

E. D. Brown

Pump Packing.

№ 50,898.

Patented Nov. 14, 1865.

Fig.

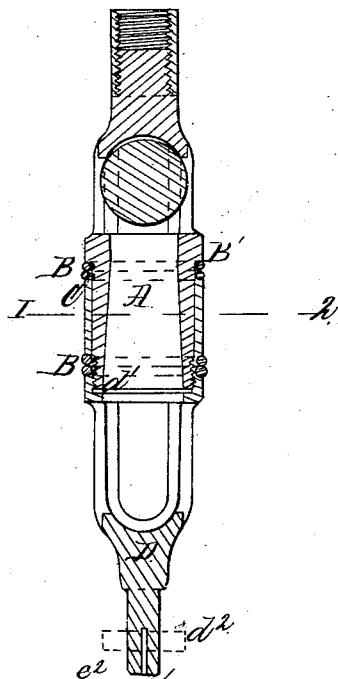


Fig. 2

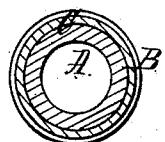


Fig. 3

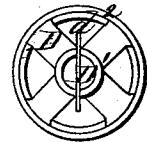


Fig. 4

Fig. 5

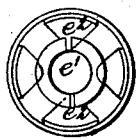
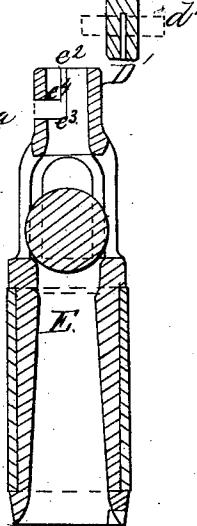


Fig. 1A



Witnesses:

W. H. Forbush
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ERASmus D. BROWN, OF BUFFALO, NEW YORK.

IMPROVEMENT IN ADJUSTING THE PACKING OF PISTONS IN DEEP WELLS.

Specification forming part of Letters Patent No. **50,898**, dated November 14, 1865.

To all whom it may concern:

Be it known that I, ERASmus D. BROWN, of the city of Buffalo, county of Erie, and State of New York, have invented a certain new and Improved Plunger-Packing and Mode of Expanding the Same for Oil-Well Pumps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure I and I^a is a longitudinal section of plunger and foot-valve. Fig. II is a cross-section of plunger, on line 1 2, Fig. I. Fig. III is a bottom plan of follower by which the packing is expanded. Fig. IV is an elevation of foot-valve, and Fig. V is a top plan of same.

Letters of like name and kind refer to like parts in each of the figures.

The nature of this invention consists in so constructing the lower or tail end of the screw-follower and the upper end of foot-valve that by lowering the plunger by the plunger-rod they may be so interlocked that, by turning, the rod and with it the plunger (the follower being prevented from turning by its interlocking with the foot-valve) will be made to screw down and expand the packing, and the necessity of withdrawing the plunger from the well to repack avoided.

A represents the plunger-head, which is made hollow and furnished with a ball-valve and connected to the pump-rod in a common manner.

B represents packing-rings of gutta-percha or other elastic and compressible material which surround the head A. Any required number of these rings may be used, they being separated either singly or in pairs by one or more interposed metallic rings or thimbles, C. This metallic ring C placed between the rings of elastic packing has the effect to compress and expand the elastic rings from the center outwardly, and hence cause them to pack more closely against the walls of the pump-barrel than would be the case if it was not used. Two or more of these metallic thimbles may be used in the same manner, if required.

D represents the screw-follower, which screws onto the lower end of the plunger-head, as

shown at d', and clamps the packing-rings and thimbles between itself and the shoulder B' on the plunger-head. As the packing wears by use, by screwing up the follower the packing-rings will be compressed and expanded laterally until they will again tightly fill the bore of the pump-barrel and cause the plunger to work efficaciously therein.

E represents the foot-valve, which is of common construction, except that its upper end is bored out, as shown at e', and has vertical slits or notches e² cut therein. The lower or tail end, D', of the follower D is made to fit the bore e', and has a cross-bar, d², which fits the notches e², so that when placed together the follower is prevented from turning. By this means the follower may be operated by turning the pump-rod and plunger, and the packing adjusted without the necessity of removing the plunger from the well.

When the packing is properly adjusted the plunger may be raised, and its connection with the foot-valve broken, and its duty be resumed with a great saving in the time, labor, and expense now lost in such adjustment.

For the purpose of withdrawing the foot-valve from the pump and well, which frequently requires to be done, the notches e² are prolonged laterally, as shown at e³, so that in turning the plunger by the pump-rod the cross-bar d² will enter and catch below the shoulder e⁴, and securely connect the foot-valve to the plunger, so that in withdrawing the plunger by the pump-rod the foot-valve will be taken with it.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

So constructing the lower end of the screw-follower D and the upper end of the foot-valve E as that they may be coupled together and the packing adjusted through the pump-rod, in the manner and for the purposes substantially as described.

ERASmus D. BROWN.

Witnesses:

C. ROGERS,
W. H. FORBUSH.