C. GORDON.

Double-Acting Pump.

No. 165,727. Patented July 20, 1875.

Fig: 1.

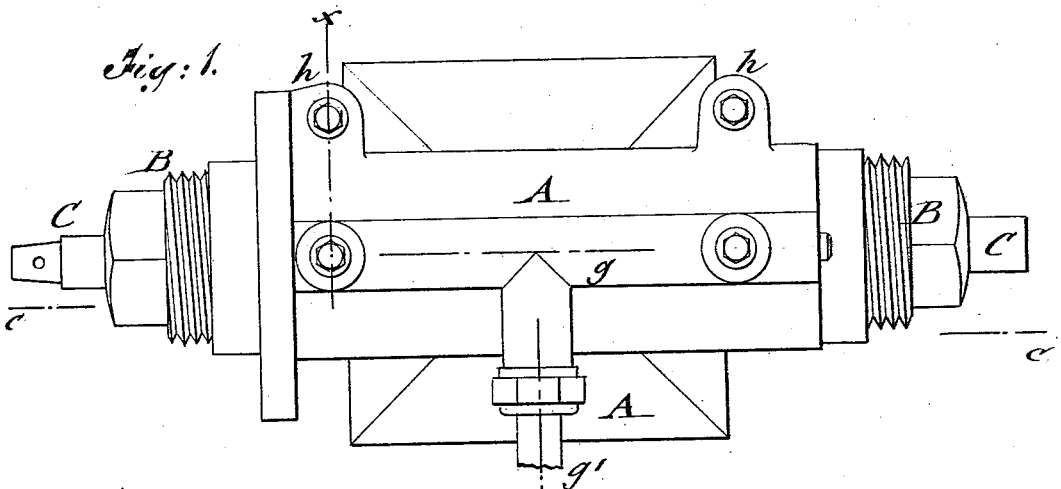


Fig: 2.

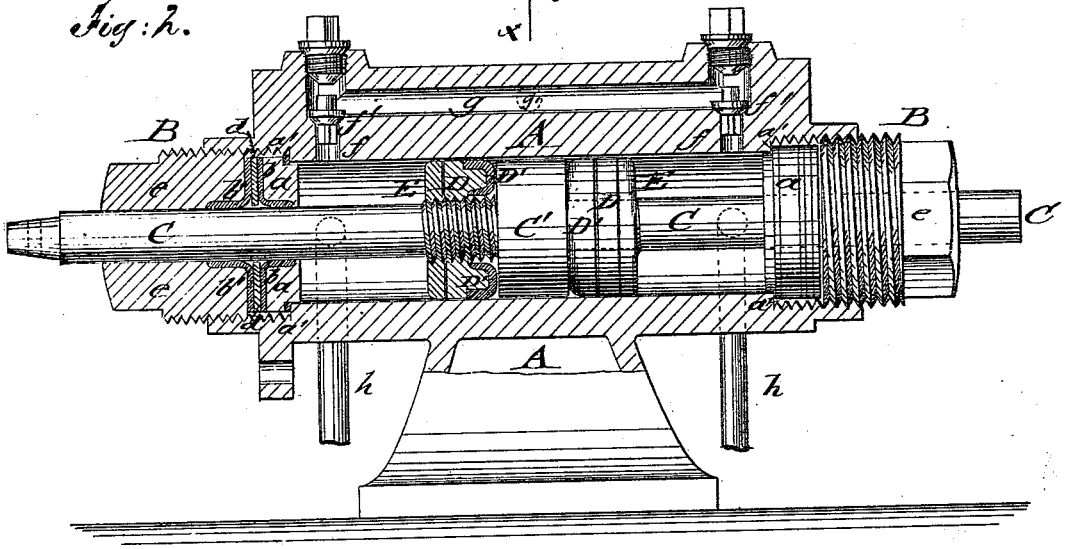
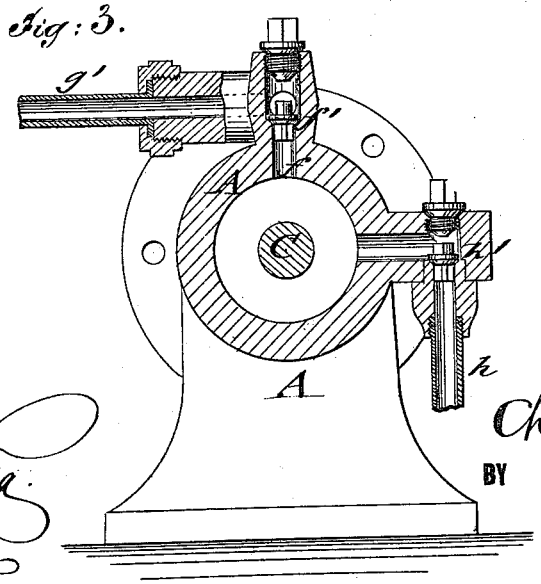


Fig: 3.



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CHARLES GORDON, OF SAVANNAH, GEORGIA.

IMPROVEMENT IN DOUBLE-ACTING PUMPS.

Specification forming part of Letters Patent No. **165,727**, dated July 20, 1875; application filed May 8, 1875.

To all whom it may concern:

Be it known that I, CHARLES GORDON, of Savannah, in the county of Chatham and State of Georgia, have invented a new and Improved Double-Acting Pump, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view; Fig. 2, a vertical longitudinal section on the line *c c*, Fig. 1; and Fig. 3 a vertical transverse section on the line *x x*, Fig. 1, of my improved double-acting pump.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide for hydraulic cotton and other presses a double-acting pump that furnishes with less power and leakage a continuous solid body or column of water, and works with greater advantage against high pressure than the pumps hitherto used in connection with hydraulic presses.

The invention will first be described in connection with drawing and then pointed out in claim.

In the drawings, A represents the pump-cylinder, which is closed at both ends by tight packing-boxes B for guiding the piston-rod C, that runs centrally through cylinder and packing-boxes. The piston-rod C is provided with a central head, C′, fitted exactly to bore of cylinder. At both sides of head C′ are screwed brass rings D, of which one part is fitted to the bore of the cylinder, while the part adjoining the head is reduced at the inner and outer circumference for seating cup-shaped leather packing-rings D thereon. Jam-nuts E, back of the brass rings D, are tightly screwed thereon, and bind the packing-rings at both sides of the central head firmly thereto, keeping all parts compactly in place, while allowing the ready substitution of the worn-out parts on removing one of the cylinder-heads and taking out the piston-rod. The packing-box B, at each end of the cylinder, is formed of a brass ring, *a*, that is seated by a packing-ring, *a*, placed in the circumferential recess of the ring against the end shoulder of the cylinder. An L-shaped leather packing, *b*, is applied to the outer side of the ring, and separated by a brass washer, *d*, from the similarly-shaped leather packing *b′* of the screw-head *e* of the cylinder. Both the inner brass ring and outer screw-head are turned out to provide for the leather packing applied thereto. Head *e* is screwed tightly into the cylinder, until the inner ring is tightly seated against the end shoulder of the cylinder, and the leather packing firmly compressed to the same and around the sliding piston-rod. The compressing of the leather packing around the piston-rod keeps the cylinder-heads entirely free from leakage or escape of water, notwithstanding the considerable pressure which the pump has to overcome in the hydraulic press, to which the same is connected. Each stroke of the double piston forces the water in the cylinder section at one side of the same through pipe *f*, with check-valve *f′*, into the longitudinal connecting-pipe *g*, and to the delivery-pipe *g′*, while the vacuum formed in the other cylinder section draws the water through the suction-pipe *h*, with check-valve *h′*, into the same, to be forced on the return stroke of the piston to the delivery-pipe, while the other section is filled with water through the opposite suction-pipe. A continuous body or column of water is thus supplied to the hydraulic press, which accomplishes by the reliable action of the pump more effective work with less leakage than the pump hitherto employed for hydraulic cotton, hay, or other presses.

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

The double piston, consisting of center-head C′, with packing and packing-rings D D′, and jam-nut E on each side of it, and secured as shown, in combination with rod C, and the cylinder and water-ways of a pump, substantially as described.

CHAS. GORDON.

Witnesses:
JULIUS KAUFMANN,
J. J. ABRAMS.