

M. J. WALSH.
HYDRAULIC-JACK.

No. 170,419.

Patented Nov. 23, 1875.

Fig. 1.

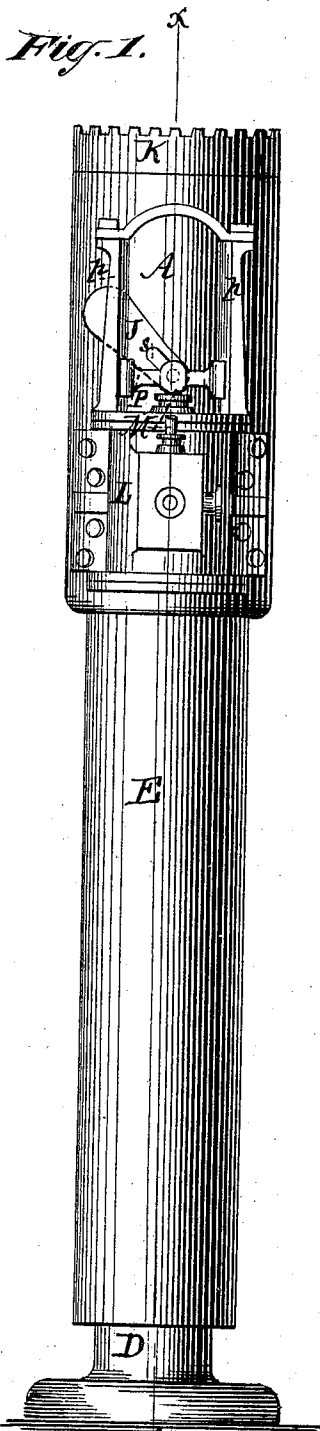


Fig. 2.

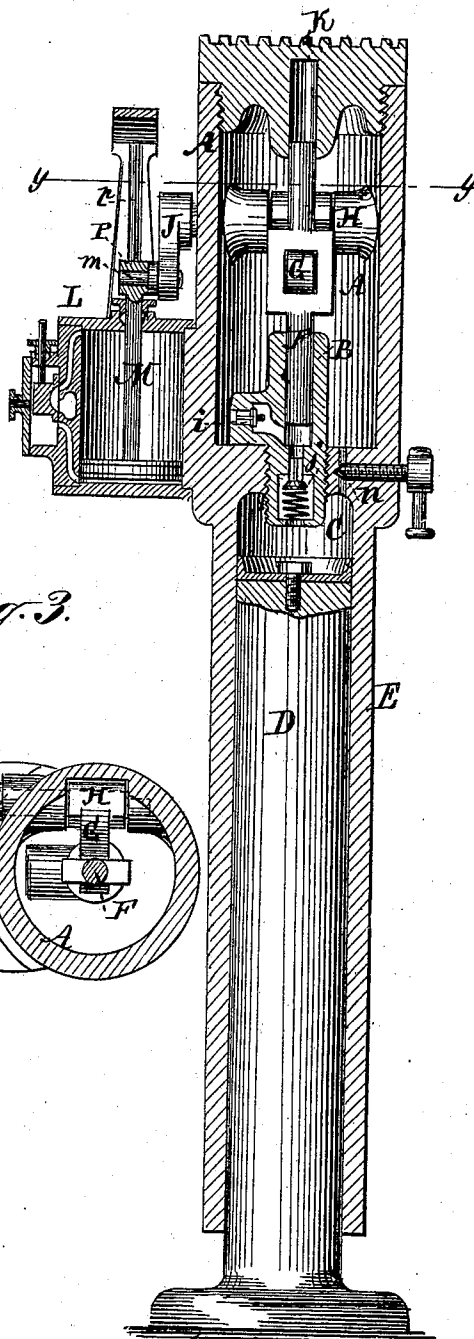
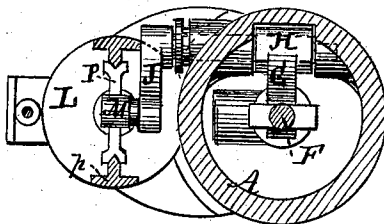


Fig. 3.



Witnesses
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IMPROVEMENT IN HYDRAULIC JACKS.

Specification forming part of Letters Patent No. **170,419**, dated November 23, 1875; application filed October 6, 1875.

To all whom it may concern:

Be it known that I, MAURICE J. WALSH, of New York city, in the county and State of New York, have invented an Improvement in Hydraulic Jacks; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to that class of jacks known as hydraulic jacks; and it consists in the combination, with such a jack, of an engine mounted directly thereon, and connected with shaft which operates the pump.

The jack may be of any suitable construction. The engine may be driven by steam, water, or air, and it is mounted directly upon the body of the jack, which thus serves as the supporting frame or standard of the engine.

The accompanying drawing illustrates one mode of carrying out my invention.

Figure 1 is a side view of a hydraulic jack of well-known construction, with an engine attached thereto. Fig. 2 is a central longitudinal section taken in the line *x x* of Fig. 1. Fig. 3 is a transverse section taken in the line *y y* of Fig. 2.

The jack is constructed with the reservoir A, pump-cylinder B, and pressure-cylinder C above the ram D, which is surrounded by and works in the ram-cylinder E, said ram-cylinder being attached to the reservoir A. The plunger F is operated by an arm, G, on a shaft, H, one end of which projects outside of the reservoir A. The jack is provided with a valve, *i*, for allowing the water to flow from the reservoir A into the pump-cylinder B when the plunger is raised, and with a valve, *j*, through which the piston, as it descends, forces the water into the pressure-cylinder C, where the pressure it exerts against the head of the ram causes the ram-cylinder E, and the parts carried thereby, to be raised or forced outward therefrom, so as to lift or exert a pressure upon any article with which the head K of the jack is brought in contact. By means of a screw-valve, *n*, communication is afforded

between the reservoir A and pressure-cylinder C, to provide for restoring the parts to the first position.

The construction of the engine, and the mode of transmitting its power to the pump, may be of any suitable description. It is here represented as a simple direct-acting engine, L, having the piston-rod M connected with a crank or arm, J, attached to the end of the shaft H, which extends outside of the reservoir A. The engine is attached to the outside of the reservoir, so as to move therewith. The crank or arm J is provided, near its end, with a slot, *s*, in which works a pin, *m*, attached to the piston-rod M; and said piston-rod is also provided with a cross-head, P, sliding in guides in a stationary frame, *p*, so that as the piston-rod is reciprocated the cross-head prevents any lateral vibration or deviation thereof from a right line, while the engagement of the pin *m* and slot *s* enables the piston-rod to impart an oscillating motion to the crank or arm J, and thus, through the shaft H and arm G, to operate the pump of the jack.

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

1. The combination, with a hydraulic jack, or an engine mounted directly thereon, and connected with its pump, substantially as herein described.

2. The combination, with the pump-operating rock-shaft H and its attached arm G, of the slotted crank or arm J, the pin *m*, and the piston-rod M, substantially as herein described.

3. The combination, with the piston-rod M and slotted arm J, of the sliding cross-head P and stationary guide-frame *p*, substantially as herein described.

MAURICE J. WALSH.

Witnesses:

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