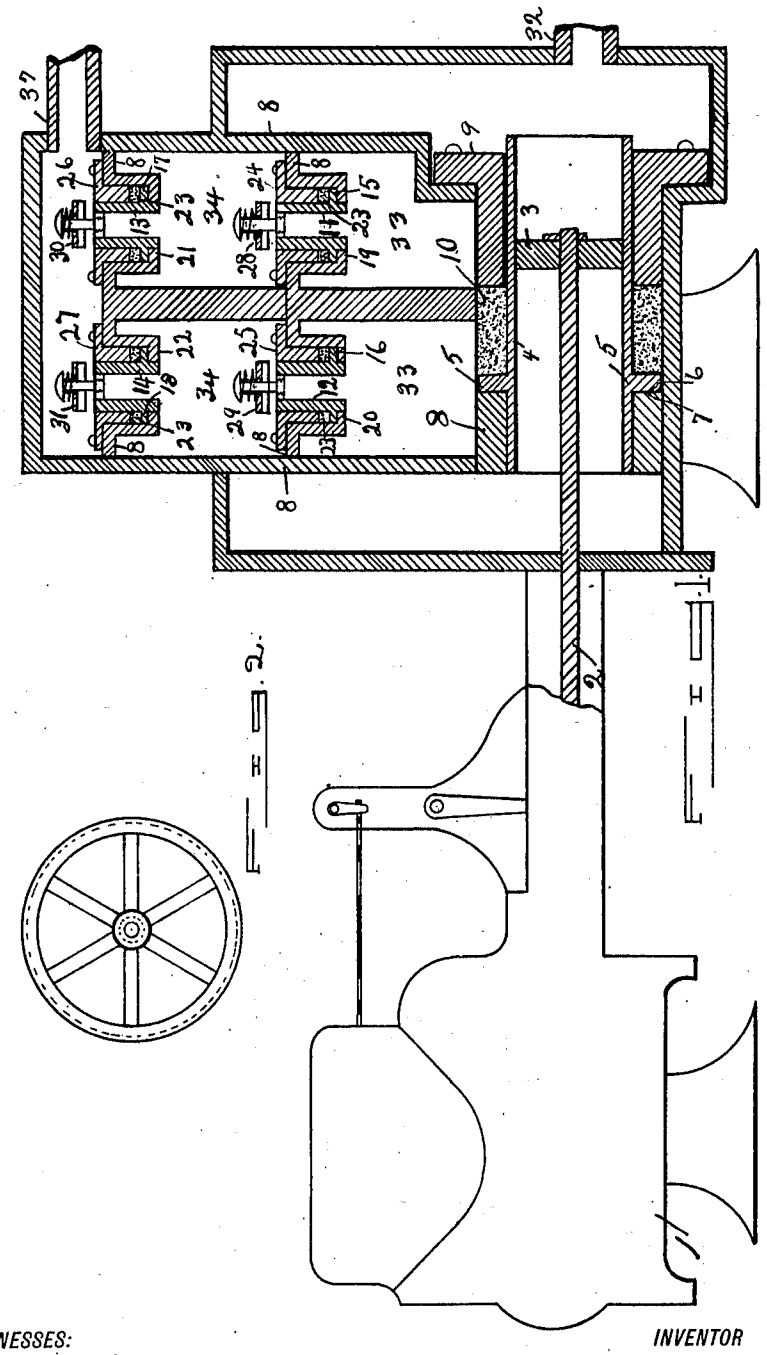
T. E. WINTZ.

PUMP.

APPLICATION FILED APR. 1, 1910.

989,096. Patented Apr. 11, 1911.



WITNESSES:

H. S. Barker.

W. C. Bosley.

INVENTOR

Thornton E. Wintz.

BY

Hardway & Calkey.

ATTORNEY

# UNITED STATES PATENT OFFICE.

THORNTON E. WINTZ, OF HUMBLE, TEXAS.

## PUMP.

989,096. Specification of Letters Patent. **Patented Apr. 11, 1911.**

Application filed April 1, 1910. Serial No. 552,769.

*To all whom it may concern:*

Be it known that I, THORNTON E. WINTZ, a citizen of the United States, residing at Humble, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My invention relates to new and useful improvements in pumps and has for its object a novel method of packing the pump liner or cylinder and also the valve seats so as to prevent the passage of the liquid through the joints between said liner and seats and the adjacent parts of the pump mechanism.

My improvement is designed specially to be used on pumps commonly known as slush pumps, which are used in pumping the slush or muddy water into wells during the process of boring with rotary drilling rigs. The sand and grit in the water has a special tendency to work into the joints of the liner and valve seats and gradually wears and cuts away the parts until they become loose and leak and the efficiency of the pump is greatly impaired or entirely destroyed.

The object of my invention is to obviate this defect.

With the above and other objects in view my invention has particular relation to certain novel features of construction and arrangement of parts an example of which is given in this specification and illustrated in the accompanying drawing, wherein:

Figure 1 represents a side elevation of a complete pump with the operative mechanism of the pump proper shown in section. Fig. 2 is a plan view of a valve seat of the pump.

The numeral 1 refers to a steam cylinder which is provided with the usual mechanism of such cylinders for operating the piston connecting rod 2. This rod operates piston 3 back and forth in the stationary liner 4. In the ordinary pump now in common use this liner is not provided with a surrounding packing and the fine grit is carried by the liquid into the joint between said liner and the pump body in the manner and with the result heretofore pointed out. In order to avoid this result I have provided the liner with the annular rib 5 with a ground seat at the point 6 which contacts with the ground seat 7 carried by the pump body 8.

Surrounding the liner and secured between the rib 5 and the gland 9 is the packing 10 composed of asbestos or some other suitable material. This packing closely surrounds the liner and forms a joint therewith impervious to fluid passage and the grit and sand of the slush to be pumped is thus prevented from finding its way between the liner and pump body and wearing these parts away.

The numerals 11, 12, 13 and 14 refer to valve seats which carry annular ribs, numbered respectively, 15, 16, 17 and 18, resting on opposing shoulders 19, 20, 21 and 22 of the pump body 8 surrounding said seats and resting on said ribs is packing 23 secured in position by glands 24, 25, 26, and 27. This arrangement effectively prevents the percolation of water between the valve seats and the surrounding pump body and excludes all sand and grit from between them.

The valves are designated by the numerals 28, 29, 30 and 31, respectively and operate in the same manner as those of the ordinary slush pump now in common use.

The form of pump I have shown is the double acting duplex type and I claim no improvement on the general pump structure but limit my invention to the provision of a stationary liner therefor surrounded by packing, as shown, and valve seats packed in a manner similar to the liner, but I do not desire to limit myself to the precise form of the invention shown but desire to vary the same within the limits of the appended claims.

In operation the fluid to be pumped is drawn through inlet 32 by the reciprocation of piston 3, enters chamber 33 and passes through valves 28 and 29 into chamber 34, whence it passes through valves 30 and 31 and is discharged through outlet 37.

It is not deemed necessary to show or describe in detail, the exact means whereby the fluid is conducted through the pump as said means constitute no part of my invention, the same being limited to the improvements as hereinbefore set forth.

What I claim is:

1. In a pump, the combination with a stationary liner, of a seat carried thereby, an opposing seat carried by the pump casing against which the liner seat rests, a packing surrounding the liner adjacent to the seat thereof and a means surrounding the liner and secured to the pump casing and resting against the packing for holding the same against the liner seat.

2. In a pump, the combination with a stationary liner, of an annular seat carried thereby, an opposing seat carried by the pump casing against which the liner seat rests, a packing surrounding the liner and resting against the side of the liner seat opposite the side contacting with the casing seat, and a removable gland surrounding the liner and secured to the pump casing and arranged to hold the packing against the liner seat.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THORNTON E. WINTZ.

Witnesses:
H. S. BARKER,
M. EMERY.