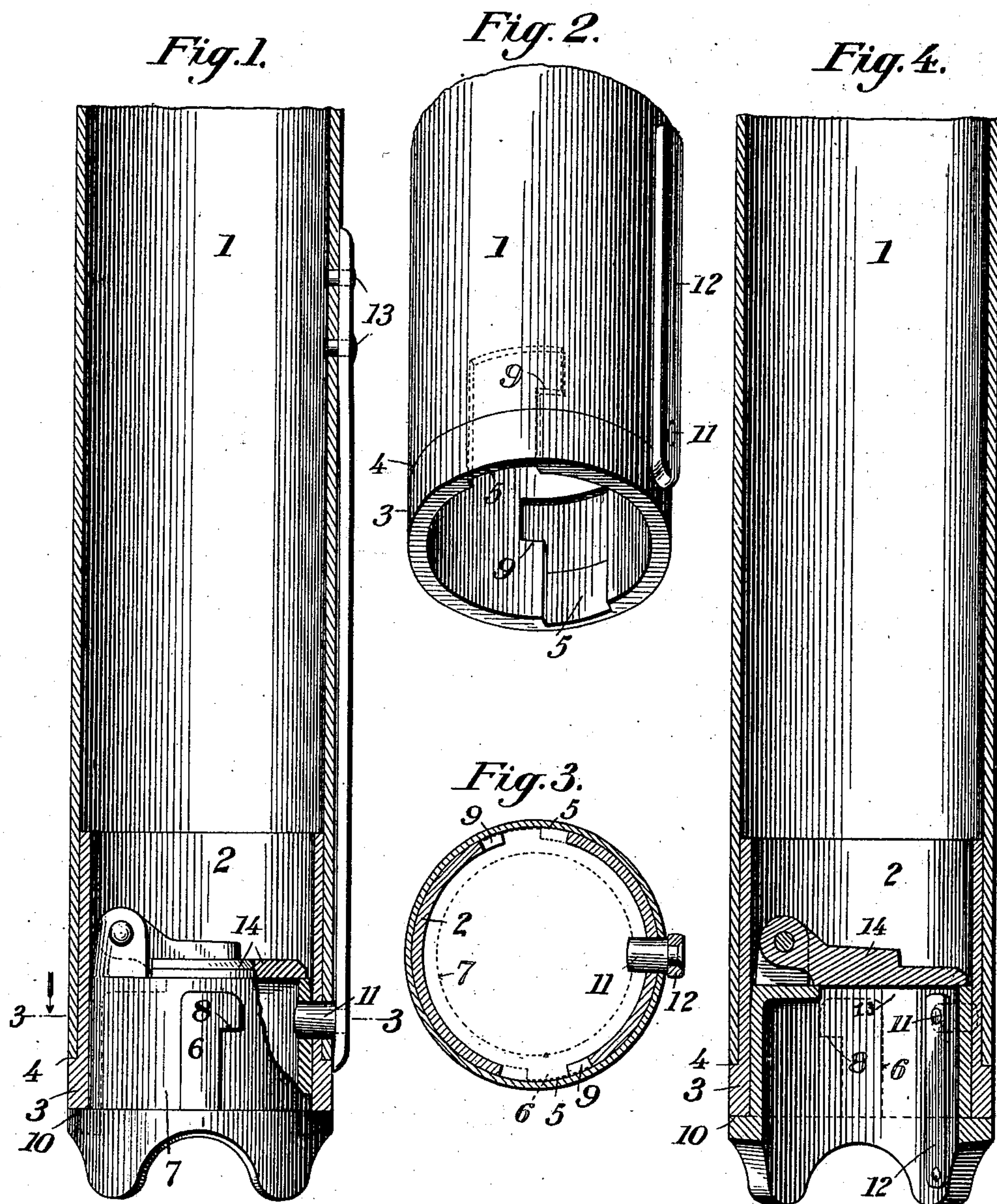


No. 702,653.

Patented June 17, 1902.

F. W. JACKSON.
SAND PUMP AND BAILER.
(Application filed July 10, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK W. JACKSON, OF CHICORA, PENNSYLVANIA.

SAND PUMP AND BAILER.

SPECIFICATION forming part of Letters Patent No. 702,653, dated June 17, 1902.

Application filed July 10, 1901. Serial No. 67,738. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. JACKSON, a citizen of the United States, residing at Chicora, in the county of Butler and State of Pennsylvania, have invented a certain new and useful Sand Pump and Bailer, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to sand pumps and bailers, and is in the nature of an improvement upon the construction disclosed in a prior patent granted to me December 14, 1897, No. 595,306.

15 The object of the present invention is to provide improved means for detachably mounting the valve and valve seat or casing within the lower end of the pump stock or tube, whereby all strain is removed from the spring-actuated locking-pins described and illustrated in my prior patent and placed upon integral parts of the pump-stock and removable valve seat or casing, the said valve seat or casing and pump-stock being connected by
20 a lock-joint which requires a limited amount of rotative movement between the valve-seat and stock in order to disengage the interlocking elements, the spring-pressed locking-pin serving to prevent relative rotation between
25 said parts, but being relieved of any strain due to the weight of the valve seat or casing.

A further object of the invention is to do away with all projections on the outside of the pump stock or tube.

35 A further object in view is to provide a reinforce or lining for the inner surface of the lower portion of the pump stock or tube, which at the same time forms one of the locking elements of the joint between the pump
40 stock or tube and the removable valve-casing.

With the above and other objects in view, the nature of which will appear more fully as the description proceeds, the invention consists in the novel construction, combination,
45 and arrangement of parts hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section through the pump-stock, showing the valve-casing mounted
50 therein, the valve-casing being partly in elevation and partly in section to show the locking means. Fig. 2 is a detail perspective

view of the lower end of the pump stock or tube. Fig. 3 is a cross-section taken on the line 3 3 of Fig. 1; and Fig. 4 is a longitudinal
55 section similar to Fig. 1, showing a modified arrangement of the locking-pin and spring.

Like numerals of reference denote like parts in all the views.

Referring to the drawings, 1 designates the
60 pump stock or tube, which may be of any desired size. Within the lower end of said stock is fixedly mounted a reinforce or lining 2, which is preferably shrunk therein and provided at its lower end with an annular rim or
65 thickened portion 3, forming an annular shoulder 4, against which the bottom edge of the pump stock or tube 1 rests and abuts.

Prior to fastening the lining 2 in place said lining is provided at diametrically opposite
70 points with bayonet-shaped recesses 5, which are adapted to receive bayonet-shaped lugs 6, arranged at diametrically opposite points on the outer surface of a valve seat or casing 7,
75 the latter being exteriorly cylindrical in shape, so as to fit snugly within the lining or reinforce 2, the lugs 6 projecting outward therefrom, so as to enter and engage the recesses 5, thereby forming a lock-joint between
80 the pump-stock and valve-casing. The engagement between the lugs 6 and recesses 5 is effected by sliding the valve-casing into the lower end of the pump-stock, so as to cause the lugs 6 to traverse the recesses 5, and when
85 fully inserted a partial turn is given to the valve-casing, causing the shoulders 8 of the lugs 6 to engage behind corresponding shoulders 9 at the inner portions of the recesses 5. The inward sliding movement of the valve-casing is limited by means of an annular
90 shoulder 10, formed on the outside of the valve-casing, which comes to bear against the lower edge of the lining or reinforce 2, as clearly indicated in Figs. 1 and 4.

Relative rotative movement between the
95 pump-stock and valve-casing is prevented by means of a locking pin or stud 11, which is mounted on the free end of a spring 12, arranged by preference on the exterior of the pump-stock and extending longitudinally
100 thereof and connected at one end, as at 13, to the pump-stock. Both the pump-stock and valve-casing are provided with openings to receive the locking-pin 11, as clearly illus-

trated in Fig. 1, and said openings are so arranged that they will register only after the shoulders 8 and 9 have been brought into engagement with each other. Therefore in order to disengage the shoulders 8 and 9 and permit the valve-casing to be removed from the pump-stock it is necessary to withdraw the locking-pin 11 from engagement with the valve-casing, which can only be effected by overcoming the tension or inward pressure of the spring 12, which may be accomplished by inserting a suitable instrument behind the spring 12 and prying the latter outward.

The upper portion of the valve-casing is partially closed to leave a central opening 13 for the passage of sand, water, &c., said opening being controlled by a pivotally-mounted flap-valve 14, which seats itself against the upper surface of the valve-casing. The lower portion of the valve-casing projecting below the pump-stock and lining is scalloped or recessed, as shown, in order to admit of the inflow of the sand, water, and other material to be operated upon by the pump. Any form of pump rod and plunger and operating mechanism therefor may be employed, as said elements form no part of the present invention.

Under some conditions it may be desirable to arrange the spring 12 within the pump-stock and valve-casing, in which event said spring may be connected at one end to the lower portion and inner surface of the valve-casing, as shown in Fig. 4, while the locking-pin 11, carried by said spring, will pass from the inside outward through registering openings in the valve-casing and pump-stock in a manner clearly indicated by Fig. 4 of the drawings.

By means of the construction above described it will be seen that access may be readily had to the flap-valve at the foot of the pump-stock by removing the valve-casing, which may be accomplished by disengaging the locking-pin 11, then giving a partial turn to the valve-casing, so as to disengage the shoulders 8 and 9, and thereafter drawing or sliding the valve-casing outward from the lower end of the pump-stock. The reverse of this operation is resorted to in reinserting the valve-casing. No frail or delicate parts are employed in effecting the desirable result pointed out, and the parts are so arranged that there is no danger of the same becoming clogged and rendered inoperative by reason of the accumulation of sand and other material in and about the valve or valve-casing. I also do away with all projections on the outside of the pump-stock and materially strengthen and reinforce the lower end of the

pump-stock by means of the inserted lining, in which the bayonet-recesses are formed, thus obviating the necessity of mutilating and impairing the strength of the pump stock or tube itself, the reinforce constituting the support for the valve-casing.

I do not desire to be limited to the details of construction and arrangement hereinabove described and accordingly reserve the right to make such changes in the form, proportion, and minor details of construction as properly fall within the scope of the appended claims.

Having described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pump, the combination with a pump stock or tube, and a fixed reinforce or lining mounted within the lower end thereof, of a valve seat or casing mounted within the lower end of the reinforce said valve-seat being supported by the reinforce and detachably connected therewith by interlocking means, substantially as described.

2. In a pump, the combination with a pump stock or tube, and a reinforce or lining inserted in the lower end thereof and provided with a bayonet-recess covered exteriorly by the pump-tube, of a valve-casing removably mounted within said reinforce or lining and provided with a lug to engage the bayonet-recess, and means for preventing relative movement between the reinforce and valve-casing.

3. In a pump, the combination with a pump stock or tube, and a reinforce or lining fixed within the lower end thereof and provided with a bayonet-recess exteriorly covered by the pump-tube, of a valve seat or casing removably mounted in the lower end of the pump-stock and provided with a lug to engage the bayonet-recess, and a spring-pressed locking-pin engaging openings in the pump-stock and valve-casing and serving to prevent disengagement between the lug and recess.

4. In a pump, the combination with a pump stock or tube, and a reinforce or lining inserted in the lower end thereof and provided with a bayonet-recess covered exteriorly by the pump-tube, of a valve-casing removably mounted within said reinforce or lining and provided with a lug to engage the bayonet-recess.

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

FREDERICK W. JACKSON.

Witnesses:

E. F. HAYS,
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