

May 18, 1926.

1,585,175

C. H. STEELE

PUMP

Filed Feb. 27, 1925

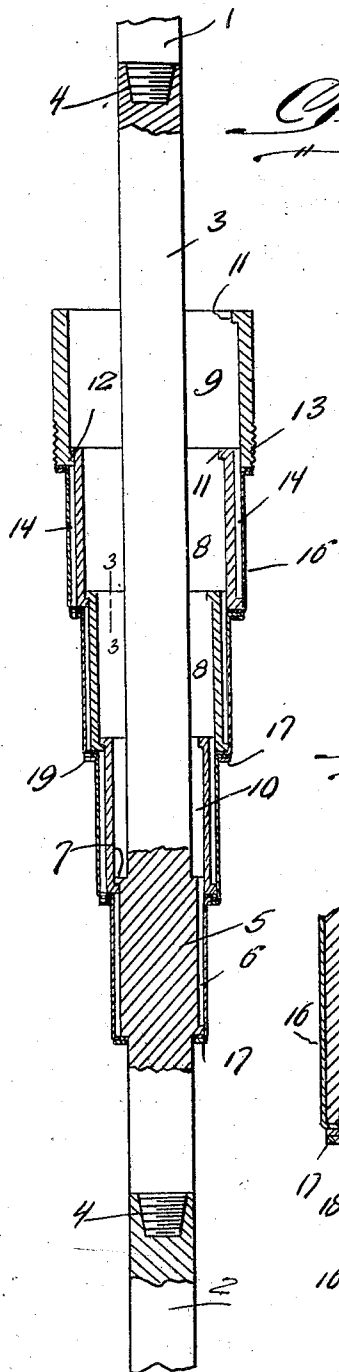


Fig. 1.

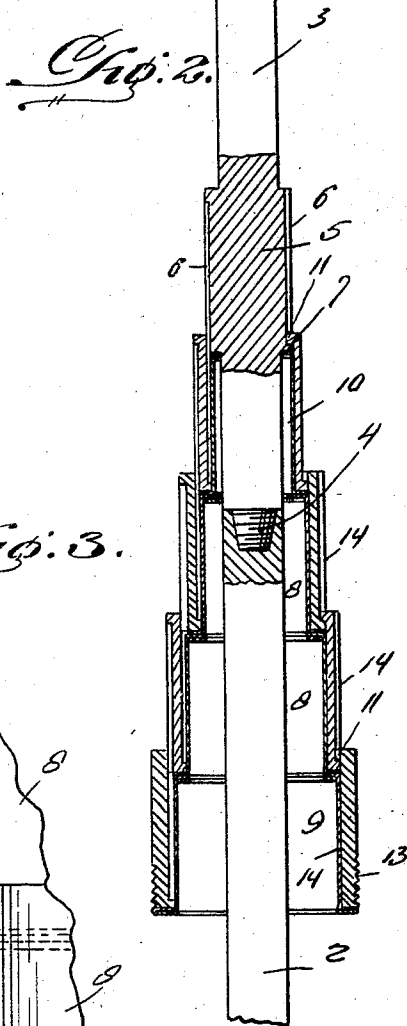
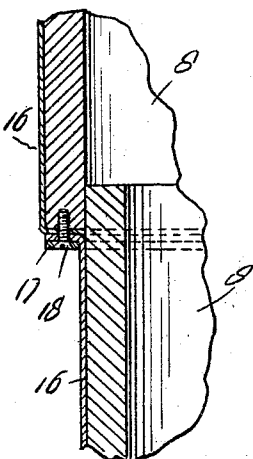


Fig. 2.

Fig. 3.



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PUMP.

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The present invention is a pump in general, and by enlargement and adjustment, may be used as such for all pumping purposes, but is more particularly a packing connection between the plunger rod and the well casing and top thereof.

In the ordinary pumps used in well casings for lifting water to a higher level, a packing box is utilized at the top of the well casing, around the plunger rod. This packing box tends to tighten around the plunger rod and thereby creates considerable resistance to the movement of the plunger rod, causing considerable loss of power, and at the same time allows a constant leak at the top of the well.

One object of the present invention is to provide a packing device, between the top of the well casing and the plunger rod, which will eliminate the annoyances and defects of the packing box just mentioned.

Another important object of the invention is to provide a packing device of this nature which will allow free movement of the plunger rod, with a minimum amount of friction and resistance, and positively prevents leakage at all times.

A still further object of the invention is to provide a device of this nature, with a simple structure, one which is both efficient and reliable in operation, inexpensive to construct, not liable to readily get out of order, strong, durable, and further well adapted for the purpose for which it is designed.

With the above and numerous other objects in view, as will appear as the description proceeds, the invention resides in certain novel features of construction, in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:

Figure 1 is a sectional view, through the device embodying the features of my invention, showing the same in one position with the plunger lowered, and

Figure 2 is a similar view, showing the plunger raised, and

Figure 3 is an enlarged detail section, through two segments of the device.

Referring to the drawing in detail, it will be seen that 1 designates an upper section of a plunger rod and 2 a lower section thereof. A rod 3 is disposed between sections 1 and 2 by a threaded coupling structure, in-

dicated at 4, or in any other suitable manner. This rod 3 forms the body of the device and has disposed intermediate its ends adjacent its lower end, an enlarged cylindrical portion 5, having a longitudinally extending groove on its periphery extending from its upper end to a point in close proximity to its lower end. The upper end of the enlarged cylindrical portion 5 is provided with an outwardly extending stop tongue 7, disposed diametrically opposite to the groove 6. A plurality of cylinders are telescopically associated with one another and with the enlarged cylindrical portion 5. The intermediate cylinders are indicated by the numerals 8 and the end cylinders by the numerals 9 and 10. The end cylinder 9 which is the largest of the cylinders is provided with the inwardly extending tongue 11 at one end and at its opposite end with an inwardly extending tongue 12, diametrically opposed to the tongue 10. The exterior surface of the cylinder, adjacent the tongue 12 is threaded as at 13 in order that this end cylinder 9 may be engaged with the well casing. The intermediate cylinders 8 are provided with longitudinally extending grooves 14 diametrically opposed to each other. These grooves are provided on the outer surfaces of the intermediate cylinders 8 and extend from opposite ends thereof, terminating at a slight distance from the other end, so as to receive tongues 11 from the cylinders at either end thereof. The smallest cylinder 10, which is the other end cylinder is constructed identical with the intermediate cylinders 8 and engages with the enlarged cylindrical portion 5 of the rod 3. It will thus be seen that if the rod 3 is moved upwardly, as is shown in Figure 1, so as to take the position shown in Figure 2, relative to cylinder 9, that the position of the other cylinders will be reversed as is indicated to advantage in Figure 2. The extent to which the rod 3 may be reciprocated, is governed by the size of the cylinders and the numbers thereof. It is, of course, obvious that the size and number of these cylinders may be varied, to suit the construction of the particular well and pump being used.

A sack 16 is made of a combination of fabric and rubber or of any other suitable stout and pliable material with no seams or openings, and tapers from the size of the larger cylinder to the size of the cylindrical enlargement 5. This sack is attached

to the lower end of the cylindrical enlargement 5, by a ring 17, and in like manner to the lower ends of the cylinders 8, 9 and 10. These rings 17 are held in place by
5 screws 18 or other suitable fastening elements, and are notched as at 19, for allowing passage of the tongues 12.

From the above description, it will be apparent that this device will function as
10 the ordinary packing box in the well casing, and will, in no way, interfere with the operation of the plunger rod, and will efficiently prevent leakage between the well casing and the plunger rod, and at the same
15 time maintain the plunger rod properly centered in the well casing. It is further apparent that the embodiment of the invention, which I have disclosed in detail, has been given merely by way of example, and
20 that numerous changes in the details of construction, in the materials, in the proportions, and in the combination and arrangement of parts may be resorted to, without departing from the spirit or scope of the

invention as hereinafter claimed, or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

In a device of the class described, a rod, a cylindrical enlargement on the rod, 30 a plurality of telescopically associated cylinders, the smallest cylinder being slidable on the enlarged cylindrical portion, means limiting the sliding movement of the cylinders in relation to each other and the 35 smallest cylinder in relation to the cylindrical enlargement of the rod, the largest cylinder adapted to be fixed to a well casing, and a tapered sack of pliable water proof material fixed at its smaller end to 40 one end of the cylindrical enlargement, at its larger end to the corresponding end of the largest cylinder, and at its intermediate portions to corresponding ends of the other 45 cylinders.

In testimony whereof I affix my signature.

CHARLES H. STEELE.