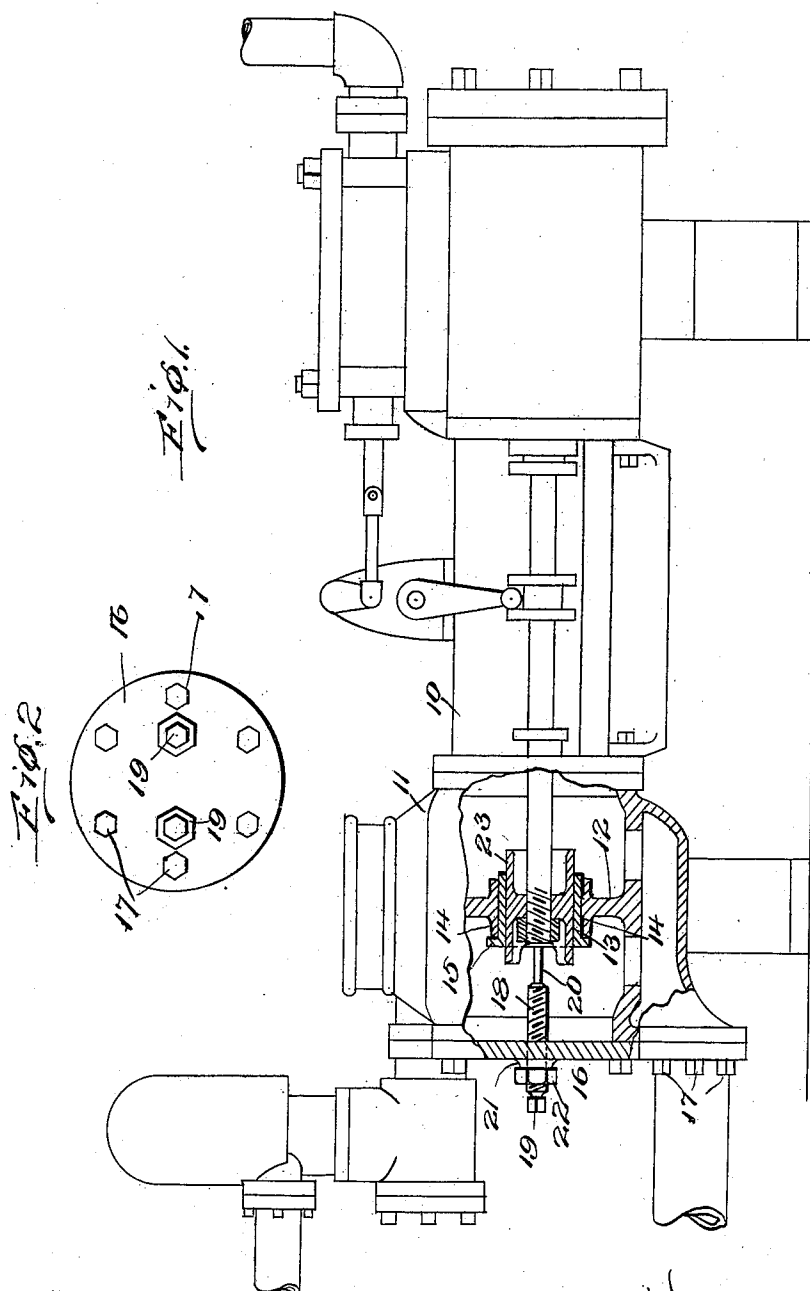


H. G. JOHNSTON.
LINER FOR STEAM PUMPS.
APPLICATION FILED APR. 28, 1909.

979,960.

Patented Dec. 27, 1910.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

HORACE G. JOHNSTON, OF CORSICANA, TEXAS.

LINER FOR STEAM-PUMPS.

979,960.

Specification of Letters Patent. Patented Dec. 27, 1910.

Application filed April 28, 1909. Serial No. 492,672.

To all whom it may concern:

Be it known that I, HORACE G. JOHNSTON, a citizen of the United States, residing at Corsicana, in the county of Navarro and State of Texas, have invented certain new and useful Improvements in Liners for Steam-Pumps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to liners for steam pumps and the like and has for an object to provide a removable liner with improved means for maintaining the liner in position and adjusting the same.

A further object of the invention is to provide in the pump end of a steam pump a liner which is removable through the opening produced by removing the head and which is readily adjustable and maintained in position from without the head.

With these and other objects in view, the invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a view in side elevation of a conventional pump having the water end broken away showing the improved liner and means for maintaining the liner in position, the new parts being shown in section. Fig. 2 is a view of the water end of the pump in elevation showing the preferred position of the set screws for maintaining the liner in position.

Like characters of reference designate corresponding parts throughout the several views.

In the drawings a conventional pump is illustrated at 10 having a water end 11 with the usual partition 12 separating the ends of such water cylinder. The partition 12 is provided with a central opening within which is set the liner 13 which forms the main portion of the present invention and the partition itself is provided with annular or sleeve-like portions 14 so that as the liner is moved into position the flange 15 contacts with sleeve 14. The head 16 is substantially the usual and ordinary head maintained in

position by means of bolts 17 and removable by the removal of such bolts. Through the head 16 are inserted two or more screws 18 having heads 19 upon the outside of the head and with extremities 20 upon the inside of the head proportioned to bear against the flange 15 when the screws 18 are inserted by manipulating the heads 19. The head is preferably provided with bosses 21 through which the screws are inserted and also lock nuts 22 are provided upon the screws 18 positioned to screw tightly against the bosses 21 to prevent leakage and displacement of the screws by jarring and otherwise. I wish it to be understood that the partition 12 is provided with an annular ring 14 which extends outwardly from the opposite sides of the base portion of the partition and further the liner being provided with an upstanding flange so that the same can be driven in contact with the outer edge of the ring 14, to permit of the liner being mounted between the peripheral surface of the piston and said ring, the screws 19 serving to bear against the flange of the liner to hold the same in position.

To put the liner in position the head is removed and the liner simply inserted to embrace the piston 23 and pushed to any convenient distance. The head 16 is then put into position and secured there by means of the bolts 17 after which the set screws 18 are inserted through the bosses 21 and screwed firmly to move the liner 13 against the positioning portions 14. When the liner has been pushed solidly to seat the lock nuts 22 are screwed to position maintaining such screws in engagement with the flange 15 and to prevent leakage around the screws 18.

To remove the liner when worn or for other reason the screws 17 are removed and the head 16 taken away in the usual manner when the liner 13 may be simply removed by moving longitudinally away from the partition 12.

What I claim is:—

The combination with a pump having a dividing partition provided with a ring extending from the opposite sides of the base portion thereof, a piston mounted in the

ring and circumferentially spaced apart therefrom, a liner having an upstanding surrounding flange at one end to permit of its being mounted between the piston and
5 ring, and a head for the pump having a plurality of screws inserted through the same so that their inner ends will bear against the upstanding flange so as to hold

the liner in position, substantially as specified. 10

In testimony whereof I affix my signature in presence of two witnesses.

HORACE G. JOHNSTON.

Witnesses:

R. N. ELLIOTT,

W. J. CHENEY.