

(No Model.)

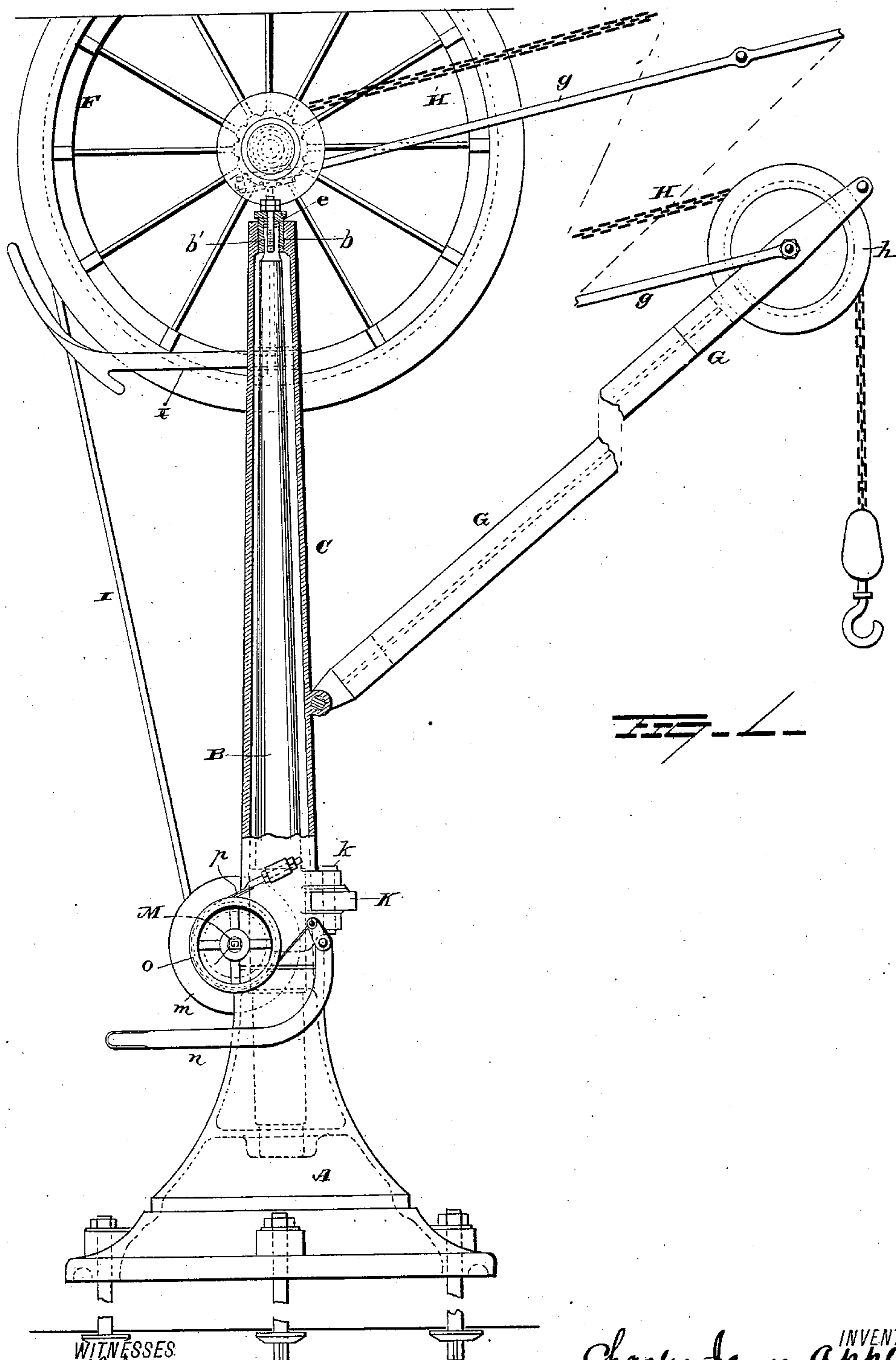
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C. J. APPLEBY.

CRANE.

No. 306,710.

Patented Oct. 21, 1884.



WITNESSES.
C. J. Nottingham
Geo. F. Downing.

Charles James Appleby INVENTOR
By H. A. Seymour ATTORNEY

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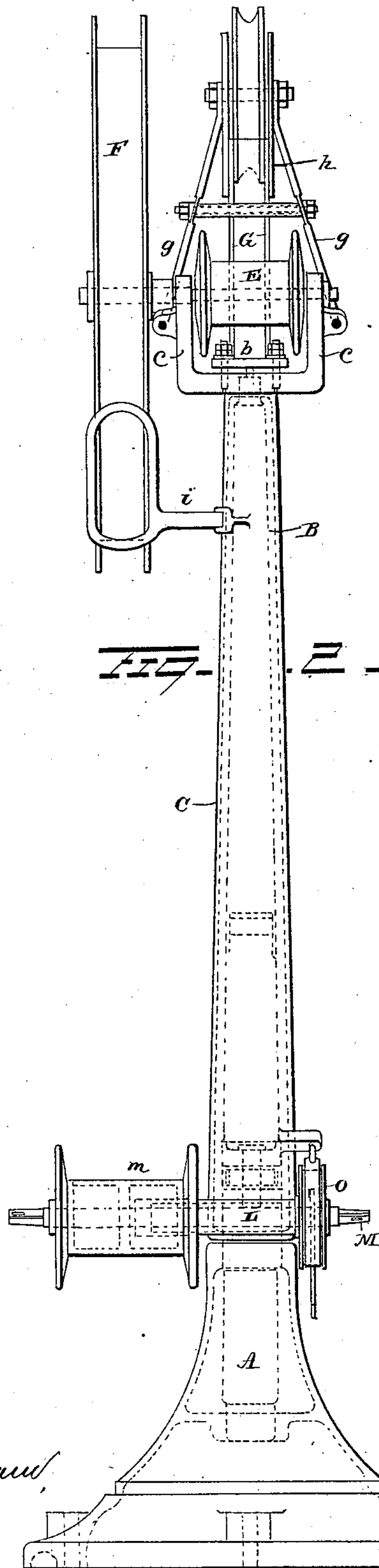
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Fig. 3.

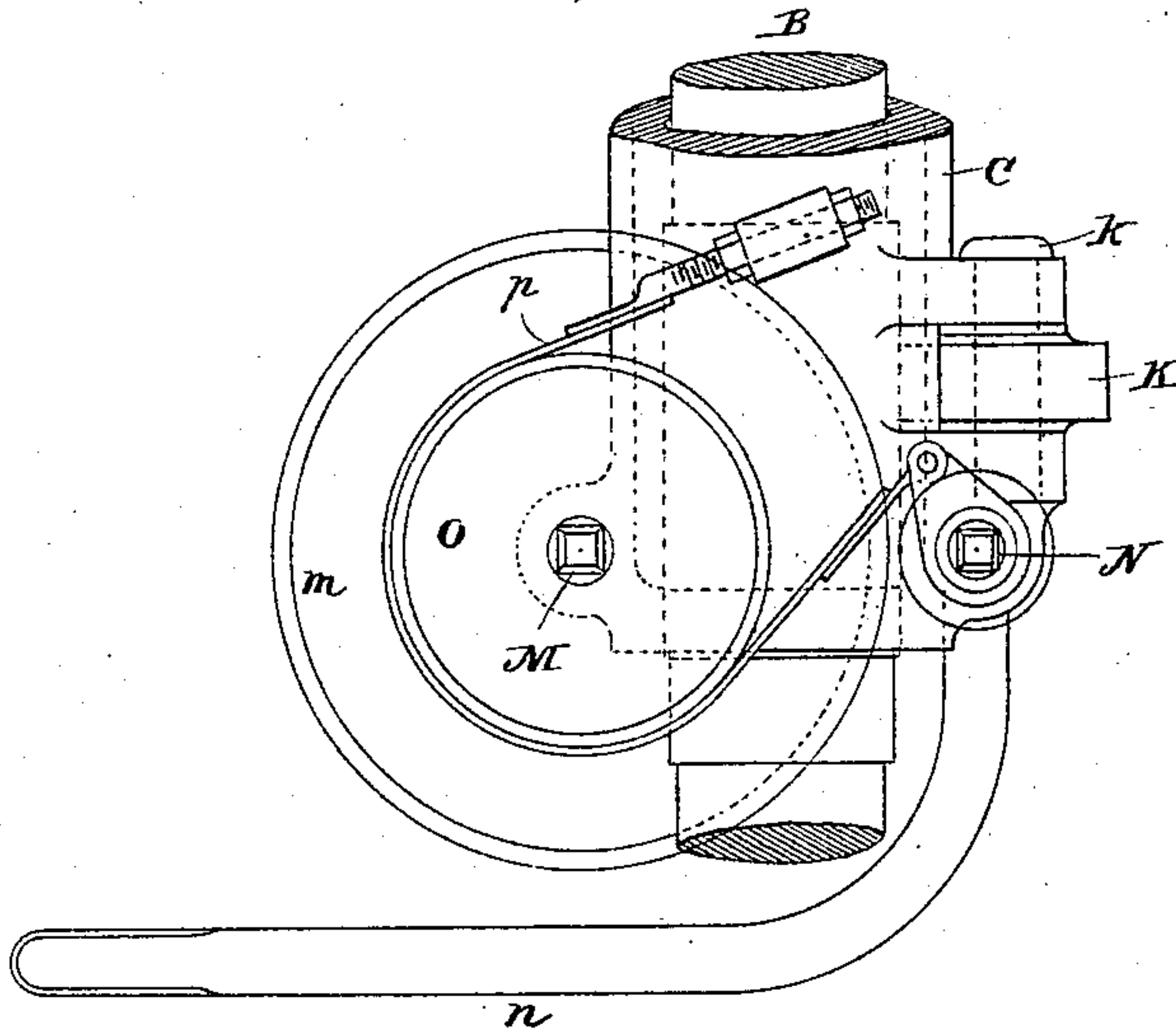
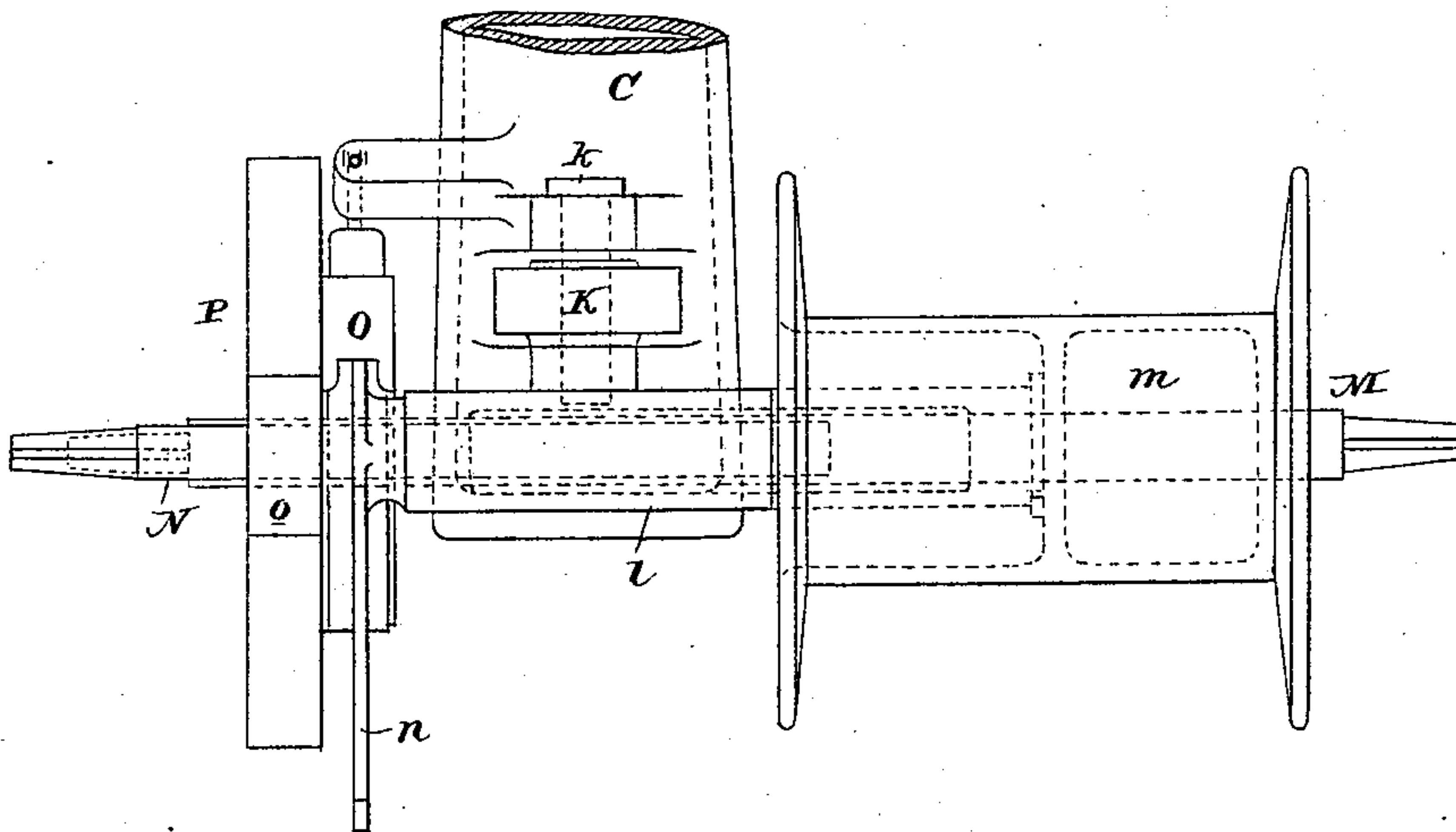


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES JAMES APPLEBY, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

CRANE.

SPECIFICATION forming part of Letters Patent No. 306,710, dated October 21, 1884.

Application filed July 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JAMES APPLEBY, of London, in the county of Middlesex and Kingdom of Great Britain, have invented certain new and useful Improvements in 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 an improvement in cranes, the object of the same being to provide a crane for lifting goods, packages, &c., from the floor or ground, turning completely around either with or without the load suspended, and depositing the load at any point of the circumference described by the end of the jib, and at any height between the point where the load is taken up and the end of the jib, a further object being to provide a crane which may be attached to a pillar or post such as is commonly used to support the floors of warehouses and similar structures, as well as to an independent post.

With these ends in view, my invention consists in certain features of construction and combinations of parts, as will be described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of an independent crane in position for use. Fig. 2 is a view in rear elevation. Fig. 3 is a detached view of the lower portion of the column, representing the gearing attached thereto in side elevation, and Fig. 4 shows the same in front elevation.

A represents a base of any convenient shape or construction securely attached to a floor or the ground, and provided with a vertical socket in which a post, B, preferably of wrought-iron, is keyed or otherwise secured. A cast-iron sleeve, C, fits loosely on the post B, and is provided at its upper end with the upwardly-extending arms *c*, preferably formed integral therewith, in which arms the shaft D, carrying the chain-drum E and whip-wheel F, is journaled. A cap, *b*, provided on its under side with a socket, *b'*, is adapted to fit in a perforation in the upper end of the sleeve C and receive in the socket *b'* the reduced head of the post B. The head of the cap *b* extends on either side of the perforation in the sleeve sufficiently far to admit of its

being conveniently bolted or otherwise secured to the head of the sleeve.

To reduce the friction between the head of the post and its bearing in the socket *b'*, I insert two or more gun-metal disks, *c*, and provide the head of the cap with an oil-hole communicating with the socket. The jib G is pivoted to the sleeve C at its lower end, its upper end being supported by the tension-rods *g*, secured to the upwardly-extending arms *c*. The drum E, about which the lifting-chain coils, and whip-wheel F are, as before observed, secured on the same shaft D, the lifting-chain H extending forward over a pulley, *h*, pivotally secured to the upper end of the jib, and the operating-rope I having one end secured to the face of the whip-wheel, passing a sufficient number of times about the wheel and leading downward to the operating-gear at the foot of the column. A guide, *i*, for leading the operating-rope onto the face of the wheel F, is secured to the sleeve in a convenient position, as shown.

To prevent the frictional contact between the lower front portion of the sleeve C and the post B, I provide the sleeve with one or more anti-friction rollers, K, which are conveniently mounted on an axle-bolt, *k*, secured in projections formed integral with the sleeve, the sleeve being cut away between said projections to receive the roller or rollers K. The lower portion of the sleeve C is further provided with the projections L and *l*, preferably formed integral therewith, the former adapted to support the drum-shaft M, and the latter to support the shaft N. The shaft M carries the spool or drum *m* on one end, preferably situated in the same vertical plane with the wheel F, and the brake-wheel O and spur-wheel P on the opposite end, and is squared to receive an operating-crank on either or both ends, as may be desired. The shaft N carries a brake-lever, *n*, mounted loosely thereon, and a driving-pinion, *o*, mounted rigidly thereon, and is squared at its end to receive an operating-crank; or, if found convenient, the shaft may be set rigidly in the sleeve and the brake-crank and driving-pinion both be loosely mounted thereon, the pinion being in this case provided with a sleeve squared to receive an operating-crank. The pinion *o* meshes with the spur-wheel P, and a brake-

band, *p*, has one end secured to the sleeve C above the wheel O, and, passing about said wheel, has its opposite end secured to the upper end of the brake-lever *n*.

5 By the system of gearing above described I am able to bring the speeds of working into direct relation with loads varying greatly in weight. For example, light loads may be lifted rapidly by pulling directly on the operating-rope I, heavier loads by a crank on the
10 shaft M, and still heavier loads by a crank on the shaft N, the loads being lowered by the brake lever or gear, as may be desired.

When it is desired to attach the crane to a
15 pillar or post of a warehouse or the like, the chain-barrel, whip-wheel, and lifting-gear may be secured to the front of the revolving sleeve C instead of the back, as described.

It is evident that slight changes in the construction and arrangements of the several
20 parts may be made without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth.

25 I am aware that cranes have hitherto been made which revolve around a post or pillar, and therefore do not claim the same, broadly; but,

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

1. In a crane, the combination, with a rotary sleeve, of a jib, whip-wheel, and operating-gear attached to the sleeve and adapted to
35 rotate therewith, substantially as set forth.

2. In a crane, the combination, with a sleeve constructed to rotate on a pillar or post, and a jib, whip-wheel, and operating-gear secured to the sleeve, of hard-metal disk-bearings interposed between the head of the post and the
40 upper end of the sleeve, substantially as set forth.

3. In a crane, the combination, with a sleeve constructed to rotate on a pillar or post, and
45 a jib, lifting-chain drum, and operating-gear

secured to and adapted to revolve with the sleeve, of gun-metal disk-bearings interposed between the head of the pillar and the sleeve, and anti-friction bearings interposed between the front of the sleeve and the pillar, substantially as set forth. 50

4. In a crane, the combination, with a stationary pillar or post and a rotary sleeve suspended from the upper end of the pillar, of an anti-friction roller journaled in the lower
55 end of the sleeve and adapted to engage the side of the pillar adjacent to the jib, substantially as set forth.

5. In a crane, the combination, with a rotating sleeve carrying a jib, whip-wheel, and
60 operating-gear, of a friction-band brake mounted on the lower end of the sleeve for holding the load suspended or lowering the same at pleasure, substantially as set forth.

6. In a crane, the combination, with a sleeve
65 adapted to rotate on a post, of a lifting-chain drum and whip-wheel secured on the same shaft, the latter being journaled in the upper end of said sleeve, and operating mechanism secured to the lower end of the sleeve, sub-
70 stantially as set forth.

7. In a crane, the combination, with a rotary sleeve having its vertical bearing on the head of a post, a jib hinged and stayed to the sleeve, and whip-wheel and chain-barrel jour-
75 naled in the sleeve, of a shaft journaled in the lower portion of the sleeve, carrying an operating-drum and a spur-wheel, a second shaft journaled in the lower portion of the sleeve, carrying a pinion which meshes with said
80 spur-wheel, and means for operating either of the shafts at pleasure, thereby increasing speed or power, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib-
85 ing witnesses.

CHARLES JAMES APPLEBY.

Witnesses:

CHARLES HENRY NEWTON,

ALEXANDER HENRY MATTHEWS.