

PN - [US2005150555](#) A1 20050714

PR - US20040989421
20041117; AU2002PS02382
20020517; WO2003AU00595
20030516

AP - US20040989421 20041117

DT - **

CT - || R141 (A1)
[US3244198](#) A [];
[US2987078](#) A [];
[US4029291](#) A [];
[US3280844](#) A [];
[US1436650](#) A [];
[US2335519](#) A [];
[US3292660](#) A []

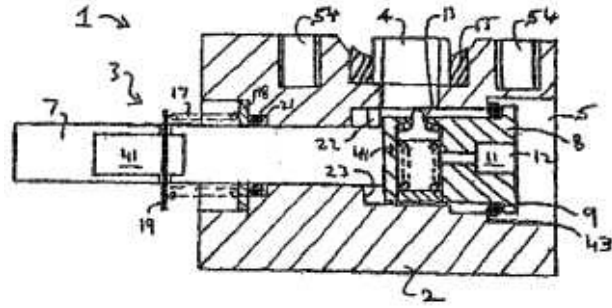
CCI - [F16K31/524](#) ; [F16K31/52408](#) ;
[F23N1/007](#) ; [F16K1/52](#) ;
[F16K3/265](#) ; [F16K31/055](#)

CCA - [F23N2035/24](#) ; [Y10T137/86936](#) ;
[Y10T137/87088](#) ;
[Y10T137/87378](#)

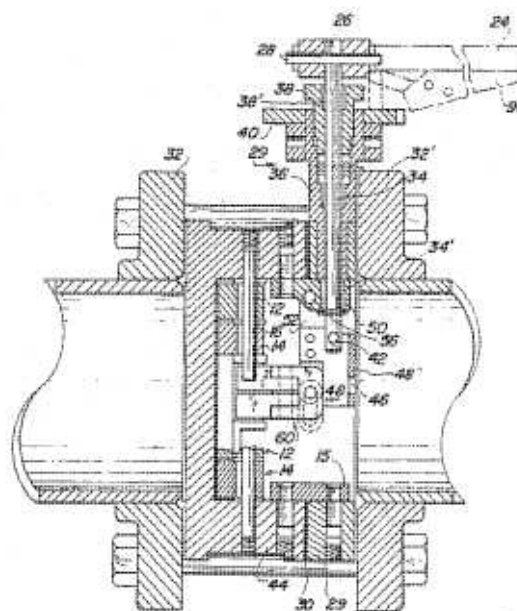
PA - ADVANCED PROD PTY [AU]

TI - Gas **control valve**

AB - The present invention provides gas **control valve** including a **valve** body having a gas inlet, a gas outlet, and a gas passage between the inlet and outlet, and including a **valve control** element for controlling the flow of gas between the inlet and the outlet. The **valve control** element includes **valve** stem have a **cam follower** in the form of a pin projecting laterally there-from, and a bead 8 at one end of the stem bearing an O-ring that is able to **seal** against an inside wall **surface** of the body to **seal** the gas outlet. The **cam follower** pin on the stem engages with a **cam surface** of the **valve** body. Rotation of the **valve control** element causes the **cam follower** pin to co-operate with the **cam surface** and displace the **valve control** element to open or close the **valve**. The present invention also provides a gas appliance having one or more gas burners and a gas **control** including at least one **control** value according to the invention.



PN	- US4658857 A 19870421
PR	- US19850778543 19850920
AP	- US19850778543 19850920
DT	- *; Rep
CT	- STSE (A) US1659880 A 19280221 [] (SAMUEL KAUFFMAN); US1887542 A 19321115 [] (CARR UHEL U); US2898080 A 19590804 [] (SMITH EDWARD M); US3070345 A 19621225 [] (LUDWIG KNECHT); US3072141 A 19630108 [] (WHEELER JR JOSEPH S); US3147768 A 19640908 [] (KENNEDY WALTER W); US3384112 A 19680521 [] (SMITH STUART B); US3533438 A 19701013 [] (SMITH STUART B); US3831628 A 19740827 [] (KINTNER E, et al); US3965921 A 19760629 [] (THURSTON DAVID L); US4005732 A 19770201 [] (BUCKNER SPENCER P); US4076035 A 19780228 [] (FRISCH PAUL P); US4377181 A 19830322 [] (CHAN JOHN C H); US4570900 A 19860218 [] (LONARDI EMILE [LU], et al); DE2604432 A1 19770811 [] (HEEDE KONRAD DIPL ING)
CCI	- F16K1/223
CCA	- Y10T137/87483
PA	- SURGEACO INC [US]
TI	- Control valve with split disc
AB	- A control valve utilizing the conventional dual wafer check valve , which check valve has a pair of semicircular plates pivotally mounted about a pivot rod at the adjacent straight edge surfaces thereof. The plates are mounted by hinge brackets that allow initial translational movement of the pivoted edges of the plates before the rotation about the pivot shaft, so as to provide a clearance between the seal and plates at the pivoted edges. A control mechanism simultaneously and continuously controls the rotation of the wafer plates so that each plate rotates in



opposite directions but the same arcuate distance. The **control** mechanism has a pair of levers with one lever pivoted to the rear **surface** of one of the plates, while their other ends are pivoted together at one end of a linear translational clevis member. The other end of the clevis member is connected to a pivotal **cam follower** via a lost-motion connection to convert rotary motion to translational motion. A handle and drive shaft accessible from outside of the **valve** body is provided to rotate the **cam follower**.

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PN - [US5730428](#) A 19980324

PR - DE1995104296 19950209

AP - US19960598493 19960208

DT - **

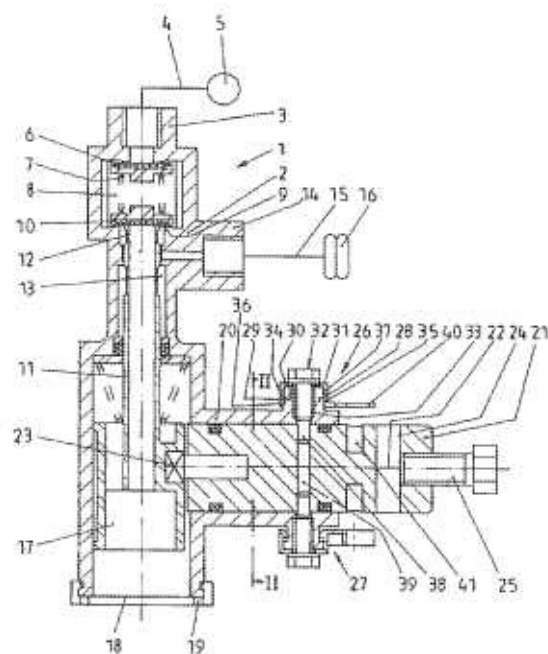
CT - [US5176404](#) A []; [DE1966636](#) A1 [];
[DE2920507](#) A1 []; [DE2920465](#) A1 [];
[DE4305500](#) A1 []

CCI - [B60G17/0525](#)

PA - GRAU GMBH [DE]

TI - Leveling **valve** having a precision adjustment device

AB - A leveling **valve**, having a precision adjustment device, for use with the suspension system of a motor vehicle. The leveling **valve** includes a **valve** housing and an inlet-outlet **valve** positioned within the **valve** housing for directing pressurized fluid from a fluid reservoir through the **valve** housing to a fluid suspension bellows, the inlet-outlet **valve** being moveable from an open position into a closed position. An elongated **control** rod is positioned within the **valve** housing and **sealed** therein, one of the ends of the **control** rod being connected to the inlet-outlet **valve**, and the other of the ends of the **control** rod having a **cam follower** formed as a part thereof. The precision adjustment device includes a housing branch formed as a part of the **valve** housing, in which an



elongated shaft formed about an axis and extending radially away from the **control** rod to outside of the housing branch is fitted. One of the ends of the elongated shaft is received within the **cam follower** of the **control** rod, and the other of the ends of the shaft extends outside of the housing branch. At least one arcuate **surface** is formed on the exterior of the **valve** housing branch on which at least one forked adjustment lever is received for holding the elongated shaft in fixed position as a separately provided **control** lever is attached thereto. The adjustment lever has a cooperating **surface** which is constructed and arranged in an arcuate configuration to be received on the arcuate **surface** formed on the exterior of the housing branch, and is fastened to the housing branch by a threaded fastener passed through an elongated slot formed in the adjustment lever.

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PN - [US4557288](#) A 19851210

PR - US19820408448
19820816; US19810286949
19810727

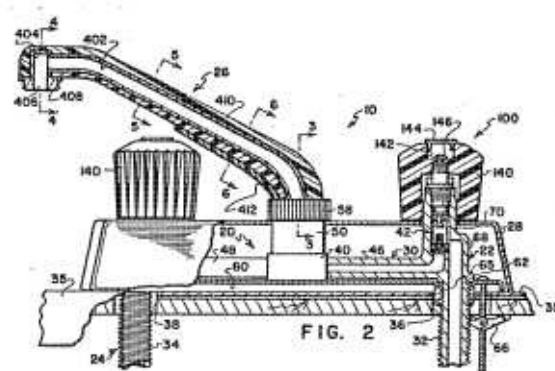
AP - US19820408448 19820816

DT - **

CT - || STSE (A)
[US285953](#) A 18831002 [];
[US362326](#) A 18870503 [];
[US490227](#) A 18930117 [];
[US1503132](#) A 19240729 [] (JOHN T FREDRICKS, et al);
[US1879320](#) A 19320927 [] (KLETT HENRY G);
[US2658716](#) A 19531110 [] (WINFREE ROBERT N);
[US3377048](#) A 19680409 [] (GRUBER STEPHEN A);
[US3941152](#) A 19760302 [] (BOTNICK IRLIN H);
[FR1210334](#) A 19600308 [] (LAFON DANIEL-GUSTAVE-THEOD, et al)

CCI - [E03C1/0401](#) ; [E03C1/0402](#) ;
[F16K27/02](#)

CCA - [Y10T137/6103](#) ; [Y10T137/7613](#) ;
[Y10T137/7668](#) ; [Y10T137/6017](#)



- PA - JOSAM DEVELOPMENTS INC [US]
- TI - Closure-assisted cartridge-type flow **control valve**
- AB - A closure-assisted **valve** includes a cartridge insertable into, and removable from, the remainder of the **valve** structure. The cartridge includes a displaceable piston having an elastomeric **sealing** member at one end engageable with a flat-surfaced **valve** seat. At the other end, the piston includes a drive **surface** against which a rotatable drive member is engaged. In a preferred embodiment, certain relatively movable portions of the cartridge include a **cam surface** and a **cam follower**. The **cam surface** is contoured such that the piston is advanced toward a **valve** closed position upon rotation of the drive member, but the last portion of piston travel prior to **valve** closure is only under the influence of gravity and fluid forces. In order to bias the piston toward a **valve** closed position, entering fluid is directed around the piston so as to aspirate the piston toward a closed position. Upwardly extending channels divert a portion of the incoming fluid upwardly around the piston and thereafter downwardly against a face of the piston spaced from the **valve** seat. The pressure of the fluid against the face assists in constantly urging the piston toward a **valve** closed position. Other embodiments of the cartridge are disclosed, as well as a technique for manufacturing a spout included as part of a faucet assembly and a technique for attaching the faucet assembly to a mounting **surface**.

PN - [US2006130906](#) A1 20060622

PNFP - US7287551 B2 20071030

PR - US20060354157
20060215; AU2002PS02382
20020517; US20040989421
20041117; WO2003AU00595
20030516

AP - US20060354157 20060215

DT - **

CT - || STSE (B2)
[US4640678](#) A 19870203 [
] (FRAIOLI JOSEPH)
[US5011043](#) A 19910430 [
] (COCA COLA CO [US])
[US5241463](#) A 19930831 [
] (WHITE CONSOLIDATED IND INC
[US])
[US6443135](#) B1 20020903 [
] (PIERBURG AG [DE])
[US6534793](#) B1 20030318 [
] (SAGEM [FR])

- || R141 (A1)
[US4640678](#) A [];
[US6534793](#) B1 [];
[US3244198](#) A [];
[US5011043](#) A [];
[US2987078](#) A [];
[US4029291](#) A [];
[US5241463](#) A [];
[US6443135](#) B1 [];
[US3280844](#) A [];
[US1436650](#) A [];
[US2335519](#) A [];
[US3292660](#) A []

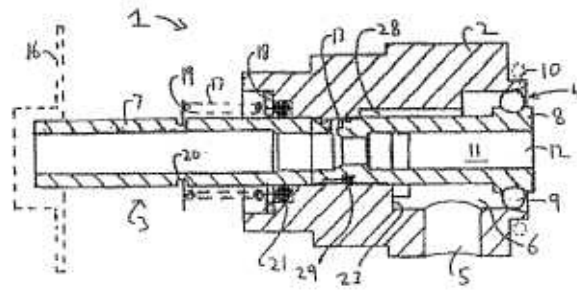
CCI - [F16K31/524](#) ; [F16K31/52408](#) ;
[F23N1/007](#) ; [F16K1/52](#) ;
[F16K3/265](#) ; [F16K31/055](#)

CCA - [F23N2035/24](#) ; [Y10T137/86936](#) ;
[Y10T137/87088](#) ;
[Y10T137/87378](#)

PA - (A1 B2)
ADVANCED PROD PTY [AU]

TI - (A1 B2)
Gas **control valve**

AB - (A1 B2)
The present invention provides
gas **control valve** including
a **valve** body having a gas inlet, a
gas outlet, and a gas passage
between the inlet and outlet, and
including a **valve control** element
for controlling the flow of gas
between the inlet and the outlet.
The **valve control** element
includes **valve** stem have a **cam**
follower in the form of a pin
projecting laterally there-from,
and a bead 8 at one end of the



stem bearing an O-ring that is able to **seal** against an inside wall **surface** of the body to **seal** the gas outlet. The **cam follower** pin on the stem engages with a **cam surface** of the **valve** body. Rotation of the **valve control** element causes the **cam follower** pin to co-operate with the **cam surface** and displace the **valve control** element to open or close the **valve**. The present invention also provides a gas appliance having one or more gas burners and a gas **control** including at least one **control** valve according to the invention.

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PN - [JPH01164873](#) A 19890628
 PR - US19870124322 19871123
 AP - JP19880292547 19881121
 DT - I
 CCI - [F16K31/528](#) ; [F16K31/105](#)
 FI - F16K31/06&305L; F16K31/06&325; F16K31/528; F16K5/02&G
 FT - 3H054/AA01; 3H054/BB18; 3H054/BB21; 3H054/BB30; 3H054/CA15; 3H054/CC10; 3H054/EE01; 3H054/EE05; 3H054/GG01; 3H054/GG07; 3H063/AA06; 3H063/BB07; 3H063/BB13; 3H063/BB39; 3H063/DA14; 3H063/DB15; 3H063/DC02; 3H063/EE13; 3H106/DA07; 3H106/DA22; 3H106/DB02; 3H106/DB14; 3H106/DB23; 3H106/DB32; 3H106/DC13; 3H106/DC17; 3H106/DD14; 3H106/DD18; 3H106/EE41; 3H106/FA08; 3H106/GB01; 3H106/GB06; 3H106/JJ04; 3H106/JJ08; 3H106/KK31
 PA - WESTINGHOUSE ELECTRIC CORP
 TI - **SEALING VALVE**
 AB - PURPOSE: To realize remotely controllable and ensured **sealing** by connecting an actuator driven axially by a solenoid to a plug, engaging a **cam** formed on a side **surface** of the plug with the **cam follower** arranged in a housing, and rotating the plug with the driving force of the actuator. CONSTITUTION: A plug 22 having a through hole 24 is accommodated in a housing 12 having an inlet 14 and an outlet 16. The plug 22 is connected to an actuator 26 driven axially by a solenoid 32. A **cam** 28 is formed by a groove 74 on the side **surface** of the plug 22. The **cam** 28 is engaged with a **cam follower** 30 arranged in the housing. When the solenoid 32 is energized, the actuator 26 is driven axially, however as the **cam** 28 is engaged with the **cam follower** 30, the plug 22 is driven axially and rotated simultaneously. In this way, it is possible to **control** the **valve** remotely and **seal** it in an ensured way.

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PN - [GB2157403](#) A 19851023

PR - US19820408448 19820816

AP - GB19850012680 19850520

DT - **

CT - || STSE (A)
[GB1227337](#) A 19710407 [];
[US4220175](#) A 19800902 [] (FOX BRIAN G [CA], et al);
[US3952764](#) A 19760427 [] (KELLER III ROBERT J);
[US3536432](#) A 19701027 [] (GRUBER STEPHEN A)

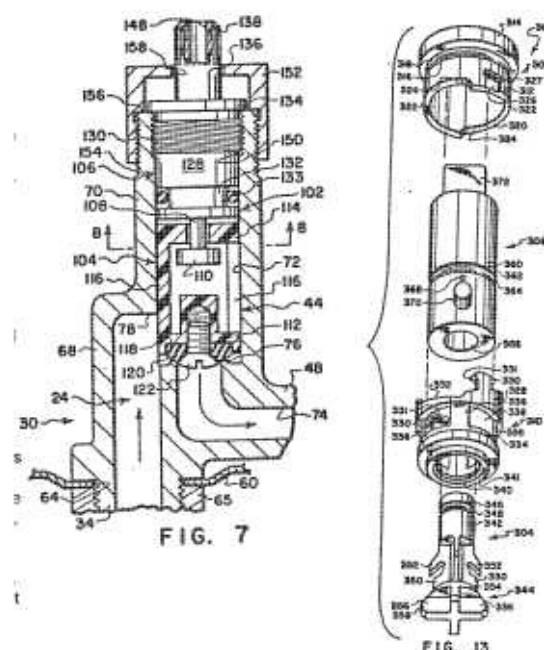
CCI - [E03C1/0401](#) ; [E03C1/0402](#) ;
[F16K27/02](#)

CCA - [Y10T137/6103](#) ; [Y10T137/7613](#) ;
[Y10T137/7668](#) ; [Y10T137/6017](#)

PA - JOSAM DEVELOPMENTS INC

TI - Closure-assisted cartridge- type flow **control valve**

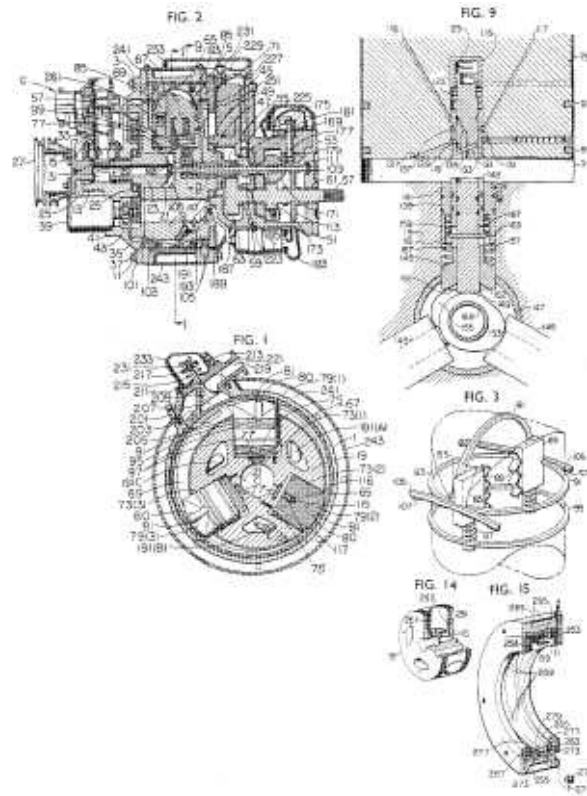
AB - A closure-assisted **valve** includes a cartridge insertable into, and removable from, the remainder of the **valve** structure. The cartridge includes a displaceable piston 104, 204 having a **sealing member** 120, 344, at one end engageable with a **valve seat** 249, 341. At the other end, the piston includes a drive **surface** against which a rotatable drive member is engaged. In a preferred embodiment, certain relatively movable portions of the cartridge include a **cam surface** and a **cam follower**. The **cam surface** is contoured such that the piston is advanced toward a **valve** closed position upon rotation of the drive member, but the last portion of piston travel prior to **valve** closure is only under the influence of gravity and fluid forces. In order to bias the piston toward a **valve** closed piston, entering fluid may be directed around the piston so as to aspirate the piston toward a closed position. Upwardly extending channels divert a portion of the incoming fluid upwardly around the piston and thereafter downwardly against a face of the piston spaced from the **valve seat**. The pressure of the fluid against the face assists in constantly urging the piston toward a **valve** closed position.



<IMAGE>

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PN - [GB1390774](#) A 19750416
PR - GB19720050841 19721103
AP - GB19720050841 19721103
DT - *
CCI - [F01C1/3442](#) ; [F01C19/00](#) ;
[F02B53/04](#)
CCA - [Y02T10/17](#)
PA - HCS TURBINE CO
TI - ROTARY POSITIVE DISPLACEMENT
MACHINE
AB - 1390774 Rotary positive-
displacement machine H C S
TURBINE CO 3 Nov 1972
50841/72 Heading F I F A rotary
positive-displacement machine
such as a rotary internal
combustion engine comprises a
stator 1 within which is mounted
eccentrically a rotor 19 having
piston vanes 79(1), 79(2), 79(3)
radially slidable in cavities 73,
the gas/fuel mixture being
injected into the working
chambers between pistons 79
via the inner end of the piston
cavities and passages in the
pistons. A carburetter C supplies
the mixture via passage 29 in the
rotor hub 23 and one way valves
77 in radial passages 75 to the
bottom of the piston cavities
when the pistons are moving
outwardly of the cavities. When
the piston 79 begins to be
pushed back into its cavity the
mixture is trapped by the closing
of **valve** 77 and it is compressed
by the piston while being
selectively transferred to either
the forward side or trailing side
of the respective piston under
the **control** of **valve** means in the
rotor and piston, Fig. 9. The **valve**
means comprises a sleeve 119
mounted slidably in bore 115 in
rotor 19 and a spool 121
slidably mounted in sleeve 119.
Spool 121 has a transversely
inclined passage 133 which is
angled to connect ports 129, 131
in sleeve 119 when moved
relative thereto. In the position
of Fig 9 ports 129, 131
communicate with a passage
127 in piston 79 which leads to



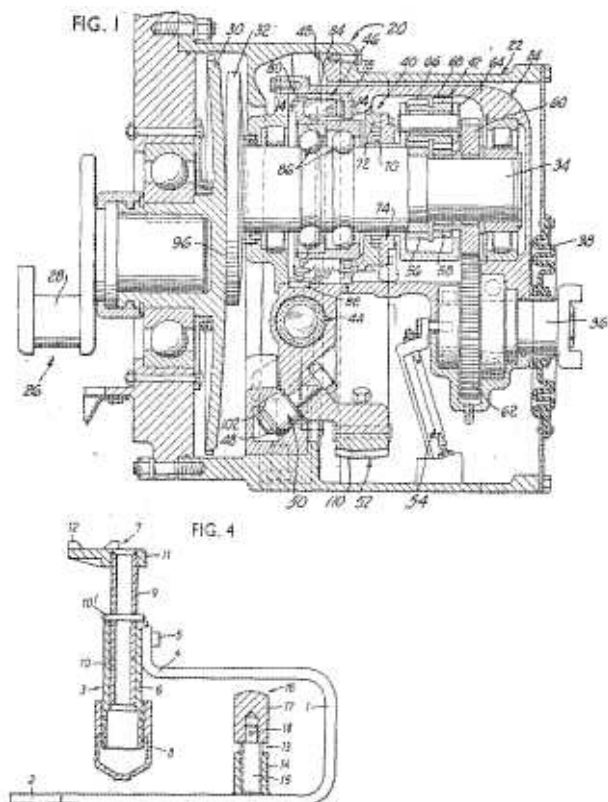
the base of chamber 73 and a passage 117 leading through the piston to the forward side thereof. A further passage 135 in spool 121 communicates the base of chamber 73 to passage 116 leading through piston 79 to the rear side thereof when sleeve 119 is moved into the bore 115 relative to spool 121. A sleeve 141 and tappet 149 in the rotor at the base of cavity 73 can be thrust into cavity 73 to engage sleeve 119 and spool 121 to provide movement of one or the other and thus selectively transmit fuel/gas mixture to the front or rear of piston 79. A **cam** shaft 169 extends rotatably the rotor 19, being coupled by gearing 171, 173 to output shaft 57 such that one revolution of shaft 57 produces half a revolution of shaft 169. Attached to shaft 169 is a central **cam** portion 153 for engaging tappet 149 and **cam** portions 155 on either side thereof which are 180 degrees out of phase with portion 153 and are for engaging sleeve 141. Each of the tappets 149 and sleeves 141 is thus thrust into cavity 73 once during two revolutions of rotor 19 and it is alleged that this sequentially injects the mixture into the working chambers between the pistons such that a fully compressed mixture is obtained in front of each piston just as it passes the tangent point of the rotor and stator. IGNITION Ignition is produced by glow plugs 191 in the rotor just in front of each piston, a contact 193 from each plug being flush with the axial end of the rotor for wiping engagement with a contact 189 in the adjacent stator wall just in front of the tangent point. Ignition is controlled by a **cam** 175 geared to **cam** shaft 169 by level gears 177, 179 the **cam** 175 being connected to coil 185 and contact 187. EXHAUST:- An exhaust unit 201 is removably fixed to stator 1 and includes a poppet-type **valve** 211 which is operated by a **cam**-controlled

lever 229. A **follower** 225 is reciprocated by **cam surface** 223 on shaft 169 to oscillate lever 229 via rod 227. The end 231 of lever 229 remote from rod 227 periodically pushes down **valve** 211 against spring 215 to permit exhaust. OPERATION:- Liquid is drawn into the bottom of the pistons and then admitted to the chambers as described, admission of liquid to any one chamber being terminated just as the trailing piston bounding the chamber reaches the tangent point. Just after termination of fuel/gas mixture supply, the compressed mixture is ignited and the power stroke commences and continues until the lead piston passes the exhaust port 205 of unit 201. The products of combustion are then expelled through exhaust 219, **valve** 211 being arranged to be opened at this time. As this exhaust phase finishes the next but one chamber in the direction of rotation is beginning its induction phase. Thus two revolutions of the rotor produce a complete cycle once in each of the three chambers as more fully described with reference to Figs. 22 (A-R) (not shown). **SEALING OF PISTONS:-** Each piston 79, Fig.3, has a crown portion divided by a **sealing** half-ring 81 which **sealingly** engages concave inner **surface** 67 of stator 1. Two rings **seals** 91, 95 **seal** the piston with respect to its cavity. Rectangular **sealing** blocks 85 are urged axially and radially outwardly of slots 83 by springs 89, 87 respectively. Blocks 85 are thus urged against cylindrical peripheral surfaces of stator 1 which blank concave **surface** 67 and are also urged against axial end-surfaces of inwardly extending flanges 69, 71. A pair of **seals** 105 at each axial end of the rotor periphery engage the inner rims of flanges 69, 71, the inner **seal** 105 being tangent to the piston cavities so that the blocks 85 **sealingly** engage the inner **seals** 105. LUBRICATION:-- An axial passage

110, Fig. 14, for lubricant has radial passages 251 branched therefrom in the rotor 19, each said passage terminating at the rotor periphery between one axial end pair of **seals** 105 and being located between a piston cavity 73 and the adjacent axial end of the rotor 19. A short axial conduit 252 leads into cavity 73. A passage 253 in stator flange 71 communicates with passage 251, a piston communicates via axial passage 255 with radial passage 254 in flange 69 which leads lubricant to a radial passage 261 in the other side of rotor 19, passage 261 terminating in the opposite side of cavity 73. Lubricant pockets 263, 265, 267 connect passage 255 to the inner **surface** of stator 1. Each pocket has a one way **valve** 271 and an absorbent oil gland 273 capable of accumulating in its pores, oil fed from passage 255, gland 273 feed such accumulated oil to the inner **surface** of stator 1. PUMP ASPECT:- The machine can be modified for use as a pump in which the pumped fluid is admitted in the same manner as the gas/fuel mixture.

9/21 © EPODOC / EPO

- PN - [GB1132473](#) A 19681106
- PR - GB19650048456 19651115
- AP - GB19650048456 19651115
- DT - *
- CCI - [F16H15/28](#) ; [F16H61/6648](#)
- PA - JAMES ROBERT YOUNG
- TI - Variable ratio friction transmission and **control** system therefor
- AB - 1,132,473. Variable-speed friction gear and **control**; gearing for stopping and starting machinery. J. R. YOUNG. 15 Nov., 1965, No. 48456/65. Headings F2D and F2L. in a continuously variable friction gear, particularly for an automotive vehicle, driving and driven discs 30, 32, respectively rotatable about the axis of, and secured to, shafts 28, 34, have mutually facing surfaces frictionally



engageable with substantially point contact 96, and the distances from the centres of the disc surfaces to the contact point are both variable throughout ranges at least equal to major portions of the respective radii of the discs.

Gear arrangement. - The driving disc 30, serving as the flywheel of a driving engine 26 and preferably provided with starter teeth, has a spherical engagement **surface** of large radius. The engagement of **surface** of the driven disc 30 may be plane as shown, or, where the relative angularity of the shafts 28, 34 is maintained nearly or exactly constant, may comprise a central plane portion surrounded by an

annular **surface** revolution generated by an arc (Fig. 15, not shown). The discs 30, 32 are preferably metallic and their engagement surfaces are unyielding, being metallic or ceramic. The shafts 28, 34 are respectively rotatably mounted in an outer housing 22 and an inner housing 24 movably mounted therein. Below and parallel to the shaft 34 an output shaft 36 is rotatably mounted in the inner housing 24 and projects rearwardly from the outer housing 22 through a flexible **seal** 38 between the two housings. The output shaft 36 is connected to the rear road wheels through a universal joint, a telescopic propeller shaft and the usual differential, and is located where relative movement of the two housings axially of the output shaft 36 is at a minimum.

An engageable and disengageable driving connection between the shafts 34, 36 comprises stepped planets 66, 68 respectively meshing a sun 56 fast with the shaft 34 and a sun 58 geared at 60, 62 (if required, through an idler) to the output shaft 36. The steps of each planet have only slightly different pitch diameters and either one may be the larger. The planet carrier 64 drives an

eccentric gear pump 40, the output of which is (1) progressively throttled to restrain the carrier and thereby provide a drive to the output shaft, and (2) provides an output torque responsive fluid pressure used for a disc traction pressure loading as described below. To provide for torque reversals, the pump is provided with suitable check valves. The disc traction pressure or loading means comprises tiltable **cam** members 84 between races 78, 80 urged together by springs 82 and respectively fixed to the inner housing 24 and acting axially on the shaft 34 through ball-bearings 86. The race 80 has teeth meshing a rack 88 which is moved to rotate, and hence axially move, the race 80, and load the discs, by fluid pressure acting on a Loader Actuator 44 connected to the rack. The inner housing 24 may be so moved as to move the disc contact point 96 through Reduced Reverse range and Reduced, Direct and Overdrive Forward range positions. For Reverse range the contact point 96 is between the centres of the driving and driven disc centres whilst for Forward range the **surface** centres are on the same side of the contact point, the latter lying substantially on a line extending through said centres. Between the Forward and Reverse ranges there is a non-driving position which is referred to as the "Re-Zero" range, and in this position, in the immediate vicinity of the centre of the driving disc, the discs are disengaged, as described below, to prevent overheating. For guidance in its movement, the inner housing 24 has three **follower** rollers 50 engaging three track grooves 48. The inner housing 24 is movable for ratio change by a gear (112) meshing teeth 110 on said housing. The Specification includes details (Fig. 9, not shown) of means by which the track grooves 48 and the teeth 110 may be cutter-generated to

meet the desired relationship of the distances from the disc **surface** centres to the point of contact throughout the movement of the inner housing. A power take-off 54 comprising a telescopic shaft and universal joints connects the output shaft 36 to the exterior of the outer housing and may drive a combined speedometer and odometer and an output pump 190 for the **control** system described below. Whilst the inner housing 24 and the **control** system both use the same fluid having good lubricating qualities, the space between the inner and outer housings contains a low lubricity coolant fluid to achieve a high coefficient of friction between the discs. **CONTROL.** Summary of main functions.-The **control** of the gear is combined with that of the engine carburettor throttle (210) so as to adjust the gear ratio so as to permit the engine to be operated at the most economical speed at which it will develop the power desired by the operator and is also combined with that of the conventional hydraulic braking system (338) so as to downshift the gear at such a rate as to produce a vehicle retarding effect in proportion to the rate the operator desires to resist the vehicle motion. Between zero output power and a fraction of the engine maximum power output, the engine speed increases somewhat above its idling speed depending upon the specific engine design while the throttle changes from the minimum opening to full opening. Between the above-mentioned fraction of maximum power and the maximum power, the throttle opening remains at its full position while the power developed increases in proportion to engine speed. The throttle opening is automatically reduced when engine speed exceeds a limit. Means are provided for engine starting by pushing or towing the vehicle or

by permitting down-hill vehicle motion. Until the engine commences normal power development a vehicle **control** pedal (260) may influence the gear ratio to modify starting. In the changeover from Forward to Reverse range and vice versa the discs are automatically separated in the "Rezero" range. Other functions are mentioned below in connection with the **control** system components. Operator's **control** inputs include:-The vehicle **control** pedal (260) actuating a Power Selector **Cam** (264) and, through a Linkage Telescoper (258), the Carburettor Throttle (210); the pedal being fully released for Deceleration and depressed slightly to a point offering a sharp increase in resistance to pedal movement to commence its Drive movement the first part of which opens up the Throttle; a Neutral- Forward-Reverse Drive Selector Lever (186); an Electrical Starter Switch; a Brake Pedal for the conventional hydraulic braking system (338); and a Push Start Lever (398). **Control** system components: Engine Driven Pump (160): piston, gear, vane or roller, positive, fixed displacement pump driven in direct proportion to engine speed. Output Driven Pump (190): positive, fixed displacement pump driven by the power takeoff 54. Engine-Speed-Variable Orifice (162): provides a pressure drop increasing with flow but at a rate less than that with a fixed orifice, and on excessive engine speed directs flow to an Engine Throttle Decreaser (164). Vehicle-Speed-Variable Orifice (394): pressure drop as orifice 162, and on excessive vehicle speed directs flow to the Engine Throttle Decreaser (164). Shift-Lock-and-Starter Interrupter (176): responsive to both engine and output speed pressures to lock the Drive Selector Lever (186) and break the starter circuit. To allow shifting at higher speeds when the temperature is

unusually low, an engine temperature responsive mechanism may be included.

Slip Pump Throttle (192): responsive to engine speed pressure to **control** Slip Pump flow, the Throttle gradually closing to establish drive through the gear on increase in engine speed, and to a signal from a Push Start Shift-up switch **valve** (202). Excess Torque Switch **Valve** (204): responsive to Slip Pump pressure to direct the latter to the Engine Throttle Decreaser (164). Engine Throttle Decreaser (164): reduces engine power to protect against excessive engine speed, vehicle speed and torque, and damps throttle movement. Neutral Switch Pressure Regulator (220): spring-biased to regulate engine speed pressure for supply to a Drive-Decelerate Switch **Valve** (226), and shifted in Neutral by the Drive Selector Lever (186) to exhaust both the engine pump flow and a traction pressure Pre-Load line (320). Position - Proportional Pressure Generator (240): in forward drive modifies Slip Pump pressure as a function of the contact radius of the driven disc 32 by shifting a helically grooved piston as a function of the position of the inner housing 24; in Reverse drive provides unmodified Slip Pump pressure. Loader Pressure Regulator (254): regulates Slip Pump pressure in response to pressure from the Position-Proportional Pressure Generator (240) for supply to the Loader Actuator 44, and blocks Slip Pump pressure and exhausts said supply to the Loader Actuator in Neutral. Loader Actuator 44: a double piston means responsive to both the Pre-Load pressure in the line (320) for initial disc driving contact for minimum tractive effort, and to pressure from the Loader Pressure Regulator (254) for torque responsive traction pressure. Drive-Decelerate Switch **Valve** (226): responsive to the position of the Power

Selector **Cam** (264) to switch pressure from the regulator (220) between (a) a Deceleration-Downshift-Rate selector (312) and, through a check **valve** 314, the Pre-Load side of the Loader Actuator 44, and (b) a Ratio Change Determiner (316) and said Pre-Load side. In the "Re-zero" range, pressure in an override line from a Ratio Range Switch **Valve** (304) blocks flow from the regulator (220) and Pre-Load pressure is exhausted. Power Selector **Cam** (264): provides a mechanical position signal, as a function of the engine power desired, to the Ratio Change Determiner (316) and

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PN - [GB1358198](#) A 19740626
 PR - US19700070125 19700908
 AP - GB19710041946 19710908
 DT - **
 CCI - [B67C3/16](#) ; [B67C3/2614](#)
 PA - ATO INC
 TI - CONTAINER FILLING MACHINE
 AB - 1358198 Suction filling machines A T O Inc 8 Sept 1971 [8 Sept 1970] 41946/71 Heading B8T A filling head for a vacuum bottle filling machine consists of a **sealing** assembly, Fig. 12 (not shown), to provide air-tight contact between the filling head and bottle, a bottle centring assembly, Fig. 17 (not shown), and an elongate filling nozzle assembly, Fig. 5 (not shown). The filling nozzle may be provided with a sleeve **valve**, Fig. 26 (not shown), the **sealing** and centring assemblies and the sleeve **valve** being movable relative to the nozzle, and the **sealing** assembly having a leak-tight contact with the filling nozzle so that the mozzle height may be varied without breaking the vacuum **seal**. Where a sleeve **valve** is provided, a **cam** M2 Fig. 36, permits **cam follower** roller 58 of the nozzle assembly, Fig. 5 (not shown), to move along **surface** 208 from station I to II, the nozzle assembly

FIG. 23

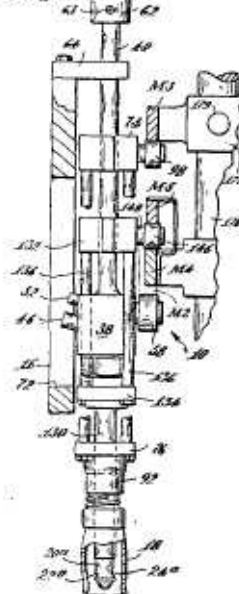
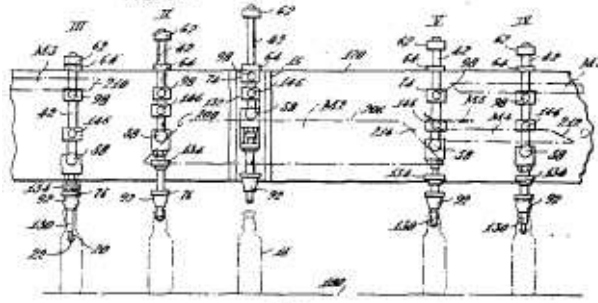


FIG. 36

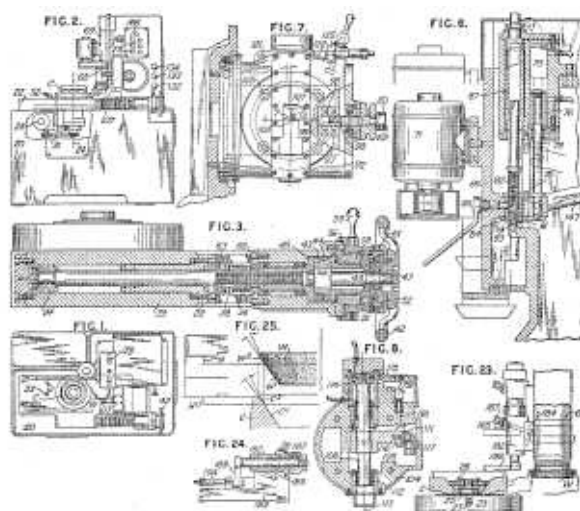


bringing down the **sealing** assembly with it until member 92, Fig. 23, is in contact with the bottle top, the filling tube 20a being passed through the member 92 until the collar 62 of the nozzle assembly contacts bracket plate 64. The sleeve **valve** assembly moves down with the nozzle until the lower member 134 contacts the lower member 76 of the **sealing** assembly. Further downward movement of the filling tube 20a opens ports 22a and 24a. During filling, the **sealing** element 92 is maintained in contact with the bottle by roller 98 and **cam** M3. After a predetermined liquid level is obtained, **cam** 146 of the sleeve **valve** assembly contacts **cam** M4 lifting lower member 134 and the nozzle assembly to a new height, the ports 22a and 24a remaining open. On completion of the filling the ports are closed by raising the nozzle assembly by moving rollers 58 along **surface** 214 of **cam** M2, but holding the sleeve **valve** assembly by **cam** M5. On closure of the ports, roller 146 is freed and the nozzle, **seal** and **valve** are raised to their inoperative position. The **cam control** may be replaced by a friction **control**, the **sealing** assembly being connected to the stem 42 of the nozzle assembly by a screw and jaw arrangement, Fig. 15 (not shown), and the sleeve **valve** modified, Fig. 29 (not shown). The **sealing** member 92, Fig. 25 (not shown), is held in contact with the bottle top by the downward movement of the nozzle under the influence of a weight (116). On raising the nozzle to a predetermined height, the **seal** is held in contact with the bottle by the **valve** sleeve member (152) which is held down by **cam** (M7), Fig. 37 (not shown). The centring and sleeve **valve** are optional and the heads are located on a turret (170), Fig. 34 (not shown), arranged close to a bottle conveyer, the heads being mounted on hangers (16), Fig. 10

(not shown), within a frame (178), Fig. 33 (not shown). A nozzle having an eccentric air tube (28a), Fig. 31 (not shown), may be provided, the tip of which has a groove (226) for an O-ring (228) which forms a leak-tight seal with the lower edge of the sleeve valve (130).

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- PN - [GB819622](#) A 19590909
- PR - USX819622 19561206
- AP - GB19570037730 19571204
- DT - *
- CCI - [B24B3/021](#)
- PA - GLEASON WORKS
- TI - Improvements relating to grinders for truing gear cutters
- AB - 819,622. Grinding; truing grinding wheels. GLEASON WORKS. Dec. 4, 1957 [Dec. 6, 1956], No. 37730/57. Class 60. [Also in Group XXXVII] A machine for trueing gear cutters C, Figs. 1 and 2, particularly those having angular side profiles, comprises a cutter slide 22 on a frame 20, a grinding wheel W on a slide 69 movable rectilinearly on the frame in the direction of the wheel axis 68 between a first stop 78, 79, Fig. 6, which is fixed and determines the wheel dressing position, and a second stop 81, 83, which determines the grinding position and is adjustable in the direction of the wheel axis to enable the profile dressed on the wheel to be brought into coincidence with the side cutting profile of the cutter, and a profile dresser for the wheel on a slide 92, Fig. 7, rectilinearly adjustable in a direction perpendicular to the wheel axis 68, the dresser being angularly adjustable on the slide 92 about a dresser adjustment axis 103 which is perpendicular to the wheel axis and the direction of adjustment of the dresser slide. The dresser has a tool T, which is preferably diamond-tipped, carried on an L-shaped arm 107 secured to a piston rod 108, Fig. 8, which is axially movable in balls 112 in a



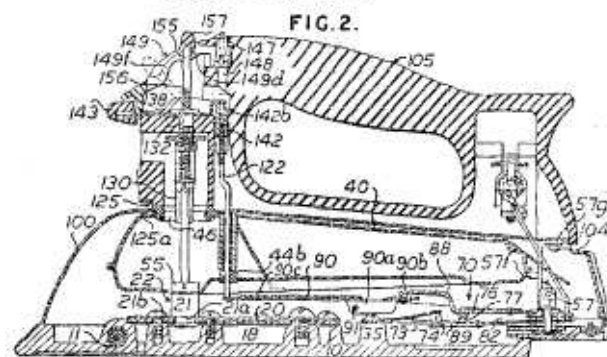
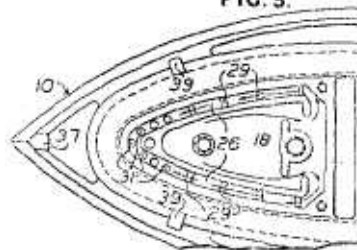
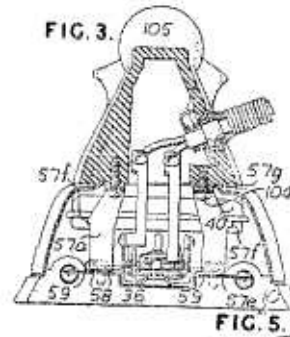
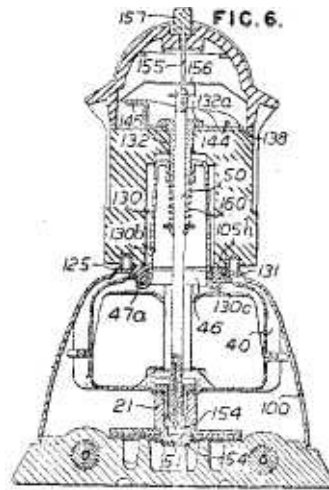
housing 104 by means of a hydraulic piston- and-cylinder device 114, 115 and rockable about its axis 113 under the **control** of a **cam** 117 and **follower** 111 urged into contact by a spring 116. The dresser is angularly adjustable about the axis 103 to a position wherein the axis 113 of the piston rod corresponds with the pressure angle of the cutter, which position can be determined by a pin 121 on the dresser housing engaging a gauge piece 122 disposed on a V-way on the slide 92 and co-operating with a removably-secured micrometer 126; the dresser is clamped in its adjusted position by screws 105. The dresser can be adjusted in a direction perpendicular to the axis 68 of the wheel and the axis 103 to bring the tool T into engagement with the grinding wheel, when the latter is in its upper position determined by the stops 78, 79, by a hand-operated screw 96 which is axially-secured to the frame of the machine and co-operates with a nut 97 secured to the dresser slide. The end 98 of the screw 96 is slotted and receives a tapered screw 99 which is axially movable by rotation of a knob 101 to expand the end of the screw and thus lock the slide in its adjusted position. During the first part of the upward, dressing movement of the tool T caused by fluid entering the lower part of the cylinder 115, the **cam** prevents rotation of the piston rod 108 so that the tool dresses the straight portion W<SP>1</SP>, Fig. 25, on the wheel, which afterwards grinds the portion C<SP>1</SP> on the cutter C, until the tool reaches the height of the dresser adjustment axis 103, after which the **cam** imparts a rotational movement to the rod 108 and arm 107 to cause the tool to dress the portion W<SP>2</SP> on the wheel which will afterwards grind the portion C2 on the cutter ; a **valve** in the

hydraulic circuit permits a quick return of the tool to its lower reset position. The slide 69, Fig. 6, carrying the grinding wheel W, which is belt-driven from a motor 71, is vertically movable from its upper position, defined by the stop 78, 79, to its lower position, defined by the stop 81, 83, under the **control** of a piston-and-cylinder device 75, 76. The lower stop 81, 83 can be set by a gauge 189, Fig. 23, removably secured to a pad 184 on a slide 69 of the wheel by an eccentric 187 and T-bolt 185 ; the gauge is axially adjustable relative to its housing 182 and can be set by a micrometer 194, Fig. 24, on a block 183 so that when the gauge is clamped to the wheel slide, its distance H, Fig. 25, from the junction between the **surface** W<SP>1</SP>, W2 on the wheel, which coincides with the dresser adjustment axis 103, is equal to the distance H<SP>1</SP> required between the tips of the cutter blades and the junction between the surfaces C<SP>1</SP>, C2 on the cutter. The stop 81, Fig. 6, is axially adjustable by means of a screw 82, which may be rotated by a wrench applied to the end of a rod 87, in a nut 84 until the gauge contacts the tips of the cutter blades, the screw then being secured in its adjusted position by a handoperated clamp 85 and the gauge removed from the slide. The cutter is clamped to a face plate 23, Fig. 23, by means of a disc 26, centre 25 and bolt 27 and rotated about its axis 24 by a motor 28, Fig. 2, and belt-drive 31. The motor is pivoted about a vertical axis and can be moved from a drive position, wherein the belt is tight, to a free position, wherein the belt is slack, by a handle 32 so that the cutter **cam** can be driven or freely rotated during setting up. The face plate and motor are mounted on the cutter slide 22 which can be moved from a loading to a grinding position by a piston- and-cylinder device 33, 34, Fig. 3. In

the grinding position, the cutter can be fed into contact with the grinding wheel until a narrow land is ground back of the edge C<SP>1</SP> of the cutter by a coarse and fine adjustment device controlled by a handle 42. In the coarse adjustment position, defined by the position of handle 59 on a screw-threaded member 56, a clutch member 51 engages a conical member 52 secured to the handle 42, and rotation of the handle and its shaft 47 causes an internal gear 44 to rotate with the shaft 47 and a planet gear 45 and rotate a second internal gear 43 on a nut 38 which imparts axial movement to a screw 36 secured to the cutter slide. In the fine adjustment position, the member 56 urges the clutch member 51 to frictionally engage a ring 49 which, in turn, frictionally engages a part 58 of the frame to clamp the gear 44 against rotation. Rotation of the handle 42 and shaft 47 rotates the planet gear 45 around the gear 44, which has 99 teeth, and the gear 43, which has 100 teeth, to impart a fine adjustment to the slide 22. Backlash between the screw 36 and nut 38 is prevented by a spring-urged nut 63 keyed to the nut 38 and dust, &c. is excluded by a flexible seal 66. A graduated scale is provided on a dust cover 61. The cutter slide 22, wheel slide 69 and dresser slide 92 preferably employ opposed V-grooves 21, 73, Fig. 1, receiving roller bearings alternately disposed with their axes at 90 degrees to each other. The piston-and-cylinder devices 114, 115, 33, 34 and 75, 76 are operated by manually-controlled valves 132, 133, 134, respectively, on the frame of the machine. A vertically-movable bar controlled by a lever 147 connected to the wheel slide 69 interconnects the valves and prevents the dresser operating except when the wheel slide is in its upper position (the cutter slide returning to the loading

position when the wheel slide is down) and the wheel slide from being lowered while the dresser is in its lower position, an indicator light controlled by a microswitch 179, Fig. 8, actuated by a spring-urged plunger 181 being illuminated except when the dressing tool is in its upper position. The fluid supply to the piston-and-cylinder devices 33, 34, and 75, 76 is restricted so that the speed of movement of the slides 22, 69 is reduced towards the end of the strokes of the pistons 34, 76 by the pistons closing the main supply lines to the cylinders and the fluid being diverted through valves which restrict its flow to the cylinders. A safety **valve** is incorporated which, in the event of failure of the fluid pressure, causes a plunger to engage a recess in the vertically-movable bar to hold the wheel slide in its upper position. The pump supplying the fluid pressure, and the motors 71 and 28 driving the wheel W and cutter C, are controlled by switches 166, 168, 171, respectively, the latter pair being rotatable to one of two positions to **control** the direction of rotation of the motors depending on whether right-hand or left-hand cutters are to be trued.

PN - [GB812828](#) A 19590506
PR - USX812828 19550429
AP - GB19550030663 19551026
DT - *
CCI - [D06F75/18](#)
PA - SUNBEAM CORP
TI - Pressing iron
AB - 812,828. Steam irons. SUNBEAM CORPORATION. Oct. 26, 1955 [April 29, 1955], No. 30663/55. Class 138 (2). [Also in Group XXXVII] A steam iron comprises a steam generating chamber 18 in a sole plate 10, a 'water reservoir 40 having an opening 46 therein and positioned above and secured to the sole plate, a cover shell 100 positioned over the reservoir with an opening aligned with the opening 46, a handle 105 provided with a chamber aligned with the openings, **sealing** means between the handle and reservoir, and bifurcated draw means 130 extending through the handle chamber and the openings, the draw means being secured to the handle and having a lower portion engaging the interior of the reservoir adjacent the opening 46 to secure the handle to the reservoir, the handle also serving to engage the cover shell 100 and press it against the reservoir to secure the cover shell to the reservoir. As shown, the iron also comprises electric heating means 11, adjustable thermal **control** means 70 responsive to the temperature of the sole plate and disposed between the sole plate and reservoir 40, and **valve** means 22 for controlling the flow of water from the reservoir to the chamber 18. The chamber 18 has a three layer cover 20 as described in Specification 701,938, and a reduced portion 21a of a **valve** body member 21 extends through the cover 20 to hold the three layers together by spinning over its lower end to bear on a stainless steel washer 21b. The cover 20 is secured by five screws to the sole plate 10. The **valve** body member 21



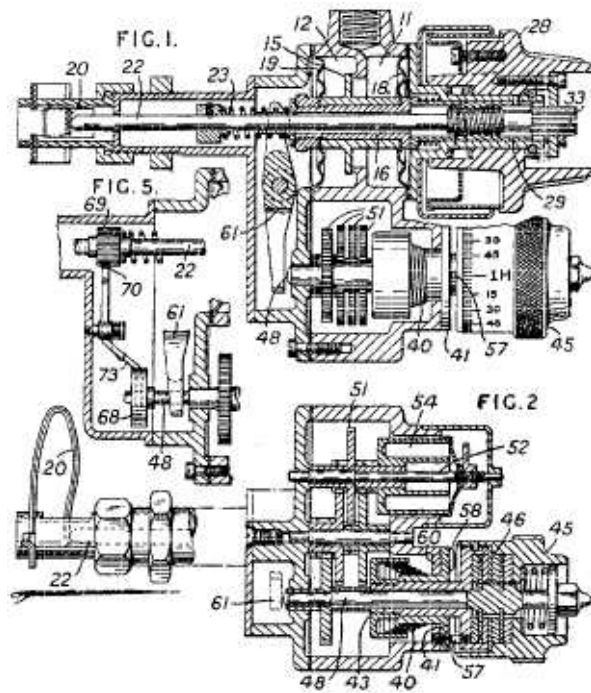
supports the reservoir 40 at its front end and is secured thereto by means of a hollow screw 55 threaded into the member 21 and provided with a slot for engagement by a screw-driver. At its rear end the reservoir 40 is supported by a pair of tabs 57f extending from the legs 57e (Fig. 3), of a U-shaped bracket 57 mounted on the sole plate 10. The bracket 57 is spaced from a wall 36 of the sole plate 10 by means of a plurality of pin-like projections 58 extending downwardly from the bracket 57 and surrounding openings for screws 59, thereby minimizing heat transfer from the sole plate to the bracket 57. The rear end of the handle is secured by screws 104 to projections 57g on the legs 57e of the bracket 57. The bifurcated draw means 130 is threadedly engaged by a hollow fastening member 132 having a head 132a. The draw means 130 has resilient legs 130b, each terminating in a hooked portion 130c adapted to engage an annular indentation 47a surrounding the opening 46 in the top of the reservoir 40. An annular ridge 105h on the handle 105 is received within a part-circular mounting ring 125 secured to the cover shell 100 by spaced deformable lugs 125a. An annular gasket 131 preferably of silicone rubber is interposed between the adjacent surfaces of the reservoir 40, cover shell 100 and handle 105. Extending through the fastening member 132 is a **valve** element 50 carrying at its lower end a pin 154 adapted to extend into an orifice 51 in the **valve** body member 21. The lower end of the element 50 is tapered so as to engage with a conical **valve** seat 54. In the example, the **valve** element 50 is biased downwardly by a spring 160, though in a modification (not shown) the **valve** element may be spring biased to the open position. The upper end of the element 50 is pivotally connected at 156 to an actuating

lever 155 which is movable from the dotted line position to the full line position in Fig. 2 to open the **valve**. The lever 155 extends through an elongated slot 149f in a temperature dial 149 and is provided with a manual **control** knob 157 adapted to engage in a depression 149d to hold the **valve** in the open position. The thermal **control** means 70 can be adjusted by means of a **control** knob 143 mounted on an extension of a **cam** 138 pivoted about the fastening member 132 and provided with a **cam surface** engaged by a **cam follower** 122. The lower end of the **cam follower** 122 is of rectangular crosssection and passes through a rectangular opening defined by a flange 44b which prevents rotation of the **cam follower**. The upper end of the **cam follower** is cylindrical and carries a threaded adjusting nut 142. In order to calibrate the thermal **control** means the adjusting nut 142 includes a hexagonal opening 142b adapted to receive a suitable wrench inserted through openings 147, 148 in the handle 105. The **cam** 138 is provided with a pair of openings 144, 145 (Fig. 6), at the ends of the **cam surface**, which openings can be moved into alignment with the opening 142b in the adjusting nut 142 to enable the wrench to be inserted therein. The lower end of the **cam follower** 122 bears on one end of an extension 90c of a lever 90 pivoted at 91 and provided with a second extension 90b by means of which the position of a support 88 for a contact 76 can be adjusted. The other contact 77 of the thermal switch is carried by a flexible switch arm 82 which also carries a compensating bi-metallic element 89. The element 89 is engaged by a ceramic member 74 secured to the free end of a main bi-metallic element 73 which is secured to an upwardly extending wall 35 of the sole plate. The forward tip of the sole plate includes a raised

portion 37 (Fig. 5), constituting the only portion thereof in engagement with the lower edge of the cover shell 100. To facilitate assembly of the cover shell on the sole plate the latter is provided with guide lugs 39. Baffles 29 provided in steam passages 26 (Fig. 5), serve as water traps to collect excess moisture in steam passing to the outlet ports 31. Specification 655,509 also is referred to.

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- PN - [GB443424](#) A 19360224
- PR - GB19340024230 19340822
- AP - GB19340024230 19340822
- DT - *
- CCI - [G05D23/08](#)
- PA - CHARLES BELL WALKER; SMITH & SONS LTD S
- TI - Improvements in or relating to thermostatically-operated **valve control** devices
- AB - 443,424. Thermostatically and clockwork actuated valves. WALKER, C. BELL-, 38, South Bar, Banbury, Oxfordshire, and SMITH & SONS (MOTOR ACCESSORIES), Ltd., Cricklewood, London. Aug. 22, 1934, No. 24230. [Class 135] A regulating **valve** for a gas cooker comprises a **valve** member 15 controlling the passage of gas from an inlet chamber 11 to an outlet chamber 12 to the burner, the position of this **valve** being regulated by a bi-metallic thermal element 20, subjected to the heat from the burner, through a rod 22 screwed into a reciprocating sleeve member 29 which abuts against a sleeve 16 carrying the **valve** 15. The chambers 11, 12 are **sealed** by flexible diaphragms 18, 19 and the spring 23 tends to keep the **valve** sleeve 16 in contact with the sleeve 29. The initial position of the **valve** is adjusted by rotation of an indicating head 28 which by means of a splined portion 33 of the spindle 22 rotates the spindle and adjusts its axial position and therefore that of the **valve** with respect to



the sleeve 29. A clockwork mechanism is provided for closing the **valve** 15 after a predetermined interval of time has elapsed and comprises a spring 40 which is wound up the requisite amount corresponding to the predetermined interval of time by a knob 45 which is normally clutched by a clutch 46 to the spindle 48. To wind up the spring and so set the timing mechanism the knob 45 is pulled outward to disengage a pin 57 from a hole 60 in the plate 41 and also the clutch 46, and turned so that the sleeve 43 winds the spring 40. The knob is then released and the clutch 46 engaged, the pin 57 riding on the top of the **surface** 41. The clockwork operates through an escapement mechanism 51, 52, 54 until the pin 57 drops into the hole 60 and the spindle 48 is moved axially by axial pressure from the spring 40 to close the **valve** 15 through the lever 61. When the time -**control** mechanism is not required, the **control** knob is turned to its fullest extent so that the pin 57 is held against a stop 58. In a modification, Fig. 5, a **cam** 68 is arranged on an extension of the spindle 48 and through a **follower**-lever 73, carrying a toothed quadrant 70, actuates a gear 69 arranged on the rod 22 to automatically vary the position of the **valve** and therefore the temperature of the oven during the period of operation according to the predetermined contour of this **cam**. Specification 419,378 is referred to.

PN - [GB795301](#) A 19580521

PR - USX795301
19550221; USX795303
19550221; USX1136347
19550221; USX795302 19550221

AP - GB19550023151 19550811

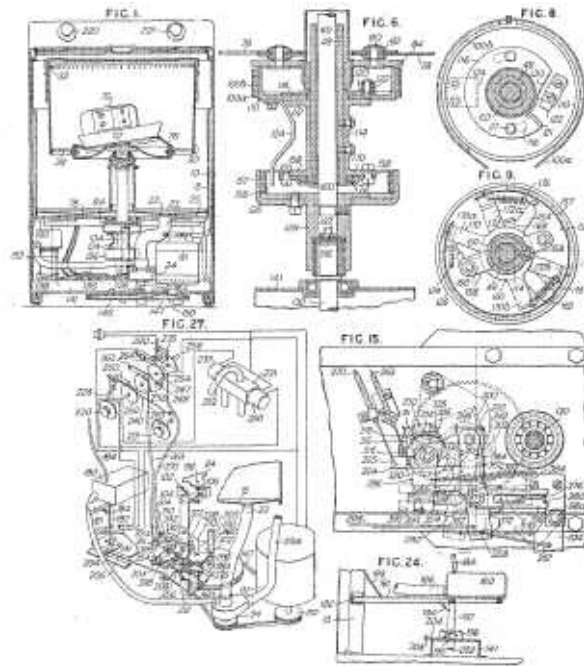
DT - *

CCI - [D06F13/08](#) ; [D06F37/36](#) ;
[F16D67/02](#)

PA - THOR CORP

TI - Improvements in or relating to clothes washing machine

AB - 795,301. Washing-machines. THOR CORPORATION. Aug. 11, 1955 [Feb. 21, 1955], No. 23151/55. Class 138 (2). A washing-machine comprises an agitator 75 positioned within a clothes tub 30 and supported on the upper end of a drive shaft 60 surrounded by a rotatable tubular shaft 48 supporting the tub 30, a support 114 carried on and rotatable with the tubular shaft 48, brake mechanism comprising a drum 110 operably associated with and rotatable with the support 114, and means providing a lost motion connection between the drum and support whereby the tub, tubular shaft and support are permitted to rotate a limited amount independently of the drum and while the brake is in operative position, as a result of rotative movement imparted to the tub and tubular shaft during normal washing operation of the agitator. General arrangement.-A suitable crank-head (not shown) is attached to the upper end of the drive shaft 60 and provided with a portion extending at a slight angle to the axis of the shaft 60. The crank-head is operably connected to a substantially circular dome like agitator mounting member 72 on which is mounted an agitator 75 which is free to rotate in one or both directions. An annular flexible **sealing** member 76 extends between the mounting member 72 and the bottom 38 of the tub 30. Gyration of the tub 30 during spin drying is reduced by means of one or more



diagonally extending snubber bars 78 provided at their ends with friction pads (Fig. 3, not shown) adapted to be pressed by springs into contact with recessed portions of brackets 20 mounted in the corners of the cabinet 10 of the washing machine. The bars 78 are secured by pins 80 and resilient grommets 82 to a plate 84 which is welded to a tubular member 60 surrounding the shafts 48, 60.

Drive mechanism.-The brake drum 110 is surrounded by a brake band 100a having friction lining segments 110b and secured at one end to an anchor pin 98 welded to the plate 84. The other end of the brake band 100a is connected by a pin 102 to an actuating member 104 pivoted at 98 and biased towards its brake applying position by a coil spring 106. The lost-motion connection between the drum 110 and support 114 is provided by arcuate slots 118 (Fig. 8), in the drum through which pass bolts 117 interconnecting a plate 116 and a flange 112 on the support 114. The plate 116 has a cut-away portion 120 and an upwardly extending lug 121 positioned so as to engage a rubber bumper 122 rigidly attached to the brake drum 110. The slots 118 permit limited rotation of the tub 30, shaft 48, support 114 and plate 116 relatively to the brake drum 110 when it is held stationary by the brake band 100a during the washing and rinsing periods when the tube tends to be rotated by the action of the rotating agitator. This limited rotation of the shaft 48 is used to move a clutch to its disengaged position through the action of an actuating member 124 depending from the brake drum 110. The clutch comprises three elements 160, 170, 172 connected to the shaft 48 and a clutch drum 126 drivingly connected through a hub 128, pin 136 and slot 137 to the shaft 60. The hub 128 also has a

resilient driving connection to a stub shaft 130 connected by a pulley 146 and belt 147 to a pulley 150 on the shaft of a driving motor 151. The clutch also comprises a metal band 156 having friction lining segments 157 and secured at its ends to arms 170a, 172a of the clutch elements 170, 172 respectively. The elements 170, 172 also have arms 170b, 172b respectively connected by a coil spring 176 and are capable of limited rotation relative to the shaft 48. The clutch element 160 has arms 166 bolted to arms 158 extending from the support 114 and lugs 168, 169 adapted to engage the arms 170a, 170b at different times in the operation. The element 160 also has an arm 165 supporting the band 156, and a hooked arm 164 connected by a coil spring 175 to the arm 172a. At the beginning of each agitation period the limited movement of the tub 30, shaft 48 and support 114 brings the clutch element 170 into engagement with the actuator member 124 which is held stationary by the brake mechanism, and disengages the clutch band lining from the clutch drum 126 (Fig. 11, not shown). During centrifuging periods the brake mechanism is released and the spring 176 tends to move the elements 170, 172 relatively to each other so as to press the clutch lining segments 157 into engagement with the clutch drum 126. The element 172 however is restrained by the spring 175 and the resulting snap action movement of the element 170 moves the arm 124 to its disengaged position (Fig. 9). As the tub is being accelerated up to its full speed the clutch element 170 engages the lug 168 (Fig. 10, not shown). When the tub 30 reaches full speed the clutch elements 170, 172 again assume the position seen in Fig. 9, with the element 172 abutting against the lug 169. If the load on the clutch increases above the

normal torque load the clutch elements 170, 172 assume a position under the **control** of the spring 175 for limiting the torque output of the clutch.

Water supply and discharge.- Water is supplied to the tub 30 through a conduit 232 (Fig. 27); under the **control** of a dual water **valve** 231 having solenoids 230, 233 for supplying warm and hot water respectively. By means of a **control** knob 221 either warm or hot water may be selected for washing but only warm water can be supplied for rinsing. The water fills the tub 30 and overflows through openings 32 into an outer tub 15 having an outlet 22 connected by a conduit 23 to a pump 24 driven by the motor 151. The inlet of the pump 24 is also connected by a hose 186 to a water reservoir 180 mounted on an arm 181 pivoted at 182 and biased upwardly by a spring 188. When sufficient water has entered the reservoir 180 to overcome the spring 188 the reservoir moves downwardly and through an arm 192 operates a switch 198 to stop the supply of water. The reservoir 180 is held in its lowered position by means of a notch 196 in the arm 192 which is biased by a spring 194 into engagement with the side of an opening in a channel member 141 through which the arm 192 extends. A bell-crank lever 204 pivoted to the channel member 141 can be operated by an arm 206 to release the arm 192 from the channel 141 but latch it in its lowered position. The rod 206 is connected to a lever 208 pivotally mounted at 210 on the channel member 141. The lever 208 is connected by a rod 212 to the brake actuator 104 the lower end of which is bent inwardly and journalled on a pin 98a in vertical alignment with the pin 98 (Fig. 27). The **control** switch 198 maintains the motor circuit open when the reservoir is at its uppermost position, which is limited by a lug 202 on the arm 192. When the reservoir 180 is

moved downwardly by the weight of water therein the switch 198 is actuated to close the motor circuit and operate the pump 24 to remove the water in the hose 23 and from the reservoir 180 and hose 186. The reservoir 180 remains latched in its lowered position however to maintain the motor circuit closed. This latching is effected during washing and rinsing periods by engagement of the notch 196 with the channel member 141, and during spin drying by the bell-crank lever 204 which is moved to its operative position as soon as the brake mechanism is released. After the spinning period the brake is re-applied and the actuator 104 moved in counter clockwise direction to move the bell-crank 204 out of latching engagement with the arm 192. The reservoir 180 then moves upwardly under the **control** of the spring 188 to reactuate the switch 198 to re-admit water to the tub 30. The reservoir 180 has a vent pipe 184, and the pump 24 has a drain hose 23a extending upwardly and having a portion fastened to the frame of the machine above the height of the reservoir 180. Timer **control** mechanism.-This comprises a **control** assembly 240 having a **control** knob 220, and an actuating assembly 242 associated with the drive mechanism of the machine. The knob 220 is mounted on a shaft bearing a water **control cam** 250, a cycling **cam** 252, an actuating ratchet 254, and a line switch **cam** 256. The **cam** 250 has a **follower** 260 adapted to operate a switch 228 to ensure that only the warm water solenoid 230 is actuated for rinsing purposes. The **cam** 252 has a **follower** 262 connected by a Bowden wire 263 to a blocking member 396 pivoted at 311 and biased to the right in Fig. 27 by a spring 398. The **cam** 252 has notched portions which determine the length of the extraction periods during which

the tub and agitator are rotated together, and raised portions which determine the length of the washing and rinsing periods when the agitator is rotated alone and the tub held stationary. The **cam** 256 has a **follower** 276 rigidly connected to a switch arm 280 normally biased to the left in Fig. 27. The **cam** 256 has three deep notches for completing a circuit to the switch 198, a shallow notch portion for holding the switch arm 280 in the neutral position, and raised portions for completing a circuit to the motor 151. The ratchet 254 and cams 250, 252, 256 are stepped rotatively as a unit by a finger 267 pivoted at 268 and connected by a Bowden wire 270 to a member 324 journaled on a shaft 311. A spring biased keeper 264 prevents reverse rotation of the ratchet and cams. Also journaled on the shaft 311 are a ratchet wheel 310 and a carrier 315 (Fig. 15), for a pawl 312 pivotally mounted at 314 on the carrier 315 and urged into engagement with the teeth of the ratchet 310 by a leaf-spring 318. The carrier 315 is oscillated about the shaft 311 by means of a downwardly extending lug 330 which enters an opening 334 in a yoke member 300 pivoted at 301 on the channel member 141. The yoke member 300 is itself oscillated by means of an eccentric 298 which engages flanges 302 on the yoke member and is rigidly connected to the upper **surface** of a gear 292 driven by a toothed portion 2

PN - [GB1247495](#) A 19710922

PR - DE19691921301
19690425; SE19670014725
19671027

AP - GB19690021280 19690425

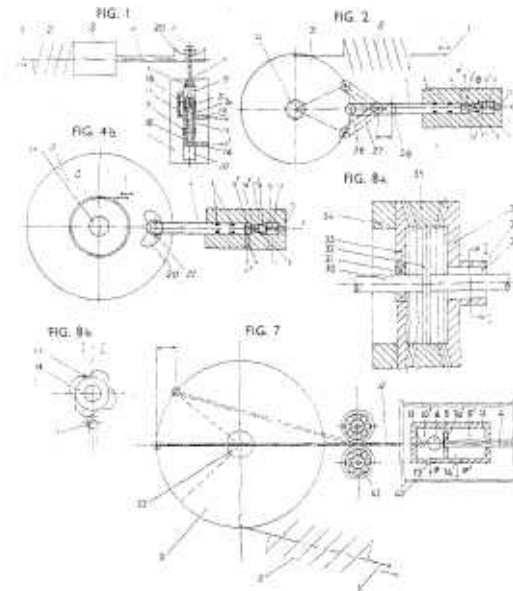
DT - *

CCI - [B60T8/74](#)

PA - EKENBERG ULF CHRISTER [SE];
HOLST MARTIN JAN-OLOV [SE];
NORDSTROM ROLF ERIK [SE];
ENBERG SVAG JOHAN [SE]

TI - BRAKE **CONTROL** DEVICE FOR
PREVENTING A ROTATING WHEEL
FROM LOCKING WHEN THE
WHEEL IS BRAKED

AB - 1,247,495. Anti-skid braking
systems. U. C. EKENBERG, M. J. O.
HOLST, and R. E. NORDSTROM. 25
April, 1969, No. 21280/69.
Addition to 1,247,049. Heading
F2F. The device of the main
invention is modified by
incorporating frequency-
increasing means for causing the
oscillation-frequency of the
brake-releasing means to exceed
the driving- pulse frequency. As
shown in Fig. 1, when the
frequency of oscillation of the
sensing device 1 equals the
resonance frequency of the
spring-mass system 2, 3, **cam**
member 20 raises and
lowers **cam follower** 21; in the
raised position, port 7a in **valve**
body 5 is obturated by **sealing**
gasket 16, so brake fluid inlet 13
is shut off by **sealing** gasket 7
and the wall of the **valve** body
from outlet 14 leading to the
brakes. At the same time, the
effective volume of chamber 10
is increased by the raising of
the **valve** body 5 with its open-
ended bore 18. Thus the braking
force acting on the wheel is first
stabilized and then released.
This cycle is repeated until the
wheel speed rises above the
critical value giving rise to the
resonance. The brake is then
applied again until the critical
speed is again reached,
whereupon the cycle re-
commences. It will be observed
that the frequency of oscillation
of **valve** body 5 is twice that of
the sensing device 1. In Fig. 2 the

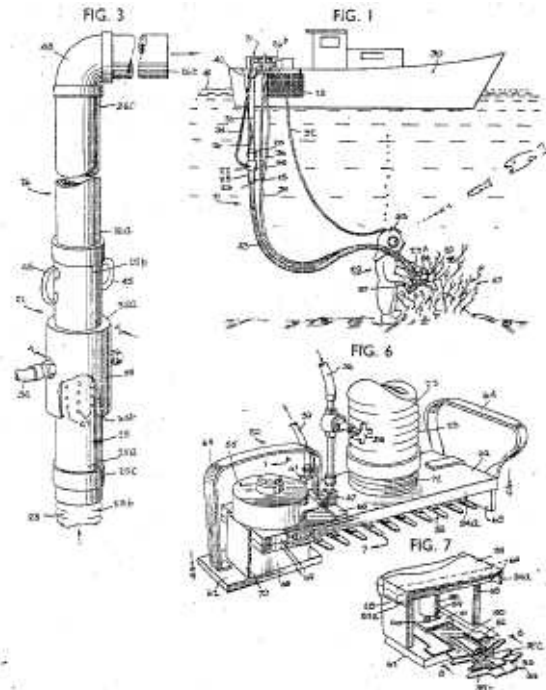


heavy mass 3 takes the form of an oscillatory disc having a pivoted link connection 26, 27, 28 with a **control** rod 4 having a reduced end co-operating with spring-loaded ball- **valve** 8, 7, passage 7a, chambers 10 and 9, and inlet 13 and outlet 14 in well-known manner. In Fig. 3 (not shown), the rod 4 is spring-loaded outwards, and has at its end a spherical **cam-follower** co-operating with a protuberance on the edge of the disc 3. In Fig. 5 (not shown), the spring-loaded rod 4 ends in an abutment plate co-operating with a spherical body on the edge of the disc. In Fig. 6 (not shown), the disc axis is parallel with rod 4, and a roller at the end of rod 4 co-operates with a protuberance on the flat **surface** of the disc. In Fig. 4b spring 2 is a torsion spring below and coaxial with the disc 3, slot 20 in disc 3 co-operating with roller 21 on rod 4. In Fig. 7 a stiff resilient blade 41 is attached to the periphery of disc 3 (acted upon by spring 2). Blade 41 extends through guide means 42 to a link system 43 connected to rod 4. If blade 41 should crack, the brake fluid supply to the **valve** will close ball **valve** 8. The frequency of the mechanical pulses generated by the wheel or shaft may be reduced during powerful braking, to bring about antilock brake release sooner, by the device shown in Figs. 8a, 8b. Toothed wheel 33, Fig. 8a, having secured to it an annular mass 34 (forming a flywheel unit) is rotatable on bearing 31 about input shaft 30. A second shaft 32, carrying freely-rotatable planet wheels 35, is rigidly attached to shaft 30. A second toothed wheel 36 is adapted to rotate in relation to shaft 30 by means of a friction clutch 38. A **cam surface** 37 on this second toothed wheel 36 co-operates with sensing device 1, Fig. 8b. In operation, during normal running and light braking, all the parts rotate at the same speed as the input shaft 30. On powerful braking, however, the flywheel

unit 33, 34 will over-run shaft 30, and through planet wheels 35 will impart a reverse relative movement to toothed wheel 36, which will thus rotate at a lower speed than shaft 30. The frequency imparted to sensing device 1 will thus be reduced.

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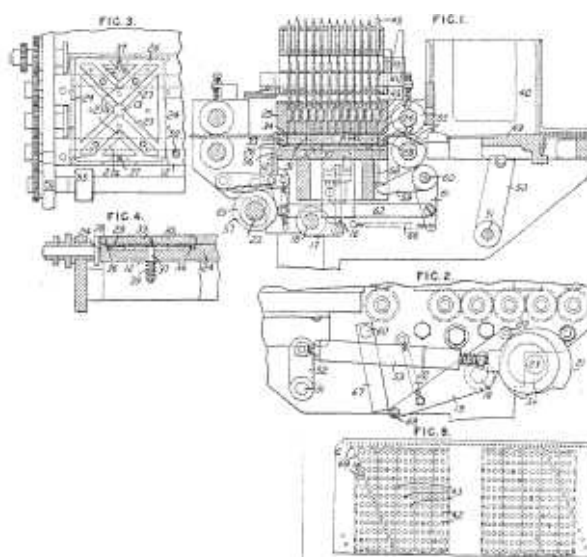
PN - [GB1393003](#) A 19750507
 PR - US19720227034 19720217
 AP - GB19720011354 19720310
 DT - **
 CCI - [A01D44/00](#)
 PA - SEAHARVEST
 TI - SEAHARVESTING APPARATUS AND METHOD
 AB - 1393003 Sea-harvesting apparatus SEA HARVEST INC 10 March 1972 [17 Feb 1972] 11354/72 Heading A1F [Also in Divisions B1 and F1] Apparatus for harvesting marine vegetation comprises a portable underwater sickle-bar cutter unit 20 operated by a diver and powered by an air motor 55. Cut vegetation is sucked up a flexible tube 23 of length greater than ten feet under the action of an airlift 22 positioned between six feet and ten feet below the water **surface** and through a discharge pipe 26 into a collection strainer 28 on board a boat 30. An air compressor 31 on the boat supplies air to the diver via air line 32, and from a separate volume tank air to operate the airlift via air line 34 and air to operate the air motor 55 on the cutter via air line 36. Air line 39 takes air from the air motor 55 back for atmospheric discharge, alternatively it may be used to operate the airlift. Fitting a Y-type reducing coupling (42) below the airlift 22 permits two divers to work independently (Figure 2, not shown). Only the last three feet of the flexible suction tube associated with each cutting unit is then made of highly flexible hose the remainder being fabric-reinforced rubber hose. The airlift is shown in Figure 3, and



has handles 45 and two hose connectors for air line 34, one being **sealed** by a cap. The hose connectors lead to an air plenum chamber, from which air passes via staggered upwardly slanting holes 47 into a delivery tube 25. The cutter unit is shown in Figure 6 and carries a collecting hood 24 with downturned edges 24a, handles 64 and 65, and a **control valve** 56 for the air line 36 to the air motor 55. The reciprocating cutting blade 38a is narrower than the fixed blade 38b for safety, and is driven by a **cam follower** 59 eccentrically carried by the motor drive shaft 57 and working within an elongated laterally oriented **cam slot** 60 in the cutting blade 38a (Figure 7). The undersides of the base plate 62 and end plate 63 are spaced about one inch below the cutting plane to function as a guide for the diver; he cuts using sideward sweeps in both directions. In alternative embodiments of cutter unit (Figures 10, 11 and 12, not shown) the air motor is mounted with its drive shaft horizontal and drives the cutting blade through a clutch and motion translator device. The collecting hoods are more pronounced and different entry angles for the suction tubes are used.

17/21 © EPODOC / EPO

- PN - [GB754740](#) A 19560815
- PR - GB19540007299 19540312
- AP - GB19540007299 19540312
- DT - *
- CCI - [F15C1/001](#) ; [G06K7/02](#) ;
[G06K13/067](#) ; [H01J25/18](#)
- PA - POWERS SAMAS ACCOUNT MACH LTD
- TI - Apparatus for sensing perforated statistical records, e.g. record cards
- AB - 754,740. Statistical apparatus. POWERS-SAMAS ACCOUNTING MACHINES, Ltd. March 1, 1955 [March 12, 1954], No. 7299/54. Class 106 (1). Pneumatic card sensing apparatus.-In apparatus for sensing perforations in

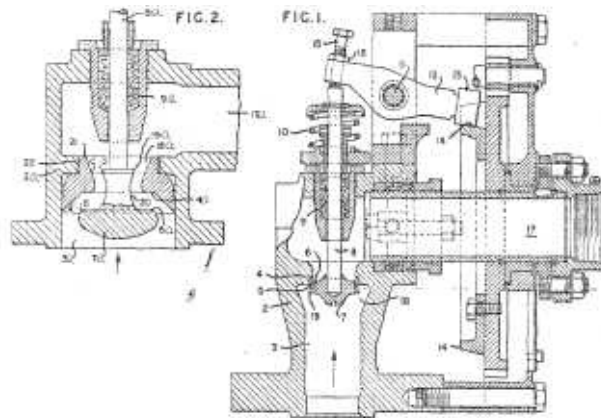


perforated statistical record cards by means of compressed air, the card is positioned between upper and lower members 25, 28, Fig. 1, and a **sealing** frame 33 is movably mounted in a recess in the lower member so as to be normally spaced from the upper member to allow the record card to be inserted, the compressed air, when applied, being adapted to force the **sealing** frame against the record card and to **seal** off the area thereof to be sensed. A base plate 12, Figs. 1 and 3, has air inlet openings 13 communicating with ring channels 26, diagonal channels 27 and secondary channels 27a cut in the **surface**. An elastic diaphragm 29, Fig. 4, is clamped in place on the **surface** of plate 12 by a clamping member 28 which is secured by screws to wall portions 24 surrounding channels 26, and forms the lower, card-supporting, member. The clamping member 28 has window openings corresponding to the periphery of the rectangular ring channels 26 as shown in Fig. 4. Over the area of these openings the diaphragm is perforated at 27b, Fig. 3, so that air can pass from the secondary channels 27a to apertures 31, Fig. 1, formed in air delivery plates 30 clamped over the diaphragm in the centre of the openings. The apertures 31 in plates 30 are formed in lines interconnected by channels 32. The **sealing** frames 33 surround the air delivery plates 30 and fit within the openings in clamping members 28 so as to be capable of movement in a vertical direction. Each **sealing** frame overlies the rectangular channel 26 and is secured to the diaphragm 29 by screws 36, springs 39 connected to it by pins 37 urging it to the lowermost position. The card-engaging face 34 of the frame is narrow compared with the lower face, e.g. about one third the width. When a card is in sensing position the air pressure is

applied as described below and, by acting against the under side of the diaphragm in the areas of channels 26, lifts the **sealing** frame against the action of springs 39 into contact with the card so that the narrow face 34 **seals** off the area within the frame. Air pressure applied through the air delivery plates 30 passes through the apertures in the record card and into corresponding bores 41 in the second element 25 where it acts on pistons 45. The pistons serve to **control** the functions of the machine to which the sensing apparatus is fitted, e.g. through Bowden cables 48. **Control** of air pressure; card feeders and detectors.-Compressed air is applied to the openings 13 through a **control valve** 15, Fig. 1, having a **control** spindle 16 acted upon to open the **valve** by an arm 17 on a rock-shaft 18. The other end of shaft 18 carries a lever 19, Fig. 2, having a **follower** 20 at one end running on a **cam** 21, a spring 22 serving to turn the lever to the **cam** engaging position. The **valve** 15 is opened to apply sensing air pressure once during each rotation of shaft 23 which is constantly driven. An eccentric 54 on shaft 23 is connected by link 53 to an arm 52 on a second rock shaft 51. An arm 50, Fig. 1, on this shaft operates a slider 49 separating record cards from the bottom of a stack 40 and forwarding them to feed rollers 55. Cards are fed by the rollers 55 into the sensing position under the member 25 and they are located by a rising and falling front stop 56. This is controlled by a **cam** 57 on shaft 23 acting through a spring-loaded lever. Another **cam** 65 on shaft 23 acts through a link 62 to cause anticlockwise movement of a lever 61, shaft 60 and arm 59, the link being moved in the other direction by return-spring 66. A detector pin 58 slidable vertically in a bore in the plate 12 and member 25 is lifted during each card sensing cycle

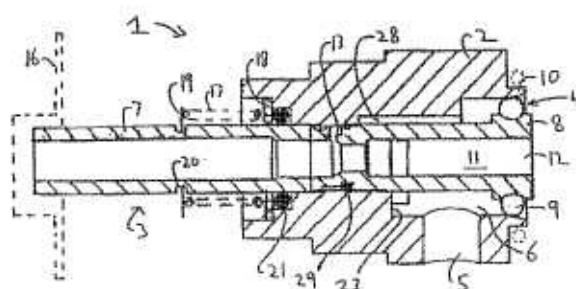
by the arm 59. If no card is present the pin is allowed to rise into a bore in upper member 25 and shaft 60 rotates under the action of spring 66 to position an arm 67 in the path of a pin 68 on the other end of lever 19 controlling the operation of **valve** 15. The lever 19 is normally urged in a clockwise direction to open the **valve** 15 by spring 22, but this movement is prevented by the arm 67 so that no air pressure is applied in the absence of a card. When a card is properly in position the detector pin is prevented from lifting and so that the spring 66 cannot rotate the shaft 60 to move arm 67 to the blocking position. The **valve** operating **cam** 21 releases the lever 19 for clockwise movement just after the **cam** 65 releases the link 62 to cause the detecting movement of pin 58. When a card is present the shaft 18 is allowed to rotate and **valve** 15 is opened to apply air pressure to the card. Record cards.-The record card C, Fig. 8, has been provided with pin hole perforations 43 in data-indicating positions 42. These pin-holes are sensed and caused to effect operation of a punching machine to which the sensing apparatus is fitted, the arrangement being such that the card, after being sensed, is passed to the punching machine to make perforations 69 in card positions corresponding to those in which the pin holes were sensed. The perforations 69 are in the " normal " horizontal row positions while the data-indicating positions are " interstage ", i.e. located between the normal horizontal rows of the card.

PN - [GB994935](#) A 19650610
 PR - GB19630001545 19630114
 AP - GB19630001545 19630114
 DT - *
 CCI - [F16K1/422](#) ; [F28G1/163](#)
 PA - BLAW KNOX CO
 TI - Fluid flow **control** valves
 AB - 994,935. Valves. BLAW-KNOX CO.
 Jan. 14, 1963, No. 1545/63.
 Heading F2V. The **control** of fluid flow from an inlet 3, Fig. 1, to an outlet 17 is effected by a movable closure member 7 having a conical **sealing surface** 6 co-acting with a similarly shaped hardened-steel seat 4 which is removable; the closure member 7 also embodies a throttling portion 1a which, once the member 7 is unseated, co-operates with a funnel-shaped part 18 of the inlet 3 to provide an annular flow area that is smaller than that between the member 9 and its seat 4. The **valve** stem 8 which passes through a gland 9 is urged on to its seat by a spring 10 and actuated by a **cam** 14 through a **follower** 13 and a lever 12; an adjustable screw 15 is provided between the lines 12 and stem 8. In another form, the throttling portion 19a, Fig. 2, is arranged on the downstream side of the closure member **sealing surface** 6a and the **valve** seat 4a is threaded in position.



19/21 © EPODOC / EPO

PN - [CN1666054](#) A 20050907
 PNFP - CN100590338C C 20100217
 PR - AU2002PS02382 20020517
 AP - CN2003815076 20030516
 DT - I
 CCI - [F16K31/524](#) ; [F16K31/52408](#) ;
[F23N1/007](#) ; [F16K1/52](#) ;
[F16K3/265](#) ; [F16K31/055](#)
 CCA - [F23N2035/24](#) ; [Y10T137/86936](#) ;
[Y10T137/87088](#) ;
[Y10T137/87378](#)
 PA - (A)
 ADVANCED PROD PTY [AU]
 - (C)
 ADVANCED PROD PTY
 TI - (A C)



Gas control valve

AB

- (C)

The present invention provides a gas **control valve** (1) including a **valve** body (2) having a gas inlet (4), a gas outlet (5), and a gas passage (6) between the inlet and outlet, and including a **valve control** element (3) for controlling the flow of gas between the inlet (4) and the outlet (5). The **valve control** element (3) includes **valve** stem (7) having a **cam follower** in the form of a pin (22) projecting laterally therefrom, and a head (8) at one end of the stem (7) bearing an O-ring (9) that is able to seat against an inside wall **surface** of the body (2) to **seal** the gas outlet (5). The **cam follower** pin on the stem (7) engages with a **cam surface** of the **valve** body (2). Rotation of the **valve control** element (3) causes the **cam follower** pin (22) to co-operate with the **cam surface** (23) and displace the **valve control** element (3) to open or close the **valve** (1). The present invention also provides a gas appliance having one or more gas burners and a gas **control** including at least one **control valve**(1) according to the invention.

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PN

- [CA1246424](#) A 19881213

PR

- US19850778543 19850920

AP

- CA19850494917 19851108

DT

- I

CCI

- [F16K1/223](#)

CCA

- [Y10T137/87483](#)

PA

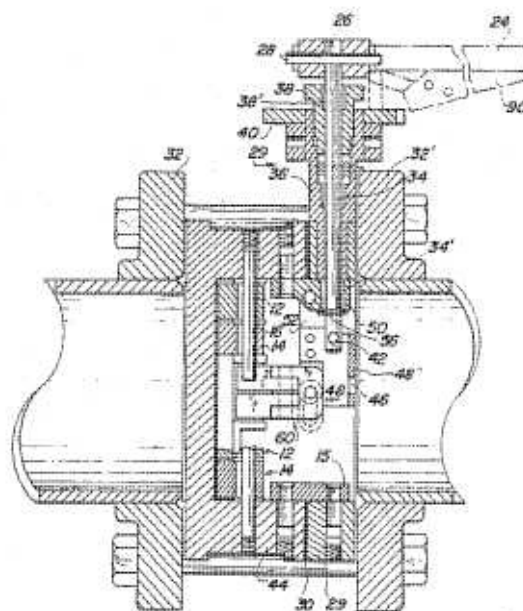
- SURGEACO INC

TI

- **CONTROL VALVE WITH SPLIT DISC**

AB

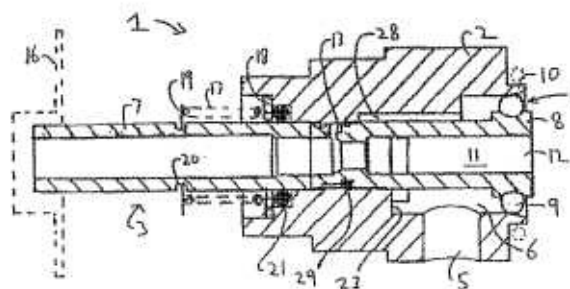
- A **control valve** utilizing the conventional dual wafer check **valve**, which check **valve** has a pair of semicircular plates pivotally mounted about a pivot rod at the adjacent straight edge surfaces thereof. The plates are mounted by hinge brackets that allow initial translational movement of the pivotted edges of the plates before the rotation



about the pivot shaft, so as to provide a clearance between the **seal** and plates at the pivotted edges. A **control** mechanism simultaneously and continuously controls the rotation of the wafer plates so that each plate rotates in opposite directions but the same arcuate distance. The **control** mechanism has a pair of levers with one lever pivotted to the rear **surface** of one of the plates, while their other ends are pivotted together at one end of a linear translational clevis member. The other end of the clevis member is connected to a pivotal **cam follower** via a lost-motion connection to convert rotary motion to translational motion. A handle and drive shaft accessible from outside of the **valve** body is provided to rotate the **cam follower**.

21/21 © EPODOC / EPO

- PN - [WO03098083](#) A1 20031127
- PR - AU2002PS02382 20020517
- AP - WO2003AU00595 20030516
- DT - *; Rep
- CT - |AU| ISR (A1)
[XP002999729](#) A[A];
[RU2049946](#) C1 00000000 [A];
[WO0206731](#) A1 20020124
[A] (SABAF SPA [IT], et al);
[XP002999730](#) A[A];
[CN1187597](#) A 00000000 [A];
[WO0111278](#) A1 20010215
[A] (ADVANCED PROD PTY [AU], et al)
- CTNP - |AU| ISR (A1)
[A] - DATABASE WPI, 1, Derwent World Patents Index, vol. 1996, no. 38, Database accession no. 1996-382979, XP002999729 & RU2049946 C1 19951210 (NIIPA RES PRODN. ASSOC.)
[A] - DATABASE WPI, 1, Derwent World Patents Index, vol. 2002, no. 68, Database accession no. 2002-628583, XP002999730 & CN1187597 A 19980715 (CHANG)
- CCI - [F16K31/524](#) ; [F16K31/52408](#) ;
[F23N1/007](#) ; [F16K1/52](#) ;
[F16K3/265](#) ; [F16K31/055](#)
- CCA - [F23N2035/24](#) ; [Y10T137/86936](#) ;



[Y10T137/87088](#) ;

[Y10T137/87378](#)

- PA - ADVANCED PROD PTY [AU]; JAMES DALE PETER [AU]
- TI - GAS **CONTROL VALVE**
- AB - The present invention provides gas **control valve** (1) including a **valve** body (2) having a gas inlet (4), a gas outlet (5), and a gas passage (6) between the inlet and outlet, and including a **valve control** element (3) for controlling the flow of gas between the inlet (4) and the outlet (5). The **valve control** element (3) includes **valve** stem (7) having a **cam follower** in the form of a pin (22) projecting laterally there-from, and a head 8 at one end of the stem (7) bearing an O-ring (9) that is able to seat against an inside wall **surface** of the body (2) to **seal** the gas outlet (5). The **cam follower** pin on the stem (7) engages with a **cam surface** of the **valve** body (2). Rotation of the **valve control** element (3) causes the **cam follower** pin (22) to co-operate with the **cam surface** (23) and displace the **valve control** element (3) to open or close the **valve** (1). The present invention also provides a gas appliance having one or more gas burners and a gas **control** including at least one **control valve** (1) according to the invention.