(No Model.)

G. S. AYER.

COMBINED FORCE AND LIFT PUMP.

No. 338,689. Patented Mar. 30, 1886.

FIG. 1.

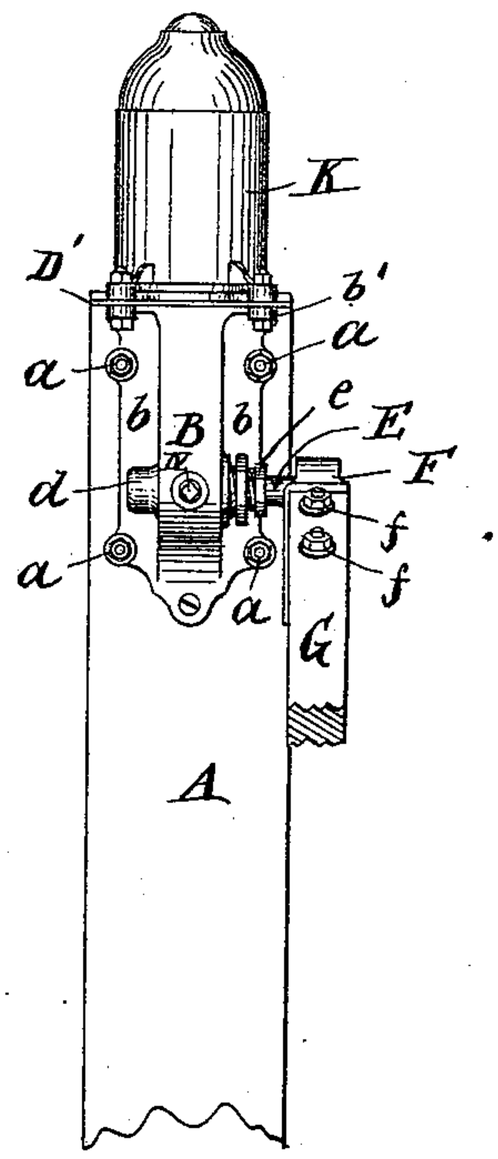


FIG. 2.

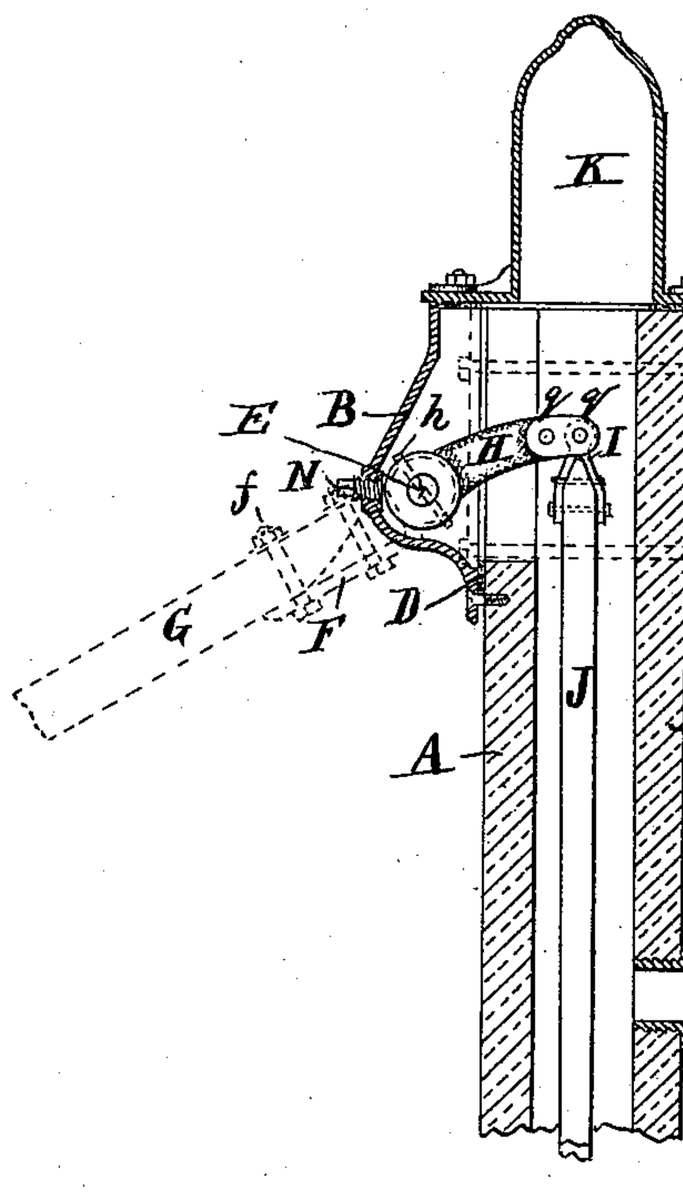


FIG. 3.

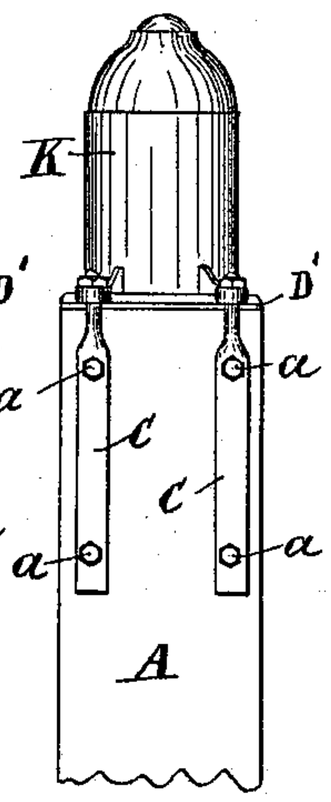


FIG. 4.

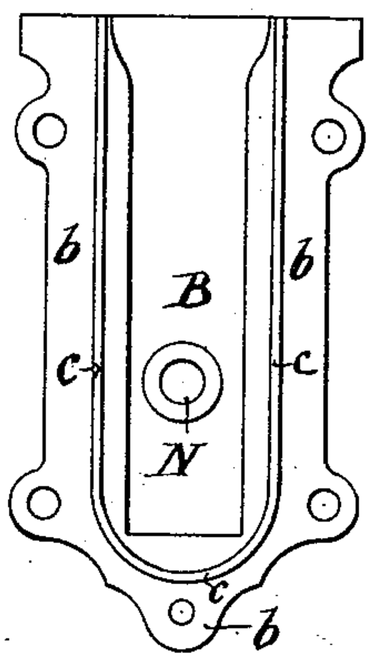


FIG. 6.

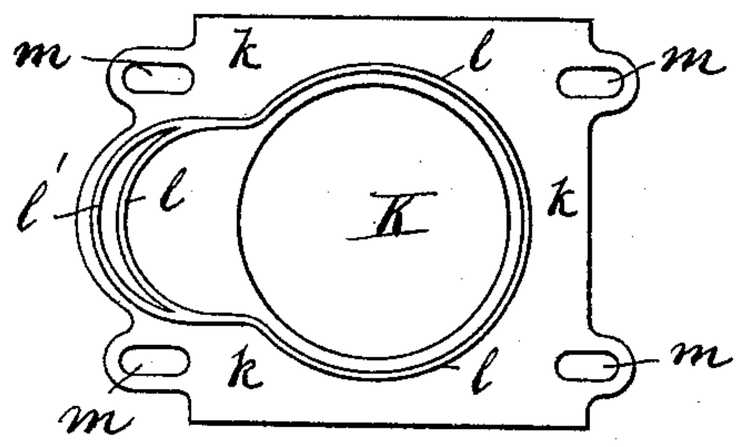


FIG. 5.

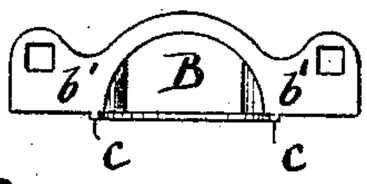
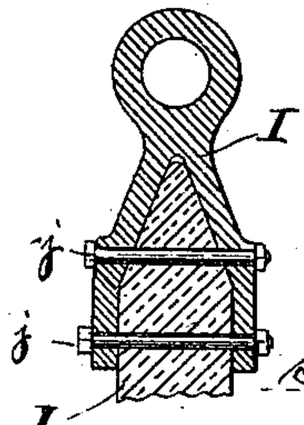


FIG. 7.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE S. AYER, OF SACO, MAINE.

COMBINED FORCE AND LIFT PUMP.

SPECIFICATION forming part of Letters Patent No. 338,689, dated March 30, 1886.

Application filed March 16, 1885. Serial No. 159,137. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. AYER, a citizen of the United States, residing at Saco, in the county of York and State of Maine, have invented a new and useful Improvement in Combined Force and Lift Pumps, of which the following is a specification.

The invention consists of an improved attachment for wooden pumps, by which the pump may be used as a lift or a force pump. The attachment can be applied to wooden pumps of any common size now in use.

The special features of novelty are hereinafter pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a front view of a portion of a pump embodying my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a rear view. Fig. 4 is an internal view of the casing. Fig. 5 is a top view of the same. Fig. 6 is a bottom plan of the air-chamber. Fig. 7 is a section of the head of piston-rod.

A represents the upper portion of an ordinary wooden pump, to the upper part of which is secured a casing, B, covering the opening in the pump through which the lever passes, and secured by means of bolts *a*, passing through straps C on the opposite side of the pump, through the wood-work of the pump, and then through flanges *b* on the sides of the casing B, by which means the casing B is firmly held to the pump, and the upper portion of the pump is firmly held and prevented from spreading.

On the inner face of the casing B is a rib, *c*, (see Fig. 4,) which, when the bolts *a* are tightened up, sink into a packing, D, placed between the casing B and the pump A, thus insuring an air-tight joint.

On one side of the casing B is a hollow projection, *d*, and on the opposite side is a stuffing-box, *e*. A short rod or spindle, E, having a bearing at one end in the hollow projection *d*, and passing through the stuffing-box *e*, carries at its outer end a shoe, F, secured thereto, to which shoe the handle G is attached. A lever, H, having a socket for spindle E and two bolt-holes, *q q*, is also secured to spindle E, inside the casing, by means of a tapering steel pin, *h*, passing through the socketed end of the lever and through the spindle. To the said lever is attached a saddle, I, into which the end of the pump-rod J is inserted and secured by bolts *j*. (See Fig. 7.)

By means of the two holes in the lever H the saddle I can be adapted to pumps of different size by attaching the saddle at one or the other of the holes.

K is an air-chamber, having at its base a flange, *k*, on the under side of which is a rib, *l*, which is made double at the front end, as shown in Fig. 6. The flange *k* is also provided at its front and rear end with two long slots or bolt-holes, *m*. The rib *l* is made double at its front end, and the slots *m*, through which the bolts pass, are made long, so that the air-chamber is adjustable for adaptation to pumps of different sizes. The air-chamber is held in position at the rear by means of bolts on the ends of the straps C, and at its front end by bolts passing through square holes in a flange, *b'*, (see Fig. 5,) on the upper end of the casing B, so that when the bolts are tightened up the rib *l* will sink into the packing D', thus insuring an air-tight joint between the air-chamber K and the top of the pump and casing A B. One of the ribs *l l* at the front end of the air-chamber is brought into line with the curved top of the casing B, and when the nuts are tightened a tight joint is formed by the packing D' between the two. The slots in flange *k* permit the adjustment of the air-chamber forward or back, so that either one of the ribs *l* can be brought in line with the curved portion of the casing. By this means my casing and air-chamber may be used on pumps of various sizes as now manufactured, only one size of attachment being required to fit all pumps generally made.

L is an iron spout adapted at its nozzle for the reception of a hose-coupling, M, when the pump is used as a force-pump.

In the casing B is a hole, in which is inserted a plug, N, when a force-pump is required, and which is removed when a lift-pump only is desired, the said plug when inserted serving to prevent the air from escaping, and when removed allowing the air to enter.

It will be seen by the above that my invention can be readily and easily applied to any ordinary wooden pump, converting it into a force-pump, and by simply removing the plug N in the casing B to allow the air to escape it becomes an ordinary lift-pump. It will also

be seen that upon carrying the handle G to its lowest point or position the pin *h* will be on a line with the opening covered by the plug N, so that by removing the plug the tapering pin *h* can be easily driven out from the spindle E to remove the latter.

What I claim as my invention is—

1. The combination, with a pump having a casing, as B, attached thereto, of an adjustable air-chamber, K, having a double rib, *l*, either one of which ribs may be brought in line with the casing.

2. The combination, with the casing B, of the plug N in an opening coincident with the line of the pin *h* when the handle G is at its lowest position, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE S. AYER.

Witnesses:
J. H. ADAMS,
E. PLANTA.