L. B. BROWN.

Linings for Pump-Barrels.

No. 152,273. Patented June 23, 1874.

Fig 1.

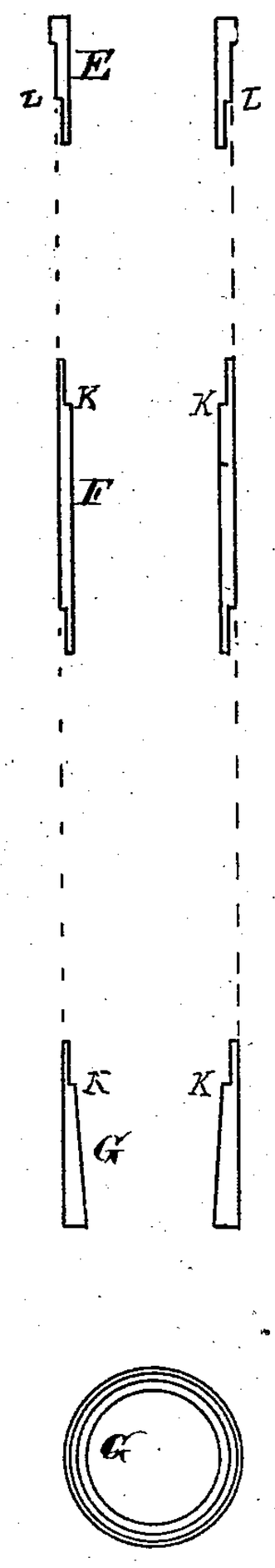


Fig 2.

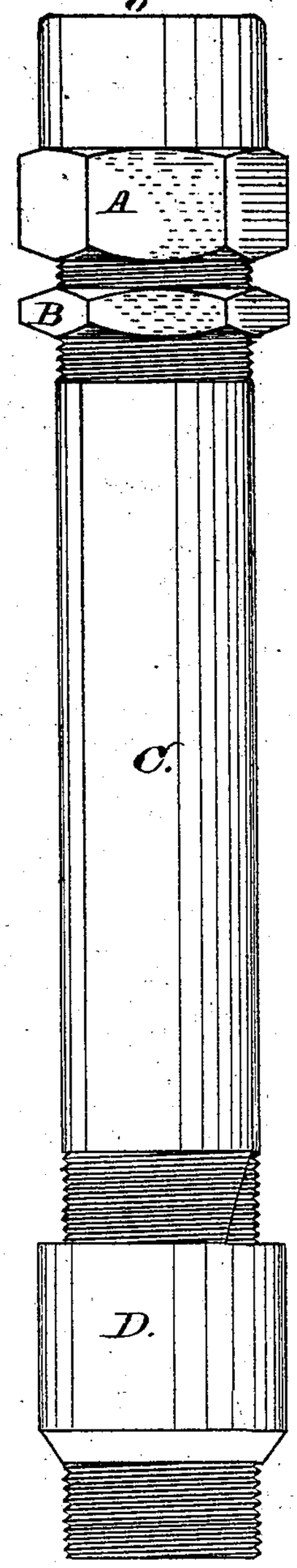
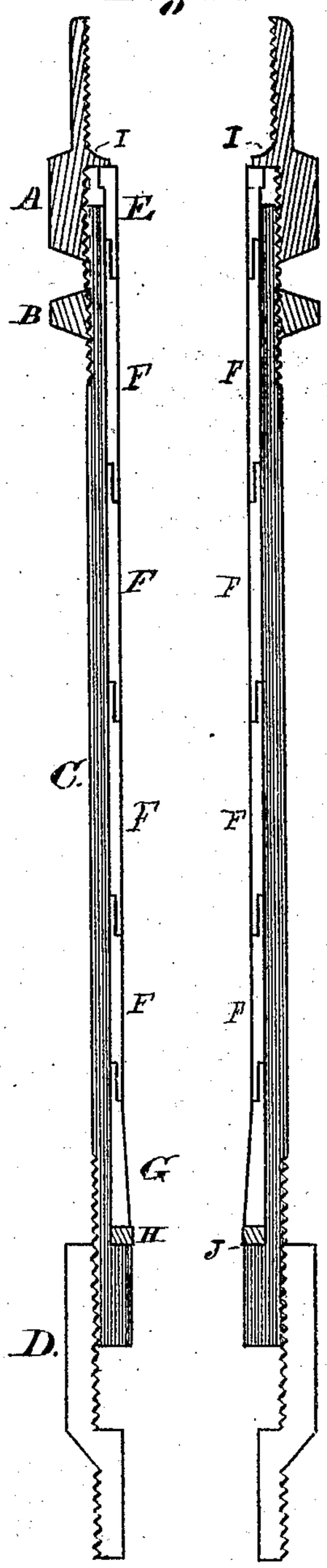


Fig 3.



Witnesses
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UNITED STATES PATENT OFFICE.

LESTER B. BROWN, OF PETROLEUM CENTRE, PENNSYLVANIA.

IMPROVEMENT IN LININGS FOR PUMP-BARRELS.

Specification forming part of Letters Patent No. **152,273**, dated June 23, 1874; application filed April 23, 1874.

To all whom it may concern:

Be it known that I, LESTER B. BROWN, of Petroleum Centre, State of Pennsylvania, have invented a Working Barrel for Artesian Wells, of which the following is a specification:

The object of my invention is to place in the inside of a working barrel for an artesian well a lining made in joints, so that a part thereof, when worn, can be withdrawn and another substituted, either by replacing the worn joint with a new one, or interchanging a worn with an unworn joint.

As ordinarily made the working barrel of an artesian well is about six feet long. The pumping-valve has generally a stroke of about two feet. After use the barrel becomes worn for about two feet of its length, and it is then necessary to bore out the barrel, so that the bore will be of the same size throughout. After a couple of such borings the interior of the barrel becomes so large that the suckers required to fill it cannot be passed down inside of the tubing without being worn, cut, and damaged. The inside of my barrel at its top part is made of a superior shape to ordinary barrels, so that the sucker can be put in without any laceration or wear.

Figure 2 is a perspective view of my working barrel. Its outside appearance differs but little from the ordinary working barrel. The lower thimble or reducer D is no part of my invention, and is in no way essential.

Fig. 3 shows a sectional view of my working barrel. It is made in several parts. The main or outside part C may be made of any metal, but preferably of iron. It is bored out from the top, leaving at the bottom a shoulder. (Shown at J.) It is a long cylinder having an external diameter of about three inches, more or less, according to the size of well-hole and the tubing used therein. On the shoulder J there rests an annular packer, H, made of leather or some elastic material or soft metal.

The main distinctive feature of my invention is the lining of the working barrel. This lining is made of any suitable metal or material, preferably of brass, and extends the whole interior length of the working barrel from the shoulder J to the top of the outer case. This lining is made in at least two joints. The lower one has an inside taper, as shown at G, so as to retain the standing box in which is the lower valve. The upper joint E has its upper part larger than the inner bore of the case C. This enlargement is intended to fit closely to the top of the case C, so as to be water-tight. An annular packer may be inserted, if needed. In a lining made of but two joints, the top joint E and the lower joint G would fit together by having a part of the metal cut away from the outside of E and the inside of G, or vice versa, so that one will fit closely inside the other. As the inner joint should be perfect, the metal should be cut so that the inner surfaces will fit closely the bottom of E close to K, even if the top of G does not quite reach the corner L.

In a working barrel made in this way, when the part is worn by pumping it should be replaced with a new one. I design, however, to make the lining in several parts—the top part E and the bottom G not over a foot in length. The rest of the lining I propose to make in at least two joints. I see no advantage in having more than four; but more could be made, if desired. These joints, F, will be precisely alike, so that they are interchangeable. They can be made to fit together so as to make a tight joint. I do not limit myself to making them in the shape shown, for they could be merely flat rings to stand one above the other.

The upper thimble A is made as shown. At its upper end it is threaded to receive the tubing. At its lower end it is threaded to receive the upper part of the outer case of the working barrel. It has an inner annular projection to press upon the upper part of E. The top of this projection is beveled, as shown at I, so that on placing the sucker-rods in the well the valve will pass down smoothly and surely into the working barrel.

When the packer H, the lower joint G, the joints F F, and the upper joint E are placed in the outer case C, the upper thimble A is screwed on, (after the jam-nut B has been put in position.) By means of the thimble A and the lower thread thereon, the inner joints are closely pressed together, so that the inner surface of the pump or working barrel is practically continuous. The jam-nut B is then screwed up against A, so as to retain A in its position. The working barrel is then suspended in the well in the usual manner. The

standing box and sucker are inserted, and pumping is commenced and continued until the part of the lining is worn too large for suction. The working barrel is then removed, the worn joint is removed and changed with an unworn one, and the barrel replaced. When all the joints are worn equally, a little larger sucker can be used, and the joints interchanged as before, until all the joints are worn thin, when a single new joint can be obtained for that part of the lining which sustains the wear. It may be that the pumping stroke will engage two or more joints; if so, they need more changing of joints than where but one is worn; but the principle is the same and the manner of use obvious.

I disclaim the lining of a working barrel or the making of a barrel with an inner and an outer case.

What I claim as my invention is—

1. A jointed lining for a working barrel for artesian wells, made substantially as described.

2. The jam-nut B, in combination with the thimble A, the outer case C, and the lining, as described.

LESTER B. BROWN.

Witnesses:
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W. J. BELL.