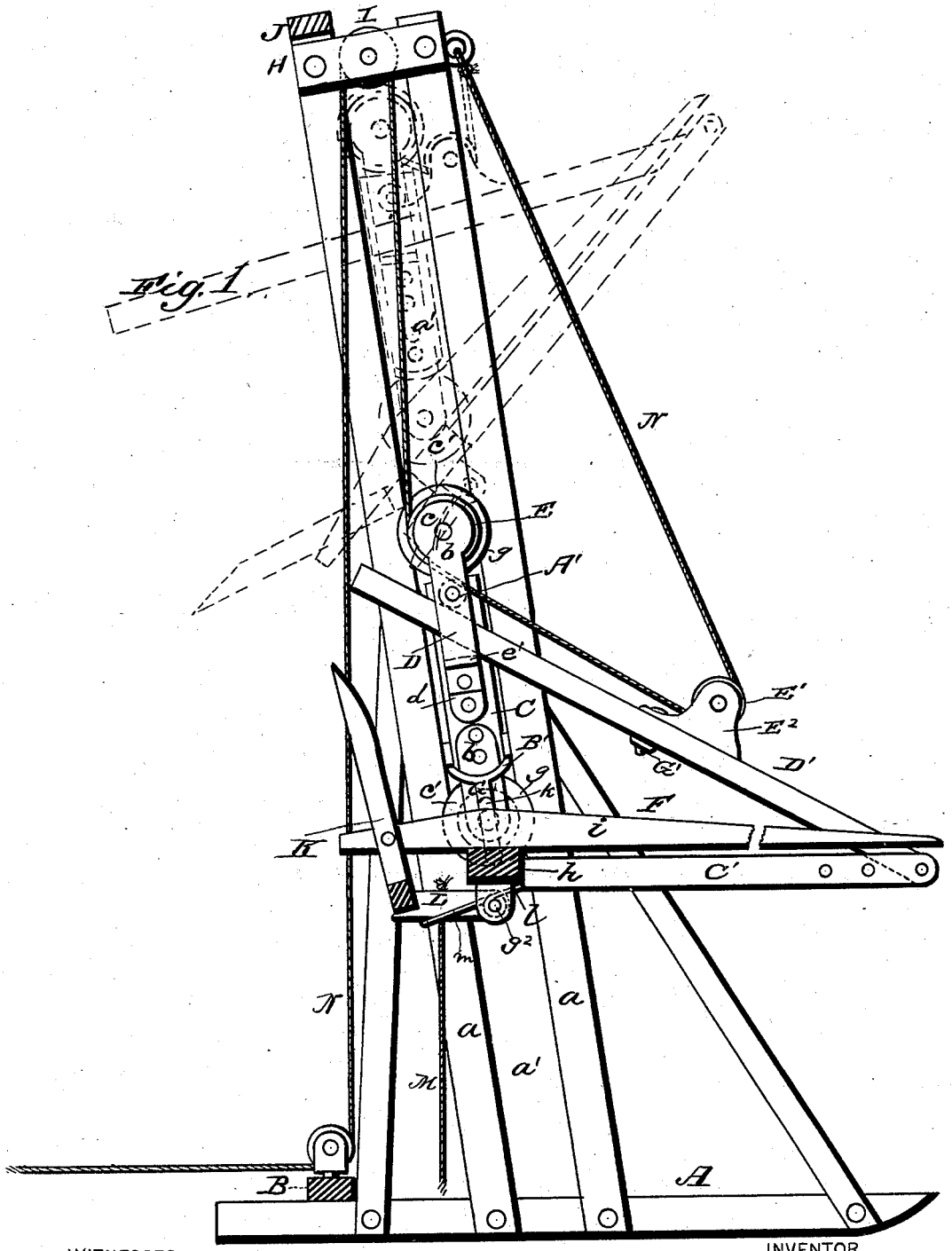
(No Model.) 2 Sheets—Sheet 1.

D. F. OLIVER.

HAY STACKER.

No. 305,325. Patented Sept. 16, 1884.

Fig. 1.



WITNESSES
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(No Model.) 2 Sheets—Sheet 2.

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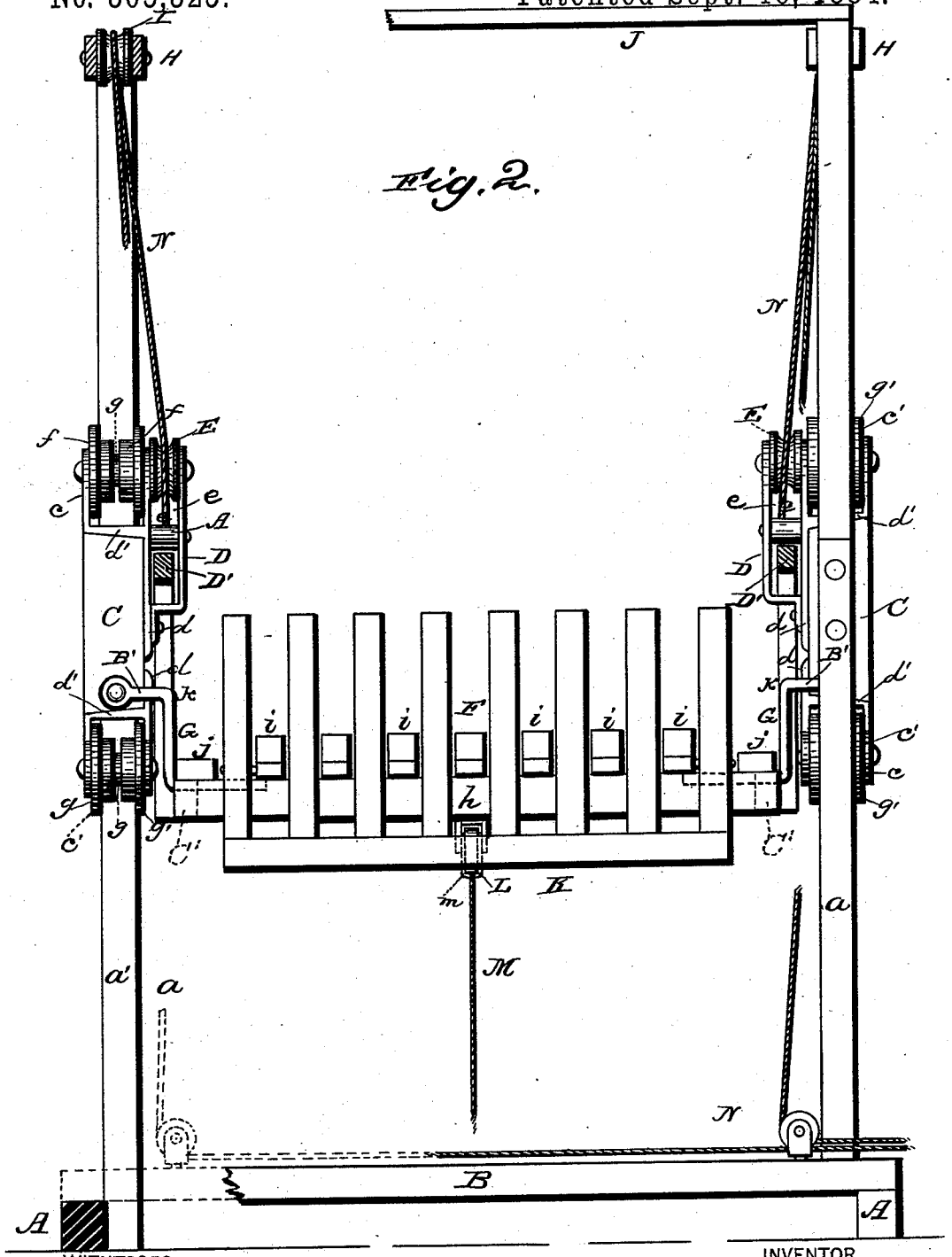
No. 305,325. Patented Sept. 16, 1884.

Fig. 2.



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UNITED STATES PATENT OFFICE.

D. FRANKLIN OLIVER, OF HUNTSVILLE, MISSOURI.

HAY-STACKER.

SPECIFICATION forming part of Letters Patent No. 305,325, dated September 16, 1884.

Application filed April 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, D. FRANKLIN OLIVER, a citizen of United States, residing at Huntsville, in the county of Randolph and State of Missouri, have invented certain new and useful Improvements in Hay-Stackers; and I do 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 or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a vertical sectional view of my device, and Fig. 2 is a rear view of the same, with one side in section.

This invention has relation to hay-stackers. It is designed as an improvement upon the patent granted to me January 15, 1884, No. 292,038; and it consists in the construction and novel arrangement of devices, as will be hereinafter more fully set forth, and particularly pointed out in the appended claims.

In the accompanying drawings, the letter A indicates shoes or runners of the ordinary construction, to which are secured the vertical inclined beams *a*. These beams are secured to the shoes in the ordinary manner, to provide ways for the carriage-heads, and are designed to have a slant of about one and one-half foot in eighteen feet, thereby bringing their upper ends in close proximity to a vertical line from the rear transverse bar, B. This bar is placed close to the rear vertically-inclined bars of the frame, so as to allow the stack to be placed close up to the ricker.

C indicates the head-blocks of the carriage, which are placed one in each of the inclined ways *a'*. These head-blocks are provided at their upper and lower ends with castings *b*, which are provided with vertical arms *c*, having perforations to receive the journal-bolts of pulleys *c'*. These castings are provided each with a longitudinal arm, *d*, by which it is secured to the head-blocks, and with a transverse arm, *d'*, which has a bearing on the end of the block. The upper inner sides of the carriage-blocks are respectively provided with an angular casting, D, which is secured to the longitudinal arm of the pulley-casting of the head-blocks, between which and the angular casting is formed an interspace, *e*. In this interspace are journaled a pulley, E, and a friction-roller or solid bearing, A', the pulley being designed to receive the hoisting-rope and the roller or solid bearing to engage an inclined beam of the carriage. The pulleys *c'* are double pulleys, being composed of the parts *f f*, which are separated by means of a washer, *g*, and are provided on their outer faces with peripheral flanges *g'*, which serve as guides for the carriage head-blocks in their upward and downward movements on the inclined frame. The object of making the pulleys in this manner is to prevent their binding in the inclined ways.

F indicates the carriage for conveying the hay upward on the stacker-frame to the rick; and it is composed of the tines *i* and bars C' *h*, and cleats or block *j*, for connecting and bracing the rods G. This carriage is connected to the carriage-heads by means of stout rods G, which are placed longitudinally above the forward transverse bar, *h*, and securely held against the same by means of a block, *j*, extending parallel with said bar *h* in such a manner as to form a pivotal or loose connection between said rods and carriage, so that the latter may be allowed to tilt when elevated to the upper portion of the stacker-frame. The opposite ends of these rods are bent upwardly, as shown at *k*, and are provided with bifurcated arms B', which are perforated at their face ends and secured to the longitudinal side walls of the carriage-heads between the inner sides of the inclined beams *a*.

To the outer ends of the lateral bars, C', are pivoted beams D' D', which extend upwardly and rearwardly through the castings D, engaging by their upper longitudinal faces the friction-rollers A'. These pivoted beams D' are provided, respectively, with pulleys E', which are journaled about midway of their length on their upper faces, and provided with housings E^2, to prevent the hay from winding on the pulleys. On the under side of these beams, slightly in advance of the pulleys E', are downwardly-projecting studs or lugs G', which are designed to engage the forward edge of the horizontal arms *e'* of the casting carrying the friction-roller A' and serves as stops for the pivoted side beams in their rearward sliding movements. The vertical inclined beams are connected in pairs at their upper ends by

cleats or boxes H, carrying pulleys I, and the pairs are connected transversely by means of a girder, J.

The tines of the carriage are of a peculiar construction, being inclined on their upper faces from the forward transverse under bar, and inclined from said under bar rearwardly, or in the opposite direction, so as to present a slanting or inclined surface for the hay, so that it may easily slide from the carriage when elevated and tilted.

K indicates the auxiliary carriage, which may be of the ordinary construction and suitably pivoted to the rear of the main carriage. This auxiliary carriage is operated by an automatic spring-locking device, which consists of a lever, L, pivoted at its forward end to the central portion of the rear transverse beam of the main carriage by means of a bolt, g^2, to which, on opposite sides of the lever L, are secured the opposite ends of a wire, *l*, having its intermediate portion carried rearwardly to form a spring-loop, *m*, which forcibly engages the under side of said lever L and keeps its outer end in engagement with the inner cross-bar of the auxiliary carriage. In this manner it is kept at less than a right angle with the main carriage until drawn down from its outer end by the rope M, which extends down within convenient distance of the operator. A number of carriage-tines may extend a sufficient distance rearwardly to receive the auxiliary carriage and form stops for the same in tilting.

N indicates the hoisting-rope, which is secured at one end to the upper end of the inclined beam *a*, thence brought down and under the pulley E′ on the inclined beam of the carriage, thence through the pulley E in the casting D of the carriage head-blocks, where it passes upward over the pulley in the box H at the upper ends of the inclined beams *a*, down to and under guide-pulleys secured to the top face of the transverse bar B′, connecting the shoes or runners, and, finally, off to the whiffletree. The end of the opposite rope is connected in a similar manner at the opposite side of the device. It will be perceived that when power is applied to the hoisting-ropes at the whiffletree, the inclined beams carrying the pulleys E′ will first move rearwardly, sliding in the loop-castings D until the stop-pins G′ engage the forward edges of the transverse bars *e′* of the castings, when the carriage will move by means of its rollers or head-blocks in the inclined ways *a′* of the main frame to the desired height. By the slack being taken out of the rope M, the spring-latch will be disengaged from the auxiliary carriage, and the latter allowed to swing rearwardly and dump its load.

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

1. In a hay-stacker, the combination, with the main frame and carriage-heads, of the guide-pulleys composed of two peripherally-flanged parts and a central separating-washer, and arranged to engage the uprights of the main frame, substantially as specified.

2. In a hay-stacker, the combination of the main frame, the carriage, carriage-heads having guide-pulleys, and loop-guides for the pivoted beams of the carriage, the friction-rollers, the elevating-pulleys, and ropes for operating the same upon the main frame, substantially as specified.

3. In a hay-stacker, the combination, with the main frame, the carriage, and its slide-heads, of the forked rods connecting the carriage with the said heads, and means for operating the same, substantially as specified.

4. The combination of the main frame, the carriage having its tines inclined on their faces to front and rear from a vertical elevated intermediate point, and means for operating the same, substantially as specified.

5. The combination, with the main frame and pulleys I, of the carriage having pivoted inclined bars carrying pulleys, the carriage-heads carrying pulleys, and ropes for operating the same, substantially as specified.

6. The combination, with the carriage-heads having guide-loops, of the carriage having pivoted bars carrying pulleys, and stop-lugs or studs, and means for operating the same on the main frame, substantially as specified.

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

D. F. OLIVER.

Witnesses:
W. R. SAMUEL,
W. F. HAMMETT.