

No. 672,090.

Patented Apr. 16, 1901.

E. J. & O. B. CANTWELL.  
HAY OR STRAW STACKER.

(Application filed Sept. 4, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 4.

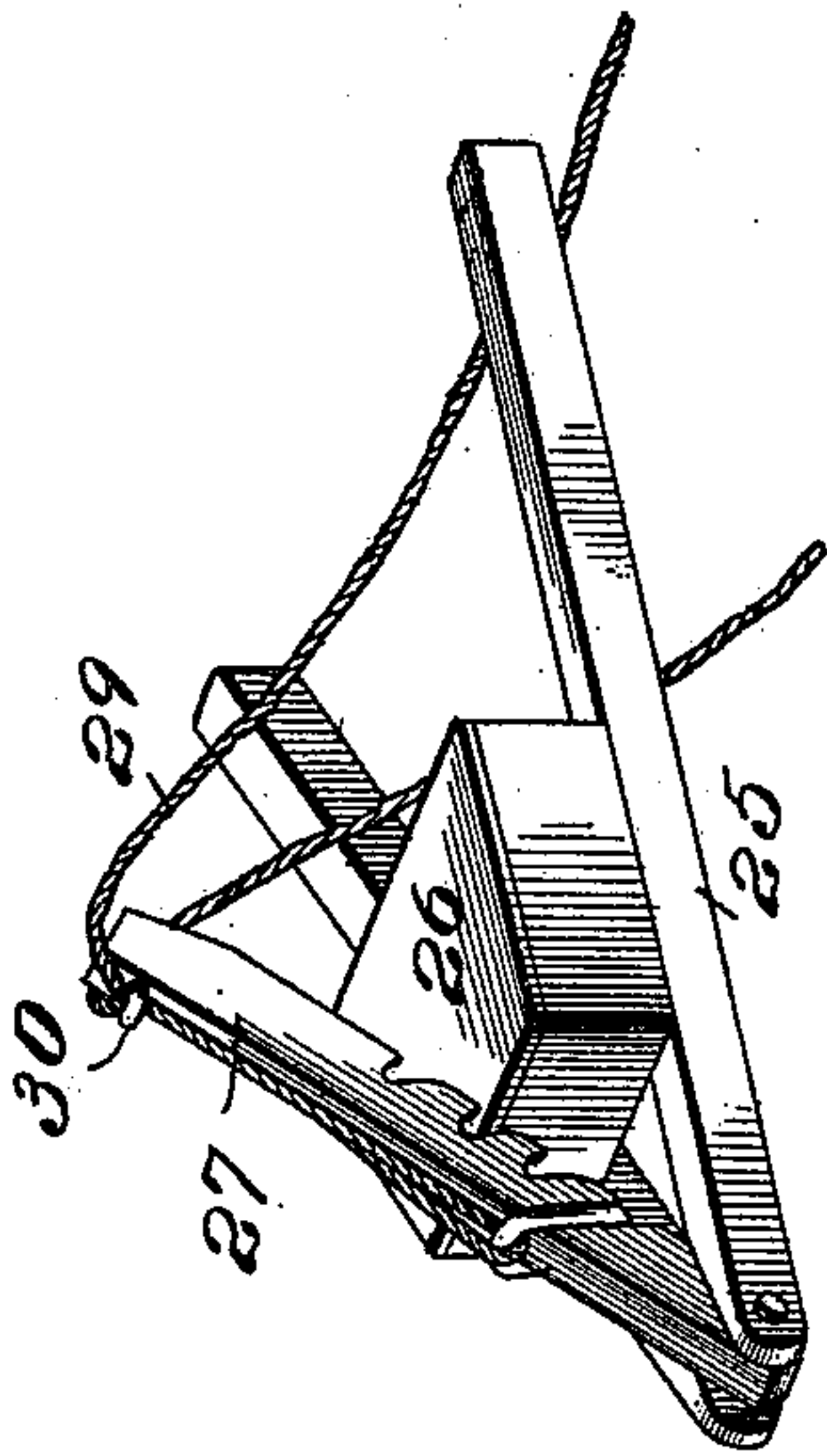
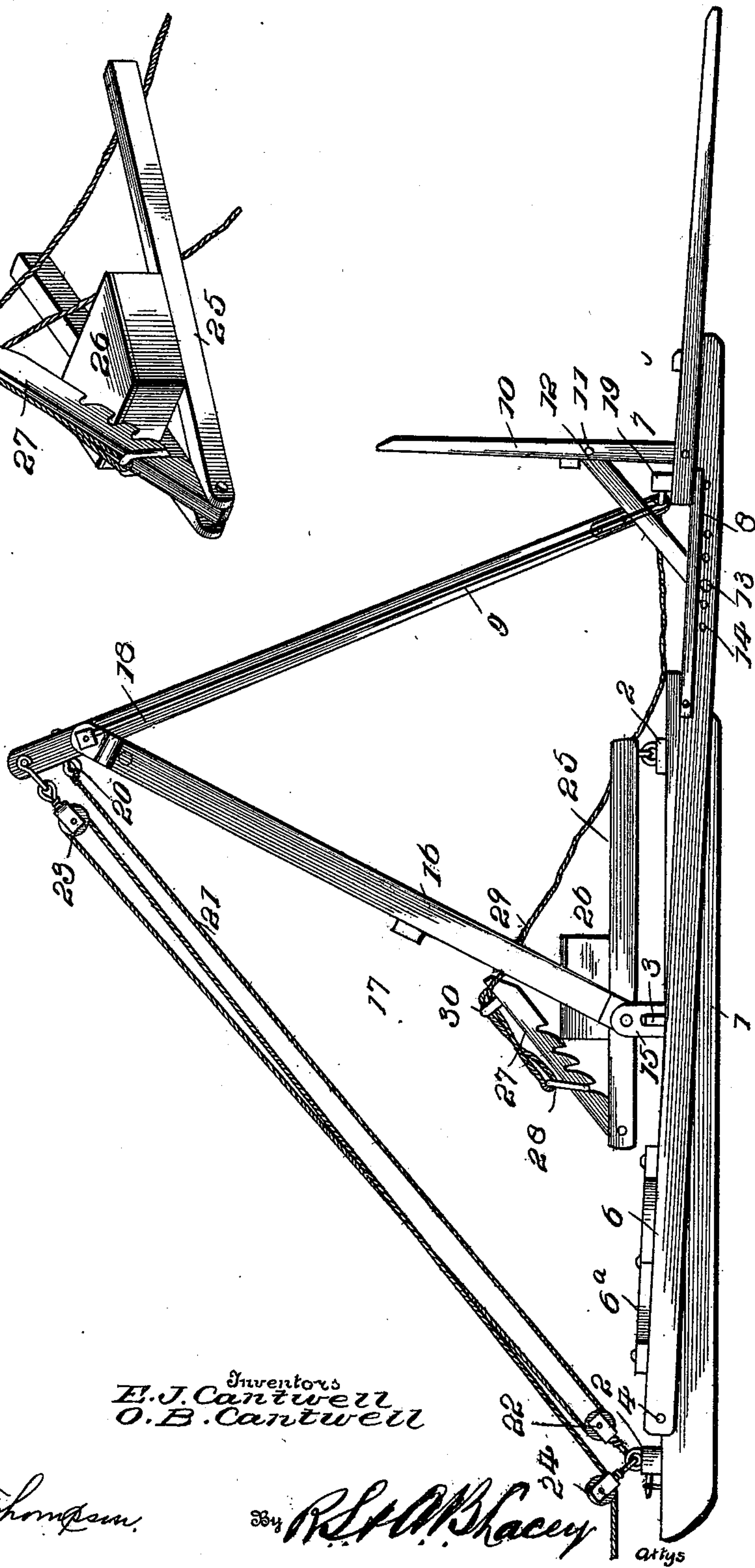


FIG. 1.



Witnesses

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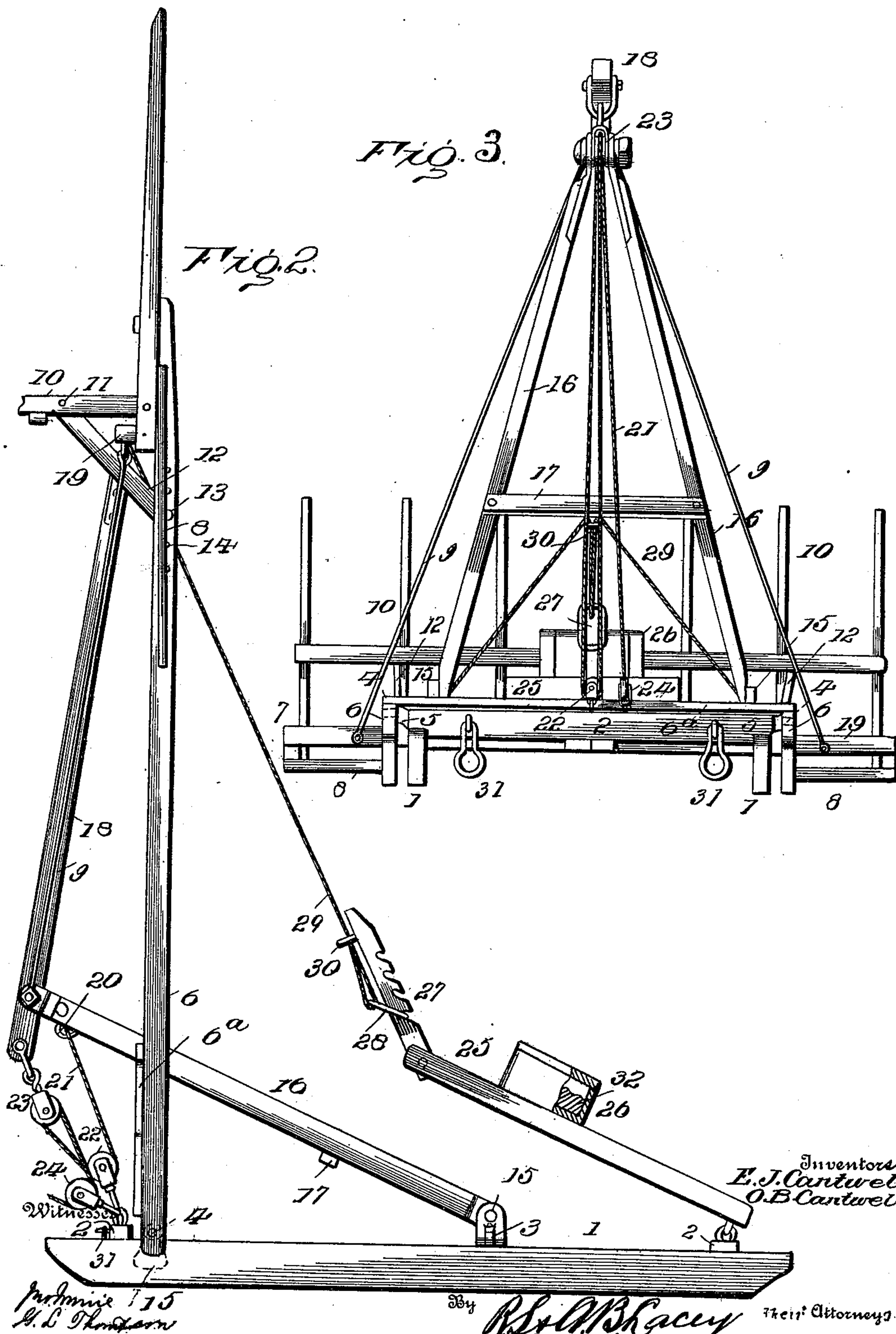
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# UNITED STATES PATENT OFFICE.

EDWARD J. CANTWELL AND OTIS B. CANTWELL, OF NEW BOSTON,  
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## HAY OR STRAW STACKER.

SPECIFICATION forming part of Letters Patent No. 672,090, dated April 16, 1901.

Application filed September 4, 1900. Serial No. 28,990. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD J. CANTWELL and OTIS B. CANTWELL, citizens of the United States, residing at New Boston, in the county of Linn and State of Missouri, have invented certain new and useful Improvements in Hay and Straw Stackers; 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.

This invention relates to hay and straw stackers, and is designed as an improvement upon the stacker shown in patent to Edward J. Cantwell, No. 631,199, dated August 15, 1899, the object of the present invention being to simplify the construction and cheapen the cost of production and provide improved features, whereby the leverage power in elevating and retracting the stacker may be varied as desired and the stacker operated in a more convenient and effective manner.

The invention consists of the construction and arrangement of parts hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevational view of the improved stacker, showing the fork or carrier lowered to receive a load. Fig. 2 is a similar view showing the fork raised. Fig. 3 is an end elevation. Fig. 4 is a detail view of the weighted frame and connections.

Referring now more particularly to the drawings, wherein like numerals are utilized to indicate corresponding parts in the several views, the numeral 1 designates opposite longitudinal sills having front-rounded ends to adapt the same for use as runners in transporting the entire stacker from one point to another. The said sills are tied by transverse end strips or cross-bars 2 and an intermediate transverse strip or cross-bar 3 to provide a rigid base structure for the support and attachment of the various parts of the elevating mechanism.

Pivotally mounted at their inner or front ends upon stub-pintles 4, projecting from bearing-plates 5, secured to the sills near the front cross-strip 2, are the elevating-arms 6, which are connected at their inner ends by braces 6<sup>a</sup> and carry at their outer or rear ends the

fork or carrier 7. The fork or carrier is strengthened by two sets of braces 8 and 9. The braces 8 are forwardly convergent and attached at their front ends to the arms 6. The braces 9 are attached at their lower ends to the outer end portions of the cross-bar 19, and their upper ends are secured to the outer sides of the derrick-arms 16 and act in opposition thereto. The fork or carrier is substantially similar to that shown in the patent referred to, one set of tines 10 having pivotal connection with the other set and held in an adjusted position by means of braces 12, pivoted at 11 to certain of the tines 10 and adjusted to have their inner ends adjustably connected with the arms 6 by means of bolts 13, fitted in any one of a series of openings 14, formed in the said arms. The purpose of this adjustment of the tines 10 is to increase or decrease the sensitiveness of delivery therefrom of the load of hay or straw elevated thereby and in accordance with the height of the stack and the conditions which the particular work may require. By moving the outer ends of the set of tines 10 forwardly to the extreme limit they will assume an obtuse angle to the other set of tines, and a slight downwardly-inclined base will be provided when the fork or carrier is raised to its full height. A reverse adjustment will change the angle of said set of tines 10, and between the two extreme adjustments varying adjustments can be made.

Upon the ends of the central cross-brace 3 bearings 15 are mounted, and to these are pivoted the lower ends of derrick-arms 16, converged toward their outer ends and connected by a cross-brace 17 to hold them in fixed relation. Between the converged ends of the derrick-arms an elevating-lever 18 is mounted near its upper end, and the rear end of this lever is pivotally connected to the head-strip or cross-bar 19 of the carrier 7. To the projecting outer end of said lever an eye 20 is attached, and to this is connected one end of an operating rope, cable, or analogous device 21. From this eye the rope, cable, or analogous device passes downwardly and forwardly through a pulley 22 on the front cross-bar 2, then up again and over a sheave-pulley 23, shackled to the said outer project-



ing end of the lever 18, adjacent to said eye 20, and finally returns and passes through a pulley 24 on the said front cross-bar 22, and its opposite end is free and may project out  
5 and away from the stacker any suitable distance for operation by horse or other power.

To the rear cross-bar is hinged or pivoted a weighted frame, consisting of a pair of arms 25, converging at their upper or front ends  
10 and having connected thereto a box or receptacle 26, in which weights may be placed to overcome the weight of the fork or carrier and the connected parts when elevated and cause them to be drawn back far enough to  
15 come within the force of gravitation and drop down to horizontally position the fork or carrier to receive a load. Between the converged ends of the weighted arms a notched or toothed bar 27 is pivoted, and upon this  
20 bar is slidably mounted a link 28, which is adapted to engage either one of the said teeth or notches of said bar. A limiting rope or cable 29 carries said link and passes through  
25 a guide 30 on the notched bar, and the ends of the rope or cable thence pass rearwardly and are connected in any manner to the opposite end portions of the head-strip or cross-bar 19 of the carrier or fork 7.

In practice horse or other power is connected to the free end of the operating-rope  
30 21 and a pulling force exerted thereon, which, acting through the pulleys 22, 24, and 23, draws upon the rear end of the lever 18 and gradually raises the front end of the latter.  
35 This movement of the lever raises the fork or carrier 7, the elevating-arms 6, and the derrick-arms 16, on which said lever swings, and after a certain elevation of said parts is reached the limiting-cable 29 is drawn taut,  
40 and the weighted frame 25 is also gradually elevated by the further movement of said fork or carrier. The weighted frame then begins to exert a resistance to the further movement of the carrier and when the limit of its up-  
45 per movement is reached arrests the movement of said carrier. By slackening the rope or cable 29 the weighted frame will be free to exert its influence, and the carrier-arms and fork or carrier will be pulled back and  
50 drop down to receive a new load. By adjusting the link 28 the cord or cable 29 may be lengthened or shortened to regulate the movement of the weighted frame in an obvious manner, whereby the retracting force exerted  
55 may be increased or diminished and the swing

of the carrier controlled to a nicety. By providing also the box 26 to receive removable weights 32 the weight of the frame 25 may be varied at will.

For convenience in anchoring the stacker 60 while the operation of loading or unloading is going on loops or rings 31 are provided to receive stakes which are driven into the ground.

While the preferred embodiment of the invention is as herein disclosed, it will of course be understood that changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof. 70

The braces 6<sup>a</sup> at the pivotal ends of the arms 6 cross and are secured at the point of crossing and serve to prevent any play of the arms and hold them in fixed relation. The braces 75 8 perform a similar office for the front ends of the arms 6.

Having thus described the invention, what is claimed as new is—

In combination, a base, arms pivoted at one 80 end to the base near its front end and having a fork secured to their outer ends, crossed braces attached to the pivotal end portions of the said arms, derrick-arms pivoted about central of the base and convergent toward 85 their outer ends, an elevating-lever connecting the fork with the convergent ends of the derrick-arms, block and tackle between the front end of the base and the projecting end of the elevating-lever, a pair of arms 25 piv- 90 otally connected to the rear end of the base and convergent toward their free ends, a weight-box applied to the said arms 25, a bar pivoted between the convergent ends of the arms 25 and notched along one edge, a guide 95 at the outer end of the pivoted bar, a rope having its end portions attached to the fork and its middle portion doubled and passed through the guide at the outer end of the notched bar, and a link supported in the fold 100 of the rope and adapted to engage with any one of the notches of the said pivoted bar, substantially as specified.

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

EDWARD J. CANTWELL. [L. S.]

OTIS B. CANTWELL. [L. S.]

Witnesses:

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J. M. JONES.