G. W. BURR.

Self-Packing Piston Connection.

No. 167,064. Patented Aug. 24, 1875.

Fig: 1.

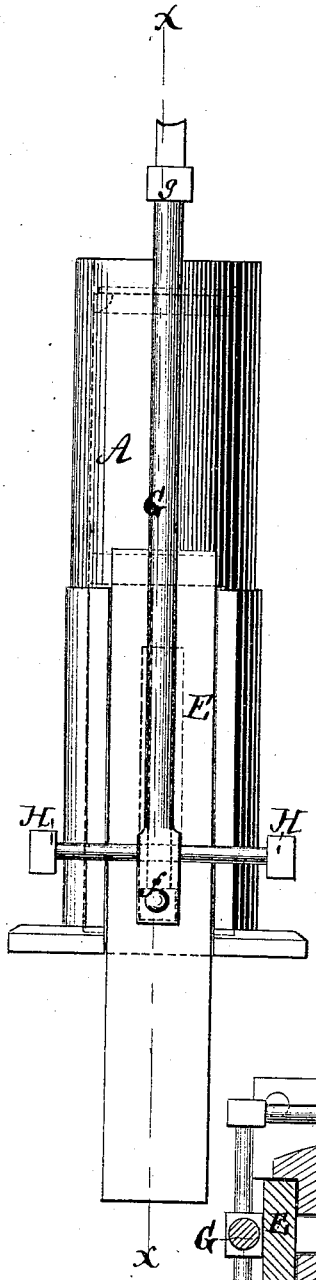


Fig: 2.

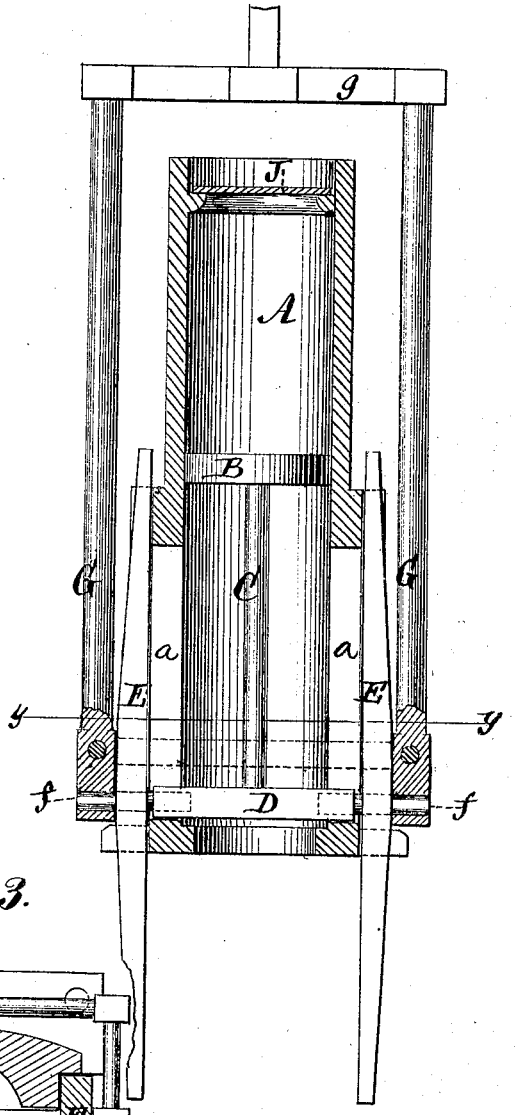
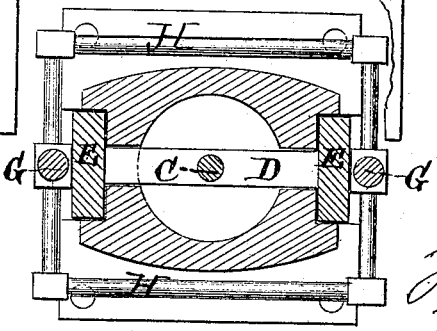


Fig: 3.



Witnesses
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GEORGE W. BURR, OF EAST LINE, NEW YORK.

IMPROVEMENT IN SELF-PACKING PISTON-CONNECTIONS.

Specification forming part of Letters Patent No. **167,064**, dated August 24, 1875; application filed July 24, 1875.

To all whom it may concern:

Be it known that I, GEORGE W. BURR, of East Line, in the county of Saratoga and State of New York, have invented an Improved Self-Packing Piston-Connection; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

The object of my invention is to dispense with a stuffing-box for the piston-rod of a pump or other apparatus.

The invention consists in extending the piston-connection through slots in the cylinder, and applying metallic slides, which form water-tight packings over the slots, whereby the friction is reduced, and a more durable packing is obtained.

In the accompanying drawing, Figure 1 is a side view of an apparatus embodying my invention. Fig. 2 is a vertical section taken in the line *x x* of Fig. 1. Fig. 3 is a transverse section taken in the line *y y* of Fig. 2.

A represents a cylinder of a pump or other apparatus, in which works a piston, B, attached to the upper end of a piston-rod, C. To the lower end of this piston-rod is attached a cross-head, D, the ends of which pass through slots *a a* in the cylinder A. On the outside of the cylinder, on each side of the slots *a a*, are guides or ways, in which work slides E E, covering said slots, and forming a packing for the same. G G represent two connecting-rods, having their upper ends connected by a cross-bar, *g*, or in any other suitable manner. The lower ends of the rods G are connected to the slides E and cross-head D by pivots *f*, which pass through and project from both sides of each of the slides, the inner ends of the pivots passing into the ends of the cross-head D, and their outer ends passing through eyes in the lower ends of the connecting-rods G. The contact of the rods with the slides may be preserved by a yoke, H, or in any other suitable manner. A cheek-valve, J, may be placed in the cylinder A above the piston, and, if desired, another may be placed below it; but such lower one will not be necessary except when liquid is to be raised from a considerable depth.

When the invention is applied to a pump-cylinder, the body of liquid inside the cylinder produces a suction, which, combined with the atmospheric pressure on the outside, causes the slides to work closely in their seats, and serve as a packing for the slots, preventing the escape of liquid therefrom. This pressure of the slides against their seats continues at all times, so that as the slides become worn, they are fed up to their facings, keeping the packing perfect without the necessity for renewing the same. The cheek-valve above the piston receives the weight of the liquid on the down-stroke, allowing the piston to descend with ease.

By connecting the rod to the plunger from below, all pressure on the rod and slides is removed, except what is caused by suction of water in the supply-pipe.

In a packing constructed according to my invention, the friction is much less than in the ordinary stuffing-box.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, with a cylinder, A, provided with slots *a a*, of the piston-connection D, passing through said slots, and the slides E E, covering said slots and forming a packing, substantially as herein described.

GEORGE W. BURR.

Witnesses:

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