No. 800,723. PATENTED OCT. 3, 1905.

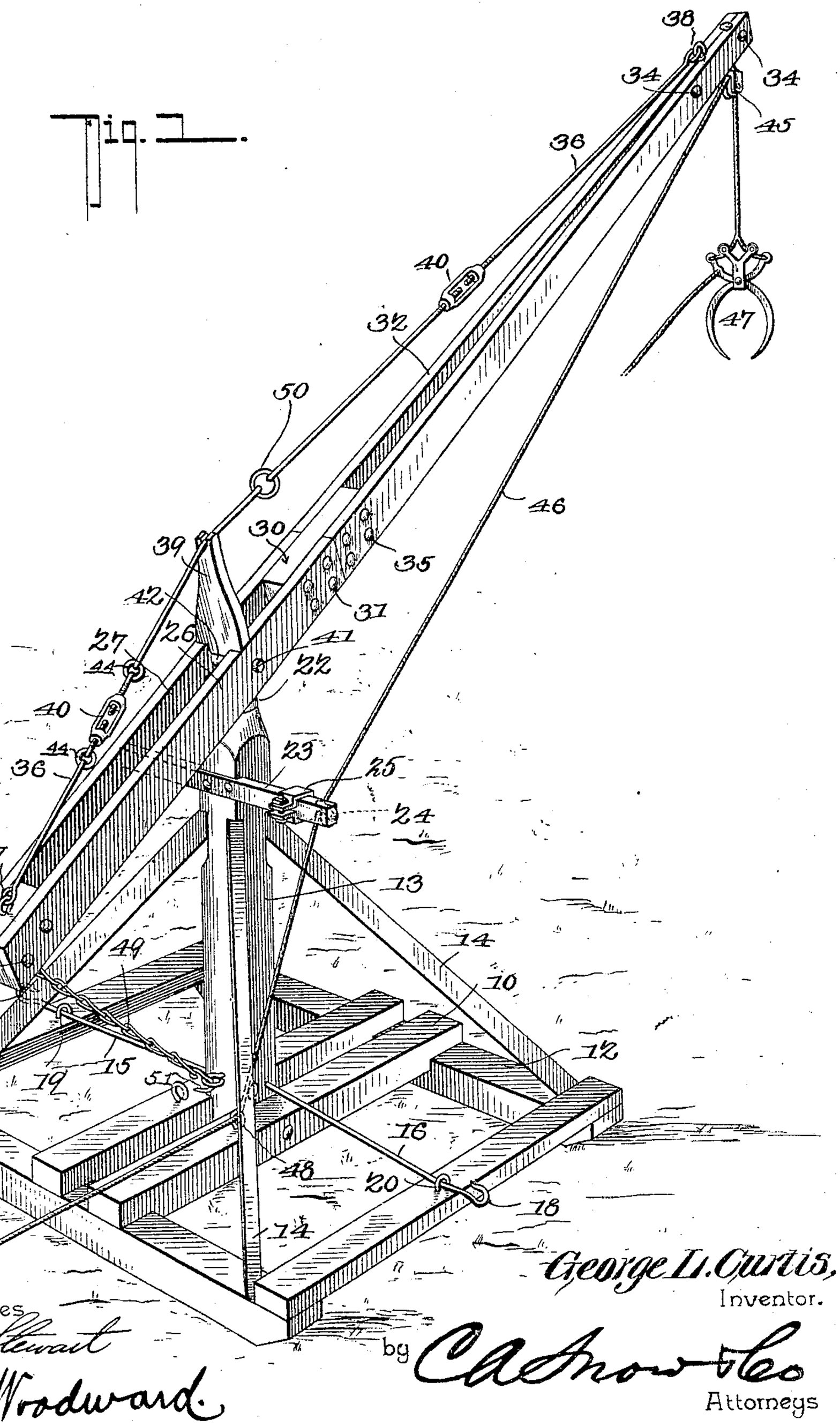
G. L. CURTIS.

HAY STACKER.

APPLICATION FILED FEB. 20, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

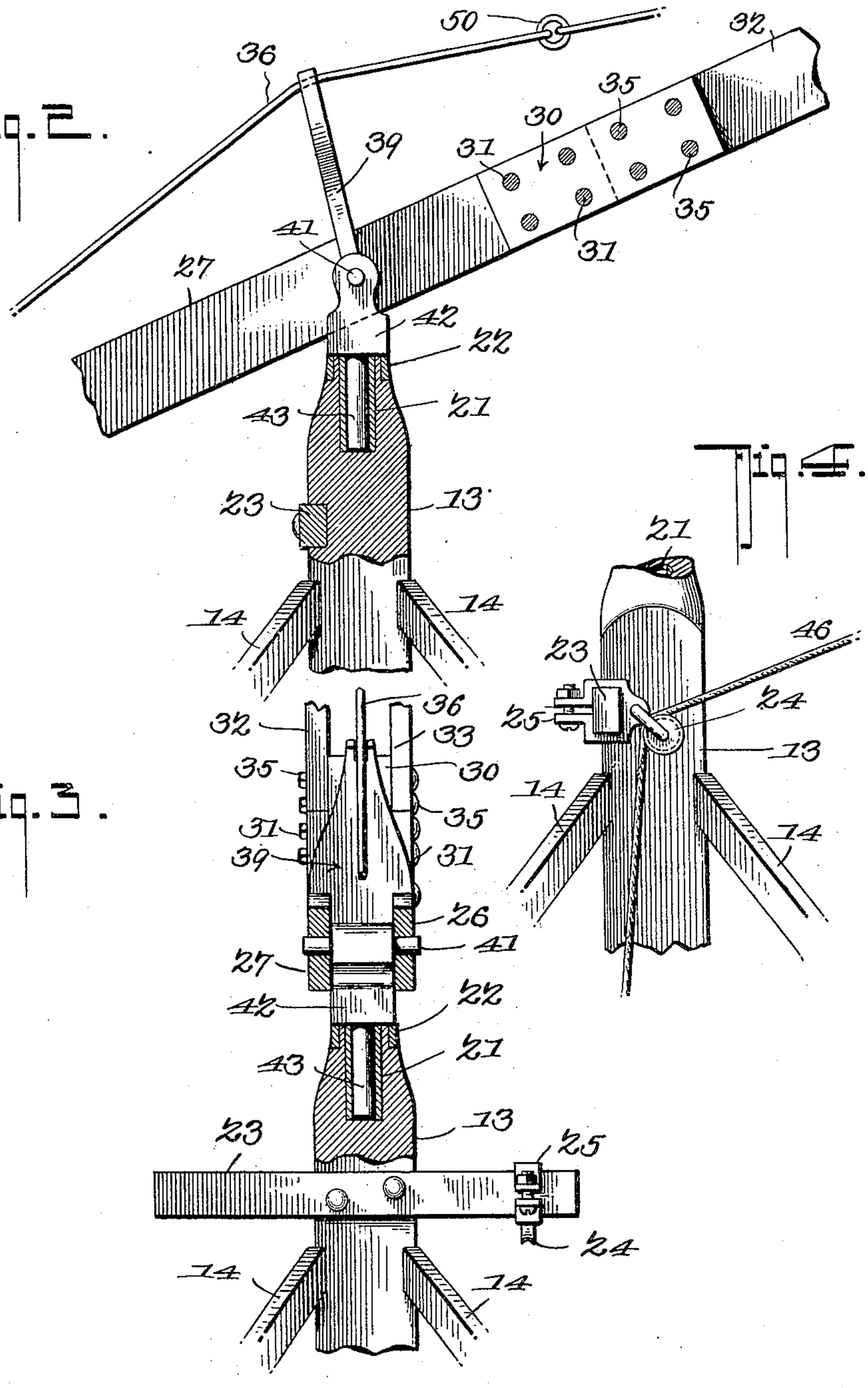

Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE LESLIE CURTIS, OF BIGTIMBER, MONTANA.

HAY-STACKER.

No. 800,723. Specification of Letters Patent. Registered Oct. 3, 1905.

Application filed February 20, 1905. Serial No. 246,572.

To all whom it may concern:

Be it known that I, GEORGE LESLIE CURTIS, a citizen of the United States, residing at Bigtimber, in the county of Sweet Grass and State of Montana, have invented a new and useful Hay-Stacker, of which the following is a specification.

This invention relates to derricks employed for assisting in stacking hay, straw, and for similar purposes, and has for its object to improve the construction and increase the efficiency of devices of this character.

With this 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, it being understood that the invention is not necessarily limited thereto, as various changes in the shape, proportions, and general assemblage of the parts may be resorted to without departing from the principle of the invention or sacrificing any of its advantages.

In the drawings, Figure 1 is a perspective view of the improved derrick. Figs. 2 and 3 are enlarged sectional details of portions of the mast and boom, illustrating the construction of the swivel-joint, whereby they are movably united. Fig. 4 is an enlarged detail of a portion of the mast and the transverse arm for supporting the draw-cable-guiding means.

The improved device comprises a platform 10, embracing in its construction spaced side members 11 12, having inclined ends to facilitate drawing over the ground and supporting a vertical mast 13, suitably braced, as at 14. Draft-rods 15 16 extend in opposite directions from the mast 13 and terminate in draft-hooks 17 18 and are held in place by keepers 19 20 or other means. The upper end of the mast 13 is provided with a central socket lined with a tubular metal wear member 21 and strengthened by a band 22. The mast is provided near the upper end with a transverse arm 23, rigidly secured by bolts or other means and having a cable-guide pulley 24 adjustably secured thereto, as by a clip-frame 25. The clip-frame is detachable, so that it may be adjusted along the bar or connected to either end or at either side of the mast, as hereinafter explained.

The boom portion of the device is formed in two sections—a relatively short section of spaced members 26 27, united at their outer ends by a spacer-block 28, to which the members are bolted, as at 29, and likewise united at the inner ends by a spacer-block 30, to which the members are bolted, as at 31, and a relatively long section of spaced side members 32 33, bolted together at the outer ends, as at 34, and connected at their inner ends to opposite sides of the spacer-block 30 by bolts 35, the spacer-block 30 being long enough to receive both of the boom-sections, and thus serve as a coupling means between them. The longer boom members 32 33 are tapered toward the outer ends to lighten them without reducing the strength. A truss-rod 36 is connected at 37 38 to the ends of the boom and supported intermediately by a strut member 39, the truss-rod also having "turnbuckles" 40 to regulate the tension and a link 50 to permit the truss-rod to fold with the boom. Pivoted between the boom members 26 27 by a transverse pin 41 is a swivel-head 42, having a stud 43 rotatively engaging the bearing 21 in the mast 13, by which means the boom is free to swing vertically and rotate laterally upon the mast. The pin 41 is preferably cast into the swivel-head 42 and projects by its ends through the boom members, and the strut member 39 is preferably disposed above and bearing upon the swivel-head 42, so that the downward strains are borne by the latter and not by the boom members 26 27. The boom members being bolted to the spacer-blocks are easily detachable when required for shipment or storage, the turnbuckles having links 44 to permit the folding of the boom members when the bolts 35 or 31 are detached. The smaller end of the longer boom-section is provided with a cable-pulley 45, through which the draw-cable 46 leads to the hoisting member 47, the cable also leading through the guide-pulley 24 upon the bar 23 and a guide-pulley 48 upon the base-frame 10 and thence in any direction to the swingletree or other means for operating it.

The hoisting member 47 may be of any of the usual devices employed upon apparatus of this character.

The shorter end of the boom will be supplied with means, such as a chain 49, for attachment to the mast 13, as by an eyebolt 51 or other connecting means, and may be of any required length.

The guide-pulley 24 being spaced from the mast 13, the hoisting-cable 46 extends between the guide-pulleys 24 and 45 at an angle to the longitudinal plane of the boom, so that when the strain is applied the boom will be caused to swing upon its stud 43 at the same time that the load is elevated, thus saving materially in time and labor, as the load is carried around from the wagon to its position above the stack simultaneously with its upward movement and by the same operation, and the extent of this swing may be easily controlled by adjusting the guide-pulley 24 upon the bar 23 by means of its holding-clip 25. This is an important feature of the invention and adds materially to the value and efficiency of the device and materially increases its scope and usefulness.

In operating the device the base-frame will preferably be located contiguous to the place where the stack is to be builded and the vehicle containing the material to be elevated drawn into position in front of the stack or upon the ground which will be occupied by the stack as the construction of the latter progresses, so that the loose hay or straw falling from the vehicle will be received upon the ground which will be beneath the stack when the latter is extended. Consequently it will not be necessary to rake up the loose hay or straw falling from the wagon, as the stack will be built right over the same. Then as the construction of the stack progresses the derrick is drawn forward by hitching the team to the draft-rod 15 or 16, as the case may be.

The device is simple in construction, can be inexpensively manufactured, and operates effectually and economically as to the power required, as both the swinging of the boom and the hoisting of the load are accomplished with one single draw-cable and with one movement of the same.

The bar 23, it will be noted, extends upon both sides of the mast, so that the draw-cable may be disposed upon either side to swing the boom in either direction, and thus materially increase the scope and convenience of the device.

Having thus described the invention, what is claimed is—

1. In a hay-derrick, a supporting-mast, a boom swinging upon said mast, a cable-guide pulley carried by said boom, an arm rigidly connected to said mast and extending transversely of the same, a hanger carrying a guide-pulley and slidably disposed upon said arm, means for clamping said hanger to said arm, and a hoisting-cable leading through said guide-pulleys.

2. In a hay-derrick, a supporting-mast having a vertical socket in its upper end, a boom formed of a rear section composed of spaced side members united to spacer-blocks at the ends with one of said spacer-blocks extending in advance of the rear boom members, and a forward section composed of spaced side members connected together at the outer end and with the inner ends detachably coupled to the extended portion of said rear boom-section, a truss-rod connected to the outer ends of said boom-sections and provided with a joint opposite said extended spacer-block, a chock between said truss-rod and said boom, and a swivel-block mounted to swing from said boom and having a stud rotatively engaging the socket in said mast.

3. In a hay-derrick, a supporting-mast having a vertical socket in its upper end and with a transverse arm disposed thereon, a boom formed of a rear section composed of spaced side members united to spacer-blocks at the ends with one of said spacer-blocks extending in advance of the rear boom members, and a forward section composed of spaced side members connected together at the outer end and with the inner ends detachably coupled to the extended portion of said rear boom-section, a truss-rod connected to the outer ends of said boom-sections and provided with a joint opposite said extended spacer-block, a chock between said truss-rod and said boom, a swivel-block mounted to swing from said boom and having a stud rotatively engaging the socket in said mast, a cable-guide pulley carried by the free end of said forward boom-section, a cable-guide pulley carried by said transverse arm, and a hoisting-cable leading through said guide-pulleys.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE LESLIE CURTIS.

Witnesses:

ROBERT M. CAMERON,

CHAS. P. MANEY.