

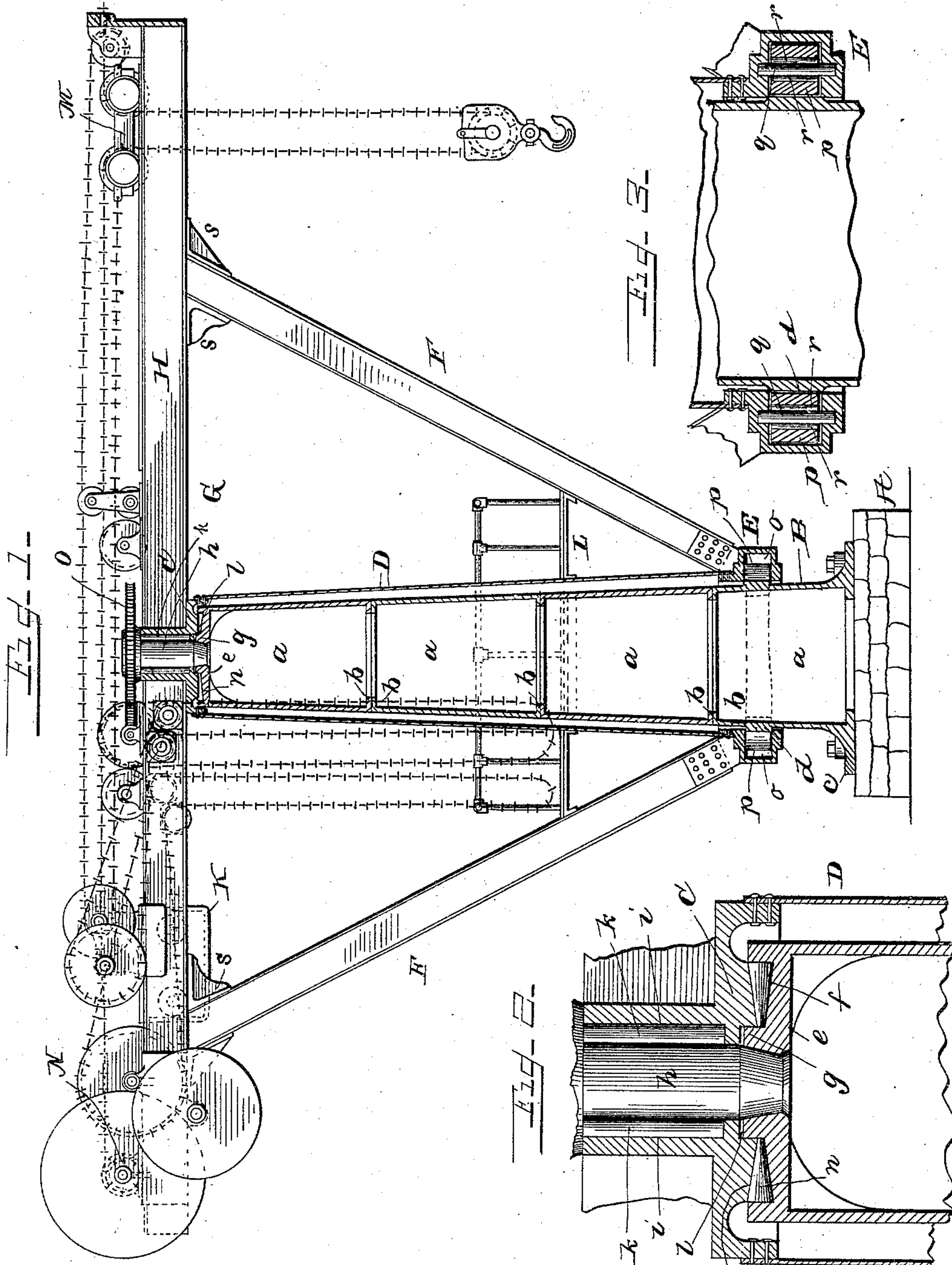
(No Model.)

2 Sheets—Sheet 1.

P. L. & A. A. WEIMER.
COUNTERBALANCED JIB CRANE.

No. 446,043.

Patented Feb. 10, 1891.



Witnesses

A. W. Tauberschmitt,
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Inventor
P. L. Weimer
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By their Attorneys
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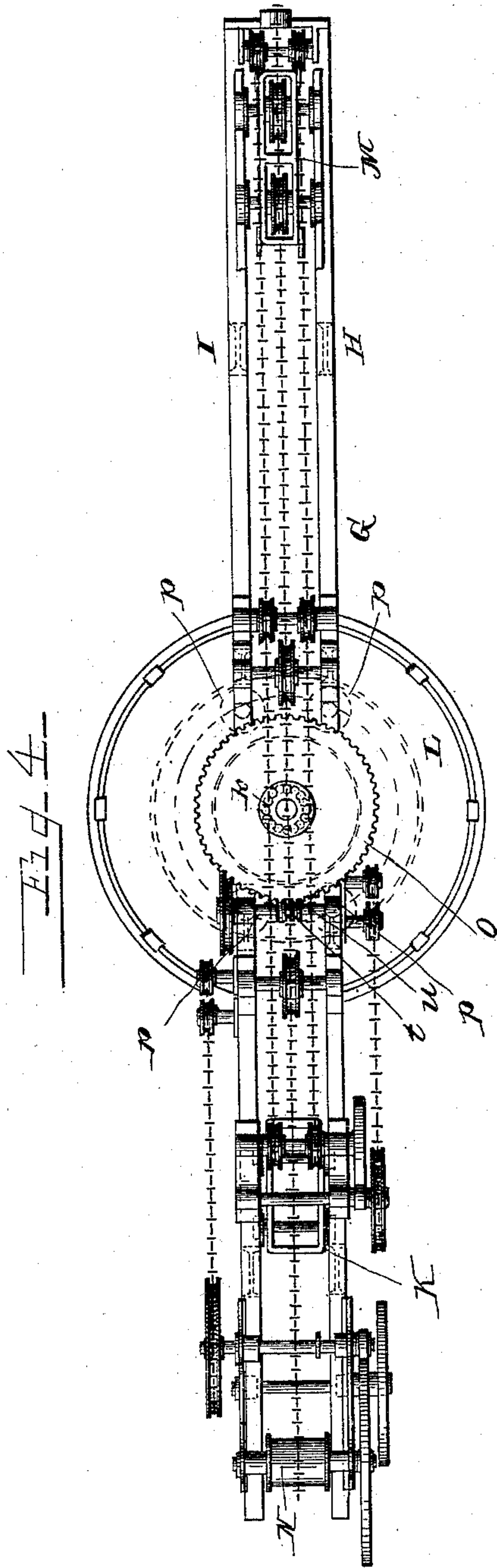
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O. W. Baker.

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UNITED STATES PATENT OFFICE.

PETER L. WEIMER AND ASA A. WEIMER, OF LEBANON, PENNSYLVANIA.

COUNTERBALANCED JIB-CRANE.

SPECIFICATION forming part of Letters Patent No. 446,043, dated February 10, 1891.

Application filed June 12, 1890. Serial No. 355,214. (No model.)

To all whom it may concern:

Be it known that we, PETER L. WEIMER and ASA A. WEIMER, citizens of the United States, residing at Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Counterbalanced Jib-Cranes; and we 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.

Our invention relates to hoisting devices, and has especial reference to that class known to the trade as "jib-cranes," and has for its object certain improvements in construction, which will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation, partly in section; Fig. 2, an enlarged section of the upper end of the spider and its casing; Fig. 3, an enlarged detail sectional view of the casting on the lower end of the casing, and Fig. 4 a plan view.

Reference being had to the drawings and the letters thereon, A indicates a masonry foundation; B, a pillar made in sections of cast-iron cylinders *a*, each of which sections is provided with flanges *b* for securing them together, and the lower section is provided with a flange or foot *c* for securing the pillar to the masonry foundation. This section is also provided with a raised portion *d*, which is turned true, for a purpose which will hereinafter more fully appear. The upper section of the pillar is provided with a head *e*, which has a recess or seat *f* in its upper surface and a central projection *g*. To the head *e* is secured a pin *h*, which enters an annular chamber *i* in the casting C and is surrounded by steel friction-rolls *k*, and the casting C is provided with a rabbet *l*, corresponding with the projection *g* on the head *e*, and a seat *m*, corresponding with the recess or seat *f* in said head, and the seat *m* and recess *f* form an annular chamber for the reception of friction-rolls *n*.

D indicates a metallic casing, which surrounds a portion of the pillar B and has secured to its upper end the casting or top C, and to its lower end is secured the annular casting E, which has a chamber *o* formed in

it and supports four wheels *p*, which are bored to receive a shaft or axle *q* and a number of friction-rolls *r*, which surround the axle *q*. 55

To the upper side of the casting E are secured the braces F, which are made of I-beams and engage with the lower side of the jib G on opposite sides of the pillar of the crane. The thrust of the load upon the crane is transferred through the braces F to the casting E, and from it through the wheels *p* to the pillar B, and as the jib is revolved upon the pillar the wheels *p* bear upon the raised portion *d* of the lower section of the pillar. The braces F are secured to the sides H I of the jib G by brackets *s*, and the jib rests upon the casting or top C of the casing. The sides of the jib are made of I-beams, and upon them is supported a weight-box K, which is mounted upon wheels bearing upon the flanges of said beams. The weight-box is transferred from one position to another to counterbalance the load to be carried by the crane, and is operated by a chain and wheels from a platform L, secured to the casing D. The trolley M is of ordinary construction, travels on the jib on one side of the pillar, and is moved by the ordinary chain-and-wheel mechanism. The hoisting-drum N and its train of mechanism are supported on the short arm of the jib at or near one end and counterbalance the longer arm thereof and the trolley. By the construction shown the thrust usually imparted to the roof of the building in which a jib-crane is operated is transferred to the pillar of the crane and the strain of the roof and the walls obviated. The jib is revolved upon the pillar B by a gear-wheel O and a worm-gear *t* upon a shaft *u*, and is operated by a chain from the platform L. 85

The mechanism for moving the trolley, raising and lowering the hook on the chain, and operating the gearing for revolving the jib being of ordinary and well-known construction, and forming no part of our invention, further elucidation thereof is deemed unnecessary. It will be observed that the jib is nearly balanced by the ends thereof extending upon opposite sides of the pillar or supporting-column, that the difference in the length of the long arm of the jib, the weight of the trolley, chain, and hook on said arm are counterbalanced by the hoisting, travers- 95 100

ing, and rotating mechanism on the short arm of the jib, and the weight of the article to be raised is counterbalanced by moving the weight-box on the short arm of the jib in or
5 out toward or from the pillar of the crane.

Having thus fully described our invention, what we claim is—

1. A metallic pillar for a crane having a raised portion near its lower end, in combination with a revoluble plate-metal casing supported by the pillar and having an annular casting secured to its lower end, a jib supported by the pillar and the casing, and braces between the jib and said casting, substantially
15 as described.

2. A metallic pillar for a crane having a concentric bearing near the lower end, in combination with a plate-metal casing supported by the pillar and having a casting attached
20 to the upper end, which casting rests upon the pillar, and an annular casting at the bottom which rests upon the concentric bearing on the pillar, a horizontal jib, and braces on opposite sides of the pillar between the jib and
25 the casting at the lower end of the casing, substantially as described.

3. A metallic pillar for a crane having an upper section provided with a head in which is formed a seat or recess, and a vertical pin secured to said head, in combination with a
30 metallic casing having a casting at its upper end, in which is a seat, an annular chamber surrounding the pin, and horizontal and vertical friction-rolls, substantially as described.

35 4. A counterbalanced jib-crane having a trolley on one end of a horizontal jib and hoisting mechanism on the opposite end, in combination with a weight movable upon the jib

between the hoisting mechanism and the supporting-pillar of the crane, substantially as
40 described.

5. A counterbalanced jib-crane in which both arms of the jib are in the same horizontal plane, a trolley on the long arm of said jib, and a hoisting, traversing, and rotating mechanism on the short arm of the jib, all combined
45 to operate substantially as described.

6. A counterbalanced jib-crane in which both arms of the jib are in the same horizontal plane and the jib supported on the top of
50 a pillar, a trolley on the long arm of the jib, and a hoisting, traversing, and rotating mechanism on the short arm, in combination with a movable weight on said short arm, substantially as described.

7. A counterbalanced jib-crane having arms of unequal length and in the same horizontal plane, in combination with a trolley, hoisting chain or cable, and fall-block supported
60 upon the long arm of the jib, a hoisting mechanism supported upon the short arm and counterbalancing the long arm, the trolley, hoisting chain or cable, and fall-block, and a weight movable upon the short arm between the hoisting mechanism and the pillar of the
65 crane to counterbalance the weights raised by the crane, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

P. L. WEIMER.

ASA A. WEIMER.

Witnesses:

SHIRK BOYER,

ALFRED HOUCK.