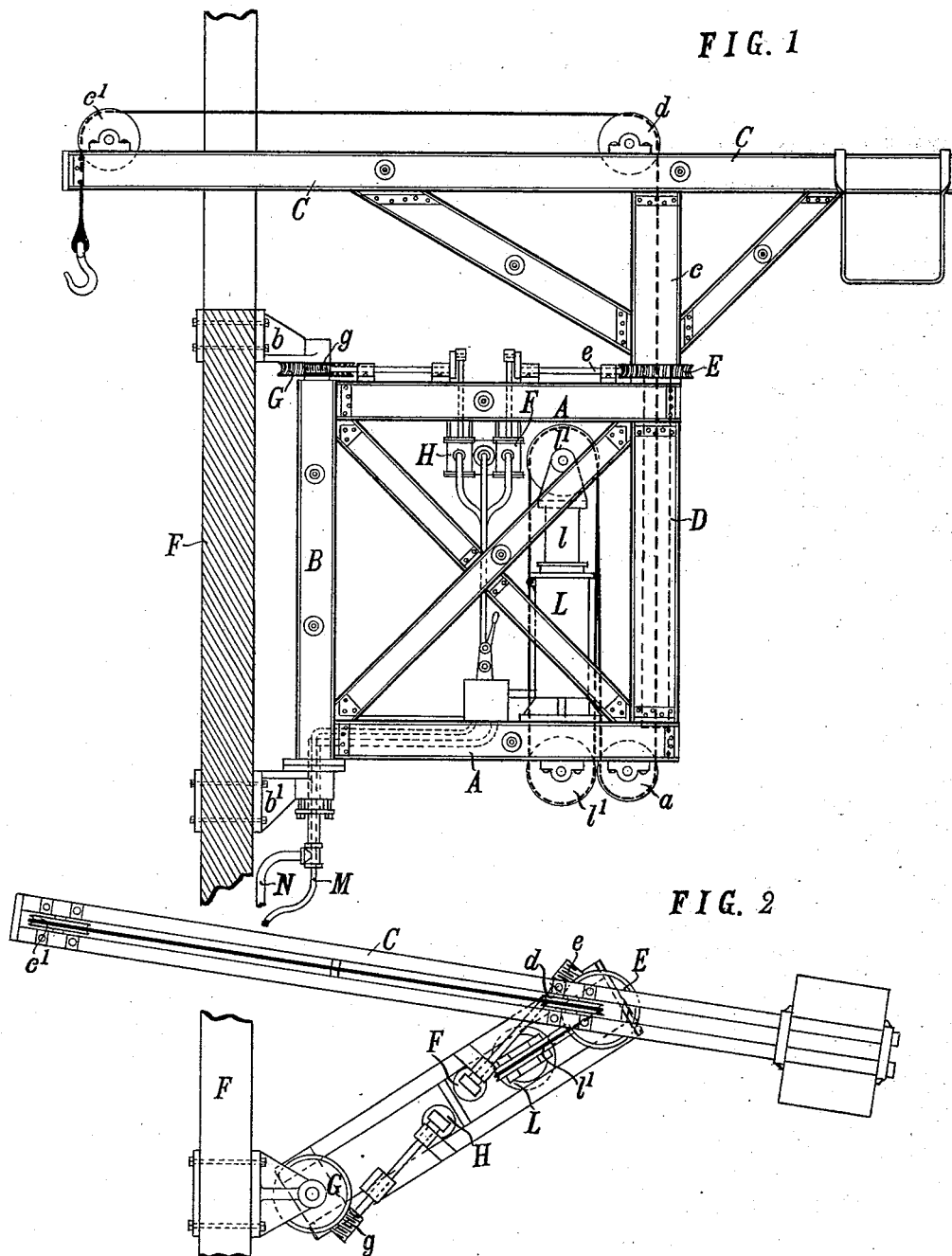


(No Model.)

E. W. NAYLOR.
JIB CRANE.

No. 491,127.

Patented Feb. 7, 1893.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ERNEST W. NAYLOR, OF CLEVELAND, OHIO.

JIB-CRANE.

SPECIFICATION forming part of Letters Patent No. 491,127, dated February 7, 1893.

Application filed April 25, 1892. Serial No. 430,575. (No model.)

To all whom it may concern:

Be it known that I, ERNEST W. NAYLOR, a subject of the Queen of Great Britain, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Jib-Cranes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to jib cranes which consist of a main jib and a supplemental jib hinged thereto; and my objects are, first, to provide a novel construction and combination of parts by means of which a load may be lifted from the floor of the room in which the crane is placed and moved to and deposited through a door in the wall which supports the crane and behind its main supporting post; and second, to provide certain novel combinations of mechanism for operating the several parts of the crane.

I will now proceed to describe the crane shown in the drawings which embodies the invention, after which the invention will be particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my improved crane, and Fig. 2 is a top view of the same.

A represents the main jib, which is pivoted by means of the post B to the supporting brackets *b b'* secured to the wall F. This main jib consists of suitable vertical and horizontal beams and diagonal braces to make it strong and stiff enough to support its load, which normally includes the supplemental jib and the operating mechanism. To the free end of the main jib is hinged a supplemental jib C which lies wholly outside of the main jib,—that is to say,—it is either placed above the upper horizontal beams, or below the lower horizontal beams whereby the main jib does not at any time interfere with the movement of the supplemental jib. The supplemental jib is longer than the main jib whereby its end extends past the post B when the parts are in the relative position as shown in the drawings. In order to properly support the supplemental jib it is provided with a long post *c* which passes through a post D on the main jib, and is stepped at its lower end in a suitable bearing. The posts *c* and D are

hollow so that the hoisting cable may pass axially through them. At the outer end of the supplemental jib a sheave *c'* is fixed over which the hoisting cable runs. A sheave *d* is fixed to the supplemental jib in such position that its face on one side of its center is in the axial line of the post *c*. A third sheave *a* is fixed to the main jib in the axial line of the post D, and the hoisting cable passes over the sheaves *c'*, *d* and *a* to the take-up mechanism which is carried on the main jib.

The supplemental jib is turned upon its axis by means of a worm wheel E secured axially to the post *c*, and a worm *e* mounted on the main jib. This worm is driven by a hydraulic motor F. The main jib is turned on its axis by means of a worm wheel G fixed to the bracket *b* concentric with the post B, and a worm *g* carried by the main jib. This worm is driven by the independent hydraulic motor H. The hoisting cable is taken up and paid out by the hydraulic cylinder L, its ram *l*, and the sheaves *l' l'* operating in the usual manner.

The hydraulic pressure and exhaust columns pass to a nest of valves on the main jib, through pipes M and N which are arranged axially with reference to the post B of the main jib, and are provided with suitable stuffing boxes. The movement of the water to and from the independent motors F and H and the cylinder L is controlled by the valves on the main jib.

By the construction and arrangement of parts shown and described a load may be taken from any point on the floor from within a few feet of the main jib post, to any point as far as both jibs will reach, lifted and deposited at any other point within said limits or through an opening in the wall which supports the crane; and all of these movements are under the control of one man on the main jib.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is;—

1. The combination of a main jib pivoted to suitable supports, and a supplemental jib longer than the main jib lying outside of the main jib, and pivoted to its free end, and independent motors carried on the main jib and adapted to turn said main and supplemental

jibs on their respective axes, substantially as set forth.

2. The combination of a pivoted main jib, and a supplemental jib hinged to its free end, 5 with a worm wheel secured axially to the supplemental jib, a worm mounted on the main jib, and a motor for operating said worm, substantially as set forth.

3. The combination of a main jib hinged to 10 suitable supports, a fixed worm wheel placed axially with reference to the mast of said jib, a worm mounted on said jib and a motor for

operating said worm, with a supplemental jib hinged to the free end of the main jib, a worm wheel secured axially to said supplemental 15 jib, a worm mounted on the main jib and an independent motor for operating the said worm, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST W. NAYLOR.

Witnesses:

J. W. SMITH,

E. L. THURSTON.