E. Elliott,

Force Pump,

No. 38,157. Patented Apr. 14, 1863.

Fig: 1.

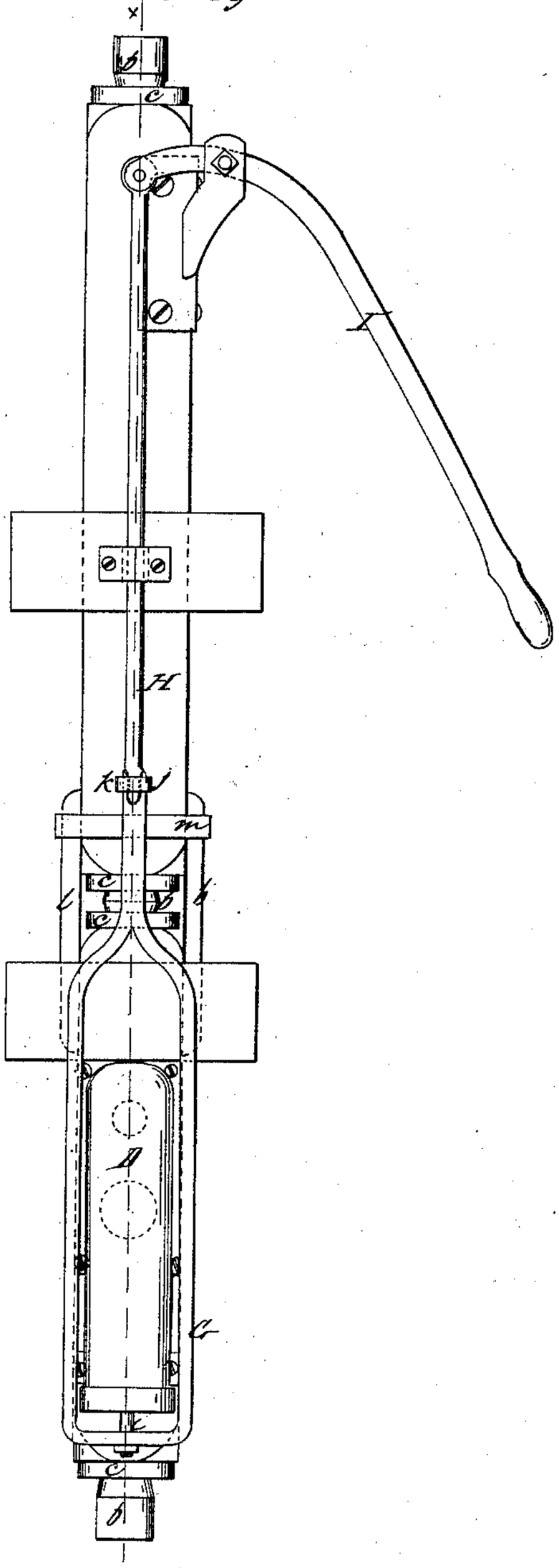
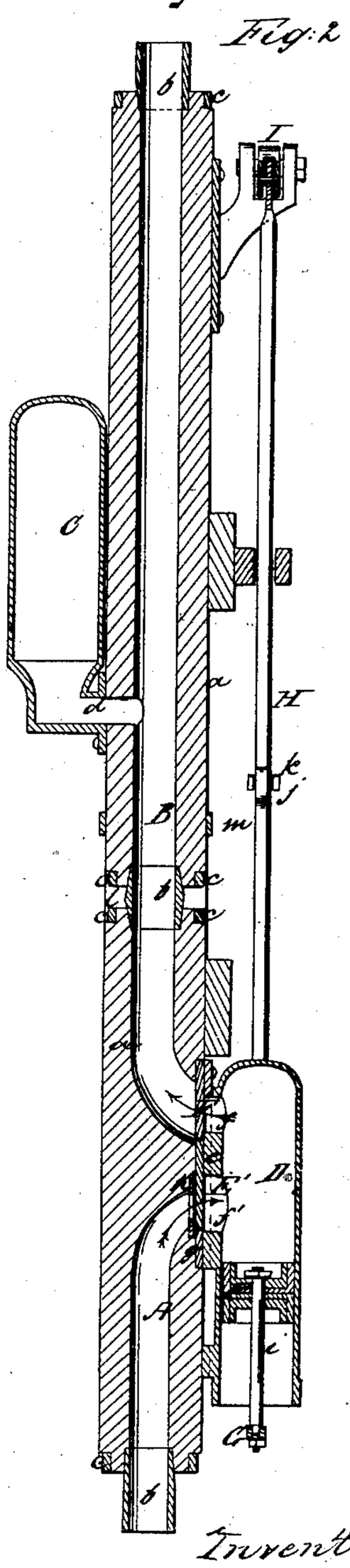


Fig: 2.



Witnesses
J. W. Coombs
G. W. Reed

Inventor
E. Elliott
per Munn & Co
attorneys

UNITED STATES PATENT OFFICE.

E. ELLIOTT, OF PETALUMA, CALIFORNIA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **38,157**, dated April 14, 1863.

To all whom it may concern:

Be it known that I, E. ELLIOTT, of Petaluma, in the county of Sonoma and State of California, have invented a new and Improved Pump; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of my invention; Fig. 2, a vertical central section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to an improved suction and force pump; and it consists in constructing the same in such a manner that it will be capable of being very readily applied and adapted in all cases where a pump of this class is required, and at the same time be exceedingly simple, not liable to get out of repair, and admit of being manufactured at a small cost.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the induction, and B the eduction, passage of the pump, which are formed by simply boring longitudinally rectangular pieces *a*, of timber of any suitable length, and connecting the same together by metallic thimbles *b*, inserted in the ends of the pieces, the latter being prevented from splitting by ferrules *c*.

C is an air-vessel, constructed of metal, and communicating with the eduction-passage B at any proper point by a horizontal tube, *d*, as shown in Fig. 2.

D is the pump-cylinder, open at its lower end and closed at the top. This cylinder is of cast metal, and has a flat plate or flange, *e*, at one side, which is cast with it, and has two holes, *f f'*, in it, which communicate with the interior of the cylinder. The plate or flange *e* is bolted to one of the pieces, *a*, which has the upper end of the induction-passage A in it and the lower end of the eduction-passage B, the latter being curved at its lower end so as to be brought in line with the hole *f*, and the upper end of the induction-passage A being curved so as to be brought in line with the holes *f*.

E E' are valves, which may be formed in a piece of leather, *g*, corresponding in area to the plate or flange *e* of the cylinder D, the plate or flange being fitted on or to the leather, so that the latter will answer as a packing, as well as for the forming of the valves. The lower valve, E', opens inward or toward the pump-cylinder, while the upper valve, E, opens outward or into the eduction-passage A. The lower valve, E', closes against a perforated metal plate, *h*, fitted over the upper end of the induction-passage A.

F is the piston or plunger, which is fitted in the cylinder D, and is connected by a rod, *i*, to the lower end of a yoke, G, which extends upward above the cylinder D, and is connected by a rod, H, to a handle or brake, I. The rod H is connected to the yoke G by means of a dovetail slit-joint, *j*, encompassed by a ring or band, *k*, as shown clearly in Fig. 1.

From the above description it will be seen that by operating the brake I the piston F will be raised and lowered in the cylinder D. Each time the piston descends the valve E closes and valve E' opens, and a suction is produced in the upper part of the cylinder D into which the water from A passes, and when the piston F descends the valve E' closes and valve E opens, and the water in the upper part of the cylinder is forced into the eduction passage B and out at its upper end.

The ends of the pieces *a*, which form the induction and eduction passages, may be firmly secured together by wooden cleats *l l*, attached by screws or bolts to the end of one piece, and having a metal strap, *m*, fitting over them at their free or disengaged ends, where they clasp the adjoining piece, *a*. (See Fig. 1.)

The piston F, it will be seen, works entirely below the valves E E'.

By this combination and arrangement of parts a very simple and cheap pump is obtained. It may, by adding more or less pieces *a*, be adapted to wells of any depth, and the cylinder D may be either submerged or not, as occasion may require.

I do not claim, separately, any of the parts herein shown and described; but

I do claim as new and desire to secure by Letters Patent—

The forming of the induction and eduction

tubes A B of a series of wooden pieces, *a*, bored longitudinally, and connected together, substantially as shown, in combination with the pump-cylinder D, attached to one of said pieces *a* and communicating with the tubes A B, as shown, and provided with the piston F, all arranged to operate as described, the above parts being used with or without the air-vessel C.

E. ELLIOTT.

Witnesses:
J. G. WICKERSHAM.
N. B. WOOD.