

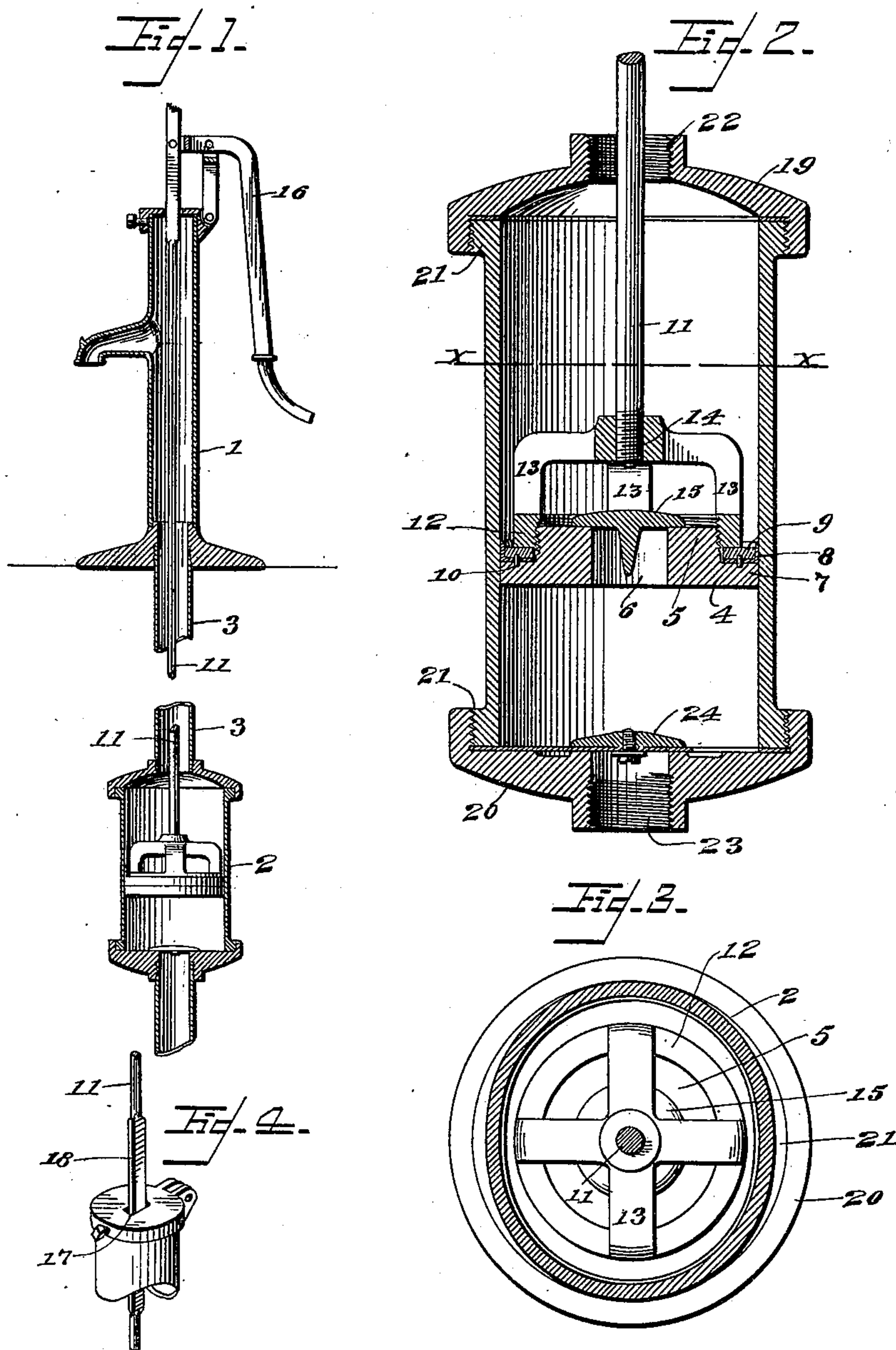
No. 631,464.

Patented Aug. 22, 1899.

H. E. HEDGE.
PUMP.

(Application filed May 23, 1899.)

(No Model.)



Witnesses

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By his Attorneys.

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HENDLEY E. HEDGE, OF LAKIN, KANSAS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 631,464, dated August 22, 1899.

Application filed May 23, 1899. Serial No. 717,930. (No model.)

To all whom it may concern:

Be it known that I, HENDLEY E. HEDGE, a citizen of the United States, residing at Lakin, in the county of Kearney and State of Kansas, have invented a new and useful Pump, of which the following is a specification.

This invention relates to pumps, and has for its object to provide improved means for connecting the plunger to the pump-rod and also to prevent the plunger from becoming accidentally disconnected from the plunger-rod and yet permitting of the ready assembling and disconnection of said parts when necessary or desirable. To this end the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that the improvement is susceptible of various changes in the form, proportion, size, and the minor details of construction without departing from the spirit or sacrificing any of advantages of this invention.

In the drawings, Figure 1 is a longitudinal sectional view of a pump-stock and pump-cylinder having the invention applied thereto. Fig. 2 is an enlarged detail longitudinal sectional view of the pump-cylinder. Fig. 3 is a transverse sectional view, taken on the line *x x*, Fig. 2. Fig. 4 is a detail perspective view showing the arrangement of the plunger-rod passing through the head of the pump-stock when coupled to a windmill.

Corresponding parts are designated by like reference characters in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates a pump-stock of common or ordinary form, and 2 a pump-cylinder which is adapted to be located in the well or cistern, as usual, and connected to the pump-stock by means of a pipe 3.

By reference to Figs. 2 and 3 it will be seen that the plunger 4 is provided with a circular upstanding shoulder or enlargement 5, which is threaded exteriorly, and a central valve-opening 6 is also provided through the plunger and the central enlargement 5. Fitted to the upper face of the annular flange 7, formed by the enlargement 5, is a cup-leather or packing-ring 8, which is held in place by means of

a metal washer 9, having a plurality of pins 10, projecting from its under face and adapted to pass through the packing-ring and into suitable openings provided in the upper face of the flange 7, so as to prevent the washer from turning upon the packing-ring. The pump-rod 11 is connected to the plunger by means of a cage comprising a base-ring 12 and the arched and crossed arms 13, connected to the ring and extending above the same. At the point of crossing of the arched arms 13 there is provided a vertically-threaded opening 14, into which the lower threaded end of the pump-rod is adapted to be removably fitted. The internal periphery of the ring 12 is threaded, so as to be removably fitted to the externally-threaded shoulder or enlargement 5 of the plunger, whereby said ring is clamped upon the upper face of the washer 9, so as to hold the same and packing-ring firmly in position. The valve-opening 6, formed centrally through the plunger, is provided with a suitable check-valve 15 in the usual way to prevent the return of the water downwardly through said opening.

It will be noted by reference to Fig. 3 that the body of the pump-cylinder 2 is elliptical in cross-section, whereby the bore thereof is also elliptical in shape, and the plunger 4 is also of elliptical shape to fit properly the bore of the cylinder, so that the plunger cannot turn axially upon the pump-rod and within the cylinder. Thus it will be seen that the plunger may be disconnected from the pump-rod whenever desired, but the plunger cannot accidentally turn and become detached from the threaded end of the pump-rod. As shown in Fig. 1, the upper end of the pump-rod is pivotally connected to a suitable operating-handle 16, so as to permit of the proper movement thereof, but preventing axial turning of the pump-rod upon the handle. In view of this arrangement it will be seen that the pump-rod cannot turn within the threaded opening 14 provided through the arched arms of the cage, and as the plunger is also prevented from being accidentally turned it is impossible for the plunger and the pump-rod to become accidentally disconnected.

When the pump-rod is connected to a windmill, the upper end or head of the pump-stock

is provided with an angular opening 17, as indicated in Fig. 4, and that portion 18 of the pump-rod which works through said opening is given an angular shape similar to that of the opening, whereby the pump-rod is prevented from turning axially, and accidental disengagement of the pump-rod and the plunger is effectively prevented.

In order that access may be had to the interior of the cylinder for positioning and repairing the plunger, removable heads 19 and 20, respectively, are provided for the open upper and lower ends of the cylinder. As the latter is elliptical in shape, the opposite ends thereof are provided with annular circular shoulders 21, which are externally threaded, so that the heads 19 and 20, which are internally threaded, may be readily fitted to the respective ends of the cylinder. The upper head 19 is provided with a central internally-threaded opening 22 to receive the pipe 3, which connects the cylinder with the pump-stock, and the lower head 20 is provided with a central opening 23, adapted to communicate with the water in the well or cistern. This latter opening is controlled by means of a suitable check-valve 24, which permits of the water entering the cylinder,

but prevents discharge thereof backward through the opening in the usual manner. 30

Although the present invention has been shown and described as applied to a pump, it will of course be understood that the same is applicable to cylinders and plungers of any character. 35

What I claim is—

In a pump, the combination with the cylinder thereof, of a plunger having a central up-standing circular shoulder externally threaded, a packing-ring fitted to the face of the plunger and encircling the central shoulder, a washer having pins extending through the washer and into openings formed in the plunger, a cage carrying an internally-threaded ring adapted to be fitted to the externally-threaded shoulder of the plunger and bearing against the washer, and a pump-rod connected to the cage, substantially as shown and described. 40 45

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 50

HENDLEY E. HEDGE.

Witnesses:

E. G. GRISWOLD,
E. S. SNOW.