(No Model.)

E. R. MAXWELL.

PISTON PACKING FOR DEEP WELL PUMPS.

No. 348,027. Patented Aug. 24, 1886.

Fig. 1

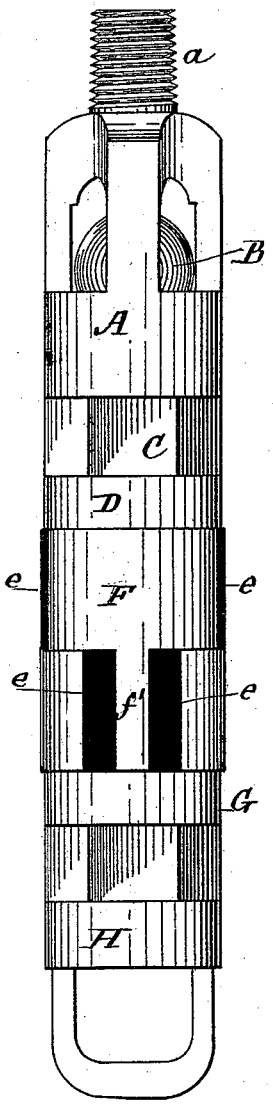


Fig. 3.

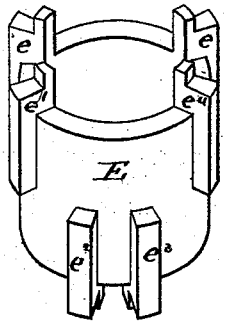


Fig. 2.

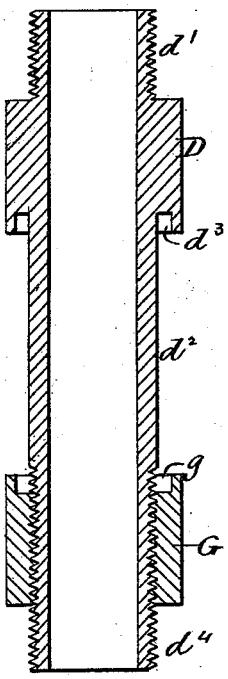


Fig. 4.

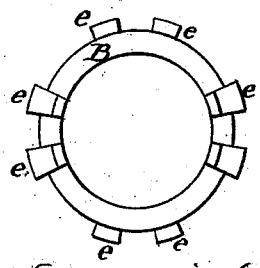


Fig. 5.

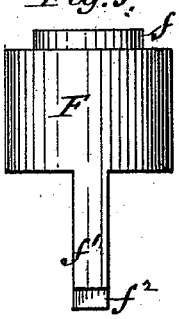
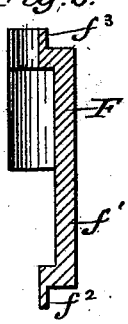


Fig. 6.



WITNESSES

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PISTON-PACKING FOR DEEP-WELL PUMPS.

SPECIFICATION forming part of Letters Patent No. 348,027, dated August 24, 1886.

Application filed July 11, 1885. Serial No. 171,338. (No model.)

To all whom it may concern:

Be it known that I, ELMER R. MAXWELL, a citizen of the United States, residing at Bolivar, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Piston-Packings for Deep-Well 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.

My invention relates to improvements in the packing of pistons for deep-well pumps; and it consists in forming such packing of pieces of metal and forcing these out against the barrel by an elastic foundation or support.

In the accompanying drawings, Figure 1 is an elevation of a pump-piston provided with my improved packing. Fig. 2 is a sectional view of the main cylinder of the piston. Fig. 3 is a perspective view of the elastic foundation or support of the packing-rings. Fig. 4 is a top view of the same. Fig. 5 is a front view of one of the segments of the metallic packing, and Fig. 6 is a longitudinal section of the same.

This piston is designed for deep-well pumps.

A is the cage containing the ball-valve B, and is fastened to the sucker-rods by the screw *a*. It is screwed onto the thread d' of the cylinder D. The cylinder D has a portion, C, made hexagonal or octagonal, so that it can be readily grasped by a wrench for convenience in screwing on or unscrewing the other parts of the piston. The shaft d^2 is made somewhat smaller than the part D, and upon the shaft the elastic ring E fits closely. This elastic ring is made as shown in Fig. 3, and has four projections on its upper end and four similar ones on its lower end. These are marked e e' e^2, &c. Both ends are alike, and therefore either end may be used upward.

F F are the metallic packing-segments, of which there are four. They are made so that the larger portion will form nearly half a circle. Projecting from the center of the larger portion F is the tongue f', and this has an interior projecting nib, f^2. The upper portion has also the interior projecting nib, f^3. The metallic segment F fits on the elastic ring E, and extends from the projection e' to the projection e^4, while the tongue f' fits between the projections e^2 and e^3. The other segments are put on in a similar manner, and together they form a double ring of metal around the piston, the joints being broken so as to prevent any leak of the fluid from above or below the packing. The groove d^3 is intended to receive the nib f^3 or the nib f^2, as the case may be. On the lower end of the shaft d^2 is the screw-thread d^4, and upon this screws the nut G, which has the groove *g*, to engage with the nibs f^2 and f^3, and by said nut G the packing is firmly held in place. The jam-nut H holds the nut G.

It is evident that the segments F F may be made in smaller pieces, so that six, eight, or even more may be used, if desired.

The ring E and its projections *e e* may be made of rubber or any other firm and elastic substance. By its elasticity it will cause the segments F F to spring out against the sides of the working-barrel.

This piston will be found well adapted to all deep-well pumps, but will be particularly advantageous in wells that pump considerable sand.

What I claim as my invention is—

A packing of a piston for a pump, consisting of a series of metallic segments, F F, with the tongues f' f' and projecting nibs f^2 f^3, the elastic foundation E, with the projections *e*, e', e^2, e^3, and e^4, head D, and nut G, substantially as shown and described, and for the purpose specified.

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

ELMER R. MAXWELL.

Witnesses:
JAMES C. BOYCE,
F. W. PERKINS.