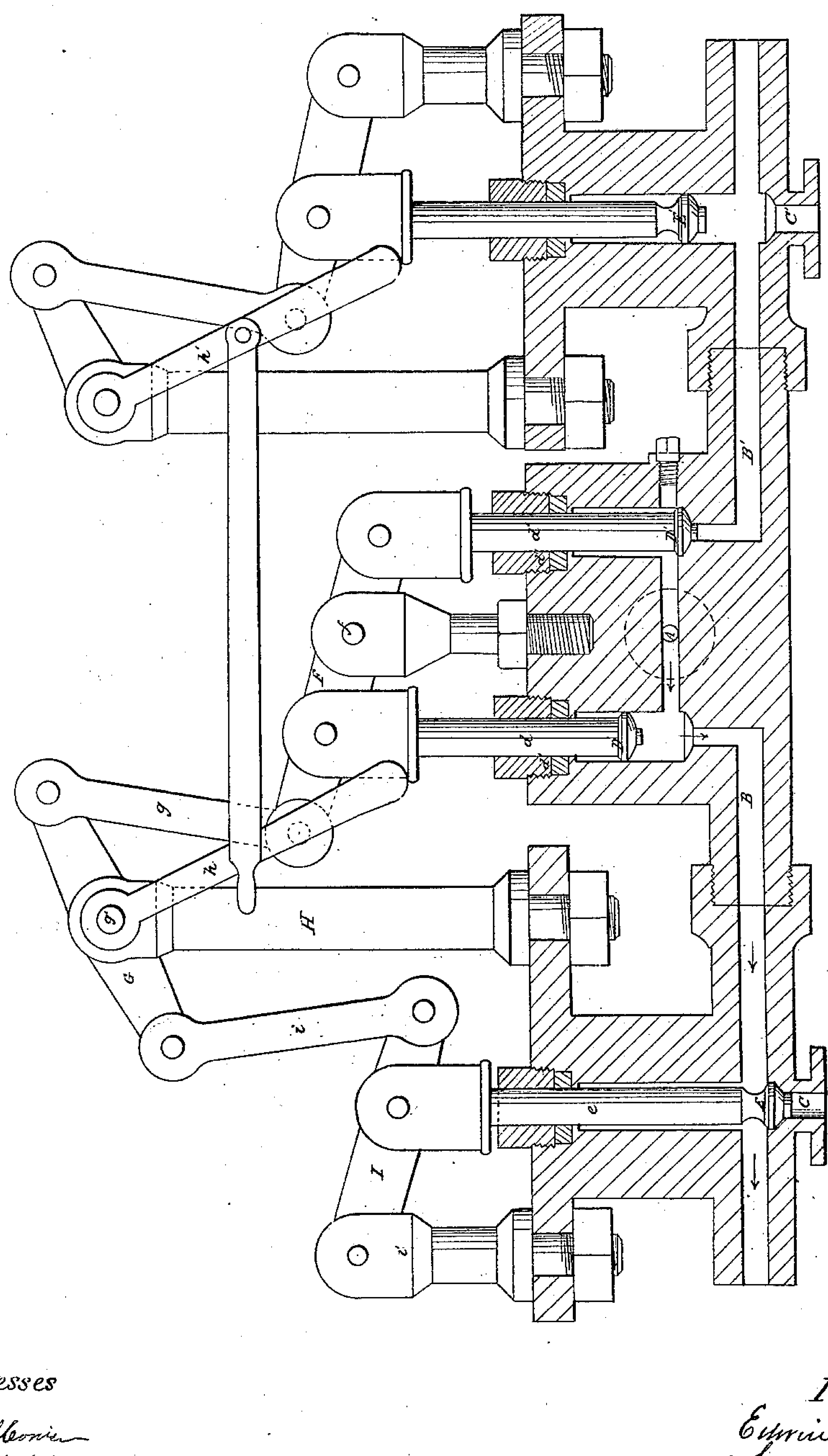
E. Squire.

Hydraulic Press.

No. 44,829 Patented Oct. 25, 1864.



Witnesses

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EDWIN SQUIRE, OF COLD SPRING, NEW YORK.

IMPROVEMENT IN HYDRAULIC PUMPS.

Specification forming part of Letters Patent No. **44,829,** dated October 25, 1864.

To all whom it may concern:

Be it known that I, EDWIN SQUIRE, of Cold Spring, in the county of Putnam and State of New York, have invented a new and useful Improvement in Valves for Hydraulic and other Purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to fully understand and construct my invention, reference being had to the accompanying drawing, said drawing representing a longitudinal vertical section of my invention.

This invention consists in the arrangement of two oscillating levers and suitable connecting-rods in combination with the waste-valve and supply-valve of a hydraulic press or other similar machine, and with a suitable hand-lever, in such manner that by one and the same motion of said hand-lever the waste-valve is closed when the supply-valve is opened, and vice versa, and the construction of the press is thereby simplified and its operation facilitated.

The invention consists, also, in combining two sets of waste and supply valves with suitable levers in such a manner that two presses can be operated simultaneously by the motion of one and the same hand-lever, one press being made to discharge while the other takes water, and vice versa, and each press being made to operate without interfering in the least with the continuous operation of the other.

A represents the opening through which water is forced to one or more hydraulic presses by a pump or in any suitable manner. This opening communicates by a channel, B, with one and by another channel, B′, with a second press, and these channels communicate with waste-pipes C C′, which branch off from the same, as clearly shown in the drawing.

The communication between the supply-opening A and the channel B is opened or closed by the supply-valve D, and the waste-pipe C can be opened or closed by the valve E, and the valves D′ and E′ open and close in the same manner the supply-channel B′ and waste-pipe C′. The stems *d d′* of the valves D D′ rise up through stuffing-boxes *d* d**, and they are pivoted to an oscillating lever, F, on opposite sides of its fulcrum *f*, so that one valve is depressed while the other rises, and vice versa. One end of the lever F connects by a link, *g*, with one end of the working-beam G, which beam is firmly secured to the rock-shaft *g**. This rock-shaft has its bearings in the forked end of a standard, H, and secured to one of its ends is a hand-lever, *h*, so that by the action of said hand-lever an oscillating motion can be imparted to the working-beam G. The opposite end of this working-beam connects by a link, *i*, with one end of a lever, I, which is pivoted with its opposite end to a standard, *i′*, rising from the valve-chest, and which connects in its center with the stem *e* of the waste-valve E.

By moving the hand-lever *h* to the position shown in the drawing, the waste-valve E is depressed in its seat, and the supply-valve D is opened, and the water forced in through the opening A has free access to the press through the channel B. The pressure of the water itself depresses the waste-valve and assists in raising the supply-valve as soon as the same has been once started from its seat, and whenever it is desired to stop the operation of the press the valves are changed by a simple motion of the hand-lever, so as to open the waste-valve and close the supply-valve.

If it is desired to supply two presses alternately from the same opening A, so that one press discharges while the other takes water, and vice versa, a second waste-valve, E′, must be attached to that end of the valve-chest containing the valve D′. This waste-valve bears the same relation to the supply-valve D′ as the waste-valve E does toward the supply-valve D, and it may be connected therewith precisely in the same manner as these two valves, or it may be connected therewith in any other desirable manner.

In the drawing, the hand-lever *h′* of the waste-valve E′ is shown in connection with the hand-lever *h* of the waste-valve E, so that by touching either of the hand-levers all the valves are moved. This double-valve arrangement is of particular value in such cases where two or more presses are kept constantly in operation for the purpose of gaging shells or for other similar purposes. In those cases a new shell or other article is introduced into one press while the other is in operation, and both presses act without interruption and with-

out interfering in the least one with the other.

What I claim as new, and desire to secure by Letters Patent, is—

1. The levers F G I and links *g i*, in combination with the hand-lever *h* and supply and waste valves D E, constructed and operating in the manner and for the purpose substantially as herein shown and described.

2. The combination of the supply-valves D D′ and waste-valves E E′ with oscillating levers F G I and hand-levers *h h′*, constructed and operating in the manner and for the purpose substantially as herein specified.

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Witnesses:
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