(No Model.) 3 Sheets—Sheet 1.

H. L. SHORT.

HAY STACKER.

No. 520,808. Patented June 5, 1894.

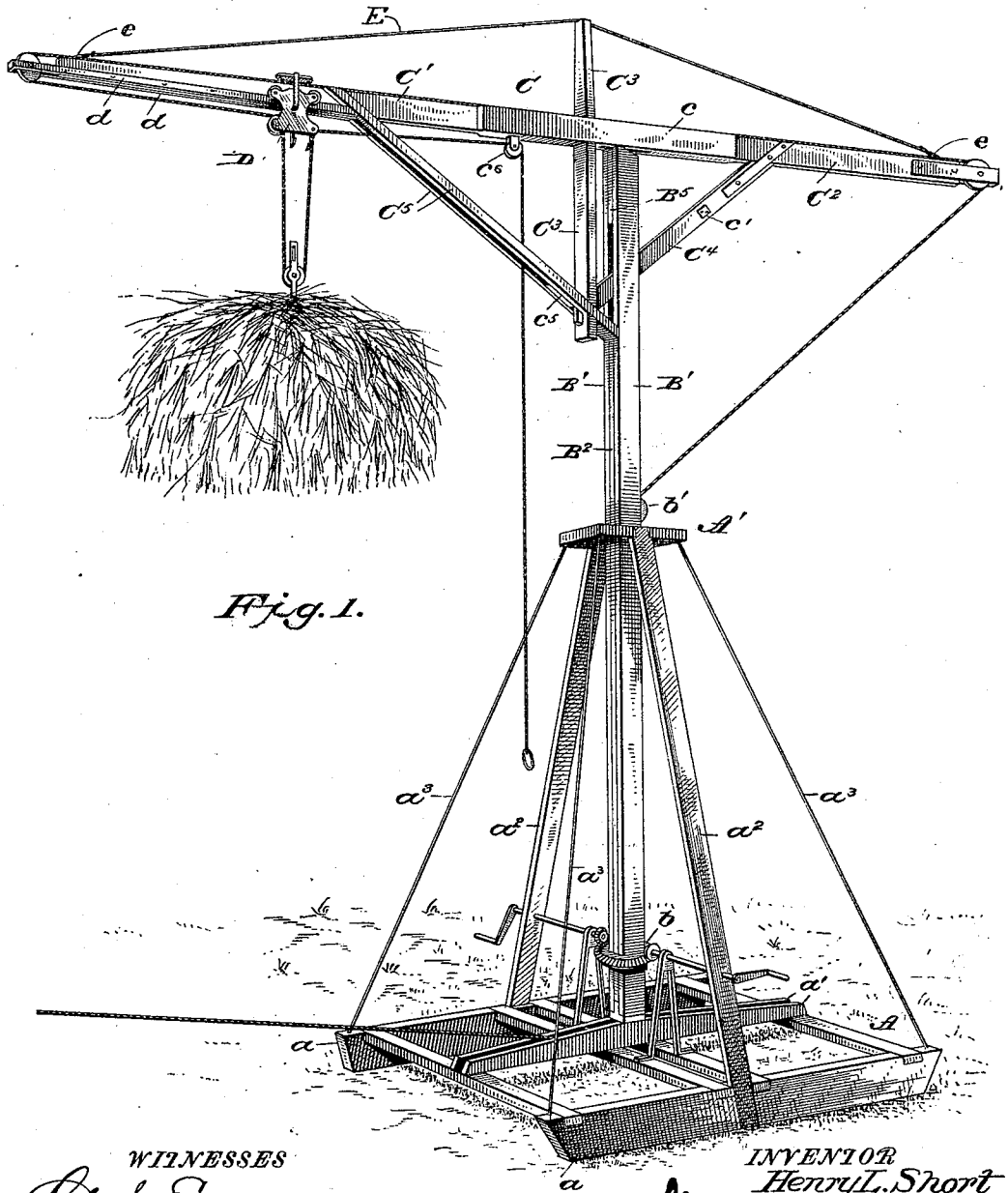

Fig. 1.

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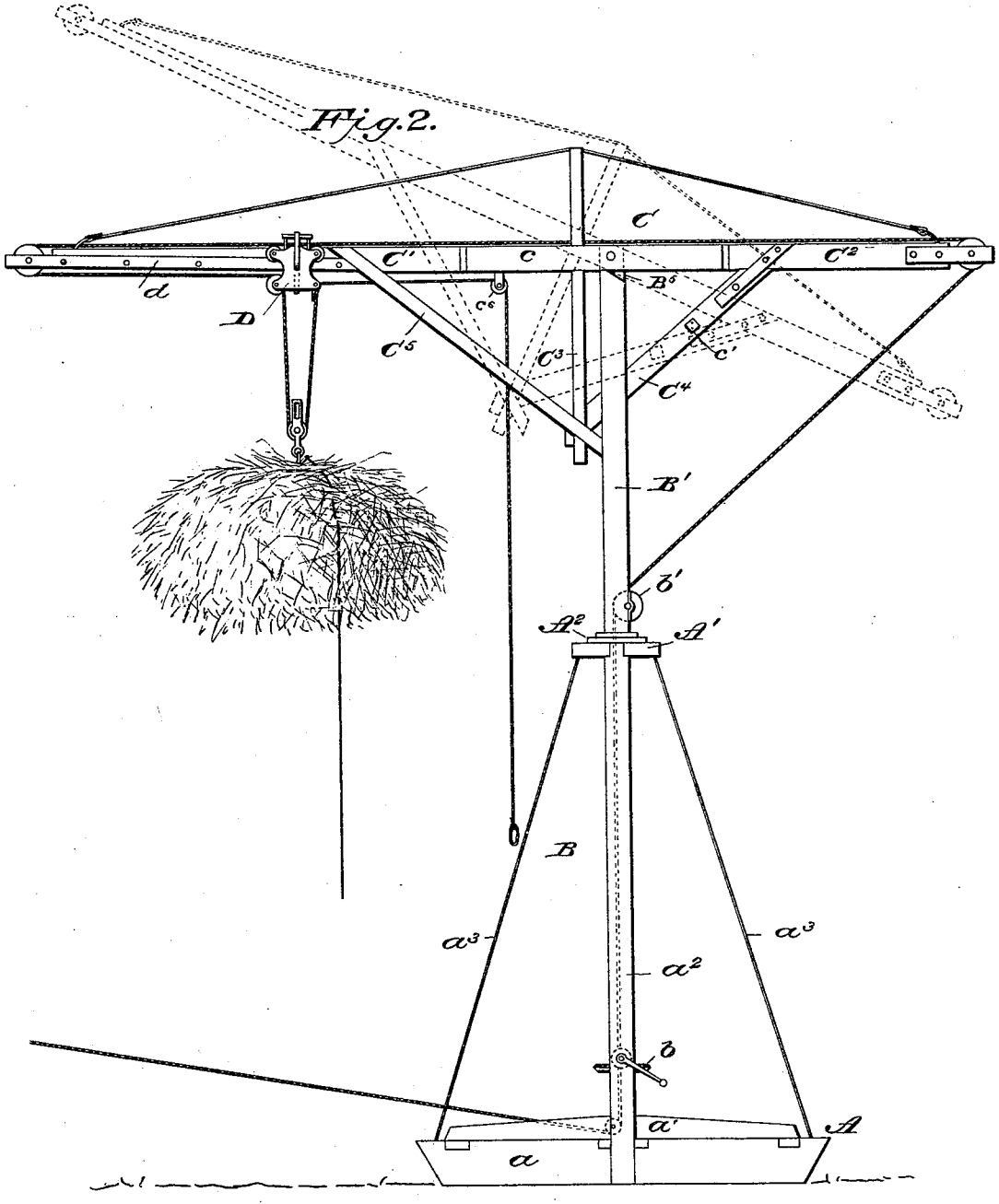
Fig. 2.



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(No Model.)

3 Sheets—Sheet 3.

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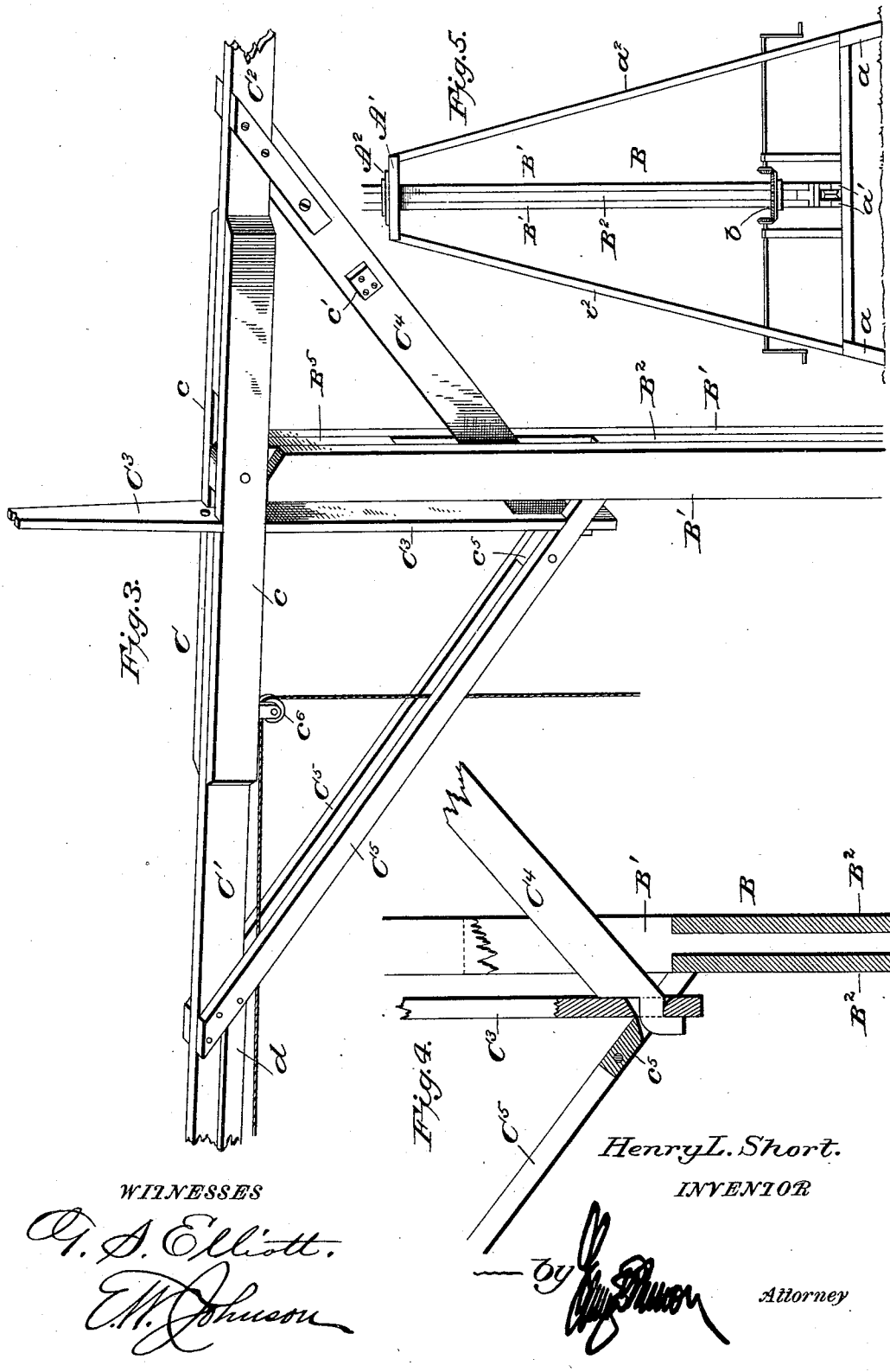

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UNITED STATES PATENT OFFICE.

HENRY L. SHORT, OF LARUE, OHIO.

HAY-STACKER.

SPECIFICATION forming part of Letters Patent No. 520,808, dated June 5, 1894.

Application filed February 15, 1894. Serial No. 500,300. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. SHORT, a citizen of the United States of America, residing at Larue, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Hay-Stackers; and I 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of derricks which are used for stacking hay or grain.

The object of the invention is to provide a portable stacker comprising a lever pivoted to an upright post, the post being mounted on a base-frame so that it can be turned and the lever being provided with means for retaining the same in a horizontal position and limiting its movement upon the post and also with a carriage which is adapted to be moved upon the same by the hoisting rope, the hoisting rope also furnishing means for tilting the lever when desired.

The invention consists in the construction and combination of the parts, as will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a derrick or hay stacker constructed in accordance with my invention. Fig. 2 is a side view, the lever being shown in a horizontal position in full lines and tilted in dotted lines. Fig. 3 is a detail perspective view of a part of the lever and supporting post. Fig. 4 is a detail sectional view showing the construction of the braces and upright which are attached to the lever, and Fig. 5 is an end elevation of the supporting or base frame.

A designates the base-frame which consists of parallel runners a a, suitably connected to each other by cross-bars upon which are secured central longitudinal beams a' a' which support a socketed bearing-plate for the lower end of the post B. Between the longitudinal beams a' below the guide-plate is journaled a pulley forming a guide for the hoisting rope. To the sides of the runners a are secured inclined supports a^2 to the upper ends of which is attached a platform A', said platform being braced by stay or guy-rods a^3 which extend from the corners of the platform to the ends of the runners. The platform is provided centrally with an opening for the passage of the supporting-post B, and is provided with a metallic bearing plate A^2 which surrounds the opening and into which fits a collar attached to the post. By means of this construction the post B can be supported in a vertical position upon the base-frame and is free to revolve.

The post B may be provided at a suitable distance above its lower end with a gearwheel b with which a pinion keyed to the inner end of a suitably journaled shaft meshes, the other end of the shaft extending beyond one of the supports a^2 to receive a crank-handle for turning the same. Two shafts with pinions may be employed, one on each side of the base-frame, and by means of this mechanism the supporting post can be turned.

The supporting post B is preferably made up of two side pieces B' B' which extend the whole length of the post, between which are secured strips B^2, extending from the lower end of the post to a suitable distance above the platform, one of these strips being cut away for the passage of the hoisting rope and pulley b' and a strip B^5 which is secured between the upper ends of the pieces B' and to which the lever C is pivoted by means of a transverse bolt. This construction provides a post which is hollow from its base to a point a slight distance above the platform A' through which the hoisting rope passes so that any draft upon said hoisting rope will not tend to rotate the post upon its bearings. The hoisting rope passes out of the post above the platform A' over a pulley b', as shown.

The lever C is made up of beams C' and C^2 which are connected to each other by side pieces c c between which the strip B^5 of the post is located and through which the pivot bolt passes, the pieces B' of the post being cut at an angle at their upper ends to provide bearing surfaces for said side pieces. To one side of the post the lever C is provided with an upright C^3 over which passes a truss-

rod E, the lower end of the upright being apertured for the passage of the foot of the brace beam C^4, the configuration of the foot being shown in Fig. 3 of the drawings; this brace beam extends through the post B and is rigidly secured to the under side of the short end of the lever, stops c' being secured to this brace which strike against the post B and limit the tilting movement of the lever From the long end of the lever C to the lower end of the upright C^3 extend parallel brace beams C^5 between which adjoining the upright is secured a block c^5, the lower ends of said parallel brace beams extending beyond the upright so that they can abut against the side pieces of the post B. It will be noted that in connecting the braces and upright to the lever C the lower ends of the braces C^5 lie in mortises formed in the upright C^3, and that the brace C^4 fits in an aperture in the lower end of the upright; this construction forms an interlocking brace, and the upright not only serves in connection with the truss of the lever but holds the lower ends of the braces in their proper position.

The longer arm of the trussed-lever C is provided with tracks *d d* upon which is mounted a carriage D; this carriage being of the construction used with hay carriers or elevators, and the hoisting rope is attached to one side of the carriage D extending therefrom around a pulley journaled in the fixture which carries the fork or other carrier and from there over a pulley in the carriage to and around a pulley at the end of the long arm of the lever along the upper side of the lever to and around a pulley at the other end of the same and from there down through the supporting post guided by the pulleys hereinbefore mentioned to the draft mechanism. To the under side of the long arm of the lever is attached a pulley c^6 over which a flexible connection passes, one end of which is attached to the carriage D while the other end passes between the braces C^5 to a suitable point so that by drawing upon this connection the carriage D can be moved along the lever toward the post while it is moved in the other direction by the hoisting rope. A flexible connection may also be attached to the fixture which carries the fork so that by drawing upon the same the load will be released.

The truss-rod E is connected at its ends to eyes or loops *e e* which are attached to the ends of the lever, and the hoisting rope passes through these loops or eyes so that it is not liable to be disengaged from the pulleys when slack.

In operation, when it is desired to stack hay or grain by slacking upon the hoisting rope the fork or carrier will be lowered so that it can be loaded, then by pulling upon the hoisting rope the load will be elevated and when the carrier reaches the carriage D by further drawing upon the rope the carriage can be moved along the track to the desired point, the post and lever being turned in the meantime by turning one of the cranks at the side of the frame, and should it be desired to further elevate the load by drawing upon the hoisting rope the lever can be tilted to the position shown in dotted lines Fig. 2.

It will be noted that in making a hay-stacker in accordance with my improvements the beams are all arranged so that the strain will come upon their wider parts, and by such construction I am enabled to build an extremely light frame having the maximum amount of strength. It will also be noted that the frame is made up of flat pieces of material or boards and can be readily put together by an ordinary mechanic.

With my improved hay stacker any style of carriage and fork or carrier may be used, as the tracks on the long arm of the lever are of the standard gage.

This device is not only adapted to be used for stacking hay but may also be used as a hoisting crane or derrick.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a base or supporting frame, a rotatable post having a passageway from its lower end to a point a slight distance above the inclined braces of the frame, of a lever pivoted to the upper end of the supporting post, said lever having tracks upon which is mounted a carriage, a hoisting rope attached to said carriage, and pulleys carried by the lever and post, the hoisting rope extending from the carriage over the pulleys entirely along the lever from end to end and thence downwardly through and out of the hollow post, substantially as shown, whereby by properly manipulating the hoisting rope the load can be raised, the carriage moved along the lever, and the lever tilted, for the purpose set forth.

2. In a hoisting device, the combination, of a supporting frame having bearings for a rotatable post, a lever pivoted to the upper end of the post and provided with braces, one of said braces passing through the post and exgaging with the brace on the opposite side thereof, substantially as shown and for the purpose set forth.

3. The combination in a hoisting device, of a supporting-post, a trussed lever mounted thereon, braces secured to the lever and to each other, one of the braces being adapted to abut against the supporting post and the other passing through the supporting post, substantially as shown.

4. In combination with the supporting post having a lever pivoted thereto, of an upright rigidly attached to the lever to one side of its pivot point, parallel brace bars secured to the lever and to the lower end of the upright, and a brace bar secured to the lever on the other side of its pivot and adapted to pass through an opening in the supporting post so as to engage with the lower end of the upright, the last mentioned brace carrying a

stop, substantially as shown, whereby the movement of the lever on its pivot is limited in both directions.

5. In combination with a base or supporting frame, of a post having a hollow portion which extends from its lower end to a point a slight distance above the upper ends of the inclined supports of the frame, said supporting post consisting in part of the side pieces B′ B′ and strips B^2, and B^5, a lever pivoted to the upper end of the post and provided with depending braces, the brace which is attached to the longer arm of the lever abutting against the edges of the side pieces of the post when the lever is in a horizontal position, and a brace which passes through the post between the side pieces thereof said brace having a stop or stops which engage with the edges of the side pieces of the post to limit the upward movement of the long arm of the lever, and a hoisting rope which extends through the hollow portion of the post and over the lever to a carriage mounted thereon, substantially as shown and for the purpose set forth.

6. In a hoisting device, the combination, of a supporting post, a lever pivoted thereto, said lever being made up of beams C′ and C^2 which are connected to each other by parallel pieces *c c*, braces secured to said lever and to an upright C^3 which is also secured to the lever, and tracks *d* attached to the long arm of the lever, substantially as shown and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY L. SHORT.

Witnesses:
HOWARD F. CASSADY,
JOHN J. FRABER.