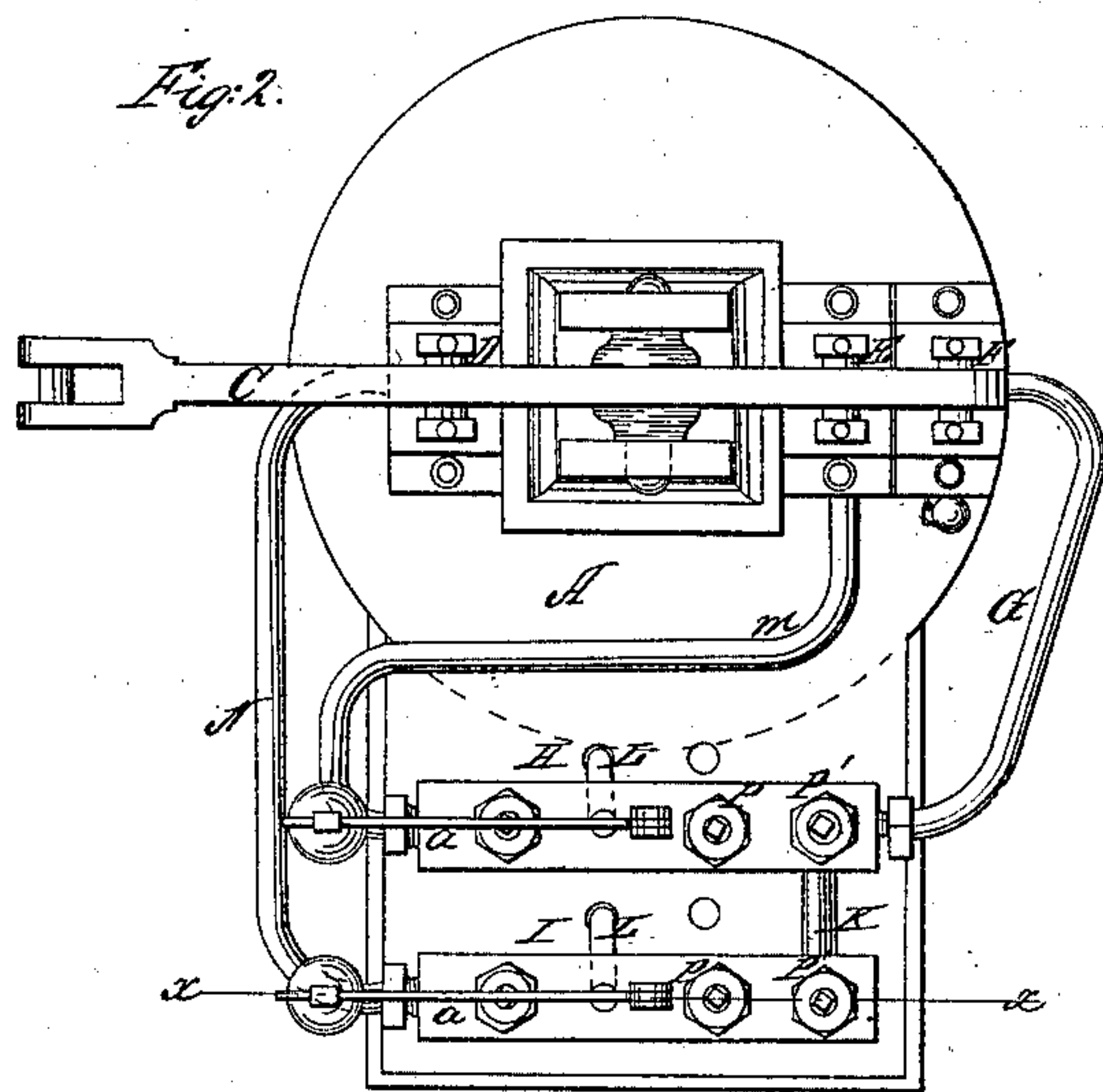
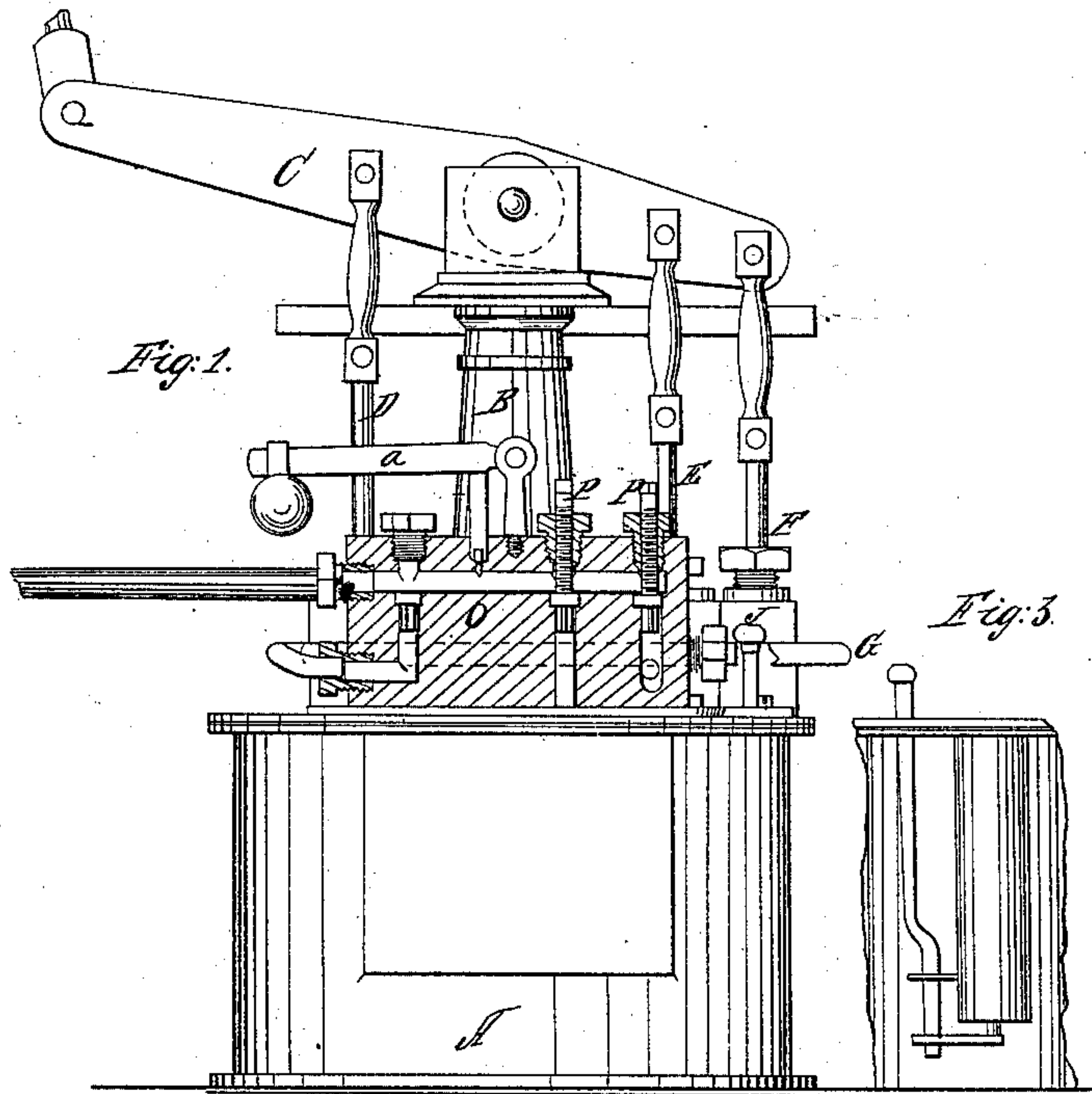


W. P. Callahan
Hydraulic Press.

N^o 79,949.

Patented July 14, 1868.



Witnesses:
W. C. Ashkettle
Thos. E. Welch

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UNITED STATES PATENT OFFICE.

W. P. CALLAHAN, OF DAYTON, OHIO.

IMPROVEMENT IN FORCE-PUMPS FOR HYDRAULIC PRESSES.

Specification forming part of Letters Patent No. 79,949, dated July 14, 1868.

To all whom it may concern:

Be it known that I, W. P. CALLAHAN, of Dayton, in the county of Montgomery and State of Ohio, have invented a new and Improved Hydrostatic Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved arrangement whereby a forcing-pump which is used to operate hydrostatic presses in the process of manufacturing linseed-oil and other similar operations where hydrostatic presses are used is made and arranged so as to operate upon a number of presses, thereby saving much valuable time and greatly facilitating and expediting the operation.

The invention consists in a series of check-valves arranged in blocks between the pump and the presses, and in a stop-valve by which the main pump is rendered inoperative when desired, and also in the general arrangement of parts, as will hereinafter be more fully described.

Figure 1 represents a side elevation of the arrangement, showing the main pump with its stop-valve stem and a sectional view of one of the check-valve blocks, the section being through the line xx of Fig. 2. Fig. 2 is a top or plan view of the arrangement, showing the pipes which connect the blocks with the pumps and the tops of the check-valves therein. Fig. 3 is a detached view of the lower valve and its stem.

Similar letters of reference indicate corresponding parts.

A represents the water-reservoir from which the pumps are supplied.

B is a pedestal upon which the beam-lever C is mounted.

D and E represent pumps with jointed connecting-rods attached to the lever C.

F is the main or large pump, which is also connected with the lever or beam C and in the same manner as the other two.

G is the pipe which connects this main pump with the first block, as seen in the drawings.

H I represent the check-blocks.

In the drawings, K represents the pipe which

connects the two blocks H and I, and L indicates the exhaust-pipe for each press.

M is the pipe which connects the small pump E with the block H, and N is the pipe which connects the small pump O with the block I. The pipe which connects each block with its press is seen at O, with an extension in red.

P P' indicate the check-valves.

In this example of my invention but two check-blocks are shown; but four (and even more) may be used, if desired, so as to correspond with the number of presses, each being connected with a force-pump, as represented, by the pumps D and E, which are connected with the blocks H and I. The water is passed through these blocks to the presses in the ordinary way, each block being provided with a safety-valve and weighted lever, as seen at a , beside the check-valves.

The usual method of operating hydraulic presses in oil-mills is to have one pump for two presses, and when the pressure is thrown off of one press it is put onto the other, thus losing the time of one press while the pump is working on the other, or (in other words) keeping one press standing idle, while both should be at work. By having a small pump for each press and a large one for all I can have the use of a number of presses at the same time. By my arrangement the water (or other fluid) can be thrown from the large pump to any one of the presses under the check-valves of the other presses while the pressure is on them.

To explain the operation we will suppose that the presses are both empty and it is desired to fill the one to which the check-valve in the block H belongs. Screw down the valve P' in I, leaving up the valve P' in H. This prevents the fluid from passing from the large pump to the other press or through I. When the press to which H belongs is filled by the main pump, that pump is made inoperative by opening its lower valve, and this is done by raising the stem J, while the small pump E, which is connected with this press, is still working in the ordinary way. The next press can now be filled by the large pump, (after throwing down the stem J to put it in operation,) the fluid passing under the valve in the block H, as that valve is now held down by the pressure, so that the water will fill the

next press through the block I, and the same operation can be repeated to fill all the presses which may be so connected alternately. Should there be three or more presses and all but one of them filled, the large pump is made to throw to that one and no other.

I do not confine myself to the particular arrangement shown as regards the details, as I am aware that it may be varied without interfering with the main feature of my invention, my object being to operate upon any one of a series of presses by a single pump, as herein described.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination of the pumps, as shown, with check blocks and valves arranged to operate in connection with hydraulic presses, substantially in the manner set forth.

2. The pump F, in combination with the pumps D and E, the stop-valve J, and the check-valves P, substantially as and for the purposes described.

W. P. CALLAHAN.

Witnesses:

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