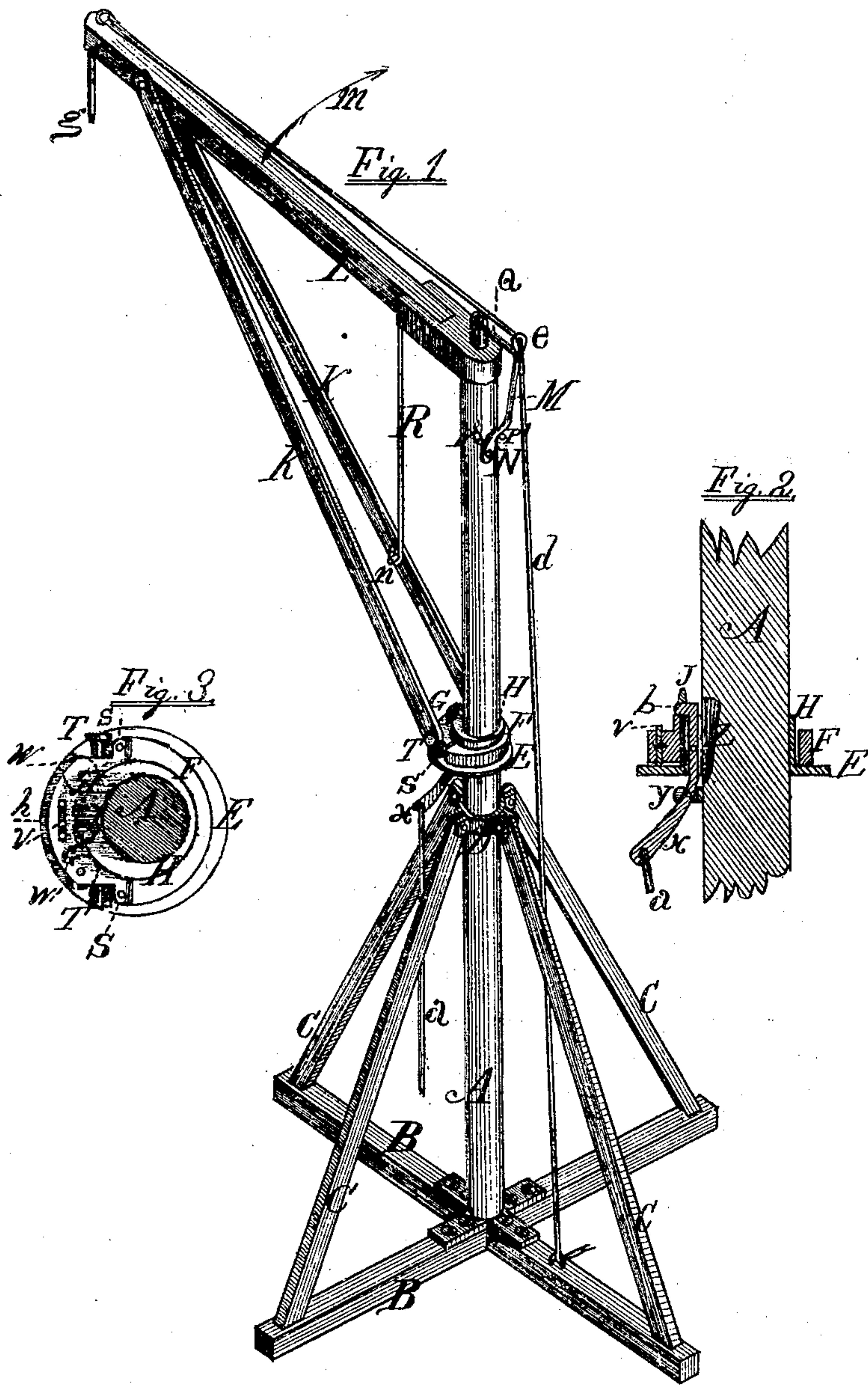


J. W. Piper & W. J. & J. S. Hanger,

Derrick.

No. 97,114.

Patented Nov. 23, 1869.



Witnesses.

E. W. Thompson
L. H. Banks

Inventors.

J. W. Piper.
Wm. J. Hanger.
J. S. Hanger.
By their attorneys
J. K. Chapin

United States Patent Office.

JACOB W. PIPER, OF CHICAGO, AND WILLIAM J. HANGER AND JACOB S. HANGER, OF TAYLOR, ILLINOIS.

Letters Patent No. 97,114, dated November 23, 1869.

IMPROVED DERRICK.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JACOB W. PIPER, of Chicago, in the county of Cook, and State of Illinois, and WILLIAM J. HANGER and JACOB S. HANGER, of Taylor, in the county of Ogle, and State of Illinois, have invented an Improved Derrick; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and letters marked thereon, making a part of this specification, in which—

Figure 1 is a perspective representation of our improved derrick.

Figure 2, an enlarged vertical section of a part appertaining to the central part of the derrick.

Figure 3, a horizontal section of the standard, and a plan view of the devices which support the braces of the swinging arm.

The nature of the present invention consists in the novel construction of the parts employed to make the arm turn automatically on the standard, in order that the article previously raised may be carried to the opposite side of the derrick, and loaded upon a wagon, or deposited upon a stack, as any particular case may require, as the whole is hereinafter fully specified.

A represents a substantial standard, of proper size and length, which is supported by transverse sills, B B, and braces, C, the latter being fastened to the outer ends of the sills, and to a collar, D, placed around the said standard.

To the middle part of the standard A is fastened a cam-track, E, the front part *h* of which is inclined upward so much above the back part, that a collar, F G, supporting the lower ends of braces K, will, when a weight is put on the outer end of arm L, turn around to the opposite side of the standard A, and consequently carry the arm, and its load also, to the other side.

The collar F G is made in two parts, in order that it may be put over an inner collar, H, projecting up from the cam E, and fastening to the standard A.

These two parts are pivoted together at S S, and the part G is provided with a vertical friction-roller, V, fig. 3, which travels on the cam E, and with two horizontal rollers W W, which travel around the inner collar H.

In order to hold the collar F G in a fixed position when a load is being raised by a rope, *d g*, a curved latch, *x*, figs. 1 and 2, is pivoted to lugs Y, fastened to standard A, and it is so arranged that when drawn upon in a proper direction by a rope, *a*, its upper end will be brought in between lugs J J, figs. 2 and 3, and thus lock the collar to the shaft, and also, so arranged that its upper part may be shut into a recess, Z, in standard A, and allow the collar to rotate.

The devices for starting the arm L to move in the required direction, consist of an adjustable arm, M, which is pivoted to the standard A at N, and held in position at its top end by means of a link, Q, pivoted to the top of standard A, and jointed to said arm M.

This arrangement is such that when the arm M is so turned as to bear against either of the pins P', fig. 1, driven into the standard A, the arm L will start to turn toward the way which the arm M inclines; for instance, as in fig. 1, arm L will move in the direction indicated by dart *m*.

The arm L is pivoted to the top of standard A, and strengthened by braces K, in the usual manner, the lower ends of the braces being bolted to collar F G at T; and, in order to prevent the arm L from rising off from the standard A, a rod, R, is fastened to said arm, and hooked over a pin, *n*, put into one of the braces K, as shown at fig. 1.

The means for elevating a load consist of a rope, *g*, the operation of which is too well understood to need further description.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent of the United States, is—

The cam E, provided with collar H, in combination with the two-part collar F G, provided with rollers V W, standard A, latch *x*, arm M L, and link Q, as set forth.

WILLIAM J. HANGER.
JACOB S. HANGER.
JACOB W. PIPER.

Witnesses:

D. N. THOMPSON,
S. F. BANKS.