2 Sheets--Sheet 1.

F. A. PRATT.

Crane.

No. 168,412. Patented Oct. 5, 1875.

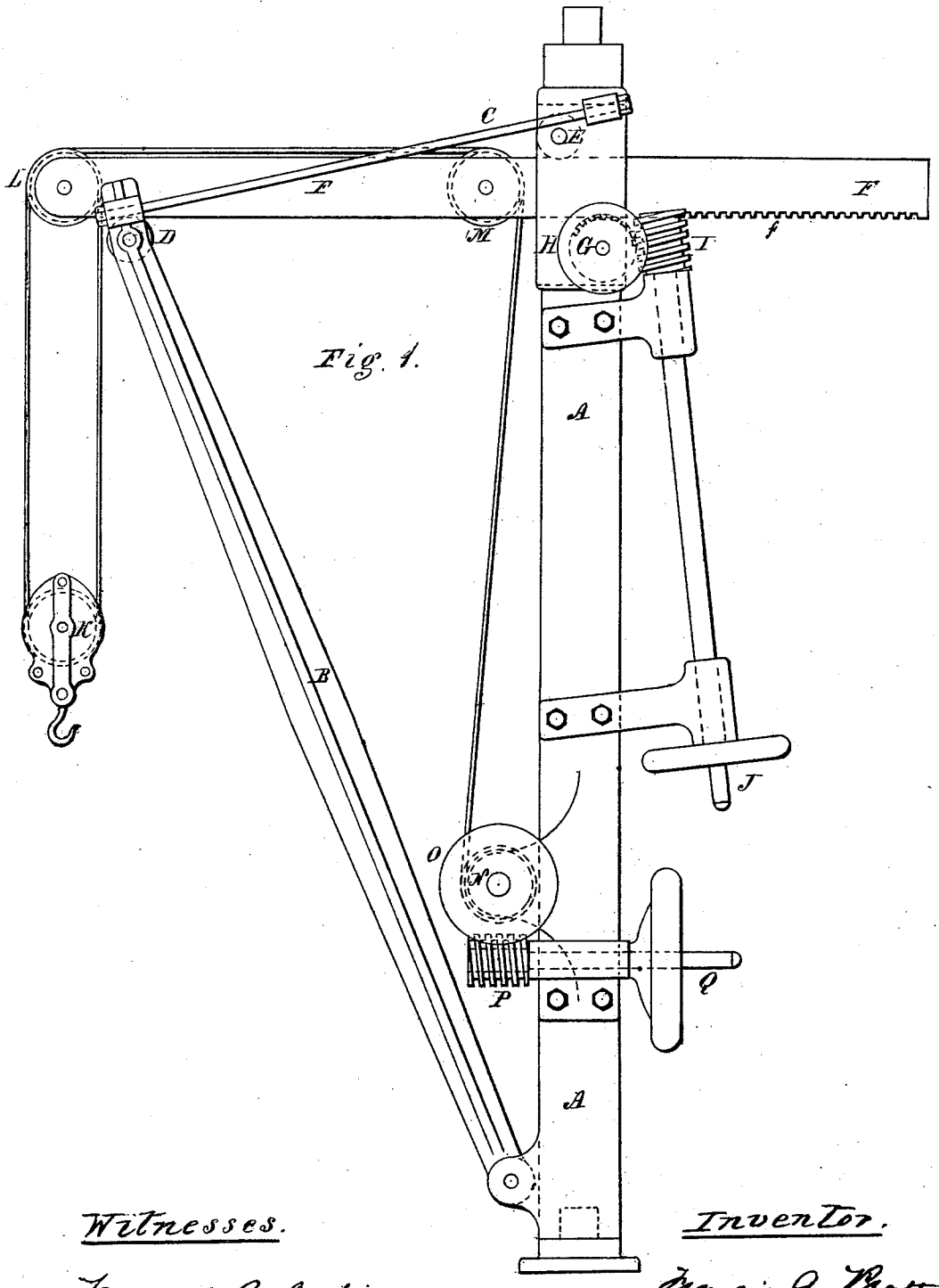

Fig. 1.

Witnesses.

Wendell R. Curtis

John T. Peters

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2 Sheets--Sheet 2.

F. A. PRATT.

Crane.

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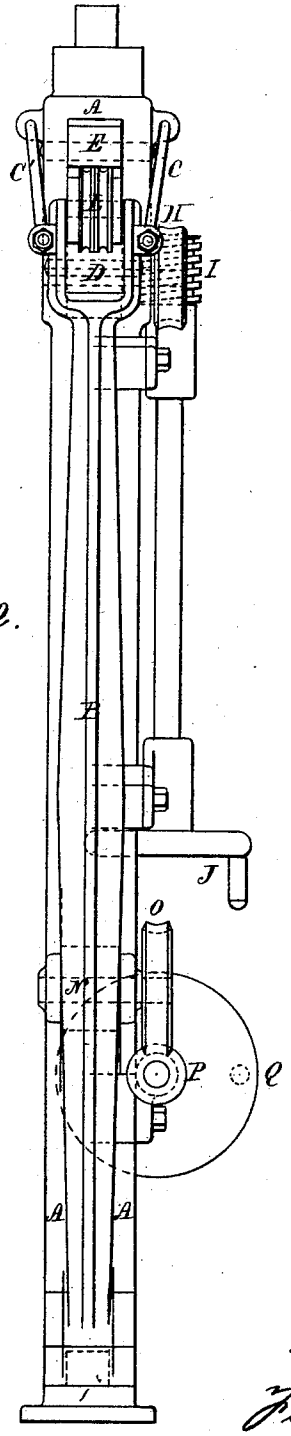
Fig. 2.



Witnesses.

Trumbull R. Curtis

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UNITED STATES PATENT OFFICE.

FRANCIS A. PRATT, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PRATT AND WHITNEY COMPANY, OF SAME PLACE.

IMPROVEMENT IN CRANES.

Specification forming part of Letters Patent No. **168,412**, dated October 5, 1875; application filed March 10, 1875.

To all whom it may concern:

Be it known that I, FRANCIS A. PRATT, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Cranes; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

As cranes are usually constructed for moving a suspended weight in and out from the center of motion, or for bringing the hoisting-gear directly over different points, the upper block is connected with a traveling-carriage that runs upon a horizontal beam or jib at the top of the crane. This beam is fixed in its position, and is supported firmly in its place by the requisite braces.

My invention consists in constructing a crane with a top beam or jib to move out and in, so that the weight is always suspended from its outer end.

In the accompanying drawings, on two sheets, Figure 1 is a side view of my improved crane. Fig. 2 is a view directly in front of the same.

A is the post or mast of the crane, which turns upon bearings at the top and bottom. To it all the other parts are attached and turn with it. B is a strut or boom, which extends upward from the bottom of the mast, and is connected with its top by the tie-rods C C′, one on each side. D and E are rollers upon which the beam F moves back and forth. This beam F passes between cheeks *b b* upon the upper end of the boom B, and also between cheeks *a a* in the upper part of the mast A to key it in its place. Upon the under side of the beam there is a rack, *f*, which gears into the wheel G which lies within the thickness of the post. Upon the same shaft, outside the post, is the wheel H, which is turned by the worm I, the shaft of which extends downward through suitable bearings, so as to be operated by the hand-crank J. K is a block, and L and M are pulleys in the beam F for multiplying the power and conducting the hoisting-chain or line to the drum N. Upon the same shaft, as N, is the gear-wheel O, which is turned by the worm P, whose shaft extends to the rear, and is operated by the hand-crank Q.

The operation of my invention is as follows: The weight is raised by means of the crank Q, and can then be swung around in the usual manner. If it is desired to project the weight farther out from the center it is done by turning the crank J. This moves the beam, so that its outer end, which carries the pulley L, is over the position desired.

By means of my invention weights can be placed in positions inaccessible to ordinary cranes—as, for instance, a large mass of iron can be placed within the door of a furnace.

My improved crane can also have a longer reach or swing than ordinary cranes, and yet be able to pass posts, beams, or other obstructions by shortening the beam F inward.

What I claim as my invention is—

The horizontal sliding beam F, with the roller-bearings D and E, and a rack and pinion mechanism for moving it outward and inward beyond the fixed frame, in combination with the standing and fixed parts of a crane, substantially as herein described.

FRANCIS A. PRATT.

Witnesses:

THEO. G. ELLIS,

WENDELL R. CURTIS.