19900621	DE19893930998	19890916

Priority:

Probable Assignee: BOSCH GMBH ROBERT**Assignee(s):** (std): BOSCH GMBH ROBERT**Assignee(s):** ROBERT BOSCH GMBH**Inventor(s):** (std): FRIEDOW MICHAEL ; HOLZMANN ROLAND DIPL ING**Inventor(s):** HOLZMANN ROLAND DIPL ING FH 7000 STUTTGART DE ; FRIEDOW MICHAEL 7146 TAMM DE**61) Family number: 53167468** (RU2011134751A)

© PatBase

Title: DVUHAGREGATNAYA fluid-energy plant (DPGEU) (Machine translation)

Abstract: Source: RU2011134751A **Machine translation:** 1. Unit - dvuagregatnaya attaching said fluid, comprising two pumping piston unit with a set of equipment, energy storage, characterized in that the cylinder actuator pump fluid flow channel connected with a cooler, while allowing the working process of creating an increased pressure in a cylinder of the piston pump unit and a fluid transfer energy to the piston actuator second agregata.2. Unit according to claim 1, characterized in that the drive power plants compressed air is used in a closed loop through the flow from one cylinder to another driving force of the moving fan mechanisms multiplier pulley block at fixed ustanovkah.3 ejectors. Unit according to claim 1, characterized in that the liquid overflows out of the cylinder when the cylinder is cooled in the connecting channel and periodically washing the wall of the drive cylinder, maintains a constant temperature of the compressed vozduha.4. Unit according to claim 1, characterized in that the hydraulic part of the pumping unit consists of a series of horizontal cylinders in which pistons pumps and drive cylinder arranged on a common piston rod, piston group are allowing fluid flow and pressure regulate a wide diapazonah $P = f(Q) = f(P)$.

Classifications:**International (IPC 8-9):** F15B11/00 (Advanced/Invention)**Family:**

Publication number	Publication date	Application number	Application date
RU2011134751 A	20130227	RU20110134751	20110822

Priority:

RU20110134751 20110822

Probable Assignee: CAST IRON ALEXANDER F**Assignee(s):** CAST IRON ALEXANDER F**62) Family number: 20868471** (GB912138A)

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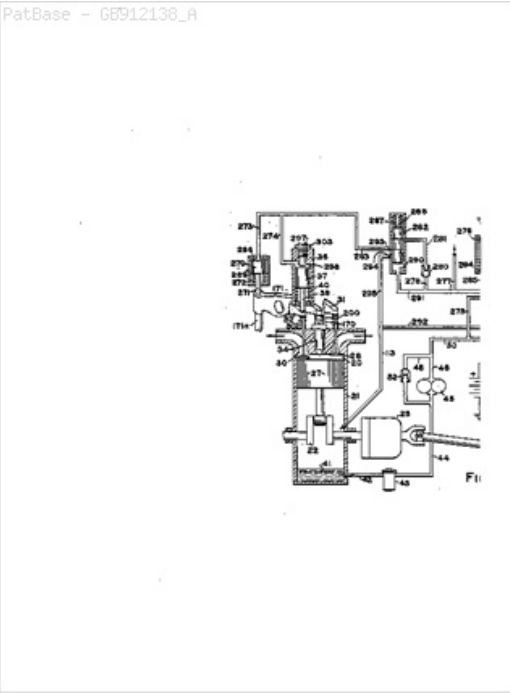
Title: VEHICLE ENGINE BRAKING AND FUEL CONTROL SYSTEM

Abstract: 912,138. Regulating; valve gear. CUMMINS, C. L. Nov. 19, 1959, No. 39347/59. Class 7(6) [Also in Group XXXI] A vehicle driving and braking system comprises a multicylinder crank-shaft engine having fuel supply and air inlet means and cam actuated exhaust means and is provided with control means, which, when operating, causes pressure fluid to actuate means, operating in synchronization with the crankshaft, to open the exhaust means when the corresponding piston is at or near the top of the compression stroke without alteration of the normal operation or timing of the exhaust means. Fig. 1. A self-adjusting hydraulic system for each cylinder or each pair of cylinders is provided to exhaust each cylinder 21 at the top of the compression stroke by an inter-connection which opens an exhaust valve 30 when a fuel injector plunger 170 is seated whilst permitting independent opening of the exhaust valve 30 by a rocker 32. A hydraulic master cylinder, the spring-loaded piston 270 of which is located over a cam-shaft actuated pushrod 171a movement of which causes a spring-loaded slave piston 37 to open the exhaust valve 30. A gear pump 45 draws oil from a crankcase sump 41 through a filter 43 and maintains a regulated pressure through an appropriate solenoid operated valve 276, of several solenoid valves corresponding to the cylinders, and a check valve 280 to a control valve 288. To effect engine braking, the number of cylinders or cylinder pairs required is manually selected by setting a switch 317. At a predetermined minimum engine speed a centrifugal governor 312 closes a switch 304 and thereafter driver operation of the brake pedal 73 closes a switch 307 to energize the solenoid valve or valves 276 which admits pressure oil into the conduits 277. The spring-loaded piston 282 is moved to permit pressure oil to pass through conduit 281 into conduits 283, 274 and 273 to effect hydraulic interconnection of the master and slave pistons 270, 37. When the control valve chamber 290 is not under pressure the spring 287 returns the piston 282 to allow oil present in conduits 273, 274 and 283 to drain to the sump. Fig. 1 B. A speed-responsive hydraulic or pneumatic system which applies varying degrees of braking effort is brought into operation by depressing the brake pedal 73. Oil or air passes through a valve 403, to a valve 405, having ports 408, 410, which are interconnected when a speedresponsive governor 306 retracts a shaft 314, to permit a spring 406 to move the valve piston against a stop 407. Depression of pedal 73 moves the lever 92 away from the contact roller 414 to allow actuation of the valve body 380 by the spring 402. In a modification (Fig. 1A not shown) a non-speed-responsive mechanical control is effected by hand operation of a knob, mounted on the vehicle instrument panel, which is connected by a flexible cable to a sliding piston selector valve replacing the valves 276. Fig. 2. In a detailed embodiment of the hydraulic system of Fig. 1, engine oil under pressure enters a chamber 290 to force a spring-loaded valve body 327 into the position shown where the oil flows through a check valve 332 and conduit 273 to force a master piston 270 downwards into the operating position. When oil pressure in the line 291 is cut off, the valve body 327 is forced downwards to align a groove 337 with the port 330 to allow oil from the system to drain back to the sump through a hole 340. The piston 270 is connected to a rocker arm screw 301 by a link pin 341 which is retained by a ring 344. When the system is inoperative the piston 270 and link pin 341 are retracted into the housing 326 by a spring 272a. A hollow slave piston 37a is spring-loaded inwardly by an encased spring 40 which is held by a retainer plate 348, extensions of which protrude through slots in piston 37a to engage a retaining ring 351 and a slot 352. The slave piston 37a is slotted to straddle a rocker arm 32 to operate dual exhaust valves 30 through a crosshead 300. In another embodiment (Fig. 6 not shown) the master piston is actuated directly by the cam-shaft, the system operation being otherwise as for Fig. 1. Figs. 8 and 9. In a modified form of Fig. 1, to effect fuel cut-off during engine braking, hold-down of the fuel injector plunger 170 is accomplished by a parallel hydraulic circuit which acts on a hold-down piston 372 through an addition control valve, incorporated in valve 282, and a check valve 365. The hold-down piston 372 is retracted by a spring 374 or 374a. Fig. 11. In a further embodiment, a hydraulic mechanism opens the exhaust valve 30 of a four-stroke diesel engine by means of a plunger 56 actuated from an auxiliary cam-shaft 33. The piston 37 is energized by fluid drawn from the sump through a filter 43 by a pump 45, pressure being maintained in the conduit 54 by check valves 52, 53. The plunger 56 has pinion teeth 60 in engagement with a rack 61 actuated by a plunger 62. A spring 63 normally retains the plunger 62 against a stop screw 65, in which position grooves 66, 67, are aligned respectively with conduits 50, 51, so that as plunger 56 rises, fluid in chamber 55 escapes through grooves 66, 67 without any fluid movement in conduit 54. In the position shown with the grooves 66, 67 not in alignment with conduits 50, 51, movement of plunger 56 results in movement of plunger 37 to open the exhaust valve 30. Fuel shut-off is effected by the closing of a switch 74 attached to the foot throttle 26, the switch 74 and a manual switch 80 being in the earth lead of a solenoid 82 which, when energized moves a piston 83 to close off the fuel line 84. The circuit is completed through normal generator cut-out switch. The fuel cut-off valve may form part of a fuel injector. The system is made operative by the depression of brake pedal 73 to close switches 90, 91. Switch 91 is in circuit with

solenoid 82 and switch 90 with a manual switch 97, is in the earth circuit of a solenoid 101, energization of which moves a valve piston 104 to connect conduit 50 with a conduit 111 so that oil pressure in chamber 69 moves the plunger 62 with its rack 61 into the position shown. In Fig. 13 (not shown) the embodiment of Fig. 11, is modified to apply to a carburettor mounted with its throttle valve connected by a linkage to a pedal 26 there being an inlet manifold extra-air entry having a valve operated by the solenoid 82 so as to admit all the air required for compression braking. Fig. 14. In another modified form of Fig. 11, the valve operating plunger 37 is supplied by a high pressure pump 131, through an engine driven distributor 132, the high pressure fluid entering through conduit 143 and bores 144, 145, 146 to actuate the plunger 37. Return feed of oil is through port 147, ring duct 148 and conduit 152. During braking energization of the solenoid valve 156 feeds the normal engine oil pressure to the back face of the distributor to effect sealing thereof whilst simultaneous energization of a solenoid valve 163 feeds the high pressure circuit. Fig. 16. In a further modification fuel is cut off when a foot throttle 26 is released to energize solenoid 190 which lifts valve 191 to connect pressure fluid to a twin ram cylinder 194, Fig. 19. Rams 195, one for each of a pair of cylinders are forced outwardly against springs 196, so that in each case a cam face 197 engages a slotted sleeve 198, secured to the injector plunger 170 which is held seated after being moved by the pushrod 171a. Whilst the plunger 170 is held down the rocker 171 has a full range of movement. In order to actuate valve 30 by movement of the rocker 171 a pin 173, Fig. 17, is slidably mounted in a bore 174 of the rocker arm 171. Movement of the pin 173 into a locking position in a slot in rocker 32 is effected hydraulically by a ram 180 which moves under control of a solenoid-actuated valve 183. A spring 203, Fig. 21, is provided to hold the rocker arm 171 at the farthest point of its oscillation. Fig. 22. Hydraulic hold-down of the injector plunger 170 is effected by the provision of a piston 211 in a cylinder bore 210. Fluid is introduced above the piston 211 through conduit 193 by the solenoid-actuated valve 190, 191. In the released position of pedal 26 release of a pin 93 initiates compression braking and also closing of contacts 74, 75 controls, through the solenoid valve, hydraulic hold-down of the injector plunger. In a modification, Fig. 23 (not shown), a separate exhaust valve may be actuated by the ram 37 of Fig. 11. Fig. 24. During compression braking, pressure fluid is released into conduit 246 to cause rams 247 and 248 to move. Ram 247 moves a rod 250 to the right to push the lever 251 clockwise against a spring 252 to open the intake air valve 240. Ram 248 moves rod 253 against a stop on a fuel pump rack 243 to prevent the spring 244 moving the rack to the left to feed fuel to the engine. Fig. 25. When the plunger 56, Fig. 11, rises fluid is forced through conduit 54 into a recess 264 to move rod part 262 upwards to open the exhaust valve. When plunger 56 falls the rod parts 261, 262 seat upon each other and the pushrod resumes normal exhaust valve operation. Specification 746,090 is referred to.

Classifications:

International (IPC 8-9): F01L13/06 F02M57/02
F02M63/02 (Advanced/Invention);
F01L13/06 F02M57/00 F02M63/00 (Core/Invention)
International (IPC 1-7): B62D F01L13/06 F02D9/06
CPC: F01L1/181 F02M63/022 F01L13/065 F02M57/021 F02M63/021
F02M63/0215
European: F01L13/06B F02M57/02B F02M63/02B2 F02M63/02B3
F02M63/02B4



Family:

Publication number	Publication date	Application number	Application date
BE594300 A	19610222	BE19600594300	19600822
FR1269428 A	19610811	FR19600836111	19600818
GB912138 A	19621205	GB19590039347	19591119

Priority:

US19590808847 19590424 GB19590039347 19591119 FR19600836111 19600818

Probable Assignee:

CLESSIE LYLE CUMMINS

Assignee(s): (std):

CLESSIE LYLE CUMMINS ; CUMMINS CLESSIE L

Assignee(s):

CLESSIE L CUMMINS

Inventor(s): (std):

CUMMINS CLESSIE LYLE ; CUMMINS CLESSIE L

Inventor(s):

CLESSIE L CUMMINS

63) Family number: 7535477 (US3913450A)

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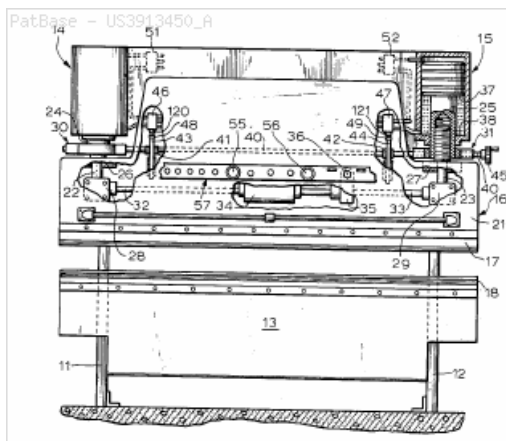
Title: Hydraulic Control system for press brakes or the like

Abstract: A control and actuator system for a press brake having a frame, a bed, a ram, and a pair of hydraulic cylinders for reciprocating the ram, utilizes a jackscrew arrangement in conjunction with positive mechanical stops on the ram pistons to support the ram beneath the cylinders to enable the bottom travel limit of the ram to be preset. The top travel limit of the ram is preset by means of vertically adjustable actuator rods on the ram, which engage actuator stems on valves associated with each cylinder to stop upward travel and hold the ram in position. Tilt compensation is provided at the top and bottom ram limits by independent adjustment of the jackscrews and actuator rods, obviating the need for a complex tape and pulley driven differential valve arrangement. The novel hydraulic circuit provided for powering the cylinders utilizes pilotdriven control valves, and provides for direct venting of the system high-volume hydraulic pump when not in use to maximize system efficiency.

Classifications:

International (IPC 8-9): B21D5/02 B30B15/00

B30B15/18 (Advanced/Invention);
B21D5/02 B30B15/00 B30B15/16 (Core/Invention)
International (IPC 1-7): B21D7/06 F15B13/06 F15B13/16 F15B15/22
CPC: B30B15/0035 B30B15/18 B21D5/02
European: B21D5/02 B30B15/00D2 B30B15/18
US: 60/421 72/389 72/389.3 72/441 72/446 72/453.18 91/390
91/400 91/410 91/448 91/519 92/13.1 92/146



Family:

Publication number	Publication date	Application number	Application date
US3913450 A	19751021	US19730359220	19730511
US4170124 A	19791009	US19770860235	19771213

Priority:

US19730359220 19730511 US19750620930 19751009 US19770860235 19771213

Probable Assignee: DREIS AND KRUMP MFG

Assignee(s): (std): DREIS AND KRUMP MANUFACTURING CO ; DREIS AND KRUMP MFG ; DREIS AND KRUMP MFG CO

Inventor(s): (std): MACGREGOR ROBERT

64) Family number: 30618486 (US2004105340A)

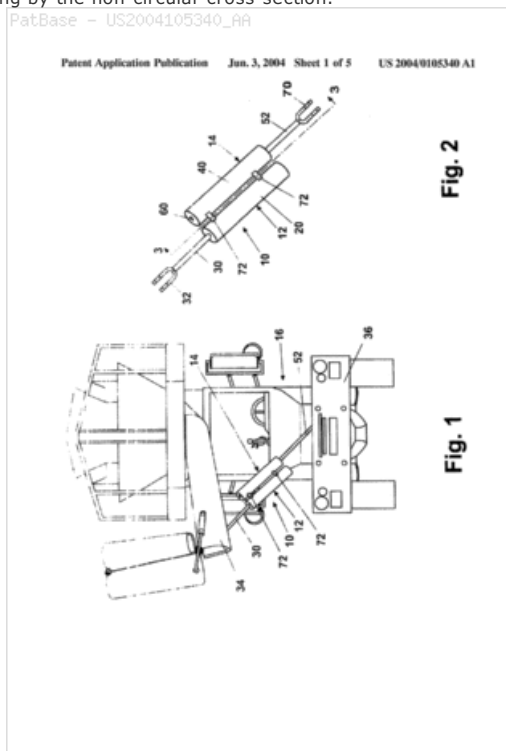
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Title: HYDRAULIC ACTUATOR ASSEMBLY WITH ROTATION RESTRAINT

Abstract: A hydraulic actuator assembly comprises a pair of hydraulic actuators having cylinders, pistons, and piston rods that are ganged together for extension of their respective piston rods in longitudinally opposite directions wherein at least one of the actuators comprises an anti-rotation mechanism that prevents rotation of the actuator assembly about its longitudinal axis. The anti-rotation mechanism comprises an axial anti-rotation rod rigidly attached to a cylinder having a non-circular cross-section slidably complementary to a non-circular aperture in a hollow piston rod. The piston rod can travel longitudinally along the anti-rotation rod, but is prevented from rotating by the non-circular cross-section.

Classifications:

International (IPC 8-9): B28C5/42 B60P1/40
F15B15/14 (Advanced/Invention);
B28C5/00 B60P1/00 F15B15/00 (Core/Invention)
International (IPC 1-7): B28C7/16
CPC: B28C5/4248 B60P1/40 F15B15/1404 F15B15/1419
European: B28C5/42A3C2 B60P1/40 F15B15/14B F15B15/14D2
US: 366/68 92/146 92/61



Family:

Publication number	Publication date	Application number	Application date
US2004105340 AA	20040603	US20030605734	20031022
US7033066 BB	20060425	US20030605734	20031022

Priority:

US20020319650P 20021025 US20030605734 20031022

Probable Assignee: HELDER BRUCE A

Assignee(s): (std): HELDER BRUCE A

HELDER BRUCE A

MCGARRY BAIR PC

65) Family number: 16912496 (DE29503736U1)

Title: POSITIONIERVORRICHTUNG ZUM GENAUEN POSITIONIEREN VON PNEUMATISCHEN UND HYDRAULISCHEN ARBEITSZYLINDERN Positioning device for accurately positioning of pneumatic and hydraulic working cylinders (Machine translation)

Abstract: Source: DE29503736U1 [DE] (Claim 1) 1. Positioniervorrichtung zum genauen Positionieren von n pneumatischen und hydraulischen Arbeitszylindern, dadurch gekennzeichnet, dass durch ein e Spreizhuelse eine gewindeartige Verbindung mit der Innenbohrung der Kolbenstange eines Arbeitszylinders hergestellt wird und durch definiertes Verdrehen der Spreizhuelse mit einem geeigneten Antrieb jede gewünschte Position der Kolbenstange exakt eingenommen werden kann und dass die Kolbenstange in der erreichten Position mechanisch, formschlüssig fixiert wird und so auch Kräfte in axialer Richtung der Kolbenstange aufgenommen werden können, ohne deren Lage zu verändernd.

Machine translation: (Claim 1) 1 Positioning device for precise positioning von n pneumatic and hydraulic marked Arbeitszylindern.dadurch because ss produces through an e expansion sleeve a thread-like Verbindungmit de r inner bore of the piston rod of a working cylinder and by a defined rotation derSpreizhuelse can be taken exactly with a suitable drive any desired position of the piston rod n and that the piston rod e in the position reached is mechanically fixed, positive locking, and so also Kraefftein axial direction of the piston rod can be added to Change customer without their situation.

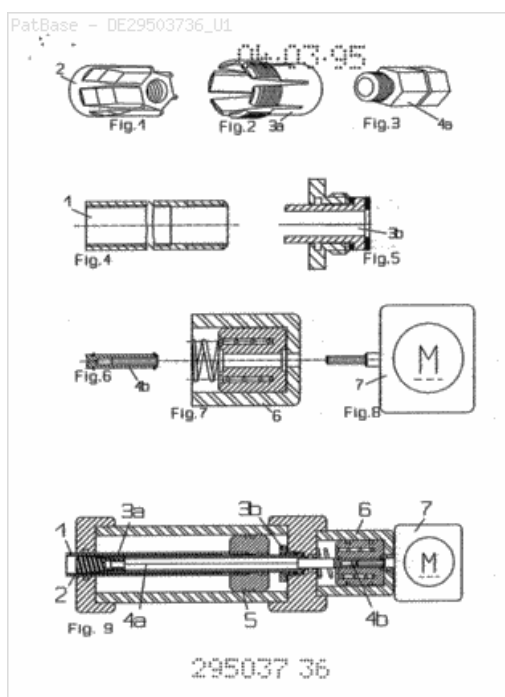
Classifications:

International (IPC 8-9): F15B15/26 (Advanced/Invention);
F15B15/00 (Core/Invention)

International (IPC 1-7): F15B15/26 F16J10/00

CPC: F15B15/262

European: F15B15/26C



Family:

Publication number	Publication date	Application number	Application date
DE29503736 U1	19950608	DE19952003736U	19950304

Priority:

DE19952003736U 19950304

Probable Assignee: SCHIRBEL NORBERT

Assignee(s): (std): SCHIRBEL NORBERT

Assignee(s): SCHIRBEL NORBERT 33758 SCHLOS HOLTE STUKENBROCK DE

66) Family number: 4621514 (JP62200002A)

Title: DEVICE FOR CONVERTING MECHANICAL INPUT QUANTITY

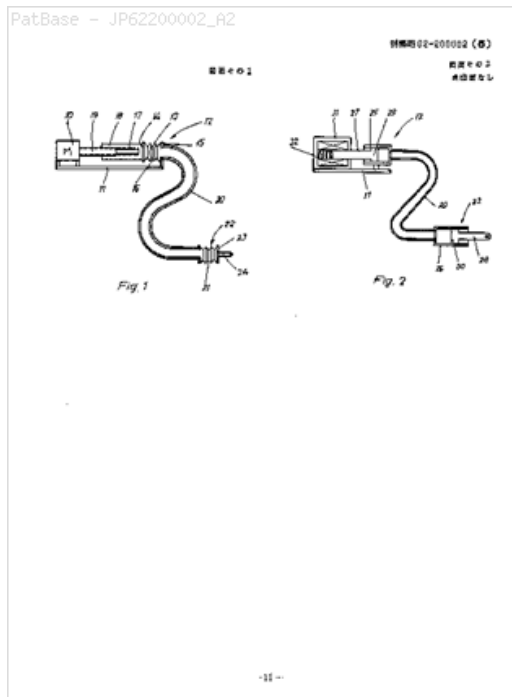
Abstract: An arrangement is proposed for transmitting a force or a feed movement from a cylinder unit (12) via a flexible line (20) containing a fluid, in particular a hydraulic fluid, to a second cylinder unit (22). Here, an electric positioning device (10) is connected via an actuator (18, 19) to an adjustable member (14), acting on the fluid, of one of the cylinder units (12). The two cylinder units (12, 22) are preferably constructed as rodless, flexible working cylinders (13, 21) of bellows-like configuration, which together with the line (20) connecting them form a hermetically sealed unit. The variable to be transmitted can thus be transferred to virtually any location even in restricted space conditions.

Classifications:

International (IPC 1-7): F15B7/00

CPC: F15B7/005

European: F15B7/00D

**Family:**

Publication number	Publication date	Application number	Application date
DE3606103 A1	19870827	DE19863606103	19860226
JP62200002 A2	19870903	JP19870009772	19870119

Priority:

DE19863606103 19860226

Probable Assignee: FESTO KG**Assignee(s):** (std): FESTO KG**Inventor(s):** (std): STOLL KURT DIPL ING ; KURUTO SHIYUTORU**67) Family number: 65364520 (US2017097105A)**

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Title: FLOW CONTROL VALVE HAVING A MOTION CONVERSION DEVICE

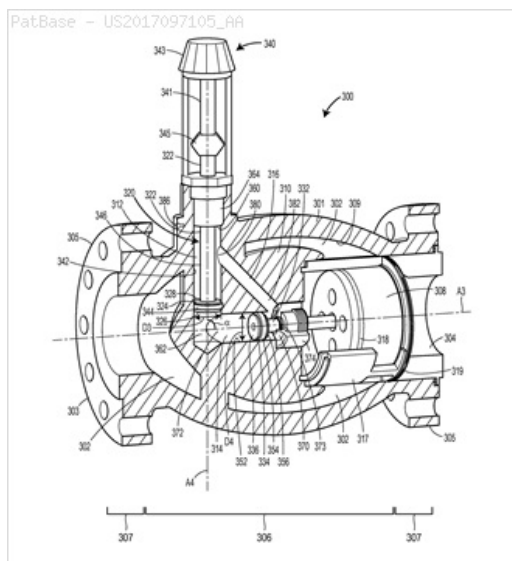
Abstract: A motion conversion device is disclosed for converting motion in one direction into motion in another direction. The motion conversion device may include a single-acting cylinder hydraulically or pneumatically coupled to a double-acting cylinder such that movement of the single-acting cylinder along an axis causes movement of the double-acting cylinder along a non-parallel axis. The single-acting cylinder may be mechanically coupled to another single-acting cylinder such that movement of one of the single-acting cylinders in a direction causes movement of the other one of the single-acting cylinders in an opposite direction. In this way, the single-acting cylinders may cooperate to provide reciprocal motion of the double-acting cylinder. Also disclosed is a valve incorporating a motion conversion device for the purpose of moving a closure member between an open position and a closed position. Furthermore, a method for operating a valve closure member with a motion conversion device is disclosed.

Classifications:

International (IPC 8-9): F15B7/06 F16K1/12 F16K1/36 F16K31/122 (Advanced/Invention)

CPC: F16K31/1225 F15B7/06 F15B7/00 F15B7/001 F16K1/126

US: 251/58

**Family:**

Publication number	Publication date	Application number	Application date
CN106979372 A	20170725	CN201610878816	20161008
CN206656012 U	20171121	CN201621104012U	20161008

US2017097105 AA	20170406	US20150874199	20151002
US9803774 BB	20171031	US20150874199	20151002

Priority:

US20150874199 20151002 CN201621104012U 20161008

Probable Assignee: FISHER CONTROLS INT LLC

Assignee(s): (std): FISHER CONTROLS INT LLC ; FISHER CONTROLS INTERNATIONALS LLC

Inventor(s): (std): GULLEEN MATTHEW LAWRENCE ; HOFF ELLIOT JAMES ; LAWRENCE MATTHEW

Agent(s): MARSHALL GERSTEIN AND BORUN LLP

68) Family number: 56777527 (US2015330417A)

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Title: HYDRAULIC ACTUATOR DEVICE

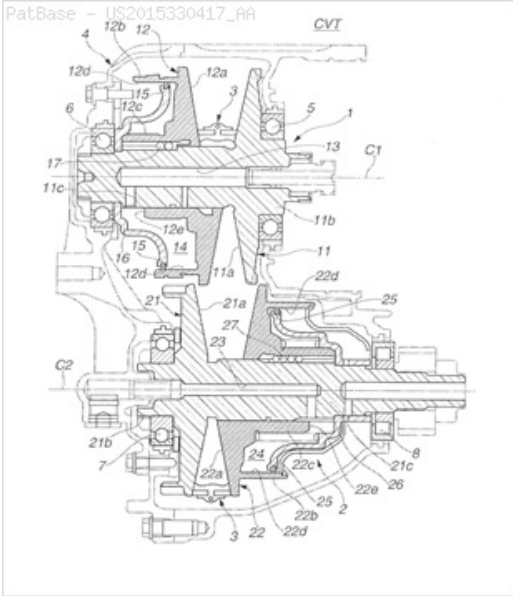
Abstract: A drive pulley (12) is formed by a piston-cylinder mechanism in which a seal ring (15) is set on an outer periphery of a fixed piston plate (16) that is in sliding contact with a cylinder inner peripheral surface (12d) of a cylinder (12b), and is driven by being supplied with hydraulic pressure. As a control parameter of a surface roughness shape of the cylinder inner peripheral surface (12d) of the drive pulley (12), a kurtosis (Rku) of a von choose curve and a skewness (Rsk) of the roughness curve, each of which is a height direction characteristic average parameter, are used. The cylinder inner peripheral surface (12d) is set to a surface having a surface roughness shape whose measurement values of the kurtosis (Rku) and the skewness (Rsk) are predetermined respective control values or less. With this, it is possible to surely suppress sliding abrasion of the liquid-tight seal member.

Classifications:

International (ipc 8-9): F15B15/14 F16H55/36 F16H55/56 F16H63/06 F16H9/12 F16H9/18 (Advanced/Invention)

CPC: F16H55/36 F15B15/14 F15B15/1428 F16H9/18 F16H55/56 F16H63/065

US: 92/170.1



Family:

Publication number	Publication date	Application number	Application date
CN104870834 A	20150826	CN201380066409	20131219
CN104870834 B	20170503	CN201380066409	20131219
EP2937573 A1	20151028	EP20130865924	20131219
EP2937573 A4	20160106	EP20130865924	20131219
JP2014098175 A1	20170112	JP20140553199T	20131219
JP5872712 B1	20160301	JP20140553199T	20131219
KR101721347 B1	20170329	KR20157015506	20131219
KR20150084988 A	20150722	KR20157015506	20131219
US2015330417 AA	20151119	US20130652955	20131219
US10371178 BB	20190806	US20130652955	20131219
WO14098175 A1	20140626	WO2013JP84045	20131219

Priority:

JP20120277536 20121220 JP20140553199 20131219 WO2013JP84045 20131219

Probable Assignee: JATCO LTD

Assignee(s): (std): JATCO LTD ; NISSAN MOTOR

Assignee(s): NISSAN MOTOR CO ; NISSAN MOTOR CO LTD

Inventor(s): (std): KURIHARA TAKESHI ; OYAMA YOSHIHIRO ; TSUJI YOICHI

Agent(s): GRUENECKER PATENT U RECHTSANWALTE PARTG MBB; KOBAYASHI HIROMICHI; TOMIOKA KIYOSHI; FOLEY AND LARDNER LLP; KOBAYASHI HIROMICHI ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

69) Family number: 22636529 (FR1493950A)

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Title: SERVO-MOTEUR HYDRAULIQUE POUR CHARGEUR A PLATEAU SERVO MOTOR HYDRAULIC LOADER TRAY (Machine

translation)

Abstract: Source: FR1493950A [FR] [Source: Claim 1] 1 Servomoteur hydraulique, comprenant au moins deux verins hydrauliques dont les parties mobiles respectives sont accouplees a des points es paces sur une piece commune d'application de force, caracterise en ce que chaque verin est relie par une jonction hydraulique a un cylindre de com mande hydraulique, individuel, associe au verin, les parties mobiles de chaque cylindre de commande etant mecaniquement connectees a une piece mo bile commune a laquelle est appliquee la force mo trice actionnant les verins. Le dispositif suivant l'invention peut presenter, en outre, une ou plusieurs des caracteristiques "2 a 6 suivantes **Machine translation:** [Source: revendication 1] 1 Hydraulic actuator comprising at least two hydraulic cylinders, the respective movable portions are coupled to points paces are on a common spare for the application of force, characterized in that each cylinder is connected by a hydraulic junction has a cylinder com hydraulic control, individual, associated with the bailer, the moving parts of each control cylinder being mechanically connected to a common mo bile piece to which is applied the strength mo trice operating the cylinders. The device of the present invention may, in addition, one or more characteristics of "2 to 6 following

Classifications:

International (IPC 8-9): B60P1/46 B66F9/22

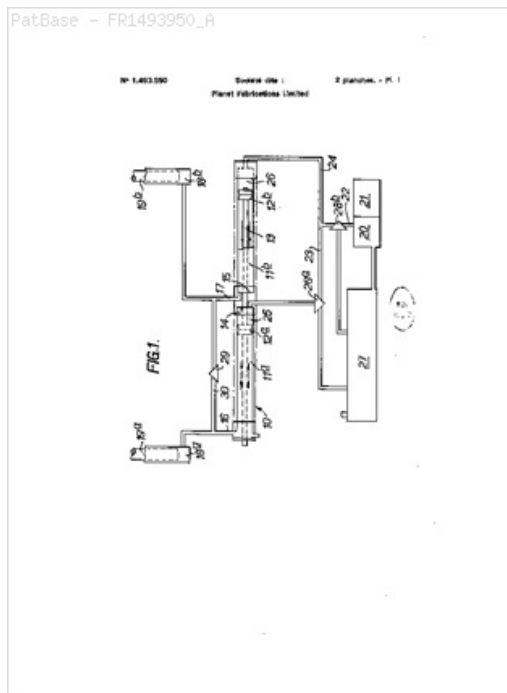
F15B11/22 (Advanced/Invention);

B60P1/44 B66F9/20 F15B11/00 (Core/Invention)

International (IPC 1-7): B60P1/46

CPC: B66F9/22 F15B11/22

European: B66F9/22 F15B11/22



Family:

Publication number	Publication date	Application number	Application date
FR1493950 A	19670901	FR19660076845	19660919

Priority:

FR19660076845 19660919

Probable Assignee:

PLANET FABRICATIONS LTD

Assignee(s): (std):

PLANET FABRICATIONS LTD

Assignee(s):

PLANET FABRICATIONS LIMITED

70) Family number: 47897543 (WO10146419A2)

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Title: HYDRAULIC ACTUATOR WITH MOVEMENT DECOUPLING, COMBINATION OF SUCH A HYDRAULIC ACTUATOR WITH A HYDROPNEUMATIC CONVERTER, AND APPLICATION OF SUCH AN ACTUATOR TO MACHINE-TOOLS

Abstract: The invention relates to a hydraulic actuator with movement decoupling, that can be applied to actuations where a linear movement must be performed while ensuring the freedom of a rotary movement. A hydraulic cylinder (03) held on the fixed part of the machine comprises a piston (01) that can perform the required linear movement, said piston comprising a mechanical interface (11) that can transmit the linear movement towards the rotating part (08) by means of an axle or a concentric master tube (07) axially sliding in the rotating part and rotating therewith. The interface performs a decoupling between the linear movement and the rotating movement, leaving the rotating movement entirely free. The invention also relates to the combination of the main hydraulic actuator with a hydropneumatic converter, the converter comprising a pneumatic cylinder (24) containing an annular pneumatic piston (20). The pneumatic piston can drive at least one pressure amplifying hydraulic cylinder (19, 25) along with its linear movement.

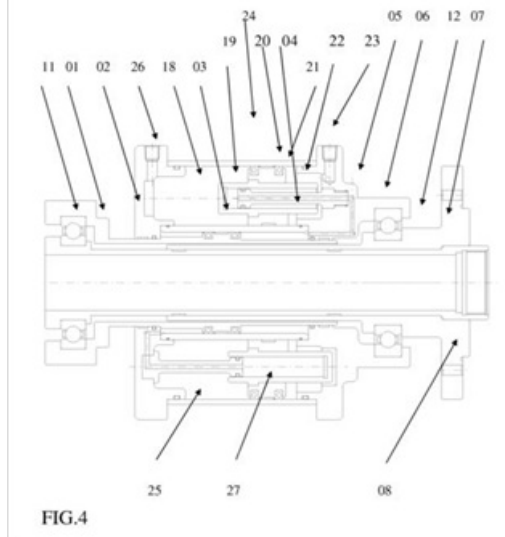
Classifications:

International (IPC 8-9): B23B31/16 B23B31/30

F15B15/06 (Advanced/Invention)

CPC: B23B31/302 F15B15/02

European: B23B31/30B F15B15/02

**Family:**

Publication number	Publication date	Application number	Application date
W010146419 A2	20101223	WO2009IB52624	20090618
W010146419 A3	20110818	WO2009IB52624	20090618

Priority:

WO2009IB52624 20090618

Probable Assignee: NEMA ERCIO MIGUEL**Assignee(s):** (std): NEMA ERCIO MIGUEL**Inventor(s):** (std): NEMA ERCIO MIGUEL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

71) Family number: 11172546 (US5816205A)

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Title: Oil supply structure in variable valve timing mechanism

Abstract: An oil supply structure for a variable valve timing mechanism that adjusts the valve timing of an exhaust valve of an engine. A exhaust side camshaft having a journal is provide for actuating the exhaust valve. A cylinder head and a bearing cap rotatably support the camshaft at its journal. A pulley is mounted on the distal end of the camshaft, and the pulley is rotatable relative to the camshaft. A belt connects the pulley to the crankshaft to transmit power from the engine to the pulley. The belt applies a force to the pulley and the camshaft. A ring gear is provided for changing the relative rotational relationship between the camshaft and the pulley. First and second chambers are defined for applying a hydraulic fluid pressure to the ring gear. First and second passages are defined in the camshaft, and the first and the second passages are connected to the first and second chambers, respectively. First and second conduits are formed in the cylinder head, and the first and second conduits are connected to the first and second passages, respectively. An oil pressure is supplied to the second chamber via the second conduit and the second passage to advance the valve timing of the exhaust valve with respect to the crankshaft. The second conduit and the second passage are connected at a position closer to the pulley than where the first conduit and the first passage are connected.

Classifications:

International (ipc 8-9): F01L1/34 F01L1/344 F01M1/06 F01M11/02 F02D13/02 (Advanced/Invention); F01L1/34 F01L1/344 F01M1/06 F01M11/02 F02D13/02 (Core/Invention)

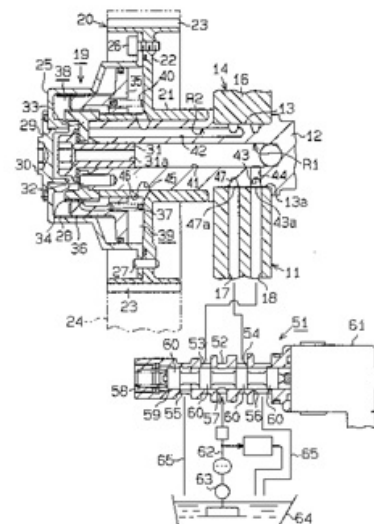
International (ipc 1-7): F01L1/34 F01L1/344 F01M1/06 F01M11/02 F02D13/02

CPC: F01L1/34406 F01L1/3442

European: F01L1/344A1 F01L1/344E R01L134/40

US: 123/90.17 123/90.31 123/90.34

Fig. 1

**Family:**

Publication number	Publication date	Application number	Application date
DE69707213 D1	20011115	DE19976007213	19970724
DE69707213 T2	20020711	DE19976007213T	19970724
EP0821139 A1	19980128	EP19970401782	19970724
EP0821139 B1	20011010	EP19970401782	19970724
JP10037722 A2	19980210	JP19960196091	19960725
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Priority:

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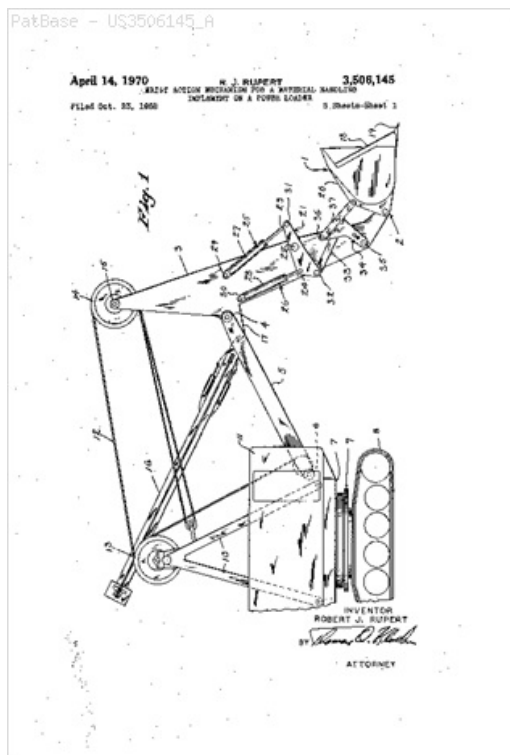
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Title: WRIST ACTION MECHANISM FOR A MATERIAL HANDLING IMPLEMENT ON A POWER LOADER**Abstract:** ABSTRACT OF THE DISCLOSURE

A quarry shovel having a boom pivoted on the front of its revolving frame with a bucket handle pivoted on the end of the boom employs the invention to wrist the bucket on the end of the bucket handle. In the wristing mechanism, a compound lever is pivoted about its fulcrum on the bucket handle by a pair of hydraulic cylinders connected between opposite sides of its fulcrum and the bucket handle. A link connects the compound lever to the bent lever mounted on the bucket handle adjacent the bucket, and the bent lever is linked to the bucket. CROSS-REFERENCE TO RELATED APPLICATIONS This is a continuation-in-part of the co-pending application of Robert J. Rupert for "A Wrist Action Mechanism for a Material Handling Implement on a Power Shovel," Ser. No. 683,174, filed on Nov. 15, 1967, now abandoned. B

Classifications:**International (IPC 8-9):** E02F3/30 E02F3/42 (Advanced/Invention)**International (IPC 1-7):** E02F3/30 E02F3/42 E02F3/62 E02F3/75**CPC:** E02F3/30 E02F3/308 E02F3/425 E02F3/427**European:** E02F3/30 E02F3/30P E02F3/42D E02F3/42M**US:** 214/138 414/694 414/713 414/715

**Family:**

Publication number	Publication date	Application number	Application date
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