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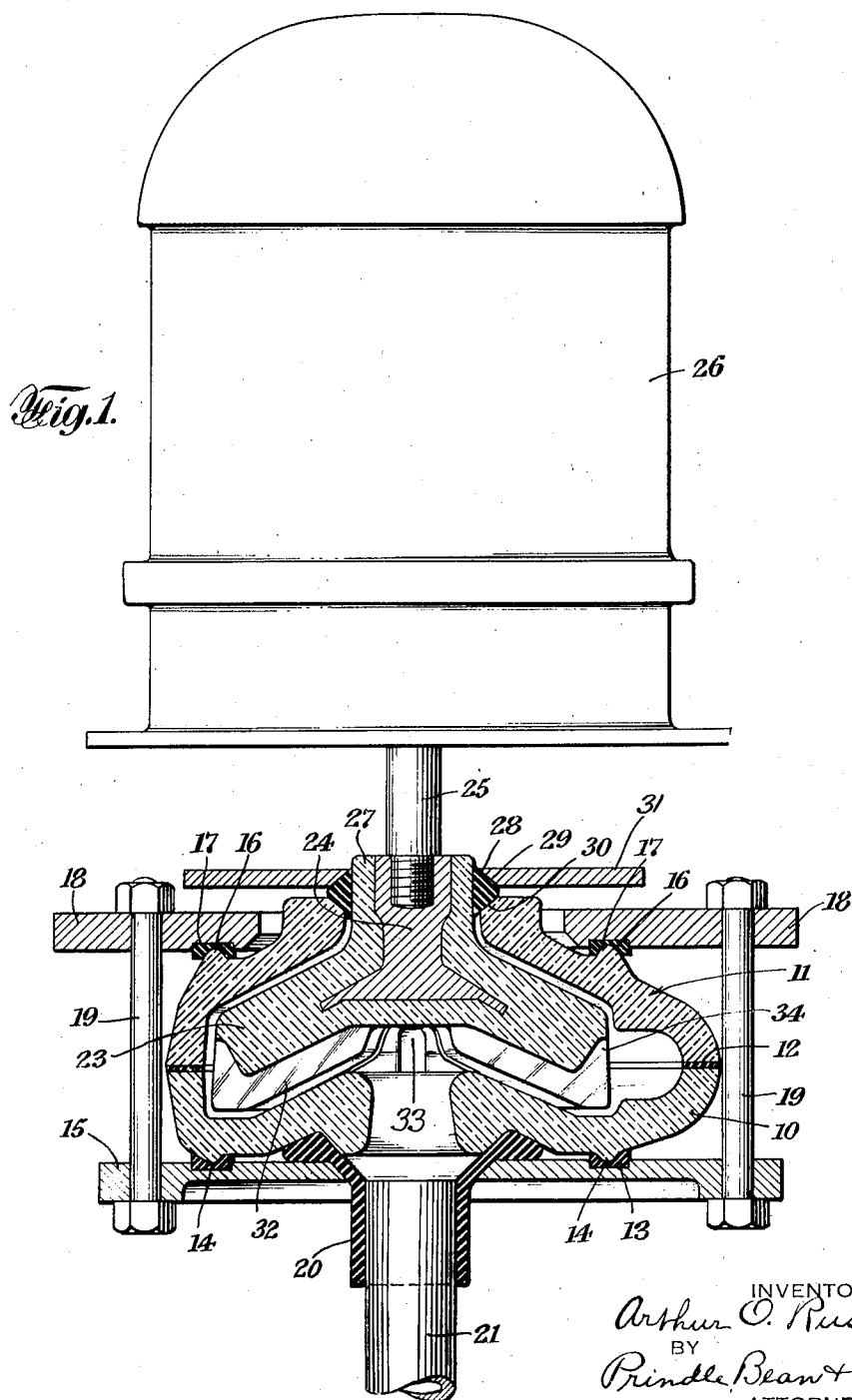
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2,060,899

ROTARY PUMP FOR CORROSIVE LIQUIDS

Filed Jan. 10, 1935

3 Sheets-Sheet 1



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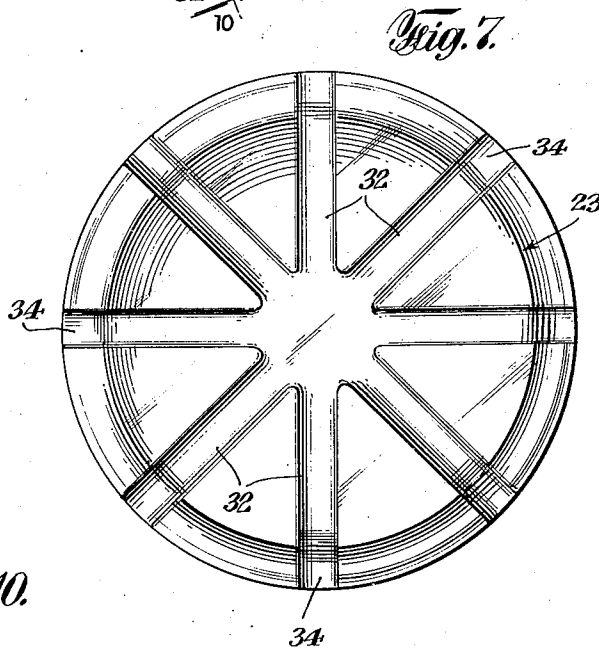
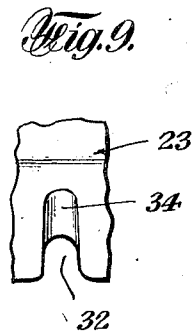
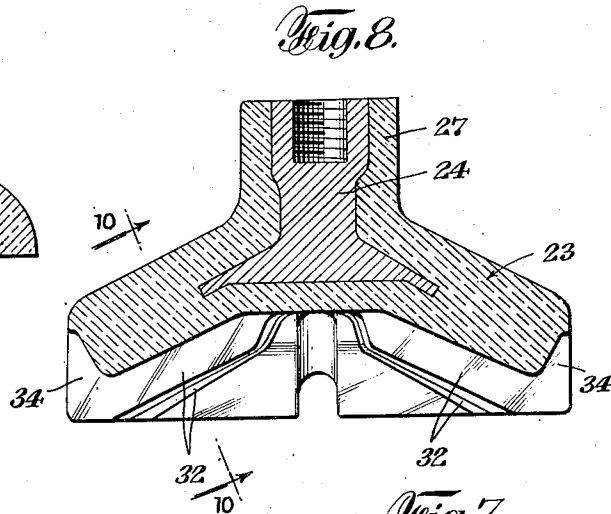
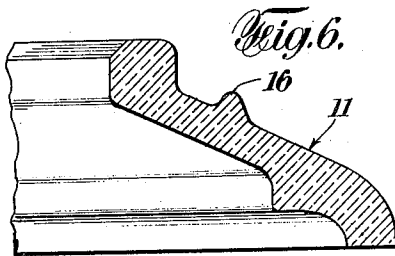
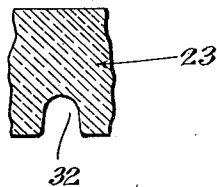


Fig. 10.



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ROTARY PUMP FOR CORROSIVE LIQUIDS

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Application January 10, 1935, Serial No. 1,145

2 Claims. (Cl. 103—114)

The object of my invention hereinafter described has been to provide certain structural features for the type of rotary pump for corrosive liquids which is the subject of my application for patent, Ser. No. 750,757, filed October 31, 1934, and to such ends my present invention consists in the rotary pump hereinafter described and shown in the drawings, in which

Fig. 1 is a vertical sectional view of said pump with its mounting and motor;

Figs. 2 and 3, respectively, are an elevation and an under-side view of the lower half of the pump casing;

Figs. 4 and 5, respectively, are an elevation and a top plan view of the upper half of said casing;

Fig. 6 is a sectional view of the said upper half of the casing, taken on the line 6—6 of Fig. 5;

Fig. 7 is a bottom plan view of the rotor or impeller;

Fig. 8 is a vertical sectional view of Fig. 7, taken in a vertical plane through the axis of said rotor.

Figs. 9 and 10, respectively, are a fragmentary view of the exit in the periphery of the rotor, and a sectional view on the line 10—10 of one of the gutters in the said rotor.

That embodiment of my invention which is shown in the said drawings may be composed of glass, quartz, or other non-corrosive materials. The pump consists of a casing made in two parts, a base 10 and a cap 11 which is supported by said base, a non-corrosive packing 12, such as rubber, being placed between their meeting surfaces. The base 10 preferably rests on a lead, or other soft material, ring 13, having an annular depression in its upper surface, in which an annular rib 14 is seated, that is formed on the underside of the base 10. The said ring 13 is set in an annular groove formed in a base-plate 15 that preferably is made of cast-iron.

The cap 11 has a rib 16 on its upper surface which is a counterpart of the rib 14 and upon which rests a lead ring 17 similar to the ring 13, a cap plate 18 resting on the said ring 17, said plate having a groove in its under side which fits over the said ring 17. Bolts 19 draw the cap and bottom plates toward each other and thus keep tight the joint between the base and the cap. A rubber sleeve 20 surrounds the inlet pipe 21 and is enlarged at the top and beaded on its edge so as to be embraced between a groove formed in the base 10 and the metal plate 22, thus making a tight connection between the inlet pipe and the base 10 of the casing.

Within the pump casing is a glass rotor 23 which is formed of glass that is cast about a

metal core 24. The core, in the present instance, is mounted on the lower end of the shaft 25 of a motor 26 which is supported by metal parts not shown. The said rotor has a neck or stem 27 against which packing 28 is held by oblique surfaces 30 and 29, respectively, formed on the cap 11 and plate 31 which is attached to the framework, (not shown).

The rotor 23 has preferably gutters 32 formed in its face, which, in the present instance, is the under side of the rotor, and which extend outward and preferably radially from a concentric depression 33 in the rotor, and also extend slantingly downward from the level of the entrances to the said gutters. At their outer ends, the said gutters preferably have exits 34 which are directed toward a groove or channel 35 that begins at the radius of the inner wall of the casing at the point 36 and increases in depth (horizontally) until it merges into the delivery pipe 37.

In the operation of the aforesaid construction of my pump the rotor is so efficient in driving the liquid being pumped that it does not require to be in contact with the casing at any point, but only that the casing shall have approximately the spaced relationship with it which is shown in the drawings. These qualities therefore enable the casing and rotor to be made of glass or other non-corrosive material, because there will be no contact which would cause breakage. This is because the rotation of the rotor generates centrifugal force in the liquid in the gutters which drives it out against the casing and into and along the eccentric groove or channel 35 and out through the delivery pipe. The said construction, also, by filling the casing with the liquid being pumped, prevents the entrance of air into the pump.

My aforesaid mounting effectively protects the glass parts of my pump from breakage. The rotor, being hung from the motor shaft 25, and the packing 28 preventing, as it does, the escape of the corrosive liquid above the glass stem of the rotor, enables the glass of the rotor to be cast around the metal core 24 and the latter to be mounted on the motor shaft 25, as no contact of the rotor inside of the casing is required.

I claim:

1. In a rotary pump, the combination of a glass rotor, a casing therefor comprising a glass cap and base, said cap and said base having a non-corrodible packing therebetween, said base being supported upon a metal part, there being a space between said base and said metal part, a rubber or other tubing having a flange at its

top adapted to be gripped in said space, and an inlet pipe mounted in said tubing.

2. In a rotary pump, the combination of a glass rotor, a casing therefor comprising a glass cap and base, said cap and base having a non-corrodible packing therebetween, said base be-

ing supported upon a metal part, there being a space between said base and said metal part, a rubber or other non-brittle tubing having a beaded flange at its top adapted to be gripped in said space, and an inlet pipe mounted in said tubing. 5

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