

A. Burr, Pump Lift,

N^o 54,289.

Patented May 1, 1866.

Fig. 1.

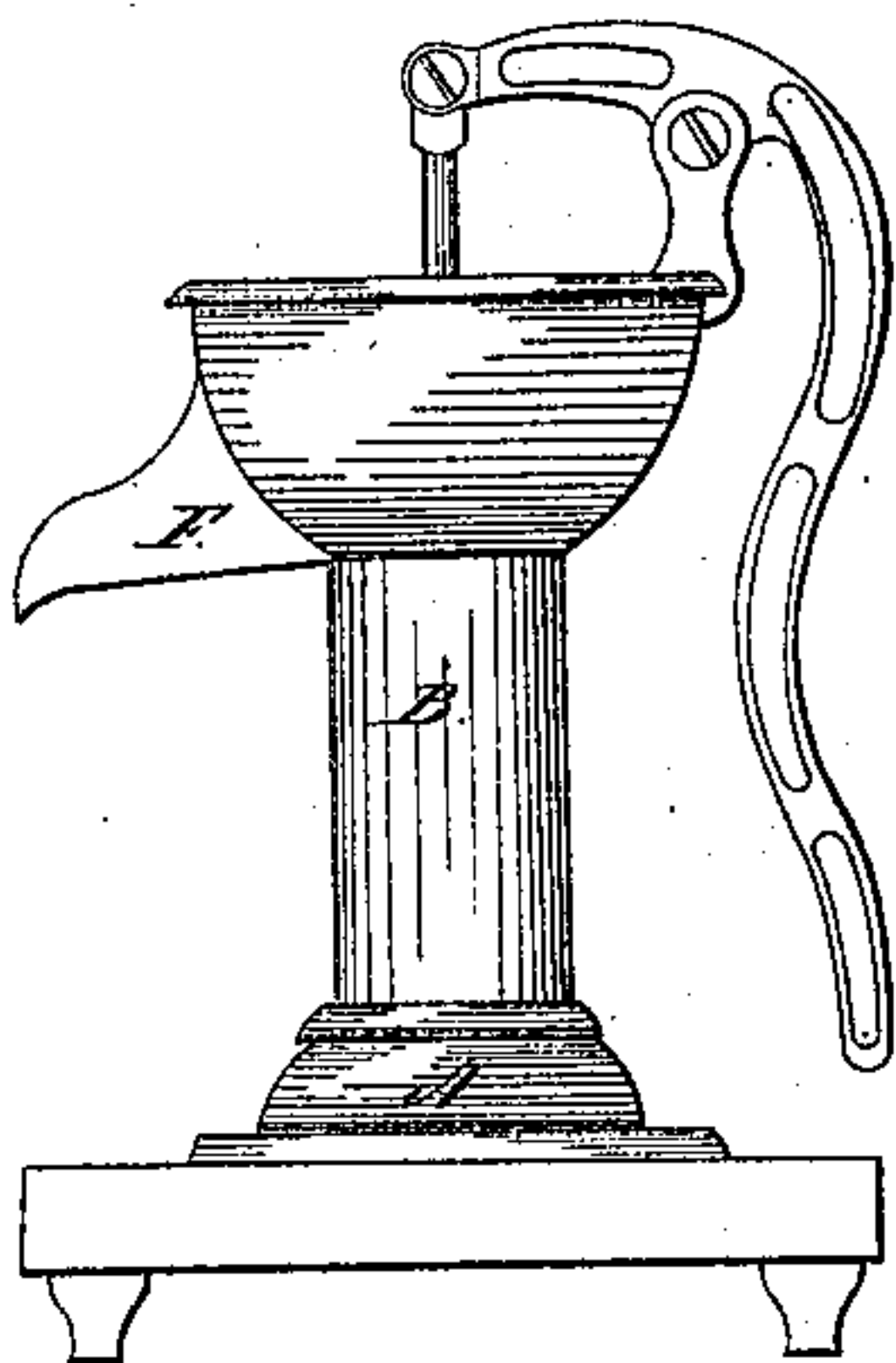


Fig. 2.

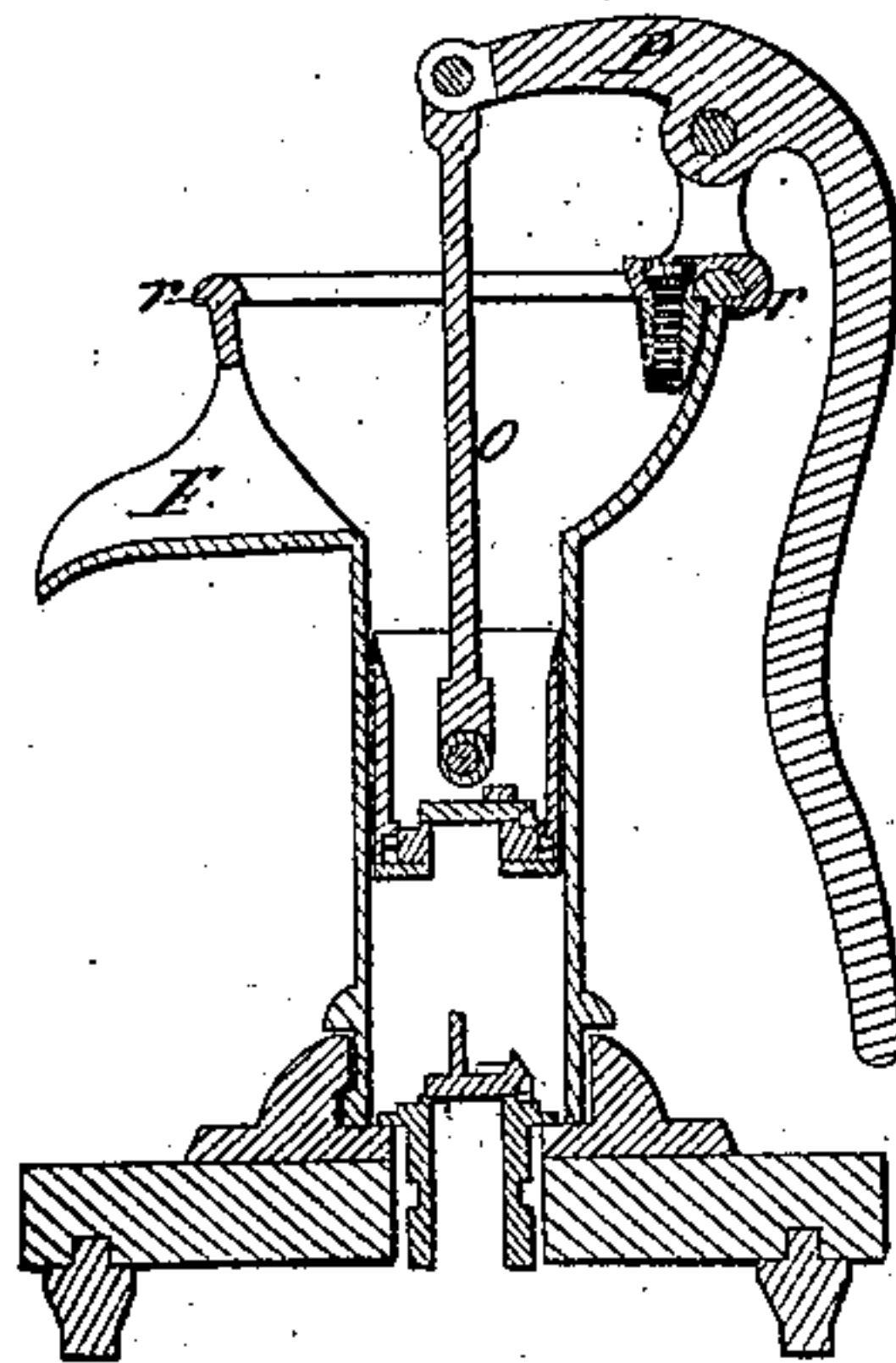


Fig. 3.

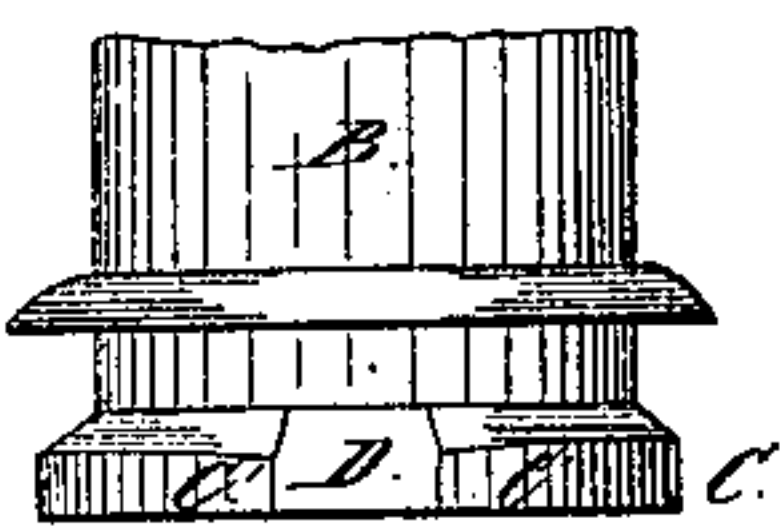


Fig. 4.

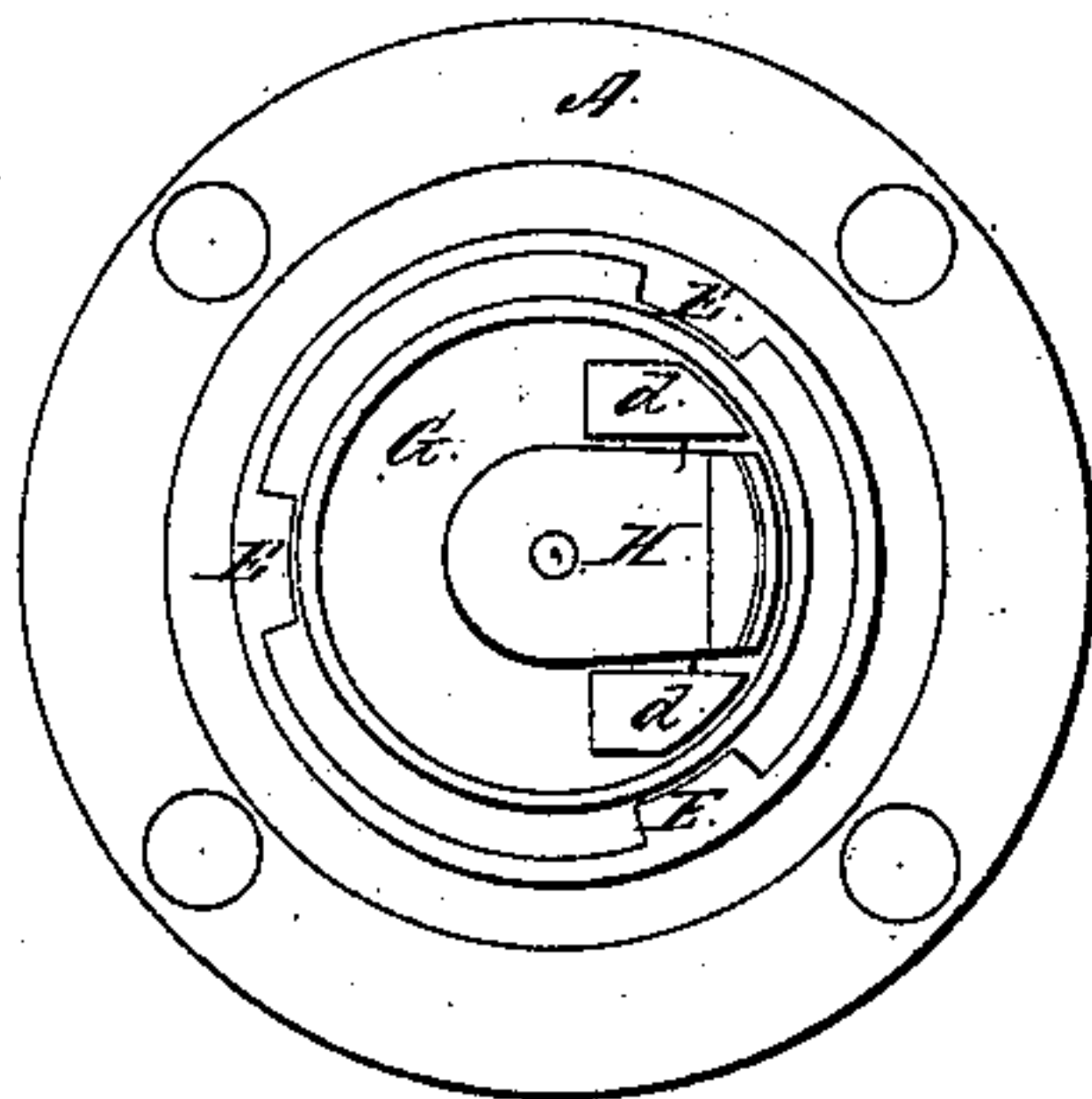


Fig. 5.

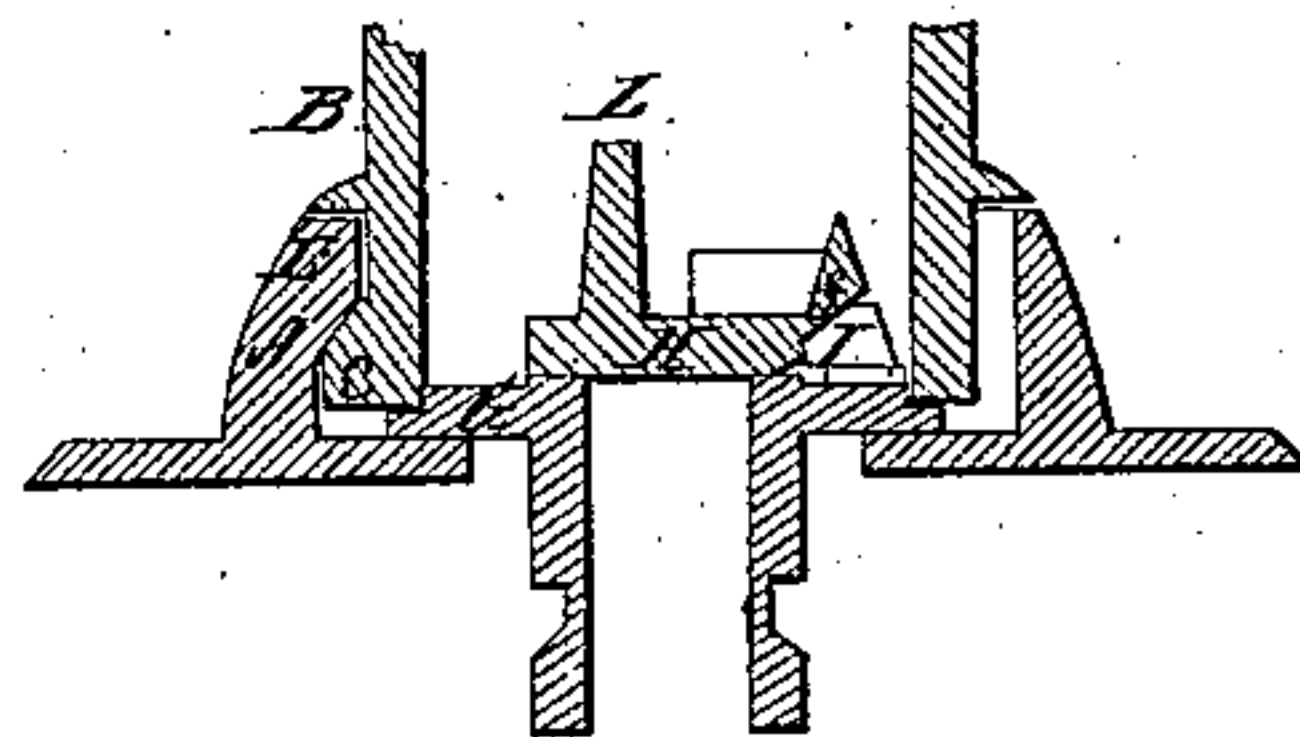


Fig. 6.

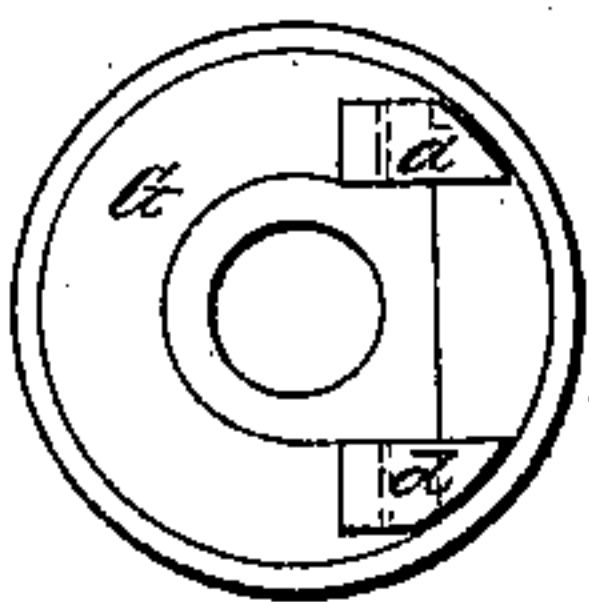


Fig. 7.

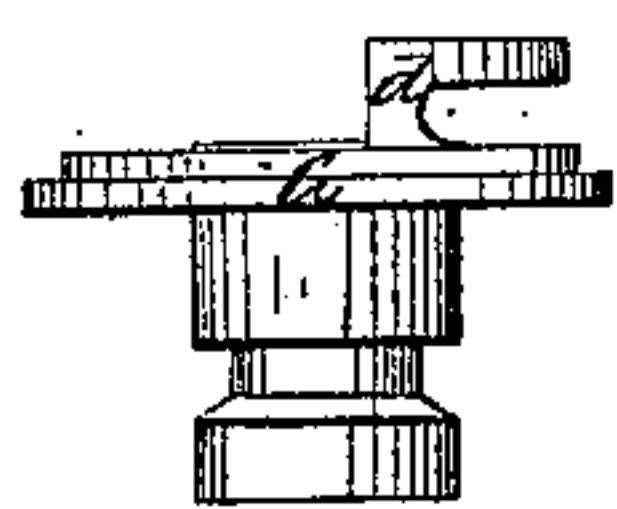


Fig. 8.

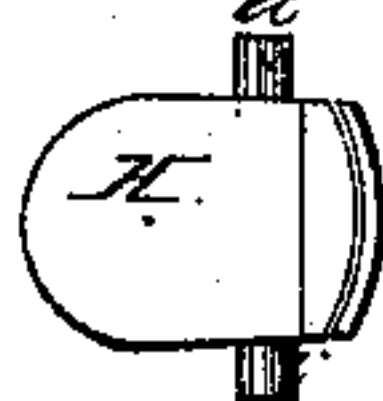


Fig. 9.

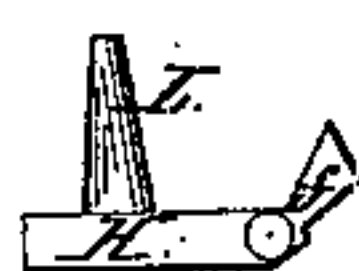


Fig. 10.

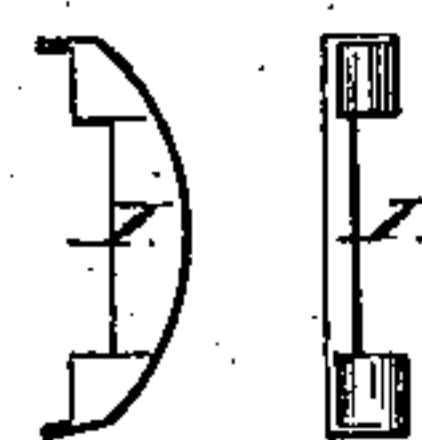


Fig. 11.

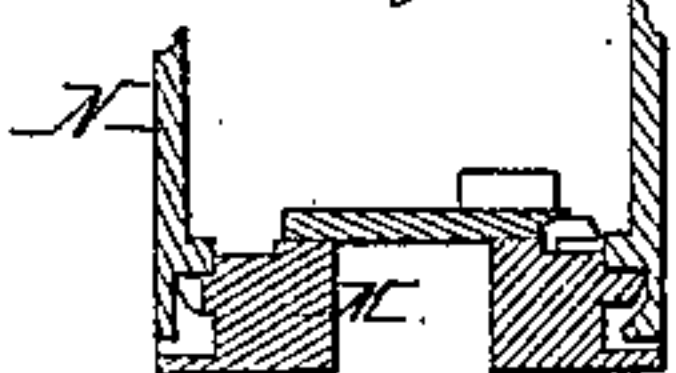


Fig. 12.

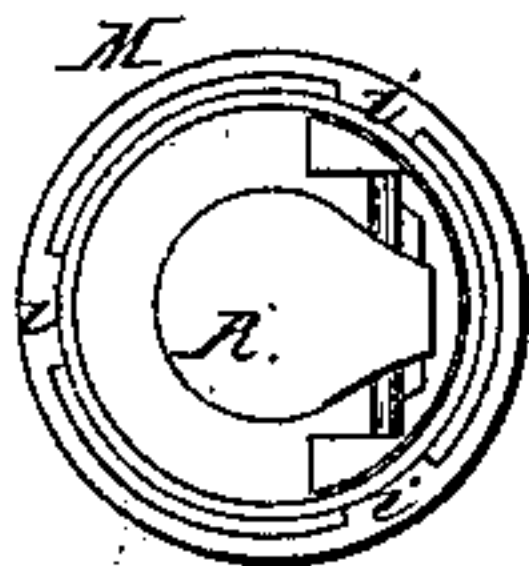


Fig. 13.

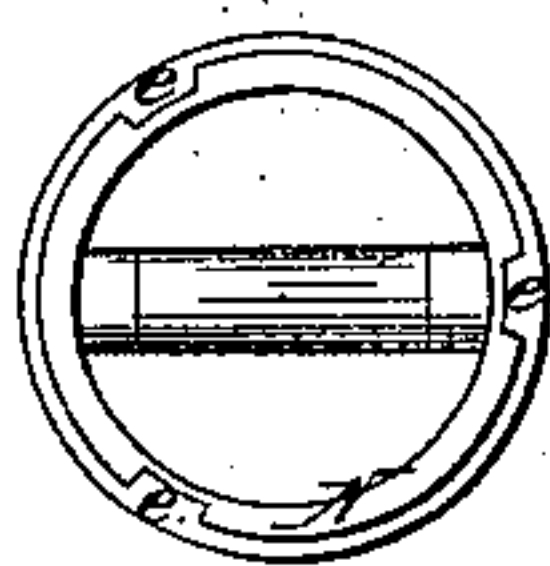


Fig. 14.

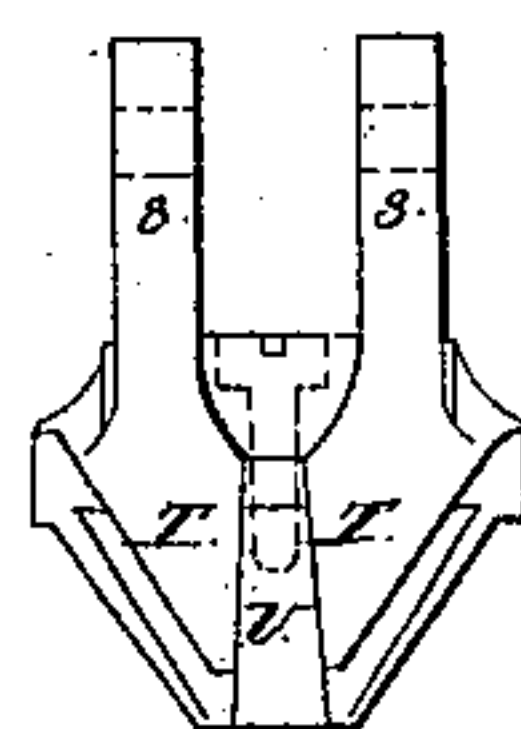


Fig. 15.



Fig. 16.



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Witnesses:

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UNITED STATES PATENT OFFICE.

ASHER BURR, OF MIDDLETOWN, CONNECTICUT.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 54,289, dated May 1, 1866.

To all whom it may concern:

Be it known that I, ASHER BURR, of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Pumps; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a vertical central section; Figs. 3 to 16, inclusive, detached views to illustrate my invention.

My invention relates to an improvement in the construction of pumps; and it consists in the peculiar construction of the joints by which the parts are united, so that no packing or bolts are required, and so that the pump may be adjusted to turn the nozzle to any desired position, and in the construction of the valves, and also in the manner of securing the lever or handle to the cylinder so that it is adjustable to different positions.

To enable others skilled in the art to construct and use my improvement, I will proceed to fully describe the same as illustrated in the accompanying drawings.

A is the base; B, the cylinder. The lower end of the said cylinder is formed with a flange, C, inclined upon its upper side downward, as seen in Fig. 3. Three notches, D, are cut through the flange C, and the said flange is also inclined upon its upper surface from the said notches, as seen at C', Fig. 3. The base A is constructed to receive the said flange, and provided with projections F (see Fig. 4) corresponding to the notches D, so that when the cylinder is placed onto the base the notches on the cylinder will allow it to pass down into the base. The diameter of the cylinder immediately above the flange is made smaller than the internal diameter of the base, for the purpose more fully hereinafter shown, and when so set into the base the cylinder is turned in either direction, turning the flange C under the projections E. The inclines C' on the flange C, passing under the projections E, securely lock the cylinder to the base, while the outward incline of the flange C tends to throw the pump from one point to another until all parts of the lower end of the cylinder bear firmly upon the base, forming a perfect joint without the ne-

cessity of packing. This result is the object of the outward incline of the flange C. Its advantage over other constructions is this, that the usual manner of uniting the cylinder to its base is by cutting an external thread upon the cylinder and a corresponding internal thread in the base, screwing the cylinder into the base. The impossibility of cutting these two threads so that the cylinder will fit perfectly entirely around its lower end is well known. This impossibility renders it necessary to use packing. Or if bolts are used the same difficulty is found in making a metal to metal joint. Three notches only on the cylinder can be employed to accomplish this object, as a positively equal bearing cannot be obtained on more or less than three.

The notches D and projection E equally dividing the circumference of the base and the cylinder, the cylinder may be placed so as to turn the nozzle in almost any desired position.

By making other projections in the base—that is to say, six equally spaced instead of three, retaining only the three notches on the cylinder—a greater range of adjustment would be obtained; or six notches on the cylinder and three projections on the base will produce the same result. I find, however, that three notches and three projections give sufficient range for adjustment for general purposes.

G is the lower valve-seat, (see Fig. 5,) constructed so as to rest upon the base, and also so that the cylinder will set upon its edge. I form a shoulder upon the said valve-seat G, as seen in Fig. 5, the smaller diameter closely fitting into the cylinder of the pump to prevent the securing of the cylinder to the base from compressing the cylinder so as to change its form—a difficulty which exists in the present mode of securing the cylinder—that is to say, in such cylinders as are formed from sheet metal; and when the cylinder is so set upon the said valve-seat and secured to the base in the manner described the joint around the seat is perfectly tight, requiring no other packing or security.

H, the lower valve, (seen in Figs. 8 and 9,) is constructed with trunnions *a*, which set into lugs *d* on the valve-seat G, (see Figs. 6 and 7,) and when so set a yoke, I, (see Figs. 9 and 10,) is placed back of the said trunnions into the lugs *d*, to hold the valve in its proper position, as in Fig. 4, the cylinder of the pump

serving to retain the yoke I in its place, as seen in Fig. 5. On the top of the said valve a stud, L, is fixed for the purpose of opening the upper valve when pressed down upon it, and the rear end of the valve turned up so as to form an arm, *f*, by which the upper box may open the said valve, as in pumps of common construction.

M is the upper valve-seat; N, the box to which it is attached, which I construct as a cylinder fitting closely the cylinder of the pump, so as not to require packing, and attached centrally to a rod, O, which connects it to the lever P. The valve-seat M is secured to the box N in similar manner as described for securing the cylinder of the pump to the base, the notches *i* being formed on the valve-seat (see Fig. 12) and the projections *e* on the cylinder. (See Fig. 13.)

R is the valve, constructed and arranged upon its seat in like manner as described for the lower valve.

The ears S S, to which the handle is attached for the fulcrum, may be of any convenient form; but, instead of rigidly securing the said ears to the cylinder, I form a bead, *r*, upon the upper edge of the cylinder, (see Fig. 2,) and form a hook, *t*, (see Fig 15,) to lock onto the said bead upon the outside, and upon the inside a pair of lips, T, Figs. 14 and 15, to extend down upon the inside, the inner edge of the lips being inclined, as seen in Fig. 16. Between the said lips I place a tongue, *u*, corresponding to the lips T T, and of a form corresponding to the inner surface of the upper part of the cylinder.

Through the body, between the ears, I place a screw, having its seat in the said body and screwing into the tongue *u*, (see Figs. 2 and 14,) so that by turning the said screw the tongue *u* will be drawn upward, and, being of a wedge shape, will wedge firmly between the

tongues and cylinder of the pump and securely hold the ears in their position upon the cylinder.

To adjust the said ears to place the lever in a different position upon the cylinder, loosen the screw to relieve the tongue, slide the ears around upon the bead to the desired position, and there fix it by turning the screw, as before described.

By the construction of the cylinder and valves as herein described the use of packing and bolts is entirely avoided, which renders my pump peculiarly adapted to pumping acids, oils, &c., as it may at all times be easily cleaned, and is equally well adapted for all other purposes where a lifting-pump is required, it not being liable to get out of order, and by its peculiar adjustment is adapted to any position.

Having therefore thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

1. The self-packing joint produced by the construction and arrangement of three notches, D, with their inclines C', and the inclined flange C upon the one part and corresponding projections E upon the other part, substantially as specified.

2. The combination of the valve-seat G, the base A, and cylinder B, when constructed and joined together substantially in the manner and for the purpose herein specified.

3. The combination of the yoke I with the valve H and seat G, substantially in the manner and for the purpose set forth.

4. The lips T T and tongue *u*, operating substantially in the manner and for the purpose described.

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Witnesses:

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