(No Model.) 3 Sheets—Sheet 1.

E. W. BARTON.

FORCE PUMP.

No. 540,626. Patented June 11, 1895.

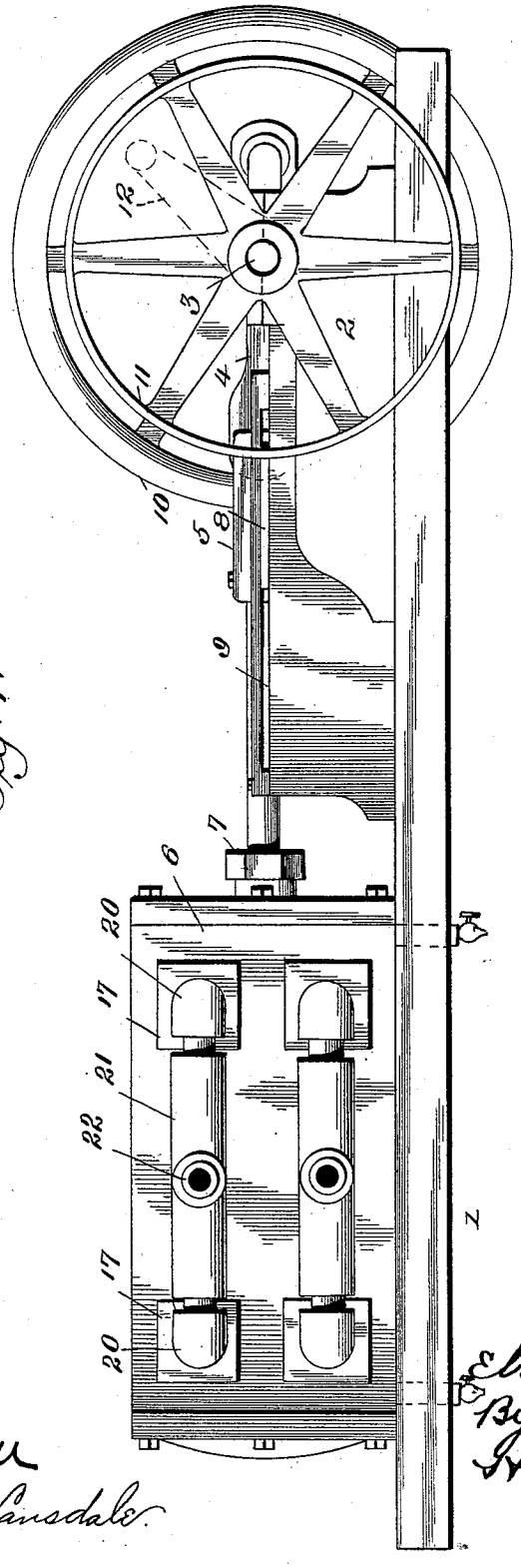

Fig. 1.

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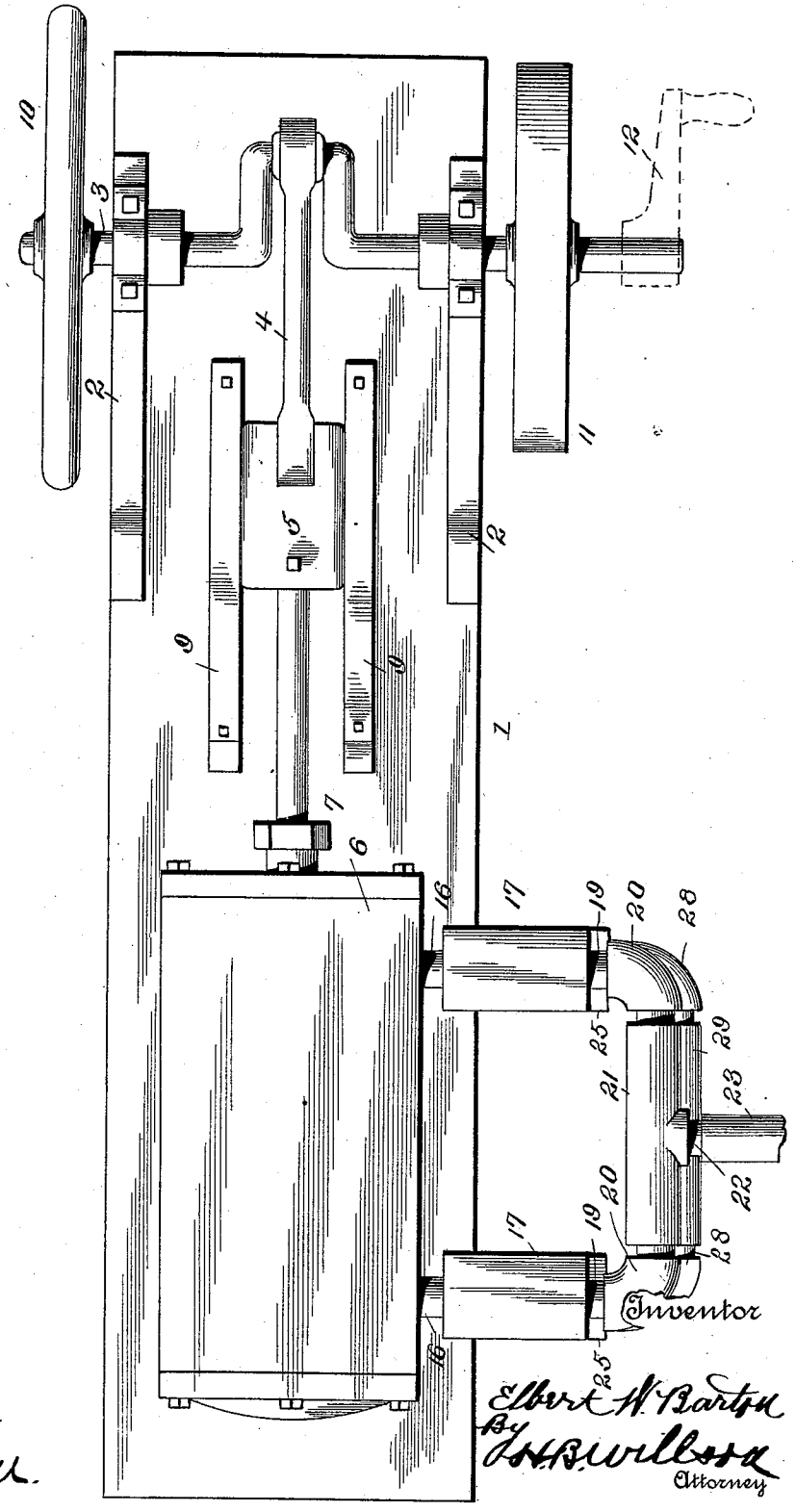

Fig. 2.

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FORCE PUMP.

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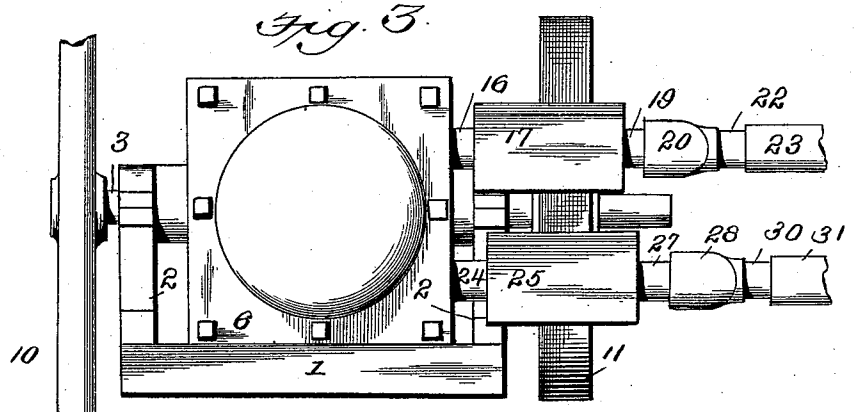
Fig. 3.



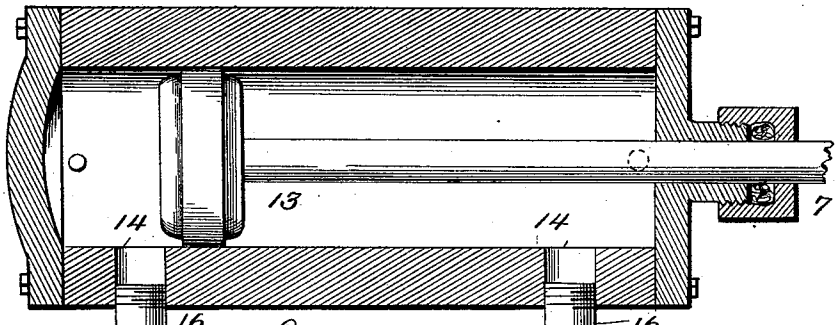


Fig. 4.

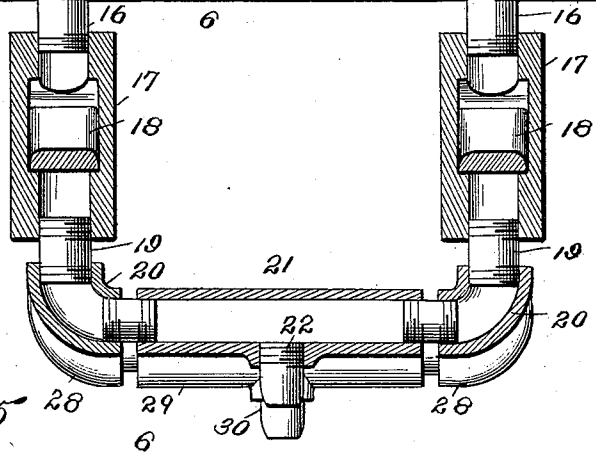
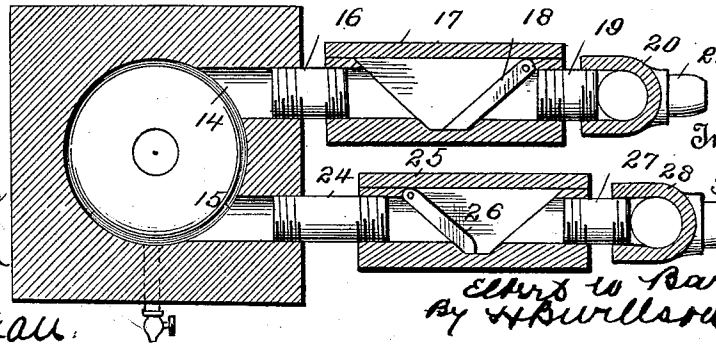


Fig. 5.



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UNITED STATES PATENT OFFICE.

ELBERT W. BARTON, OF WINDSOR, NEW YORK.

FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 540,626, dated June 11, 1895.

Application filed August 11, 1894. Serial No. 520,022. (No model.)

To all whom it may concern:

Be it known that I, ELBERT W. BARTON, a citizen of the United States, residing at Windsor, in the county of Broome and State of New York, have invented certain new and useful Improvements in Force-Pumps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to force pumps and among the objects in view is to provide an extremely simple, inexpensive and efficient force pump whereby a continuous stream of water may be forced to any desired point and with the above and other objects in view, all of which will presently be made apparent.

My invention consists in the novel construction, arrangement and combination of parts as hereinafter fully described, illustrated in the drawings and pointed out in the appended claim.

In the drawings, Figure 1 is a side elevation of my improved force-pump. Fig. 2 is a top plan view; Fig. 3, an end view; Fig. 4, a vertical horizontal sectional view; Fig. 5, a transverse sectional view through one of the check-valve casings for the feed and discharge pipes.

In carrying out my invention, I provide a suitable bed plate 1 upon which the various operative parts of my pump are mounted, and which bed plate may be suitably mounted or carried upon a wheeled truck whereby my device may be rendered portable and made serviceable for fires; or said bed plate may be mounted upon a fixed support as masonry or the like for pumping water to any desired point. In suitable pillow blocks 2 carried by the said bed plate, is mounted a transverse crank shaft 3, to the crank of which is pivotally connected one end of a pitman 4, jointed at its opposite end to a cross head 5, connected with a piston rod 6 adapted to reciprocate through a suitable stuffing box 7 on the cylinder. The cross head is provided with lugs or journals 8 which slide in suitable guides 9 carried by the bed plate. Upon one end of the crank shaft is mounted the usual fly wheel 10, while upon the opposite end of said shaft is mounted a belt wheel 11, said crank shaft projecting beyond the belt wheel and adapted to receive a hand lever or crank handle 12 whereby the pump may be operated by hand power. Within the cylinder is fitted and adapted to reciprocate a piston 13, which is provided with a leather or other packing to adapt it to fit snugly within the cylinder. Formed in the wall of the cylinder and communicating with the spaces upon opposite sides of the piston are openings or channels 14 near opposite ends of the said cylinder which openings or channels constitute the fluid inlet ports, while beneath said ports are formed similar openings or channels 15 which constitute the fluid discharge ports. Communicating with the ports 14 are short sections of pipe 16 which fit into casings 17 provided with check valves 18 adapted to open toward the cylinder. Into the opposite ends of the casings fit short sections of pipe 19 connected by elbows 20 to a pipe 21 which is provided with a nipple or threaded plug 22 to which may be coupled or attached a pipe 23 for supplying the fluid. Within the openings 15, fit short sections of pipe 24 which fit into one end of casings 25, provided with check valves 26 opening away from the cylinder and into the opposite end of the said casings fit short sections of pipe 27 which are connected by elbows 28 with the pipe 29 provided with a nipple or plug 30 to which may be attached the pipe 31 to convey the fluid to any desired point. Suitable oil cups may be provided at the various points requiring lubricant, for supplying the latter to the same.

The operation of my improved pump may be briefly described as follows: Upon the pump being started, the plunger in moving toward one end of the cylinder, say to the left, in Fig. 1, water will be drawn through the various pipes constituting the feed pipe, *i. e.*, the pipes 21, 19, casing 17 and pipe 16, on the right of Fig. 1 and into the cylinder and upon the return stroke of the piston the water previously drawn in will be forced through the port 15 on the right and through the respective pipe 24, casing 25 and pipes 27 and 29 and thence through the pipe 31 to the point desired. While the piston is moving to the right, water will be drawn in through the pipes and valve casing on the left, and when the piston again moves to the left, said water will be forced through the discharge port on

the left and thence through the pipe 24, casing 25, pipes 27, 29 and 31 to the point of discharge. Thus it will be seen that there will be a continuous stream of water flowing into the cylinder and being discharged therefrom during the operation of the pump, the arrangement of the feed and discharge check valves allowing proper flow of water into and from the pump and preventing any back flow of either the feed or discharge water.

33 are drain pipes communicating with the interior of the cylinder and adapted to permit the drainage of any water remaining in the cylinder after stoppage of operation.

My pump may be driven by any suitable or desired power and the advantages to be derived from its use are obvious.

I would say that modifications may be made in the construction and arrangement of parts without departing from the invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a force pump, the combination with a cylinder and a reciprocating piston therein, of inlet ports communicating with the interior of the cylinder upon opposite sides of said piston, pipes communicating with said ports and with valve casings having check valves arranged as described, and a pipe provided with a plug or hose attaching section and connected at opposite ends with said valve casings, discharge ports arranged beneath the inlet ports and communicating with the interior of the cylinder upon opposite sides of the piston, pipes communicating with said ports and with valve casings having check valves arranged as described, a pipe provided with a plug or hose attaching section and connected at opposite ends with said valve crossings, and drain pipes communicating with the interior of the cylinder upon opposite sides of the piston.

In testimony whereof I affix my signature in presence of two witnesses.

ELBERT W. BARTON.

Witnesses:
FRED E. MOREY,
ALTEN W. SUINGLE.