

A. V. OJEDA.  
Hydraulic Jacks.

No. 141,232.

Patented July 29, 1873.

Fig. 1.

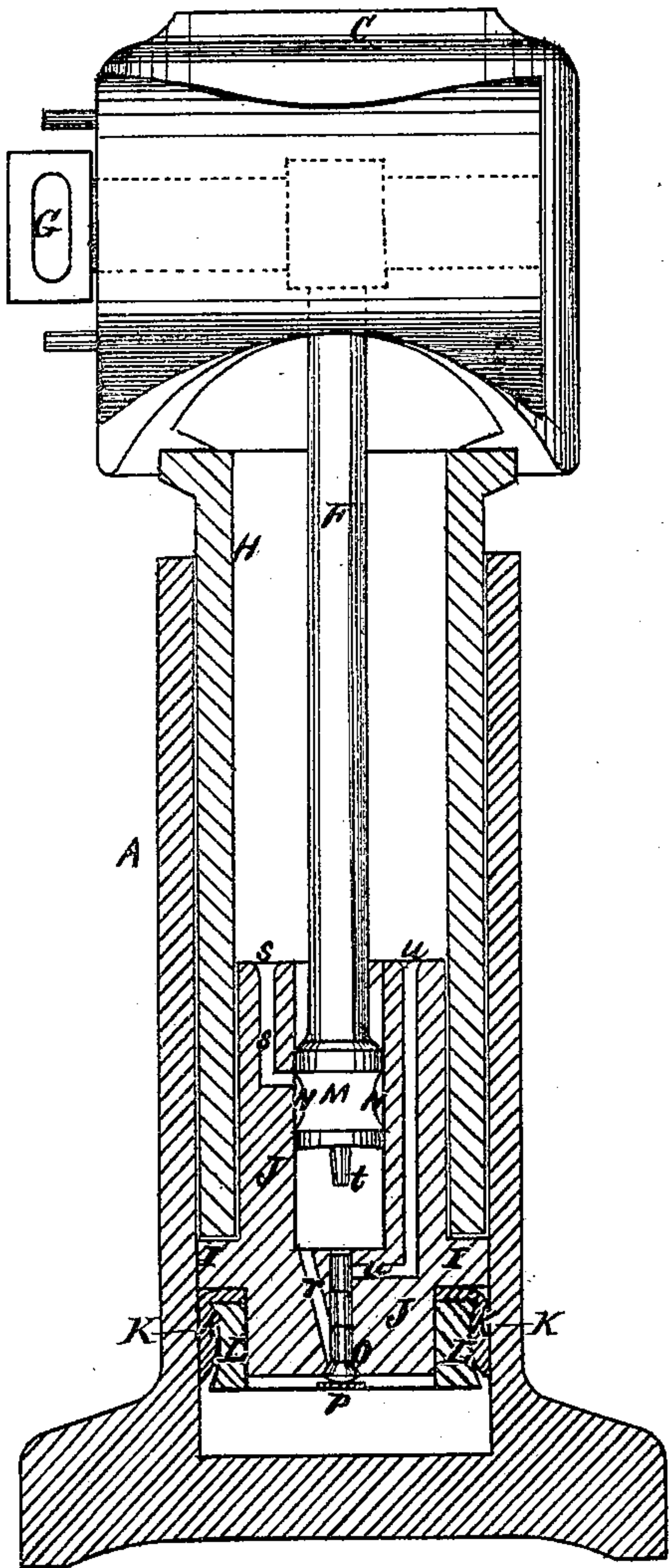
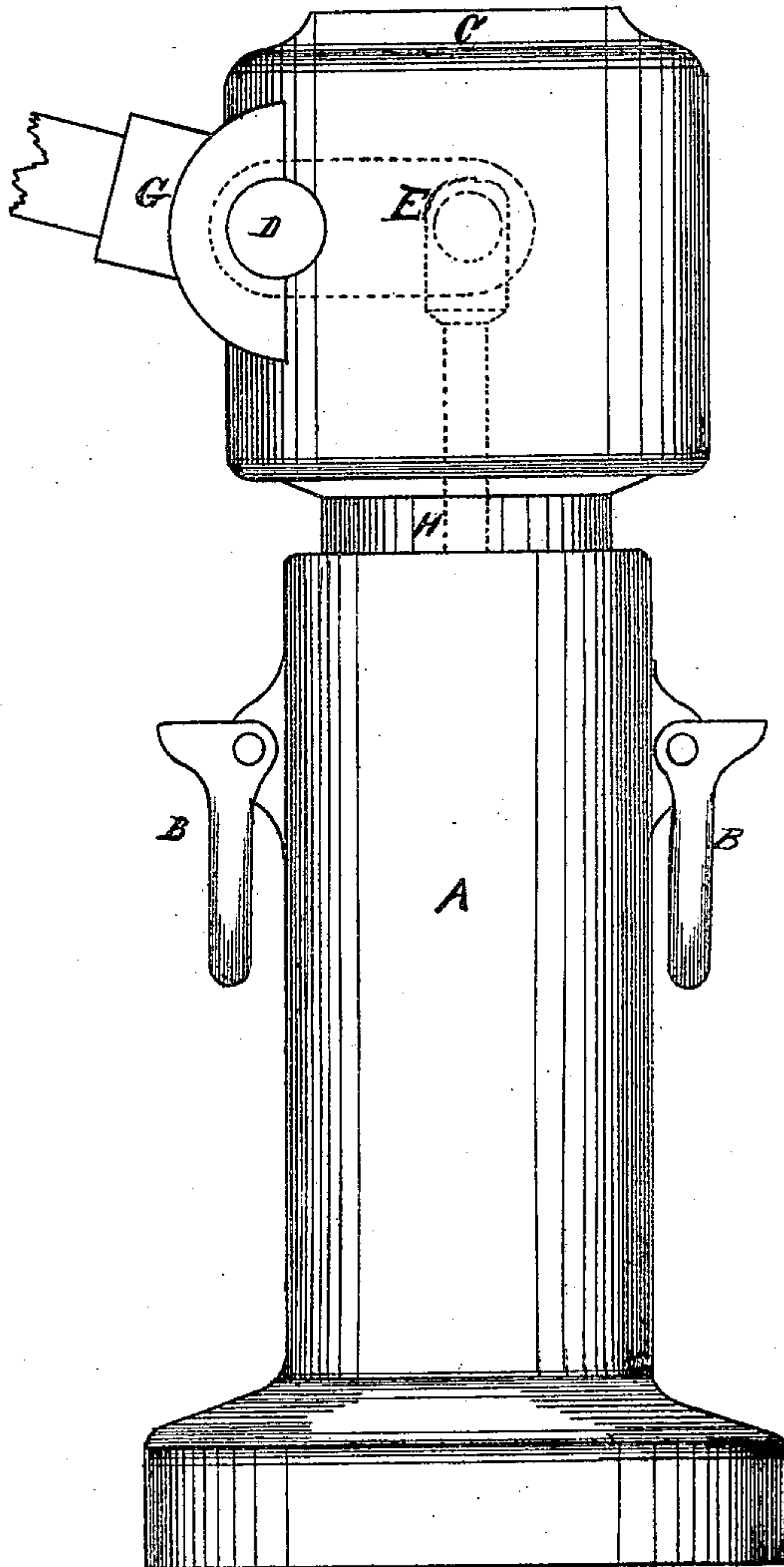


Fig. 2.



Witnesses.  
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# UNITED STATES PATENT OFFICE

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## IMPROVEMENT IN HYDRAULIC JACKS.

Specification forming part of Letters Patent No. **141,232**, dated July 29, 1873; application filed June 5, 1873.

*To all whom it may concern:*

Be it known that I, ANTHONY V. OJEDA, of the city and county of San Francisco, State of California, have invented an Improvement in Hydraulic Lifting-Power for Ships, &c.; 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 and to the letters marked thereon.

The object of my invention is to provide an improvement in that class of hydraulic presses which have the plunger, piston, operating-valves, and mechanism, and the necessary liquid, all contained within the outer cylinder, which is easily portable; and it consists, mainly, in a novel construction of a plunger, to be moved within the cylinder, which plunger is provided with a central bore for the operating-piston, and also with certain passages so arranged that water is taken from above the plunger and forced below it, by means of the piston, with the use of only one valve. The piston is so constructed, with a projection below, that when it is forced down to the lowest point it will open the valve and permit the water to escape from below the plunger to the space above it after having done its work.

Referring to the drawings, for a more complete explanation of my invention, Figure 1 is a front view of my press with a vertical section of the lower part, showing the interior of the plunger. Fig. 2 is a side elevation.

A is an outside cylinder, of a diameter suitable to the work to be done, and provided with handles B for the purposes of transportation. C is the head of the ram, the top of which serves to lift or press any object desired. This head is enlarged, and a shaft, D, passes through it, having at its center the crank-arm E, which serves to operate the piston-rod F. The socket G, for the operating-lever, is keyed to the end of the shaft D outside the head. Below the head C, and moving with it, is a cylinder, H, which extends down into the cylinder A, and rests upon the flange I of the plunger, forming, as it were, a continuation of it, and serving both to guide and steady the head C as it rises, and also as a stuffing-box. The plunger J moves in the outer cylinder A, and has a packing-ring, K, surround-

ing its lower end, and kept in place by the ring or follower L. The body of the plunger is bored out in the center so as to admit the piston M, which has a packing-ring, N, and is operated by the piston-rod F, as before described. From the center of the bottom of the piston-chamber a hole extends downward into the space below the plunger in the cylinder A, and a valve, O, works in this passage opening downward, and having its seat against the bottom of the plunger, as shown. A spring, P, serves to hold this valve to its seat. An inclined passage, r, leads from the bottom of the piston-chamber to a point just above the valve-seat, and through this the water is forced below the plunger, opening the valve by its pressure at each stroke of the piston. A passage, s, leads downward from the top of the plunger by the side of the piston-chamber, and opens into this chamber at a point where the piston in rising will uncover it and allow the water to flow from the space above the plunger into the chamber.

The operation will be as follows: The piston being raised above the opening S water will flow in and fill the piston-chamber. When the piston is forced down it closes the passage s and forces the water through the passage r, and opening the valve O passes below the plunger, which is thus raised gradually, carrying with it the head C, with a power depending upon the relative size of the piston and plunger. When the plunger and head have been elevated to a sufficient height, and it is necessary to lower the whole again, the piston is forced to its lowest point. By this action the projection t, on the lower end of the piston, will strike the top of the valve and force it down until the passage u (which extends down through the plunger and into the chamber of the valve) is opened, and the water is thus allowed to flow back above the plunger as the latter sinks by its weight.

By this arrangement I am enabled to make my press extremely simple, with only one valve and a simple flat spring, which cannot get out of order, and the press is very efficient.

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

1. The plunger J, having an opening for the

piston M, and provided with the inlet-passage *s*, and the valve O with the exit-passage *r*, when constructed to operate substantially as herein described.

2. The passage *u*, through the plunger and opening against the valve, as shown, in combination with the valve O and the projection *t* on the bottom of the valve, whereby the passage is kept closed while the press is in operation, but can be opened to discharge the liquid when it is desired to depress the ram-head, as herein described.

3. In a hydraulic press or lifting-jack, the plunger J, working within the outer cylinder and provided with the passages *s*, *r*, and *u*, and the single valve O with its flat spring *p*, in combination with a solid piston, M, as herein described.

In witness whereof I have hereunto set my hand and seal.

ANTHONY V. OJEDA. [L. S.]

Witnesses:

C. W. M. SMITH,  
PHILIP MAHLER.