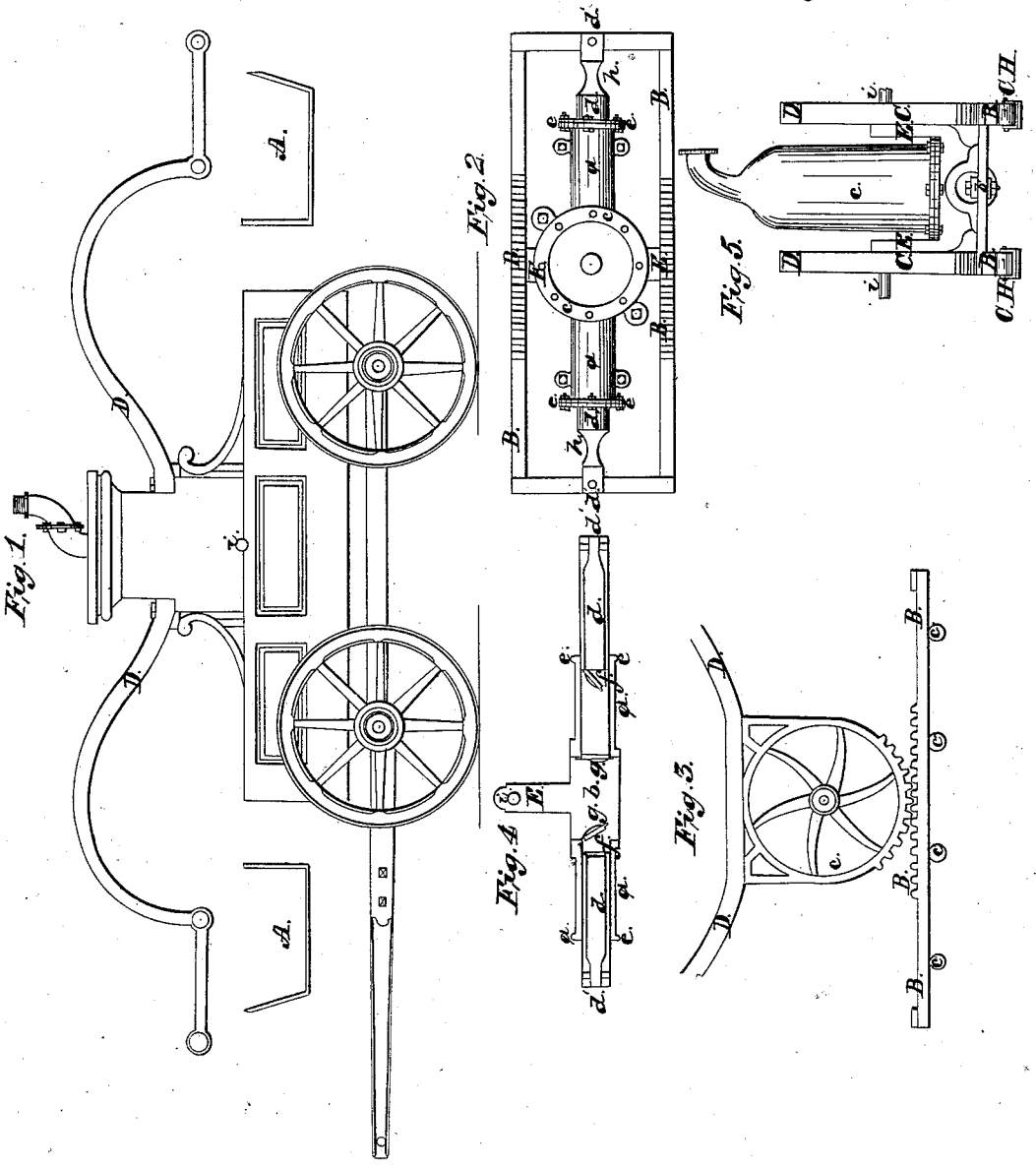
J. B. Babcock,

Fire Engine.

No. 2,150. Patented July 2, 1841.



UNITED STATES PATENT OFFICE.

JOSEPH B. BABCOCK, OF MARIETTA, OHIO.

CONSTRUCTION OF FIRE-ENGINES.

Specification of Letters Patent No. 2,150, dated July 1, 1841.

To all whom it may concern:

Be it known that I, JOSEPH B. BABCOCK, of Marietta, in the county of Washington and State of Ohio, have invented certain Improvements in the Manner of Constructing Fire-Engines or Machines for Throwing Water for the Extinguishing of Fires in Buildings; and I do hereby declare that the following is a full and exact description thereof.

In my fire engine, the box or cistern for containing water is made in the usual way, and the pistons which operate in the barrels of the force-pumps are worked by means of levers which extend lengthwise of the engine, and which do not differ in form, or in the manner of working them, from such as are now in use in many fire engines.

My improvements consist in the manner in which I have combined and arranged the cylinders and pistons, or plungers, of the force-pumps, and in which said pistons, or plungers, are operated upon by means of segment wheels and a sliding frame within the body of the cistern or box for containing the water to be thrown. The cylinders, and pistons, or plungers, are placed horizontally, and these cylinders with the part of the apparatus to which they are attached, are secured down to the bottom of the cistern; said pistons, or plungers, are made hollow, or tubular, from end to end, the water which is to be forced out, entering the cylinders through them, in a manner to be presently described. The sliding frame, above spoken of, is placed horizontally within the cistern, near to its bottom, and traverses back and forth upon friction rollers, as it is operated upon by the segment wheels which take into toothed racks formed on the upper part of the sides of the sliding frame.

In the accompanying drawing, Figure 1, is a longitudinal elevation of the engine, which does not present anything peculiar in its external appearance. A, A, are strainers of the ordinary kind, one of which is to be placed in each end of the cistern, or water box. Fig. 2, is a top view of the sliding frame, the cylinders, and plungers, and the seat of the air-chamber; all of which are contained within the cistern, and are sustained on the bottom thereof. Fig. 3, shows one of the segment wheels, and one side of the sliding frame. Fig. 4, is a longitudinal section through the cylinders, the plungers, and the seat of the air-chamber; and Fig. 5, shows the air chamber, and other parts contained within the body of the engine, as will be seen by the letters of reference designating those parts; which letters of reference are the same in all the figures.

In Figs. 2, and 4, *a*, *a*, are two pump cylinders, which are attached at their inner ends to the bottom, or seat, *b*, of the air-chamber, said seat having a flange, *c*, *c*, on its upper side, to which the air-chamber is bolted down; *c'*, Fig. 5, shows the air-chamber, which is the same in all respects with that in common use. The hollow plungers, or pistons, are shown at *d*, *d*, and these are bolted at their outer ends to the sliding frame B, as at *d'*, *d'*. The plungers *d*, *d*, which I have said are tubular, are encircled by a stuffing box *e*, *e*, at the outer ends of each of the pistons, and have each a valve, *f*, *f*, on its inner end, opening inward; the pistons, also, have similar valves *g*, *g*, on their inner ends, also opening inward within the seat of the air-chamber. The water may pass into the plungers through openings at their extreme ends *d'*, *d'*, or at their sides *h*, *h*, as may be preferred. The operation of this part of the apparatus will be manifest to everyone acquainted with hydraulic machinery, its main difference from that in common use being in the introduction of the water through the plungers, and the arrangement of the parts consequent upon this mode of procedure.

The sliding frame B, B, has teeth on the upper part of each of its sides, as at B', B', into which mesh the teeth of the segment wheels C, C. These segment wheels are made fast to the levers D, D, the centers *i*, of these wheels being the fulcra of the levers. The gudgeons, or axes, on which they work are received into two standards E, E; when the levers are worked, the frame B, B, will be carried back and forth, and to cause it to slide easily, it rests upon friction rollers *c''*, *c''*, on the bottom of the cistern. The chambers *a*, *a*, the seat *b*, of the air vessel, with its flange *c*, *c*, and the standards E, E, may all be cast in one piece, and fastened down to the bottom of the cistern by screw bolts.

Having thus, fully described the nature of my invention, and shown the way in which the same operates, what I claim therein, and desire to secure by Letters Patent, is—

The manner in which I have constructed,

arranged and combined, two horizontal hollow pistons with the horizontal cylinders affixed to the bottom of the cistern of a fire-engine, and also with the vibrating frame and segment wheels; the whole being constructed and operating as herein set forth. I do not claim either of these parts separately and individually, but I do claim so to have combined them as to produce an instrument new in its construction, and useful in its operation.

In testimony whereof I hereunto set my name this nineteenth day of April 1841.

JOSEPH B. BABCOCK.

Witnesses:
THOS. F. JONES,
GEORGE R. WEST.