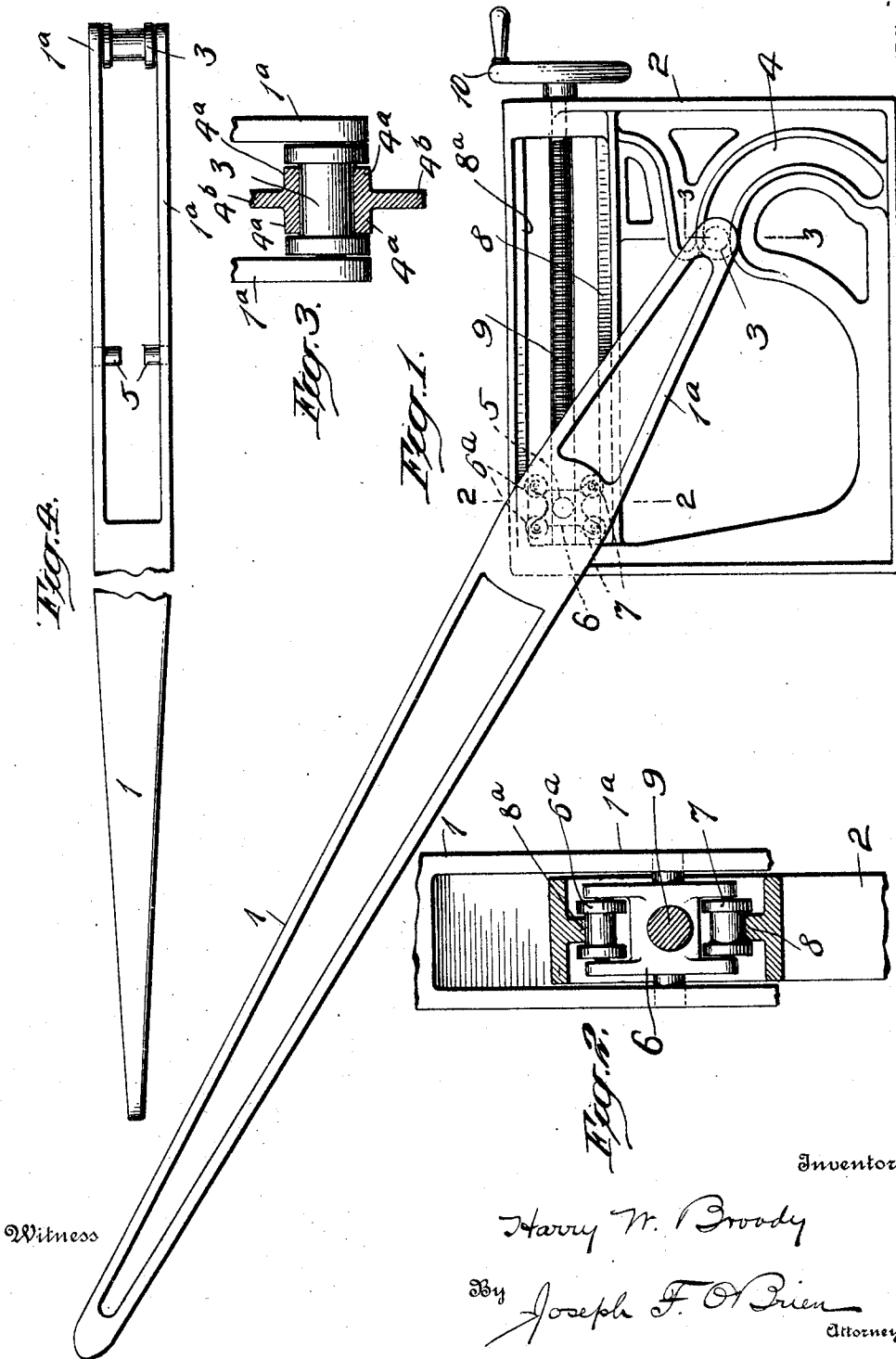


H. W. BROADY.
CRANE OR DAVIT.
APPLICATION FILED AUG. 11, 1919.

1,388,831.

Patented Aug. 23, 1921.



Inventor

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CRANE OR DAVIT.

1,388,831.

Specification of Letters Patent. Patented Aug. 23, 1921.

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To all whom it may concern:

Be it known that I, HARRY W. BROADY, a citizen of the United States, and a resident of Bayside, borough of Queens, county of Queens, and State of New York, have invented certain new and useful Improvements in Cranes or Davits, of which the following is a specification.

This invention relates to improvements in cranes or davits.

By the use of my invention, I produce a crane or davit mounted and supported in a suitable frame to swing in a vertical plane about a fulcrum or pivot positioned between its ends and movable on a rectilinear track in said frame in a substantially horizontal direction, and also having a traveling guiding connection between the lower end or foot of said crane or davit arm and a slot of suitable configuration formed in the said frame below the said track, whereby the outer end of the crane or davit arm may be caused to travel through an arc which is the component or compound of the rectilinear movement of the pivot and the guided movement of the lower end of the arm, and a load suspended therefrom may be swung with great facility and with a minimum amount of stress on the actuating mechanism.

In the preferred embodiment of my invention, the crane or davit arm is fulcrumed and supported between its ends on a block or nut which is mounted on suitable rollers movable on a rectilinear track formed integrally in the frame at the top thereof and said block or nut is threaded on a screw mounted in said frame and extending parallel to said track so that rotation of the screw will cause the block and pivot to move along said rectilinear track, and the lower end of said arm is preferably provided with an anti-friction roller guided in a slot of arc-shaped configuration, also preferably formed integrally in the frame below the movable fulcrum and operating screw.

Other objects of my invention will be in part obvious from the annexed drawings and in part indicated in connection therewith by the following analysis of this invention.

This invention accordingly also consists in the features of construction, combinations of parts, and in the unique relationship of the members and in the relative proportioning and disposition thereof, all as more com-

pletely outlined in the following specification and in said drawings.

To enable others skilled in the art so fully to comprehend the underlying features of my invention that they may embody the same by numerous modifications in structure and relationship of parts contemplated by this invention, drawings depicting a preferred form have been annexed as a part of this disclosure, and in such drawings like characters of reference denote corresponding parts throughout all the views, of which:—

Figure 1 is a side elevation of a davit embodying my invention in its outboard position;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 1; and

Fig. 4 is a plan view of a davit arm separated from its frame.

Referring now to these drawings, 1 indicates a davit arm which is pivoted or fulcrumed intermediate its ends on a traveling fulcrum suitably supported in a frame 2 to move in a rectilinear path and has its lower end 1^a guided to move in a slot 4 in the said frame 2. As illustrated, the said davit arm 1 is so fulcrumed or pivoted intermediate its ends to swing in a vertical plane on pivot stubs 5 which have suitable bearings in opposite sides of a traveling block or nut 6 guided by and supported on anti-friction grooved rollers 6^a and 7, which are adapted, as shown in Figs. 1 and 2, to roll along a rectilinear horizontally disposed tracks 8, 8^a formed integrally with the frame 2 contiguous to the upper end thereof.

As illustrated, the block or nut 6 is threaded on a screw 9 supported in the frame 2 to rotate and, as shown, supported at its opposite ends in suitable bearings at the top of said frame, and as illustrated, said screw 9 is rotated by a crank wheel 10.

In the preferred embodiment of my invention shown in these drawings, the lower end of the davit arm 1 is divided or split and has legs straddling the upper end of the frame 2 and connected at its lower end or heel with the roller 3 which is grooved and is movable within the slot 4, the walls of which, as shown, have lateral flanges 4^a extending from a web portion 4^b so as to provide a solid and efficient guiding slot or track for

the said grooved roller 3 which is preferably pivotally mounted at its opposite ends in the said heel or lower end of the davit arm.

In operating the crane or davit, it will be obvious that by turning the crank handle 10 and rotating the screw, the block 6 which is threaded on the screw 9 will be caused to move or travel inboard and outboard on the rectilinear track 8 carrying the pivotal point of the davit arm along the same, and that the lower end of the davit will be guided by the slot 4 and in the embodiment shown will be caused to move in the arc of a circle, thus causing the upper end of the davit to move or swing through an arc which will be the component of the horizontal rectilinear travel of its pivot and the guided movement of its lower end through the arc-shaped slot 4.

It will be obvious that by changing the shape and direction of the slot 4 the upper end of the davit may be caused to travel in varying arcs and that a load suspended from the upper end of the davit may be swung in and out with much greater facility than if the lower end of the davit were fixedly pivoted or were not so movably guided in a slot of suitable conformation. It is obvious also that the construction illustrated is an economical one and provides rigid guiding means and support for the lower end of the davit as well as for the intermediate pivot thereof.

Having described my invention, I claim:

1. In a crane or davit, the combination with a frame having a rectilinear and substantially horizontal, rigid track at its upper end and a guiding slot below said track, of an arm supported on a pivot located between its ends and movable on the said track, and also having at its heel a guiding connection with the said guiding slot and means for moving said pivot along said horizontal track.

2. In a crane or davit, the combination with a frame having formed integral therein a rectilinear and substantially horizontal, rigid roller track at its upper end and a guiding slot below said track also formed integrally therein, of an arm supported on a pivot located between its ends and movable on the said roller track, and also having at its heel a guiding connection with the said guiding slot and means for moving said pivot along said rectilinear and horizontal track.

3. In a crane or davit, the combination with a frame having a rectilinear and substantially horizontal, rigid roller track at its upper end and a guiding slot below said track, a traveling block movable along said upper rectilinear, horizontal track, of an arm pivotally supported on said traveling block and having at its heel an anti-friction guiding connection with the said guiding slot and means for moving said traveling block along said rectilinear horizontal track.

4. In a crane or davit, the combination with a frame having a rectilinear and substantially horizontal, rigid roller track at its upper end and a guiding slot below said track, a traveling block movable along said upper horizontal track, of an arm pivotally supported on said traveling block and having at its heel an anti-friction guiding connection with the said guiding slot, means for moving said block along said rectilinear, horizontal track and a screw mounted in said frame and having a threaded engagement with said block for causing the same to move along said horizontal track.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

HARRY W. BROADY.

Witnesses:

CHARLES J. GALE,
A. MAHULLATT.