

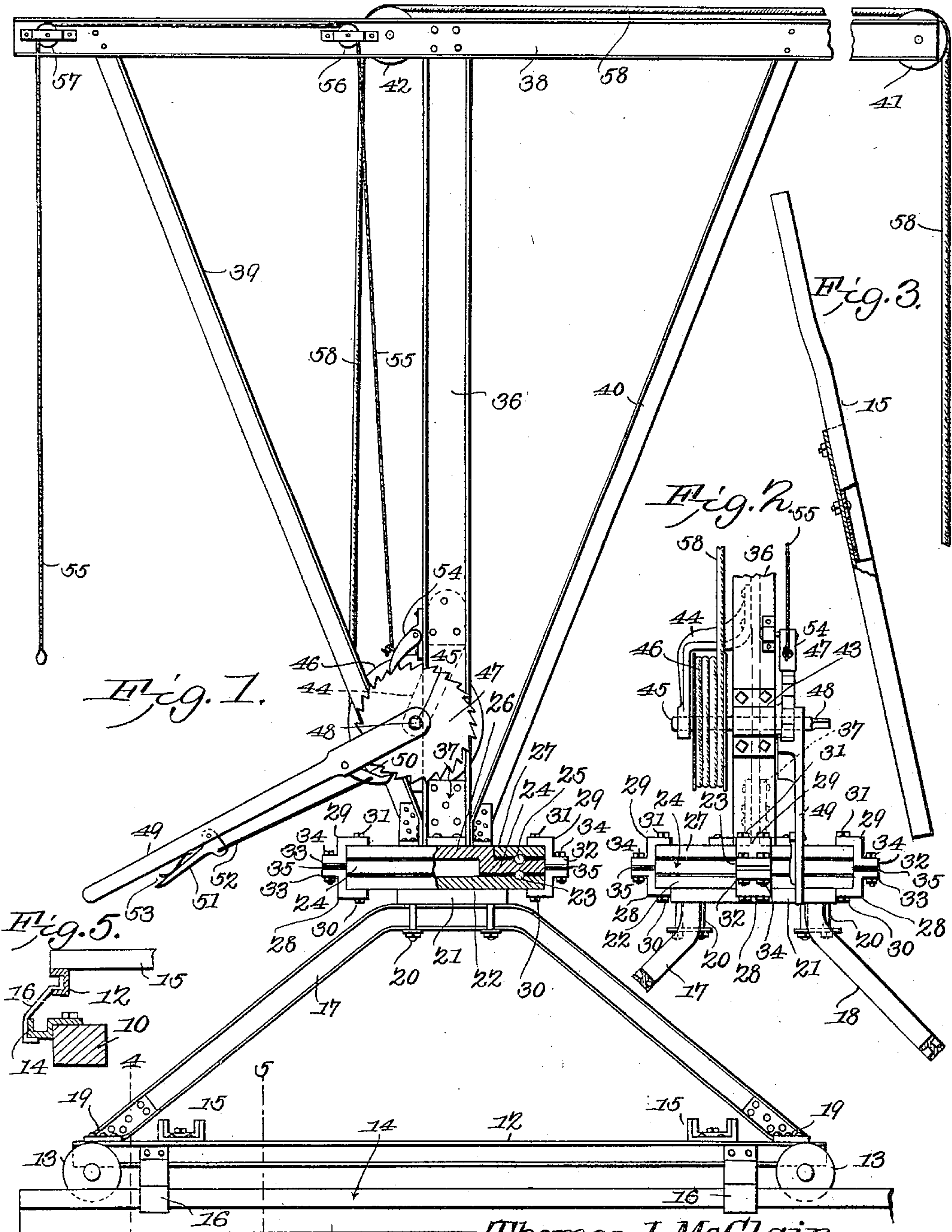
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T. J. McCLAIN & R. S. McDANIEL.

DERRICK.

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# UNITED STATES PATENT OFFICE.

THOMAS J. McCLAIN AND ROBERT S. McDANIEL, OF TWIST, TEXAS.

## DERRICK.

No. 816,590.

Specification of Letters Patent.

Patented April 3, 1906.

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*To all whom it may concern:*

Be it known that we, THOMAS J. McCLAIN and ROBERT S. McDANIEL, citizens of the United States, residing at Twist, in the county of Swisher and State of Texas, have invented a new and useful Derrick, of which the following is a specification.

This invention relates to improvements in portable derricks for elevating heavy material or products, and has for its object to improve the construction and increase the efficiency and utility of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of embodiment of the invention capable of carrying the same into practical operation.

In the drawings, Figure 1 is a side elevation, partly in section, of the improved apparatus. Fig. 2 is a front elevation of the central portion of the device. Fig. 3 is a side view, partially in section, of one of the adjustable members. Fig. 4 is a sectional detail of the lower framework on the line 4 4 of Fig. 1. Fig. 5 is a sectional detail of the lower framework on the line 5 5 of Fig. 1.

The improved device is supported upon a suitable base-frame, which may be supported in turn upon the ground upon a truck or wagon or other subbase or provided with runners or skids to enable it to be readily moved from place to place; but for the purpose of illustration the base-frame is represented at 10 as resting upon the ground 11 and of indefinite length.

The improved derrick structure herein shown and described comprises frame members 12, having bearing-wheels 13, supported by track-rails 14, attached to the base-frame 10, as shown more clearly in Fig. 4.

The frame members 12 are connected by transverse tie members 15, spaced apart, as shown in Fig. 1. Attached to the frame members 12 near their ends are clip-plates 16, extending over the rails 14 and bearing beneath the same, as shown in Figs. 1 and 5, and effectually preventing any tendency of the superstructure to overturn so long as the

base portion remains intact, while at the same time not interfering with the movement over the base-frame upon the wheels 13. Rising from the frame members 12 are diagonally-disposed frame members 17 18, coupled firmly by the lower ends, as at 19, to the frame members 12 and coupled together at the upper ends, as by clips 20, to a horizontal plate 21.

Bearing upon the plate 21 and rigidly secured thereto is a disk 22, having a concentric channel for receiving a plurality of bearing-balls 23, and bearing over the disk 22 is another disk 24, having an annular channel for bearing over the balls 23 and provided with a concentric channel for receiving another set of bearing-balls 25. The upper plate 24 is also formed with an elevated circular central portion 26, and bearing over the portion of the upper disk outside the elevated central portion is an annular member 27, having a concentric channel for bearing over the upper set of bearing-balls 25. The lower disk 22 is provided with a plurality of clips 28, and the annular member 27 is provided with a similar set of clips 29, the clips 28, bolted or otherwise secured, as by bolts 30, to the member 22, and the clips 29, similarly secured to the member 27 by bolts 31, the outwardly-extending ends 32 33 of the clips being united, as by clamp-bolts 34. Between each adjacent pair of the portions 32 of the clips a plurality of relatively thin superimposed space-strips 35 are arranged to provide a ready means for adjusting the relative distances between the members 22 24, and thus enable the parts to be maintained in the requisite operative position and to take up the parts as fast as the bearing-balls or channels wear. Rising from the raised central portion 26 of the member 24 is a mast 36, and rigidly secured thereto, as at 37, and secured transversely of the upper end of the mast is a boom member 38, the boom member supported by diagonal braces 39 40 from the mast and portion 26 of the member 24. Mounted for rotation in the longer end of the boom 38 is a cable guide-sheave 41, and similarly disposed in the boom near the mast is a cable guide-sheave 42. Mounted for rotation transversely of the mast near its lower end, as by bearings or brackets 43 44, is a shaft 45, carrying a cable winding-drum 46 and a ratchet-wheel 47, the shaft also having a square terminal 48 to receive an operating-crank, if required. Swinging upon the shaft



45 is a lever-arm 49, and provided with a pawl 50 for engaging the teeth of the ratchet-wheel, and releasable by a hand-lever 51, connected by a rod 52 to the pawl and held yieldably in position by a spring 53. A holdback-pawl 54 is connected to the mast 36 and engages the teeth of the ratchet-wheel. Leading from the stop-pawl 54 is a releasing-cord 55, conducted thence over guide-sheaves 56 57 to a point convenient to the hand of the operator.

The hoisting-cable 58 is connected at one end to the drum 46 and leads thence over the guide-sheaves 42 41 and terminates in a hook 15 or other means for coupling to the material or load to be elevated.

The mast member 36 and the boom member 38 may be of any required length, so that loads may be elevated to any required height 20 and moved laterally to any required distance.

The parts will preferably be of structural steel and malleable iron or steel and may thus be very strong and durable without possessing undue weight or being cumbersome or 25 unsightly.

The device is very compact and convenient and may be operated by one man standing on the ground and manipulating the lever-arm 49 and the releasing-cord 55 and swing 30 the upper portion upon the lower portion, the ball-bearing joint insuring the ease of action and reducing the friction to a minimum.

Having thus described the invention, what is claimed is—

35 1. In an apparatus of the class described, a base-frame, side frames in arching form and connected at their terminals to said base-frame, a tie member connecting the upper ends of said arched frames, a swivel base 40 member connected to said tie member, a swivel member rotatively connected to said swivel base member, a mast extending from

said rotative swivel member, and a boom extending transversely of said mast.

2. In an apparatus of the class described, a 45 base-frame, a swivel base member spaced above said base-frame, frame-standards connected to said swivel base members and diverging therefrom and connected at their lower terminals to said base-frame, a swivel 50 member rotatively bearing upon said swivel base and formed with an elevated central portion, an annular member bearing upon said rotative swivel member exteriorly of said elevated central portion, clips connect- 55 ing said annular member and swivel base member, a mast extending from said elevated central portion of said rotative swivel base member, and a boom extending transversely 60 of said mast.

3. In an apparatus of the class described, a base member provided with an annular bearing-ball channel, a swivel member rotatively bearing upon said base member and formed with an elevated central portion and with an- 65 nular bearing-ball channels in the upper and lower faces, an annular member bearing upon said rotative swivel member, and provided with an annular bearing-ball channel, bearing-balls disposed in said channels between 70 said base member and swivel member and annular member, spaced clips connecting said base member and annular member, and a mast extending from the elevated central portion of said rotative member. 75

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

THOMAS J. McCLAIN.  
ROBERT S. McDANIEL.

Witnesses:

C. M. JORDAN,  
E. D. SMITH