

(No Model.)

G. W. COONSE.

FORCE PUMP.

No. 310,561.

Patented Jan. 13, 1885.

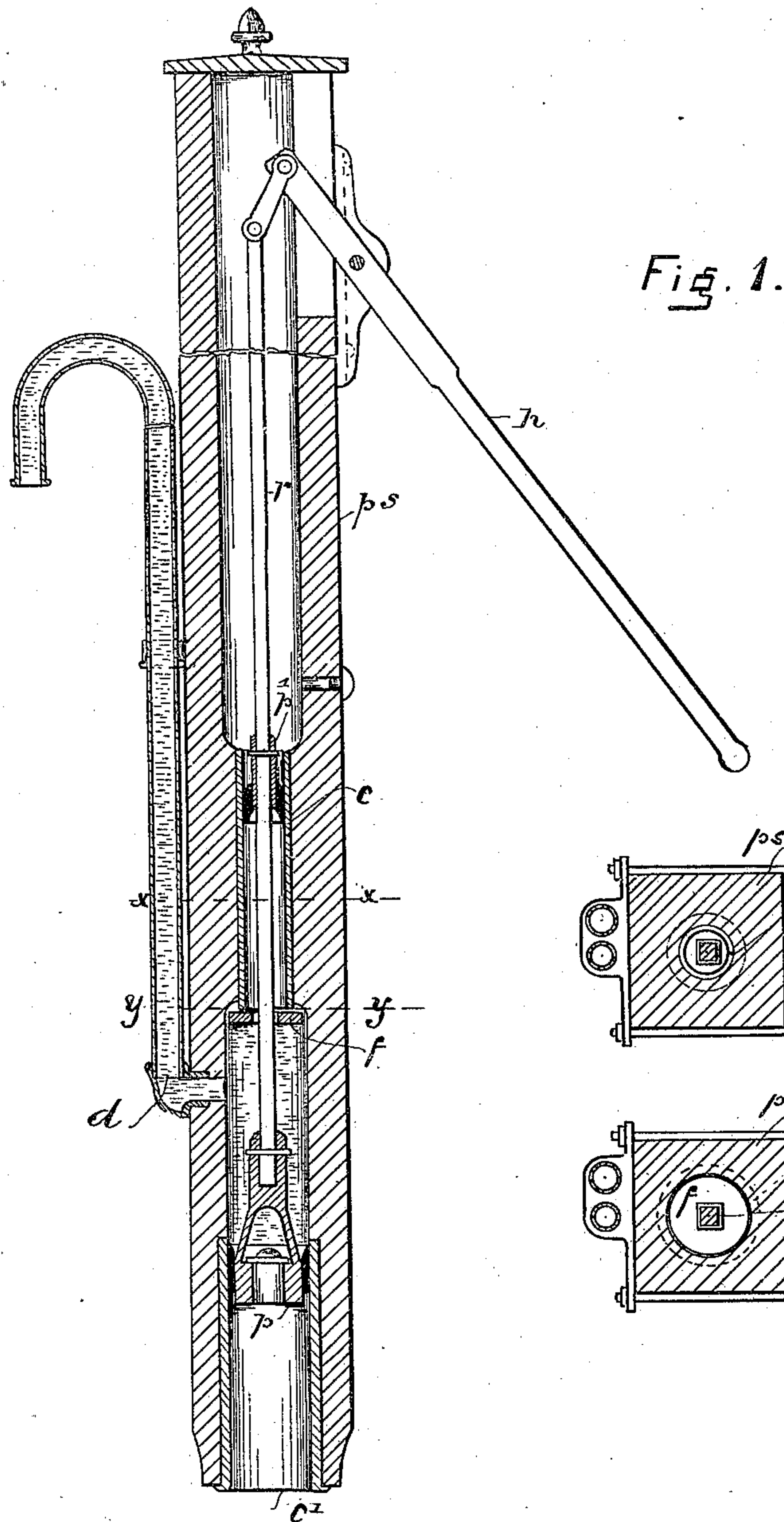


Fig. 1.

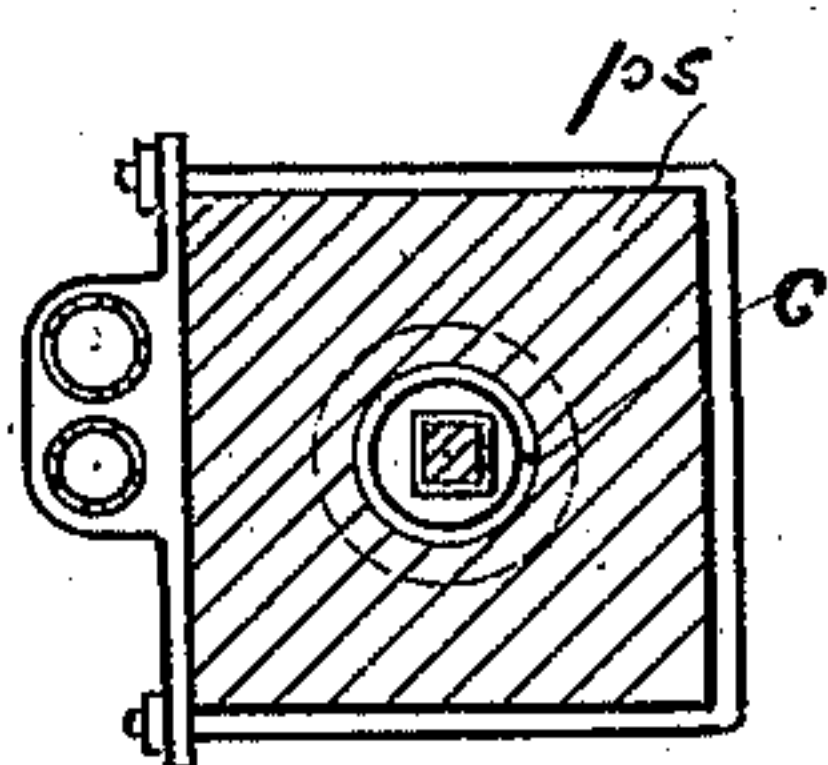


Fig. 2.

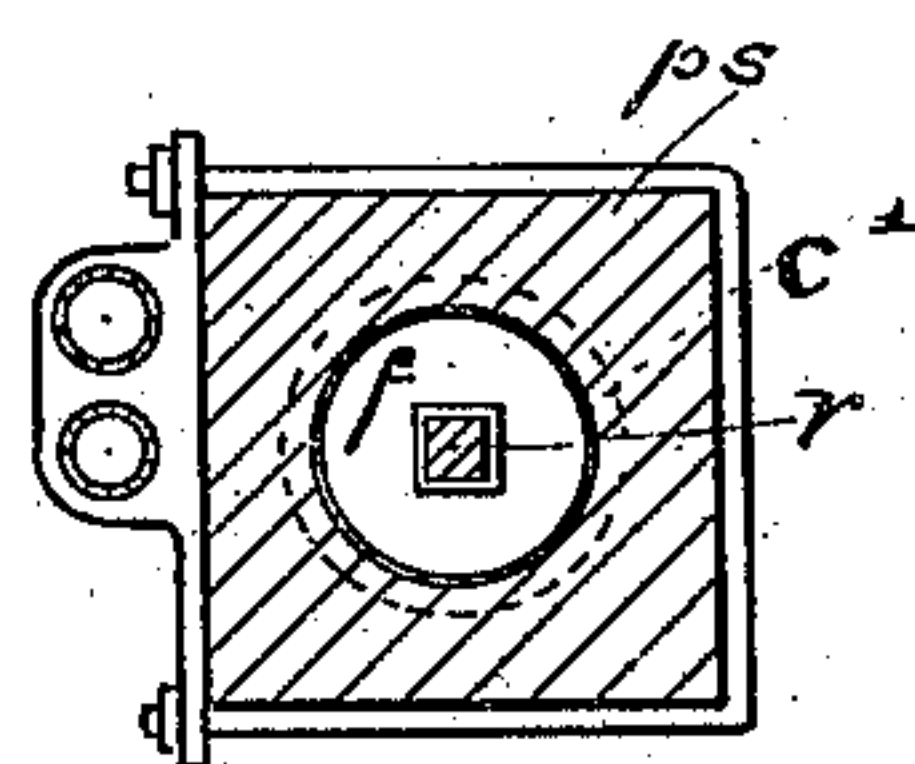


Fig. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE W. COONSE, OF INDIANAPOLIS, INDIANA.

FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 310,561, dated January 13, 1885.

Application filed May 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. COONSE, a resident of Indianapolis, Indiana, have made certain new and useful Improvements in Force-Pumps, a description of which is set forth in the following specification, reference being made to the accompanying drawings, in the several figures of which like letters indicate like parts.

My invention relates to the construction of force-pumps wherein a wooden stock having differential bores is adapted to receive two metal cylinders of different sizes, in which two buckets move upon a common rod, with a valve between, and will be understood from the following description:

In the drawings, Figure 1 is a vertical section of the pump-stock, its inclosed cylinders, and buckets, showing the pump-rod and its attachment by a joint to the handle. Fig. 2 is a cross-section on the line xx , Fig. 1; and Fig. 3 is a cross-section on the line yy , Fig. 1.

In detail, ps is a wooden pump-stock bored out below and above the upper cylinder, c , to a diameter of about three and one-half inches, and between these the stock is bored to a diameter of about two inches, the latter and smaller bore connecting the larger ones. In the lower bore is inserted a metal cylinder, c' , and in the smaller central bore is driven a smaller metal cylinder, c . To the handle h , by a link, is connected the pump-rod r , which carries an upper bucket or plunger, p' , fitted to work in the small cylinder c , and a lower bucket or plunger, p , fitted to work in the lower cylinder, c' , and between the two buckets a float or valve, f , works loosely on the pump-rod r . The discharge-pipe is shown at d .

The operation of the pump is as follows: As the plunger p rises, the water follows and passes through the valve in its top, filling the chamber above the cylinder c' . The water, as it rises, lifts the floating valve f to the top of the chamber, where it stops and closes the smaller opening of the upper cylinder, c , pre-

venting the water from escaping into it, and thus the water, or the greater bulk of it, is forced to escape through the discharge-pipe d . A reverse movement of the piston or pump rod now forces down the upper plunger, p' , which has a concave opening or cup turned downward, and this forces whatever water there may be in the upper cylinder and air downward against the float f , forcing it also downward, and, as the water cannot escape otherwise, the valve in the lower plunger being closed, the water is of course forced out the discharge-pipe. The result produced is a free and uninterrupted flow of water from the nozzle and great ease of working the pump. The upper cylinder with its reversed plunger avoids the necessity of packing the rod, so as to make it air and water tight, and of course the rod moves much more easily than when so packed.

I am aware that two plungers reversed with respect to each other are old, and do not broadly claim the same, although mounted on the same piston-rod; but I am not aware that a pump-stock having differential bores adapted to receive metal cylinders of different sizes, or the use in one pump-stock of two metal cylinders of different sizes, has ever been known or used, either with or without a float-valve, before my invention.

What I claim, and desire to secure by Letters Patent, is the following:

The pump-stock ps , having differential bores adapted to receive metal cylinders of different sizes, the cylinders c and c' , the upper bucket, p' , lower bucket, p , the pump-rod on which both buckets are mounted, and the loose valve f , adapted to rise and fall on the rod between the two cylinders, all combined substantially as described.

Witness my hand this 20th day of May, 1884.

GEORGE W. COONSE.

Witnesses:

C. P. JACOBS,

D. C. MUSGROOVE.