

Search history

Search 1: (CPC = (F04D29/* OR F23L7/*)) AND (PD<20150414) (Results 43509)
Search 2: 1 AND (TAC = centrifugal W2 pump) (Results 4225)
Search 3: 2 AND (FT = seal* AND (knife OR blade)) (Results 427)
Search 4: 3 AND (CC = CO) (Results 1)
Search 5: 3 AND (FT = pump* NEAR (solid OR chunky)) (Results 28)

Title: CENTRIFUGAL PUMPS

Abstract: 1,083,496. **Centrifugal pumps.** T.E. JUDD. Sept. 11, 1964 [Sept. 13, 1963], No. 37350/64. Heading F1C. In a **centrifugal pump** for liquids and liquids containing solids, e.g. sewage and slurries, the front face of the impeller has vanes 27, and the rear face has **sealing** vanes 36 providing greater pumping action than vanes 27. The vanes 27 comprise primary vanes 27B alternating with radially shorter and axially narrower secondary vanes 27A. The front edges of the vanes 27 may lie in a plane perpendicular to the axis 32 but preferably are curved axially rearwardly as shown to avoid accumulation of solids. The impeller front face is convex and has a vane-free central area. The convex surface may be generated by rotating a part of a circle, ellipse, parabola, hyperbola or compound curve about the shaft axis.

Classifications:

International (IPC 8-9): F04D29/22 (Advanced/Invention);
F04D29/18 (Core/Invention)

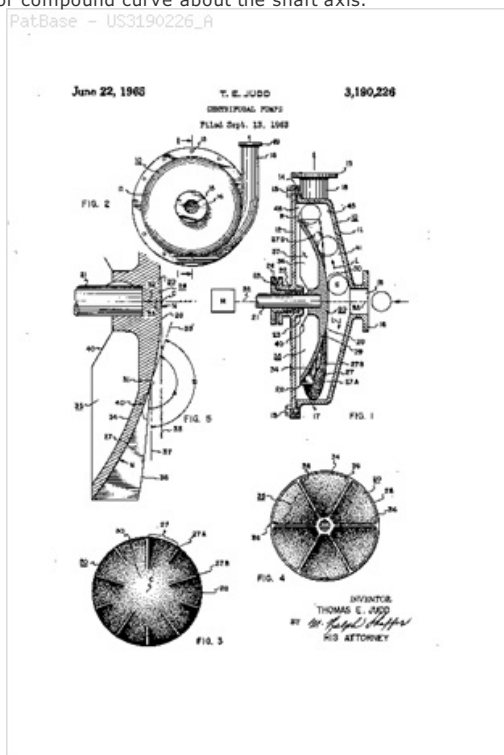
International (IPC 1-7): F04D5/00 F04D7/04

CPC: F04D29/2244

European: F04D29/22C2

US: 415/198.1 415/206 415/225

PatBase - US3190226_R

**Family:**

Publication number	Publication date	Application number	Application date
DE1453782 A1	19690220	DE19641453782	19640829
GB1083496 A	19670913	GB19640037350	19640911
US3190226 A	19650622	US19630308791	19630913

Priority:

US19630308791 19630913

Probable Assignee: JUDD THOMA E

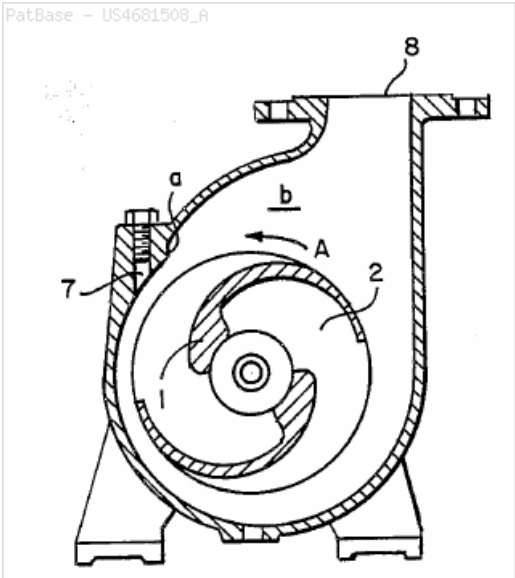
Assignee(s): (std): JUDD THOMA E ; JUDD THOMAS E ; THOMAS ELI JUDD

Inventor(s): (std): JUDD THOMAS E ; E JUDD THOMA

Title: Supercavitation **centrifugal pump**

Abstract: A supercavitation **centrifugal pump** comprising an impeller casing defining an impeller chamber, a discharge port and a suction port operatively connected to the impeller casing, a water inlet means disposed within the impeller casing for the introduction of water into the impeller chamber, impeller means disposed to move eccentrically within the impeller chamber to a location in close proximity to the impeller casing, the water inlet means being positioned within the impeller casing at the location for facilitating the conveyance through said **centrifugal pump** whereby the pump is free from abrasion caused by solid maters in the fluid.

Classifications:
International (ipc 8-9): F04D29/22 (Advanced/Invention); F04D29/18 (Core/Invention)
International (ipc 1-7): F04D29/22 F04D7/04
CPC: F04D29/2238
European: F04D29/22C
US: 415/116 415/204 415/206 415/213R 415/219C 415/226 416/185



Family:

Publication number	Publication date	Application number	Application date
US4681508 A	19870721	US19860935593	19861128

Priority:
US19840671303 19841114 US19860935593 19861128

Probable Assignee: KIM CHOONG W

Assignee(s): (std): KIM CHOONG W

Inventor(s): (std): KIM CHOONG W

Title: **CENTRIFUGAL** SEWAGE **PUMP**

Abstract: This invention relates to a **centrifugal** sewage **pump** of a torque flow type having a hollow depressed backward curve in front of a shroud of an impeller, in which an outer periphery portion of a vane is projected into a water passage for the purpose of improving a pumping head and pump efficiency and simultaneously for the purpose of avoiding **pump** clogging caused by fibriform **solid** matter adhering to the front edge of the vane. In order further securely to avoid clogging of the **pump** due to fibriform **solid** matter, a cutter plate or guide plate is provided alongside the flow line, to remove fibriform solid matter from said vane front edge, so that they can be positively discharged outward. By providing a shoulder on the outer periphery of the vane projecting into the water passage, the pump permits free adjustment of pumping head without changing pump rotational speed.

Classifications:

International (IPC 8-9): F04D29/22 (Advanced/Invention);
F04D29/18 (Core/Invention)

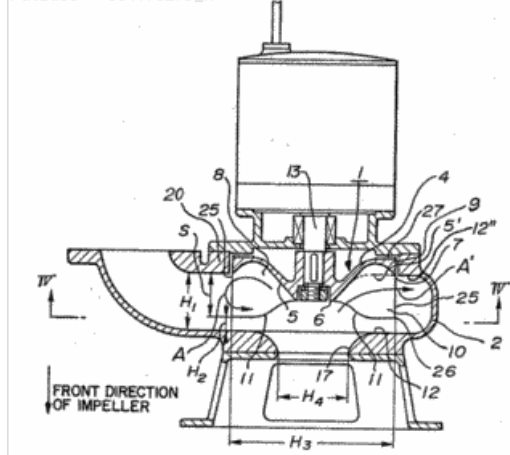
International (IPC 1-7): B02C23/36

CPC: B02C18/0092 F04D7/045 F04D29/2244

European: B02C18/00W2 B02C18/40C F04D29/22C2

US: 241/185.6 241/46.11 415/225

PatBase - US4076179_A



Family:

Publication number	Publication date	Application number	Application date
US4076179 A	19780228	US19760679464	19760422

Priority:

US19760679464 19760422

Probable Assignee: SOGO PUMP SEISAKUSHO

Assignee(s): (std): SOGO PUMP SEISAKUSHO

Assignee(s): SOGO PUMP SEISAKUSHO KK ; KABUSHIKI KAISHA SOGO PUMP SEISAKUSHO

Inventor(s): (std): TSUKUBE SYOZO

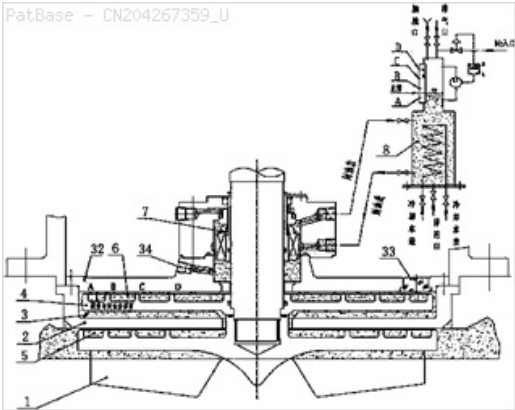
Title: SHAFT SEAL STRUCTURE OF CENTRIFUGAL COAL SLURRY PUMP

Abstract: The utility model relates to a shaft seal of a centrifugal coal slurry pump of a water coal slurry gasification device. For eliminating the defect that a mechanical seal of an existing centrifugal low-pressure coal slurry pump in the prior art is short in service life and the situation that outer flushing water flows into the pump cannot be avoided completely, 3-5 partition rings are added on a back blade and blades of an auxiliary impeller to weaken harmful radial flow in a flowing channel and increase blocking lift for delivering high-viscosity coal slurry. A large-specific-gravity coal slurry ring is arranged in an outer area of an auxiliary impeller cavity, a small-specific-gravity oil ring is located in an inner area, and the division surface of the coal slurry ring and the oil ring is obvious and stable. A PLAN 23 single-end-face mechanical seal and an improved fluid sealing tank are adopted, and the auxiliary impeller cavity, a mechanical seal cavity and the fluid sealing tank are communicated to monitor that coal slurry is away from the mechanical in a central control room and a field, ensure the long service life and achieve that additional flushing water is not needed completely during normal operation. The shaft seal structure is suitable for a shaft seal of the centrifugal coal slurry pump with delivered solid content of 58-61 wt percent and viscosity of 700-3000 mPa.s and is also suitable for a shaft seal of a centrifugal pump for delivering a high-solid-content and high-viscosity medium for other devices.

Classifications:

International (IPC 8-9): F04D29/10 (Advanced/Invention)

CPC: F04D29/106 F04D29/108 F04D29/2266



Family:

Publication number	Publication date	Application number	Application date
CN104389807 A	20150304	CN201410671156	20141121
CN104389807 B	20170315	CN201410671156	20141121
CN204267359 U	20150415	CN201420703556U	20141121

Priority:

CN201410671156 20141121 CN201420703556U 20141121

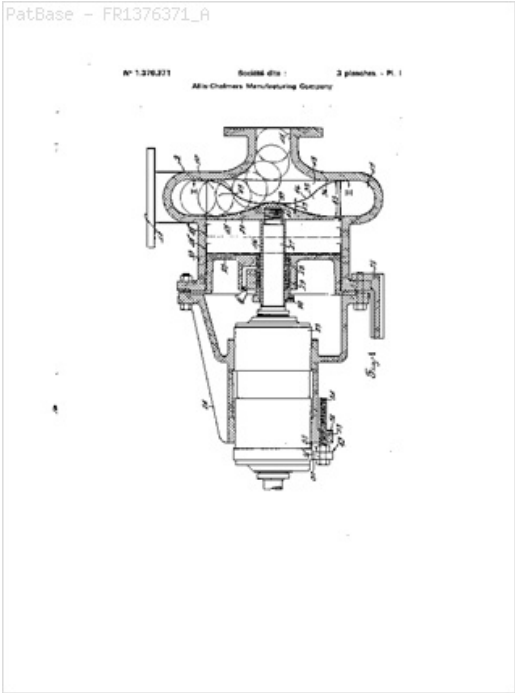
Probable Assignee: CHINA CHENGDA ENGINEERING CO LTD
Assignee(s): (std): CHINA CHENGDA ENGINEERING CO LTD
Inventor(s): (std): QI MINGGUI ; WEI SHAOJUN ; WEI ZONGSHENG

Title: PERFECTIONNEMENTS AUX POMPES CENTRIFUGES IMPROVEMENTS TO **CENTRIFUGAL PUMPS** (Machine translation)

Abstract: Source: FR1376371A [FR] (Claim 1) 1. Une pompe centrifuge comprenant fondamentalement une chambre de roue ayant un orifice d'aspiration dispose axialement et un orifice de refoulement dispose tangentiellement, et une roue montee a rotation dans cette chambre et constituee par un voile arriere supportant des aubes sensiblement radiales, angulairement espacees et faisant saillie axialement sur ledit voile, chacune desdites aubes s'etendant au moins partiellement en travers de la chambre de roue et presentant une largeur axiale qui est maximale a son extremite radiale externe et qui diminue vers son extremite radiale interne de facon a ce que l'ensemble des aubes, du voile et de la paroi de la chambre de la turbine forme une multiplicité de passages continus s'etendant du susdit orifice d'aspiration audit orifice de refoulement, la dimension minimale de chacun desdits passages etant au moins egale a celle d'une sphere de meme diametre que l'orifice d'aspiration de la chambre;

Machine translation: (Claim 1) 1. A **centrifugal pump** comprising basically a wheel chamber having a suction port has axially and has a discharge port tangentially, and a wheel rotatably mounted in said chamber and constituted by a veil rear supporting substantially radial **blades**, and spaced angularly by projecting axially from said web, each of said vanes extending at least partially through the wheel chamber and having an axial width which is a maximum outer radial end thereof and which decreases towards its radially inner end of so that the all the **blades**, of the web and the wall of the chamber of the turbine form a multiplicity of continuous passages extending from the aforesaid inlet to said outlet, the minimum size of each of said passages being at least equal to that of a sphere of same diameter as the suction port of the chamber;

Classifications:
International (IPC 8-9): F04D29/22 (Advanced/Invention); F04D29/18 (Core/Invention)
International (IPC 1-7): F04D15/00 F04D7/04
CPC: F04D29/2238
European: F04D29/22C



Family:

Publication number	Publication date	Application number	Application date
FR1376371 A	19641023	FR19630956381	19631206

Priority:
FR19630956381 19631206

Probable Assignee: ALLIS CHALMERS MFG CO
Assignee(s): (std): ALLIS CHALMERS MFG CO
Assignee(s): ALLIS CHALMERS MANUFACTURING COMPANY

Title: One-piece pumping device with ambivalent operation

Abstract: A single motor 25 simultaneously drives two pump elements mounted on its shaft ends. The hydraulic circuit, the motor and the pump elements are contained within a one-piece 3-part assembly comprising a central part 2 placed between two end parts 1 and 3. It is merely necessary to change the relative orientation of one of the end parts, the movable part 1, through 180 DEG in order to couple the two pump elements in series or in parallel as required. The pumping device operates immersed. Suitable for several applications to meet domestic and light industrial requirements.

Classifications:

International (IPC 8-9): F04D1/10 F04D13/06 F04D29/62 (Advanced/Invention); F04D1/00 F04D13/06 F04D29/60 (Core/Invention)

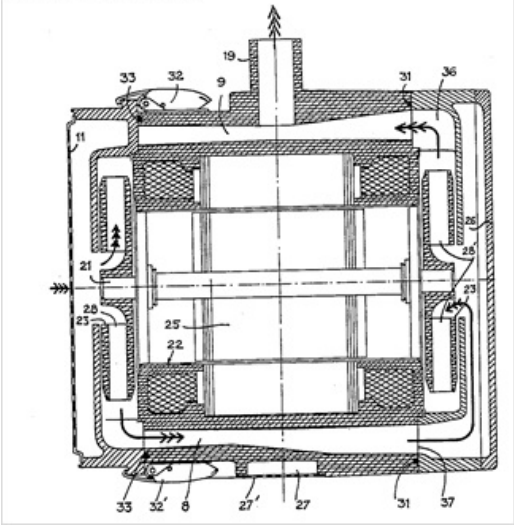
International (IPC 1-7): F04B23/04 F04B49/02 F04D1/10 F04D13/00 F04D13/08 F04D13/12 F04D13/14 F04D15/00

CPC: F04D1/10 F04D13/0606 F04D29/628

European: F04D1/10 F04D13/06B F04D29/62P

US: 417/238 417/350 417/38 417/62

PatBase - US4229142_A



Family:

Publication number	Publication date	Application number	Application date
BE871901 A	19790301	BE19780191641	19781110
CH627235 A	19811231	CH19780011545	19781109
DE2848887 A1	19790517	DE19782848887	19781110
DE2848887 C 2	19881103	DE19782848887	19781110
DK147442 B	19840806	DK19780004988	19781109
DK147442 C	19850218	DK19780004988	19781109
DK498878 A	19790511	DK19780004988	19781109
ES474909 A1	19790316	ES19780474909	19781108
FR2408739 A1	19790608	FR19770033889	19771110
FR2408739 B1	19800822	FR19770033889	19771110
GB2007770 A1	19790523	GB19780043469	19781107
GB2007770 B2	19820224	GB19780043469	19781107
IT1160047 A	19870304	IT19780029489	19781107
IT7829489 A0	19781107	IT19780029489	19781107
SE444037 B	19860317	SE19780011533	19781108
SE444037 C	19860626	SE19780011533	19781108
SE7811533 A	19790511	SE19780011533D	19781108
US4229142 A	19801021	US19780957918	19781106

Priority:

FR19770033889 19771110

Probable Assignee: POMPES SAL MSON

Assignee(s): (std): LE MATERIEL ; MATERIEL TELEPHONIQUE ; THOMSON CSF MAT TEL ; BOULOGNE BILLANCOURT FRANCIA A

Assignee(s): ELECTRO HYDRAULIQUE SEH ; A BOULOGNE BILLANCOURT FRANCIA ; LE MATERIEL TELEPHONIQUE THOMSON CSF ; POMPES SAL MSON ; LE MATERIEL TELEPHONIQUE ; LE MATERIEL TELEPHONIQUE S A ; POMPES SALMSON RUEIL MALMAISON FR ; MATERIEL LE TELEPHONIQUE

Inventor(s): (std): DALL JEAN CLAUDE LE ; PASQUET J C M ; PASQUET C M ; PASQUET JEAN CLAUDE MARIE ; LE DALL J C ; DALL J C ; PASQUET JEAN CLAUDE M ; LE DALL JEAN CLAUDE

Inventor(s): JEAN CLAUDE LE DALL ET JEAN CLAUDE MARIE PASQUET ; PASQUET JEAN CLAUDE MARIE ST CLOUD FR ; MARIE PASQUET JEAN CLAUDE ; LE DALL JEAN CLAUDE RUEIL MALMAISON FR ; J C LE DALL ; J C M PASQUET ; JEAN CLAUDE LE DALL ; JEAN CLAUDE MARIE PASQUET

Title: Impeller construction

Abstract: ABSTRACT OF THE DISCLOSURE
The invention relates to a modified close-type impeller for a **centrifugal pump**. The impeller includes a central hub having an inlet to receive the liquid being pumped and a pair of shrouds extend radially outward in spaced relation from the hub. Located between the shrouds are a series of **blades** and both the front and rear shrouds are scalloped or recessed along the pressure face of each

Classifications:

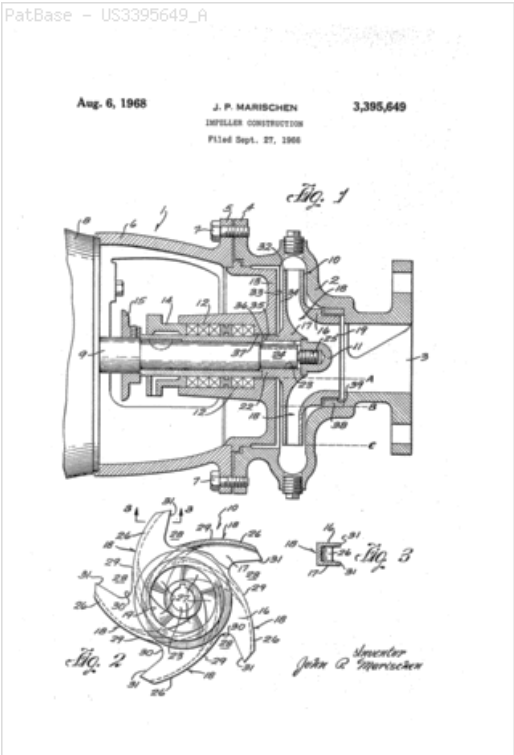
International (IPC 8-9): F04D29/22 (Advanced/Invention);
F04D29/18 (Core/Invention)

International (IPC 1-7): F04D13/06 F04D29/22

CPC: F04D29/2266

European: F04D29/22D2

US: 415/227 416/186R 416/243



Family:

Publication number	Publication date	Application number	Application date
US3395649 A	19680806	US19660582335	19660927

Priority:

US19660582335 19660927

Probable Assignee:

AMPCO METAL INC

Assignee(s): (std):

AMPCO METAL INC

Inventor(s): (std):

MARISCHEN JOHN P

Title: **CENTRIFUGAL PUMP**

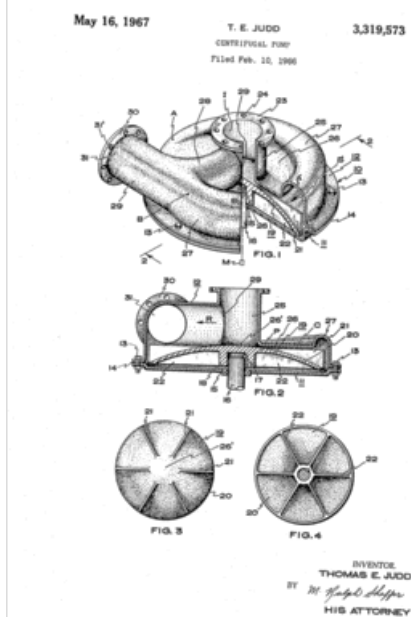
Abstract: (Claim 1) 1. A **centrifugal pump** comprising a structure defining a **centrifugal pumping** chamber, a **centrifugal** impeller operatively disposed in said chamber, said impeller having a convex **blade** supporting surface provided with a vaneless central portion and a peripheral **bladed** fluid energizing portion in said chamber, means **sealingly** jour-naled in said structure and centrally connected to said impeller and extending rearwardly thereof for driving said impeller, an inlet chamber for admitting fluids containing solids therein to said impeller chamber, said inlet chamber having a restriction therein extending circumferen-tially of the impeller, and defining a circumferentmly spaced liquid phased auxiliary channel about the peripheral **bladed** portion, means defining a main outlet chamber communicating with said inlet chamber proximate volute Channel will be relatively free of all foreign 35 tije central vaneless portion of the impeller, said auxiliary matter such as sewage or other solid particles. This is so because the space or constriction means P between the impeller and the portion 26 is very small and hence does not permit passage of solids therethrough. (Of course, any fine-grained matter which does wedge in this area will tend to be carried through because of the force of the liquid through the action of the pump. In this regard it is especially important that passage into chamber C beyond space P rapidly increase in area so that channel and said main outlet chamber merging in a downstream direction whereby the energized pressure fluid from the auxiliary channel engages the solids entrained in said main outlet chamber fluid and forces the entrained solids in a downstream direction.

Classifications:**International (IPC 8-9):** F04D29/70 F04D7/04 (Advanced/Invention);

F04D29/00 F04D7/00 (Core/Invention)

International (IPC 1-7): F04D7/04**CPC:** F04D7/04 F04D29/708**European:** F04D29/70P F04D7/04**US:** 415/144 415/225 D15/7

PatBase - US3319573_A

**Family:**

Publication number	Publication date	Application number	Application date
US3319573 A	19670516	US19660526433	19660210

Priority:

US19660526433 19660210

Probable Assignee:

JUDD THOMAS E

Assignee(s): (std):

JUDD THOMAS E

Inventor(s): (std):

JUDD THOMAS E

Title: VORTEX PUMP

Abstract: (Claim 1) 1. A centrifugal pump comprising; a casing having a peripheral wall, said wall havin- a single continuously smooth inner sarface; a pair of axially spaced end waus defining with said peripheral wall -a pumping chamber; an axial inlet ol preselected diameter in one of said end walls; a tan-ential outlet in the peripheral wall adjacent ing chamber coaxial with said inlet, said blErdes having open end ed,-es facing said inlet and axially spaced therefrom a distance not less than the diameter of said inlet, said outlet being located entirely axially forward of said open end edges of said **blades**, -and said **blades** having outer radial ends spaced a substantial radial distance -inwardly of said single continuously smooth inner surface whereby said inipeller produces an annulus of rotating fluid between the radial outer ends of said **blades** and said smooth inner surface and said outlet. Referring to the drawing.a pump casing generally desig- 5- the eiad wall having said inlet; and a pump impeller havnated 6 is constructed of aia annular outer cylindrical ' - mg a plurality of **blades** rotatably supported in said pump-

Classifications:

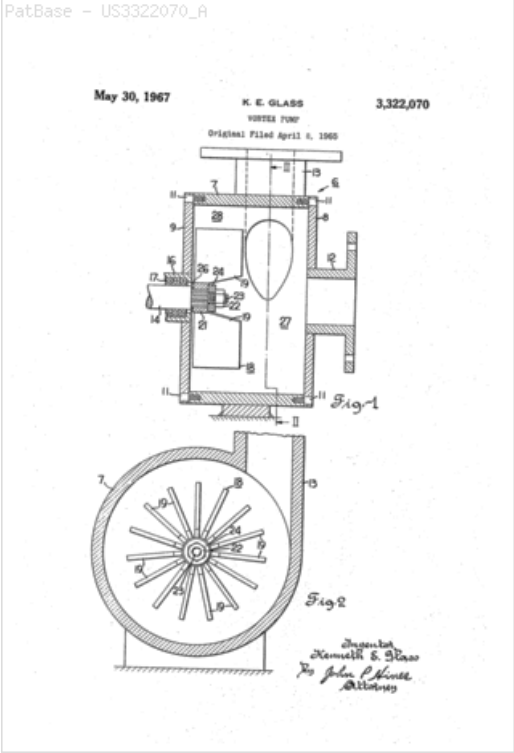
International (ipc 8-9): F04D29/22 F04D5/00 (Advanced/Invention); F04D29/18 F04D5/00 (Core/Invention)

International (ipc 1-7): F04D5/00

CPC: F04D5/00 F04D29/2233

European: F04D29/22B4C F04D5/00

US: 415/206 415/223 415/225



Family:

Publication number	Publication date	Application number	Application date
US3322070 A	19670530	US19660542980	19660311

Priority:

US19660542980 19660311

Probable Assignee: ALLIS CHALMERS MFG CO

Assignee(s): (std): ALLIS CHALMERS MFG CO

Assignee(s): CONNECTICUT NATIONAL BANK A NATIONAL BANKING ASSOC ; CONNECTICUT NATIONAL BANK A NATIONAL BANKING ASSOCIATION TRUSTEE AS ; WOODS KATHLEEN D ; WOODS KATHLEEN D TRUSTEE AS ; ALLIS CHALMERS MANUFACTURING COMPANY

Inventor(s): (std): GLASS KENNETH E