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W. E. WALLER.
HAY STACKER.

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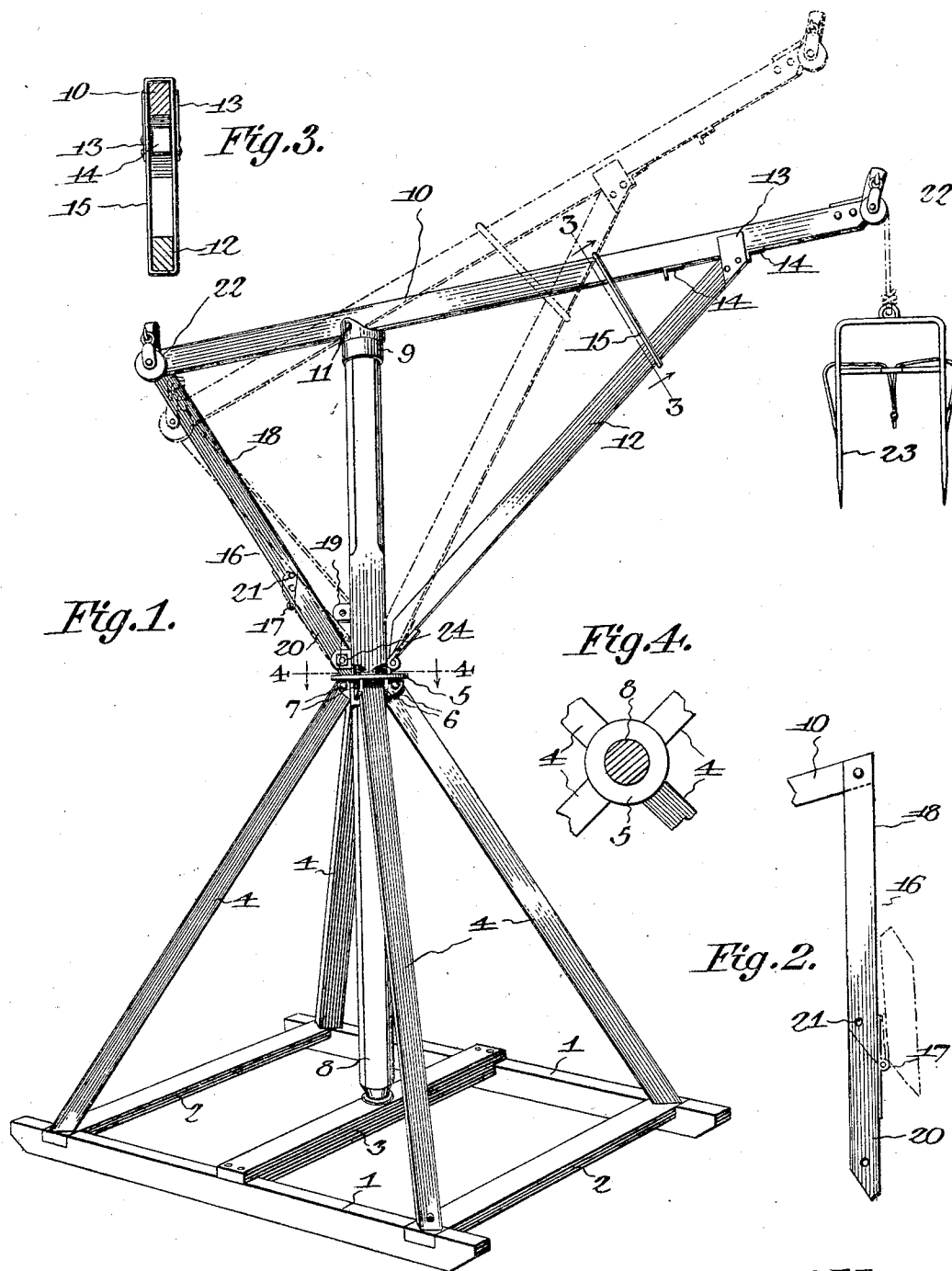


Fig. 1.

Fig. 4.

Fig. 2.

Fig. 3.

Witnesses
E. F. Stewart
Wm. Bagger

Warren E. Waller,
Inventor.

by C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

WARREN E. WALLER, OF CHARLES CITY, IOWA.

HAY-STACKER.

SPECIFICATION forming part of Letters Patent No. 794,825, dated July 18, 1905.

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To all whom it may concern:

Be it known that I, WARREN E. WALLER, a citizen of the United States, residing at Charles City, in the county of Floyd and State of Iowa, have invented a new and useful Hay-Stacker, of which the following is a specification.

This invention relates to an improved derrick for hay-stacking and other purposes; and it has among its objects to provide a swinging derrick-arm which shall be readily adjustable to various positions for the purpose of enabling a load to be elevated to various heights.

Other objects are to simplify and to generally improve the construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes, alterations, and modifications to which recourse may be had within the scope of the invention and without departing from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a perspective view of a hay-stacking derrick constructed in accordance with the principles of the invention. Fig. 2 is a detail view showing the jointed brace detached. Figs. 3 and 4 are sectional detail views taken on the planes indicated by the lines 3 3 and 4 4 in Fig. 1.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

A base-frame is provided, the same including a pair of runners 1 1, connected near the ends by cross-pieces 2 2 and near the middle by a relatively heavy cross-brace 3. Near the four corners of said frame are supported upwardly-converging braces 4 4, supporting at

their upper ends a ring or collar 5, provided with lugs 6, between which the upper ends of the braces 4 are secured by means of bolts 7.

A mast 8 is stepped for rotation in the cross-brace 3, and said mast extends upwardly through the ring or collar 5, in which it is free to rotate. A cap 9 at the upper end of the mast serves to pivotally support a derrick-arm 10, which is mounted upon a fulcrum-pin 11.

Hingedly connected with one side of the mast is a brace 12, the upper end of which is provided with clip-plates 13, engaging opposite sides of the derrick-arm 10. The latter is provided on its under side with a plurality of stop-lugs 14, against any one of which the upper extremity of the brace 12 may be caused to abut, the adjustment being readily effected by simply lifting the outer end of the derrick-arm from contact with the brace and sliding it between the clip-plates or cheek-plates 13 until the desired adjustment has been attained. A link 15 serves to connect the derrick-arm and the brace, so as to prevent liability of accidental displacement of said members with relation to one another.

The rear or inner end of the derrick-arm is connected with the mast by means of a jointed brace 16, the members of which are connected with each other by means of a hinge 17, and said members having oblique ends abutting upon one another. The upper member 18 of said brace is pivotally connected with the rear end of the derrick-arm. The lower member of said brace is pivotally connected with one of a plurality of lugs 19, secured upon the mast, said lower member being designated 20. The upper brace member 18 is provided near its lower end with an auxiliary aperture 21.

The derrick-arm 10 has been shown as provided with guiding means, such as pulleys 22, for hoisting-tackle of any suitable description, and a hay-fork has been conventionally indicated at 23.

In Fig. 1 of the drawings the folding brace 16 has been shown in full lines in extended position, and the related parts—viz., the derrick-arm 10 and the brace 12—have likewise been shown in full lines in a position at which

the outer end of the derrick-arm is at its lowest limit. By detaching the pivotal pin or bolt 24, which connects the member 20 of the brace 16 with one of the lugs 19, the said
 5 brace may be folded to the position indicated in dotted lines, when the lower member 20 of said brace will lie in contact with the under
 10 side of the upper member 18, the lower end of said upper member being connected with an upper lug 19. In this position the brace
 12 has been moved from contact with an outer lug 14, into engagement with an inner lug 14, and the derrick-arm will thus be tilted to the
 15 position shown in dotted lines, which admits of a load being lifted to a greater elevation, as will be readily understood.

This device, as will be seen, is extremely simple in construction and it will be found extremely useful for the purpose of building
 20 stacks of various dimensions, said device being capable of being easily transported from one place to another in the field upon the runner-frame which constitutes the base-frame of the device.

25 Having thus described the invention, what is claimed is—

1. A base-frame including runners, converging uprights supported by said frame, a ring supported by said uprights, a mast
 30 stepped for rotation in the base-frame and extending through said ring, a derrick-beam pivotally supported at the upper end of the mast and provided with stops upon its under
 35 side, and a brace hingedly connected with the mast and abutting upon one of said stops.

2. A mast supported for rotation, a derrick-beam pivotally supported upon the mast and having downwardly-extending lugs, a brace
 40 connected hingedly with the mast and abutting upon one of said lugs, and cheek-pieces connected with the brace and engaging opposite sides of the derrick-beam.

3. A mast supported for rotation, a derrick-beam pivotally supported upon the mast and
 45 having downwardly-extending lugs, a brace hingedly connected with the mast and abutting upon one of said lugs; and a link adjustably engaging the derrick-beam and the brace.

4. A mast supported for rotation, a derrick-beam pivotally supported upon the mast and
 50 having downwardly-extending lugs, a brace hingedly connected with the mast and abutting upon one of said lugs, cheek-pieces con-

nected with the brace and engaging opposite sides of the derrick-beam, and a link adjustably engaging the derrick-beam and the brace. 55

5. A mast supported for rotation, a derrick-beam pivotally supported by the mast, a brace hingedly connected with the mast and adjustably engaging the derrick-beam, and a link
 60 engaging said beam and brace.

6. A mast supported for rotation, a derrick-beam hingedly connected with the mast and adjustably engaging the beam, and an auxiliary brace connecting the beam adjustably
 65 with the mast, said auxiliary brace being composed of hingedly-connected members.

7. A mast supported for rotation, a derrick-beam pivotally supported upon the mast, a plurality of lugs upon the latter, and a brace
 70 connected with one end of the derrick-beam; said brace comprising a plurality of hingedly-connected members any one of which may be connected with one of the lugs upon the mast.

8. A mast supported for rotation, a derrick-beam pivotally supported upon the mast and having downwardly-extending stop-lugs, a brace connected with the mast and adapted to
 75 abut upon one of the stop-lugs, apertured lugs upon the mast, and an auxiliary brace connected with the derrick-beam and comprising a plurality of hingedly-connected members any one of which may be connected with one
 80 of the apertured lugs upon the mast.

9. The combination with a mast having a pivoted derrick-beam and provided with a plurality of apertured lugs, of a brace connected with said derrick-beam and including a plurality of members having ends obliquely abutting upon one another, and means for connect-
 85 ing any one of said members with one of the apertured lugs upon the mast.

10. In a hoisting apparatus, the combination with a mast and a derrick-beam, of a brace hingedly connected with the mast and
 90 adjustably engaging one end of the derrick-beam, and a foldable collapsible brace adjustably connecting the other end of the derrick-beam with the mast.

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

WARREN E. WALLER.

Witnesses:

GEO. E. MAY,
 CLARENCE SEAMAN.