(No Model.)

M. J. WALSH.

JACK.

No. 254,741 Patented Mar. 7, 1882.

Fig 1.

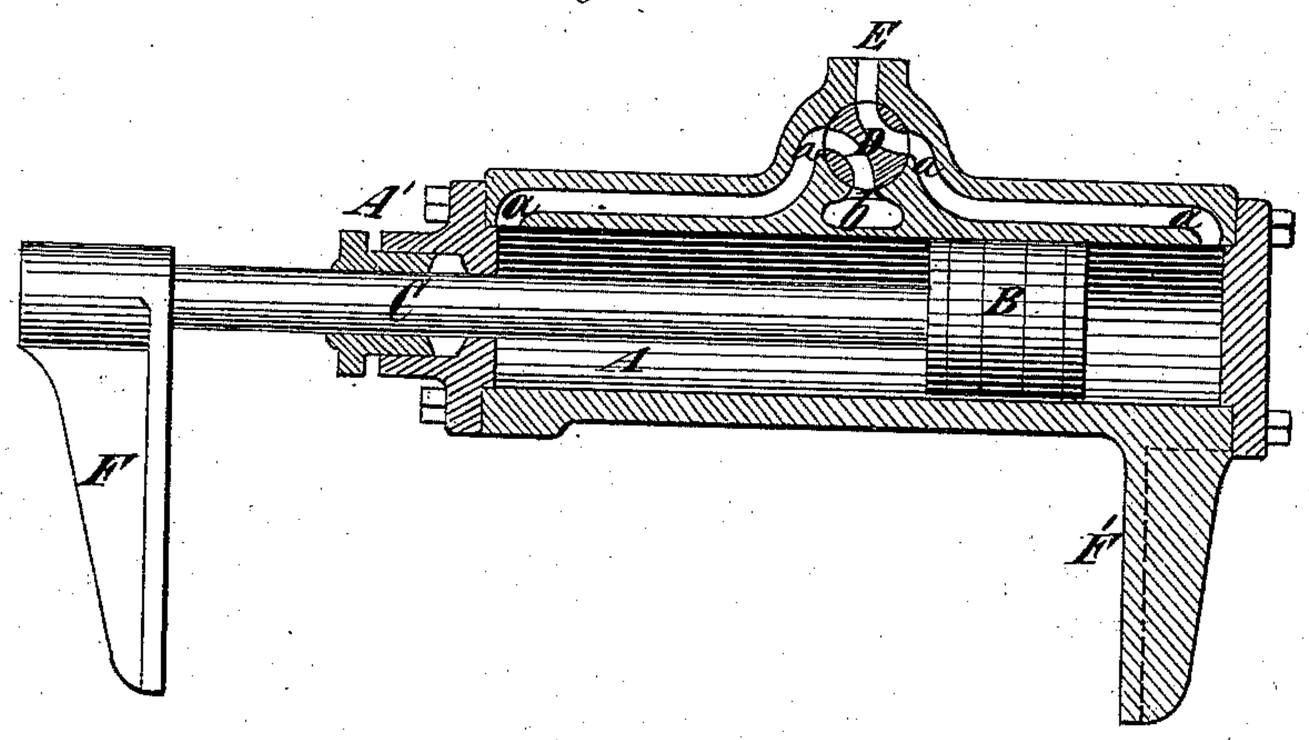
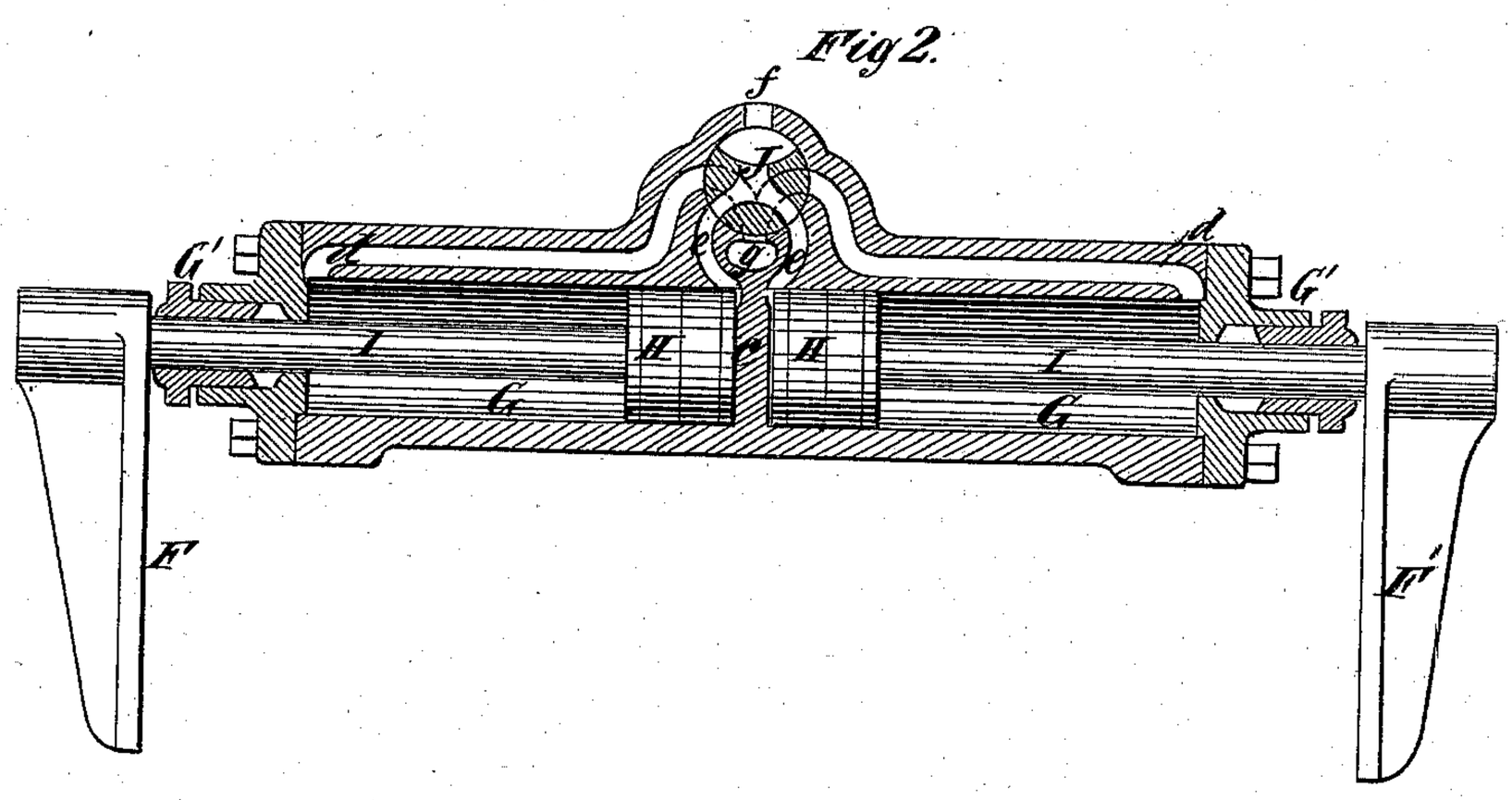


Fig 2.



Witnesses
John Becker
Thomas E. Birch.

Inventor
Maurice J. Walsh
by his Attorneys
Brown & Brown

UNITED STATES PATENT OFFICE.

MAURICE J. WALSH, OF NEW YORK, N. Y.

JACK.

SPECIFICATION forming part of Letters Patent No. 254,741, dated March 7, 1882.

Application filed December 21, 1880. Renewed February 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, MAURICE J. WALSH, of the city, county, and State of New York, have invented certain new and useful Improvements in Jacks, of which the following is a specification.

My invention relates to jacks adapted to be operated by hydraulic or other power, which are frequently used for the purpose of stowing cargo—such, for instance, as bales of cotton—in a vessel, but which may be used for stump-pulling or other purposes. As frequently constructed these jacks comprise a cylinder, one end of which is planted against an immovable support, and a piston or plunger, which, by the pressure of water or other motive agent, is run out and used to move, compress, or stow away articles.

The principal object of my invention is to provide a jack whereby a number of articles—such, for instance, as bales of cotton—may be drawn up or confined or pressed tightly together side by side, so as to occupy less space, without necessitating any outward support for the jack.

To this end my invention consists in the combination of a jack-cylinder, a piston and rod fitted thereto and adapted to be reciprocated therein for expanding or contracting the jack, and two claws, arms, or pressers adapted to embrace the material to be compressed or moved and be drawn together by the operation of the jack. One of said claws, arms, or pressers may project from the cylinder and one from the piston-rod, or I may employ two pistons and piston-rods working through opposite ends of the cylinder and each provided with a projecting claw, arm, or presser.

The invention also consists in the combination, in a jack, of a cylinder, two pistons fitted thereto, two piston-rods working through opposite ends of said cylinder, passages or ports for supplying a motive agent to the two ends of said cylinder upon the outside of said pistons, and other passages or ports for supplying a motive agent to said cylinder between said pistons.

In the accompanying drawings, Figure 1 represents a longitudinal section of a single-acting jack embodying my invention; and Fig. 2 is a similar section of a double-acting jack in which the claws, arms, or pressers are each attached to separate piston-rods.

Similar letters of reference designate corresponding parts in both figures.

Referring to Fig. 1, A designates the cylinder of the jack, and B a piston adapted to reciprocate therein, and provided with packing of any suitable kind. The piston-rod C, to which the piston B is fixed, reciprocates in a stuffing-box, A′, in one end of the cylinder A.

The cylinder A is constructed with suitable ports, *a a*, leading from the ends of the cylinder to a valve, D, consisting simply of a four-way cock for controlling the supply of water or other motive agent from a supply-port, E, to either end of the jack and the exhaust of such water or motive agent from either end of the jack to an exhaust-port, *b*. The said valve may be replaced by one of any other construction adapted to the situation.

F F′ designate claws, arms, or pressers projecting transversely to the line of movement of the piston, and connected, one, F, to the piston-rod C, and the other, F′, to the cylinder A, the latter being here represented as cast in one piece with the cylinder.

It will be observed that to extend or contract the jack the motive agent is supplied on the right-hand side of the piston, and when the jack is extended so that its claws, arms, or pressers F F′ will embrace a number of bales of cotton or other merchandise the supply of water or other motive agent is shifted to the left-hand side of the piston and the bales are drawn tightly together, so as to occupy less space, and, if desirable, permit the insertion of additional bales.

The jack is adapted to be used without being attached in any way to the vessel when in operation, or without exerting any strain thereon; but if it is desirable to draw the bales embraced by the claws, arms, or pressers in one direction only, the piston or cylinder may be attached to any part of the interior of the vessel. It will be observed that any strain thus produced upon the hull will be in the same direction as that in which the water acts, and is therefore a strain which the vessel is well adapted to resist.

Referring now to Fig. 2, it will be observed that the cylinder G is divided by a central par-

tition, *c*, into two compartments, each fitted with a piston, H, fixed to a rod, I, the two rods working through stuffing-boxes G′ in opposite ends of the cylinder. In this example of my invention both the claws, arms, or pressers are attached to the piston-rods, and when the jack is contracted they are drawn together to compress material in the same manner as the jack shown in Fig. 1.

The cylinder G is constructed with ports *d* for supplying water or other motive agent to the ends of said cylinder to bring the pistons together, and with other ports, *e*, to supply water or other motive agent to the jack upon each side of the partition *c* to force the pistons apart. The valve J here shown is provided with two sets of ports or passages in different planes, one series being here shown in full outline and the other in dotted outline. When the valve is in the position shown the water or other motive agent is free to pass from a supply-port, *f*, through the valve J and ports *e* to force the pistons apart, the water upon the outside of the pistons being meanwhile exhausted through the ports *d* and the ports of the valve shown in dotted outline to the exhaust-port *g*.

When the jack is to be reversed the valve is turned so as to bring the ports *d*, by means of the ports in the valve shown in dotted outline, in communication with the supply-port *f*, and also to bring the ports *e* in free communication with the exhaust-port *g*. In lieu of this valve, one of any other suitable construction might be employed.

While the jack is principally designed for compressing bales of merchandise—such as cotton—it may be employed to move articles bodily—as, for instance, to pull stumps; and the jack may have water or other motive agent conducted to and from it by flexible pipes or hose to enable it to be readily moved and adjusted. It may also be used, if desirable, to push instead of pull.

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

1. The combination of a jack-cylinder, a piston and rod fitted thereto and adapted to be reciprocated therein for extending or contracting the jack, and two claws, arms, or pressers adapted to embrace the material to be compressed or moved and be drawn together by the operation of the jack, substantially as specified.

2. The combination, in a jack, of a cylinder, two pistons fitted thereto, two piston-rods working through opposite ends of said cylinder, passages or ports for supplying a motive agent to the two ends of said cylinder upon the outside of said pistons, and other passages or ports for supplying a motive agent to said cylinder upon the inner sides of said pistons, substantially as specified.

MAURICE J. WALSH.

Witnesses:
EDWIN H. BROWN,
T. J. KEANE.