

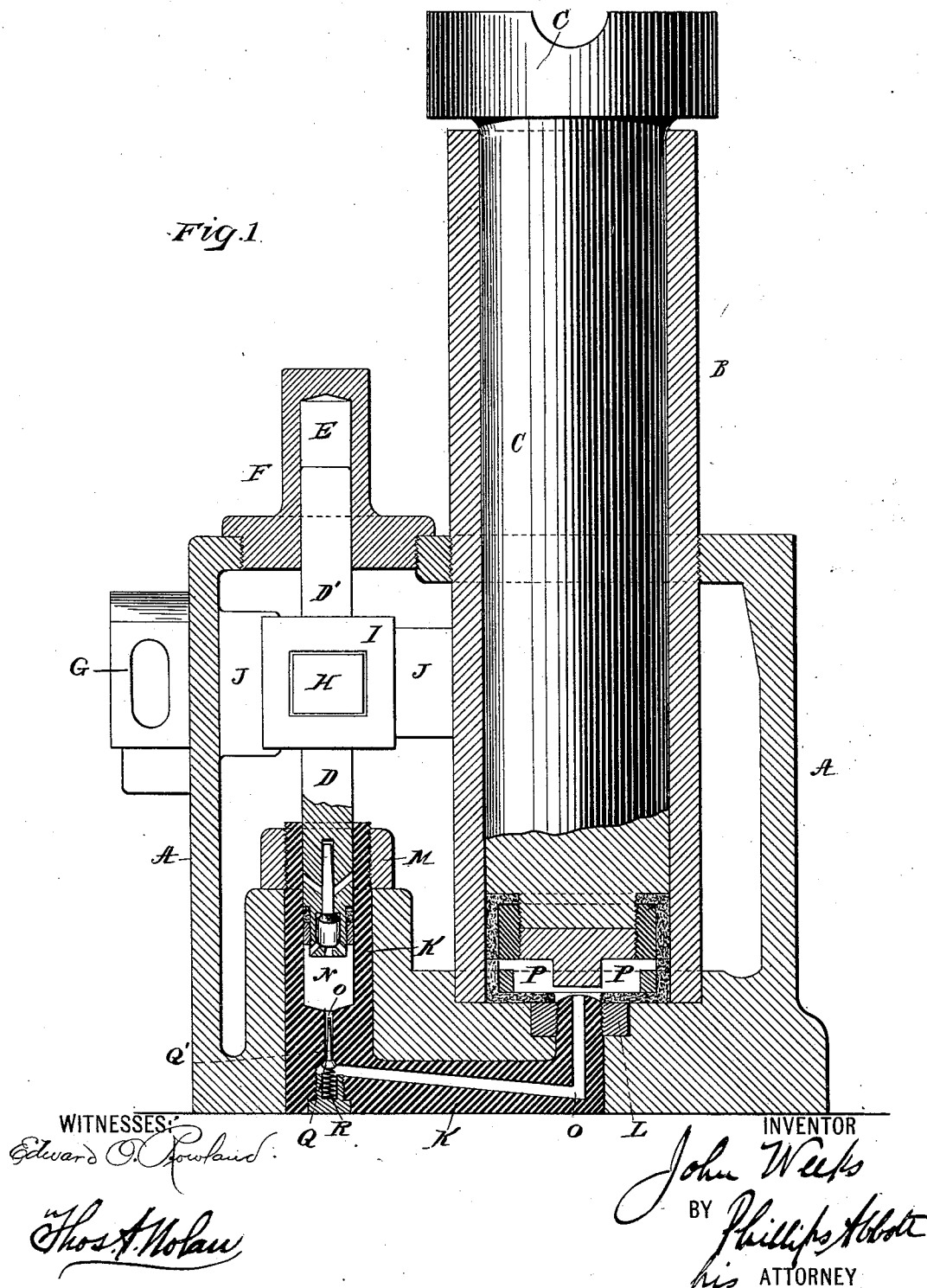
(No Model.)

2 Sheets—Sheet 1.

J. WEEKS.
HORIZONTAL HYDRAULIC JACK.

No. 478,530.

Patented July 5, 1892.



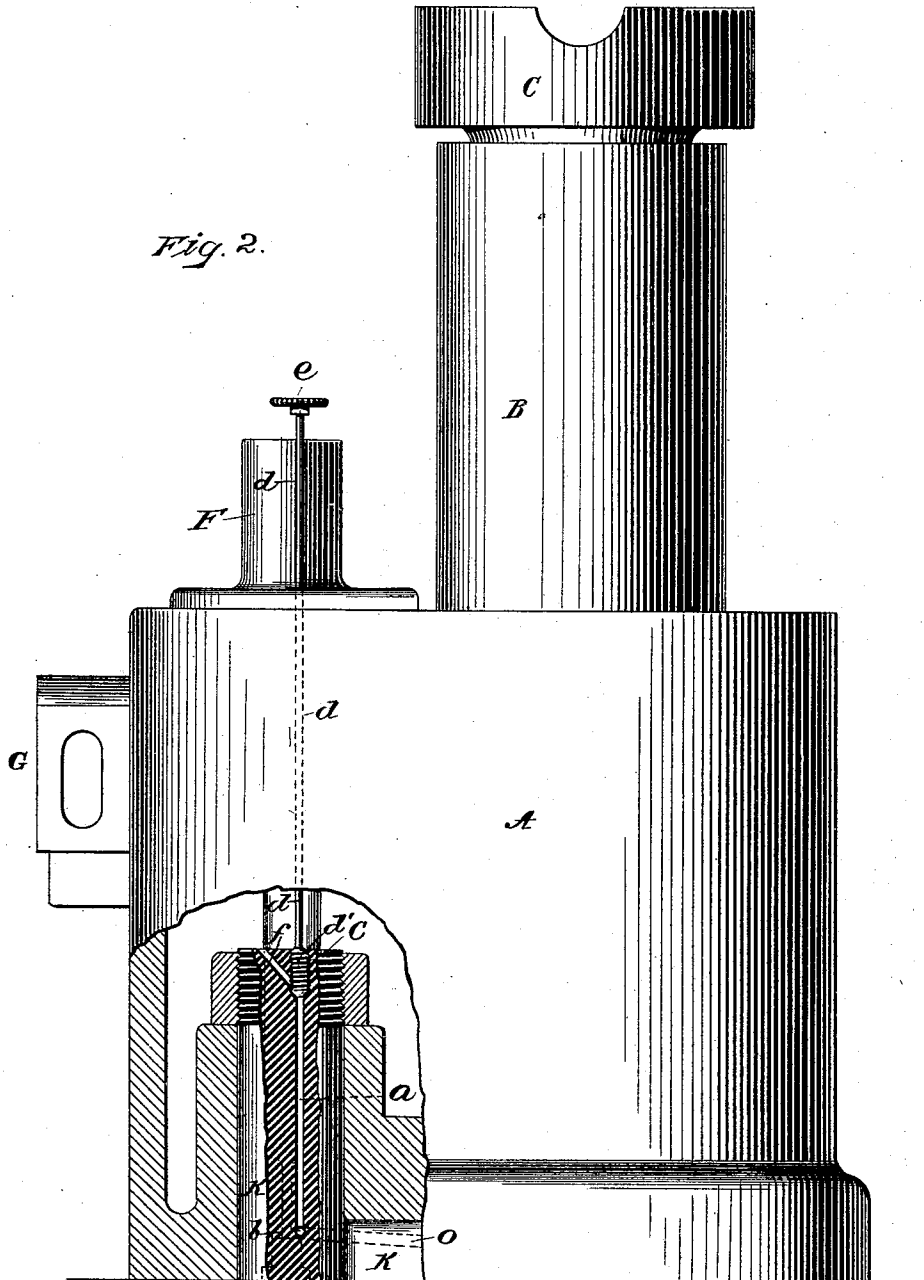
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WITNESSES:
Edward C. Rowland
Thos. A. Nolan



INVENTOR
John Weeks
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UNITED STATES PATENT OFFICE.

JOHN WEEKS, OF NEW YORK, N. Y., ASSIGNOR TO RICHARD H. DUDGEON,
OF SAME PLACE.

HORIZONTAL HYDRAULIC JACK.

SPECIFICATION forming part of Letters Patent No. 478,530, dated July 5, 1892.

Application filed January 12 1892. Serial No. 417,793. (No model.)

To all whom it may concern:

Be it known that I, JOHN WEEKS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Horizontal Hydraulic Jacks, of which the following is a specification.

My invention relates to improvements in "horizontal jacks," so called; and it consists in means whereby the head of the jack may be "lowered," and is applicable to single-pump jacks or to double-pump jacks, although I illustrate it only in conjunction with a single pump, in order that the drawings may be simplified and more easily understood.

My invention is likewise applicable to punches and other hydraulic apparatus.

In horizontal jacks various devices have been employed whereby the liquid may be permitted to flow backwardly from the force-chamber of the ram into the reservoir; but in all the methods known to me there are disadvantages which need not here be recited; and my present invention consists in utilizing a large part of the passage through which the liquid passes from the pump to the force-chamber of the ram as the back flow-passage when desiring to lower the jack. This I secure by the addition of very simple devices, as will hereinafter appear.

Figure 1 is an elevation in section of a horizontal jack, showing the pump-block and the passages through the same connecting with the force-chamber of the ram. Fig. 2 is an elevation, partly broken away, showing partly in section the reverse side of the pump-block from that shown in Fig. 1. Fig. 3 is a plan of the pump-block detached from the other parts.

A is the metallic case of the jack.

B is the ram-cylinder.

C is the ram.

D is the pump-piston rod.

D' is the upwardly-extending portion thereof, which slides through a recess E, made in the cap F of the jack.

G is the lever-socket.

H is the knuckle, which is connected with a shaft operated by the socket and lever. The

knuckle works in a frame I, connected to or made part of the piston-rod D. The frame I is guided by the webs J J.

K is the pump-block. It is let into the casting from the under side and is held firmly in position by a nut L at one end and by another nut M at the other end.

N is the bore of the pump.

O is a passage leading from the interior of the bore of the pump through the pump-block and up into the force-chamber P of the ram. In this passage a valve Q is set, which has a three-sided stem Q', by the sides of which the water may pass, and it is also provided with a spring R, which reseats it upon the upstroke of the pump.

From the foregoing it will be readily understood that upon the downstroke of the pump the liquid is forced into the passage O, which presses the valve Q off from its seat, compressing the spring R in so doing, and the liquid then passes along the passage O up into the force-chamber of the ram and there exerts its power.

To lower the head of the ram, I provide the following devices, which form the subject-matter of my invention, references being had to Figs. 2 and 3.

In the wall of the pump-block K, I drill a hole *a* from the top downwardly to a point below the valve Q, and I then drill a hole *b* horizontally, which connects the lower end of the hole *a* and the passage O. The upper portion of the hole *a* I enlarge, as at *c*, and at the lower end of the enlarged portion I make a valve-seat.

d is a rod, the lower end of which is enlarged, as at *d'*, and is threaded to correspond to threads in the enlarged part *c* of the hole. The rod extends upwardly, passing out of the top of the jack, where there may be a stuffing-box, if desired, or other means to prevent the escape of water from the reservoir, and at the top of the rod is a small hand-wheel *e*. The lower end of the rod *d* below the threading is made into the form of a valve, which is seated in the seat at the lower end of the enlarged threaded part *c*.

The operation is as follows: When desiring

to lower the ram, the hand-wheel *e* is turned in such manner as to run back the rod *d* by the action of the screw-threads *d'* upon the lower end of the rod. This of course retracts the valve from its seat, and the liquid then flows back from the force-chamber *P* of the ram through the passage *O* into the chamber below the valve *Q* in which the spring *R* is, and thence latterly through the horizontal connecting-passage *a*, thence through the valve on the lower end of the rod *d*, which is now open, and thence through the connecting-passage *f* into the reservoir, and by this means the ram is lowered.

15 I claim—

1. In a horizontal jack or like apparatus, the combination of a base for the apparatus, made of a single casting and having a recess therein which connects with the force-chamber at one part and with the reservoir at another part, a pump-block within the said recess and confined therein, said pump-block having a pump-cavity, a passage connecting the pump-cavity with the force-chamber of the ram, and a back flow-passage connecting with said passage in the block and with the

reservoir and a valve for said back flow-passage, substantially as set forth.

2. In a horizontal jack or like apparatus, the combination of a base for the apparatus, 30 made of a single casting and having a recess therein which connects with the force-chamber at one part and with the reservoir at another part, a pump-block within the said recess and confined therein, said pump-block 35 having a pump-cavity, a passage connecting the pump-cavity with the force-chamber of the ram, and a back flow-passage connecting with the said passage in the block and with the reservoir and a valve for said back flow-pas- 40 sage, and a rod connected with said valve and projecting to the outside of the jack, whereby said valve is controlled, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 11th day of 45 December, A. D. 1891.

JOHN WEEKS.

Witnesses:

PHILLIPS ABBOTT,
J. E. HOFFMAN.