(No Model.) 2 Sheets—Sheet 1.

F. DONALD.

HAY PITCHING AND STACKING MACHINE.

No. 357,070. Patented Feb. 1, 1887.

Fig. 1.

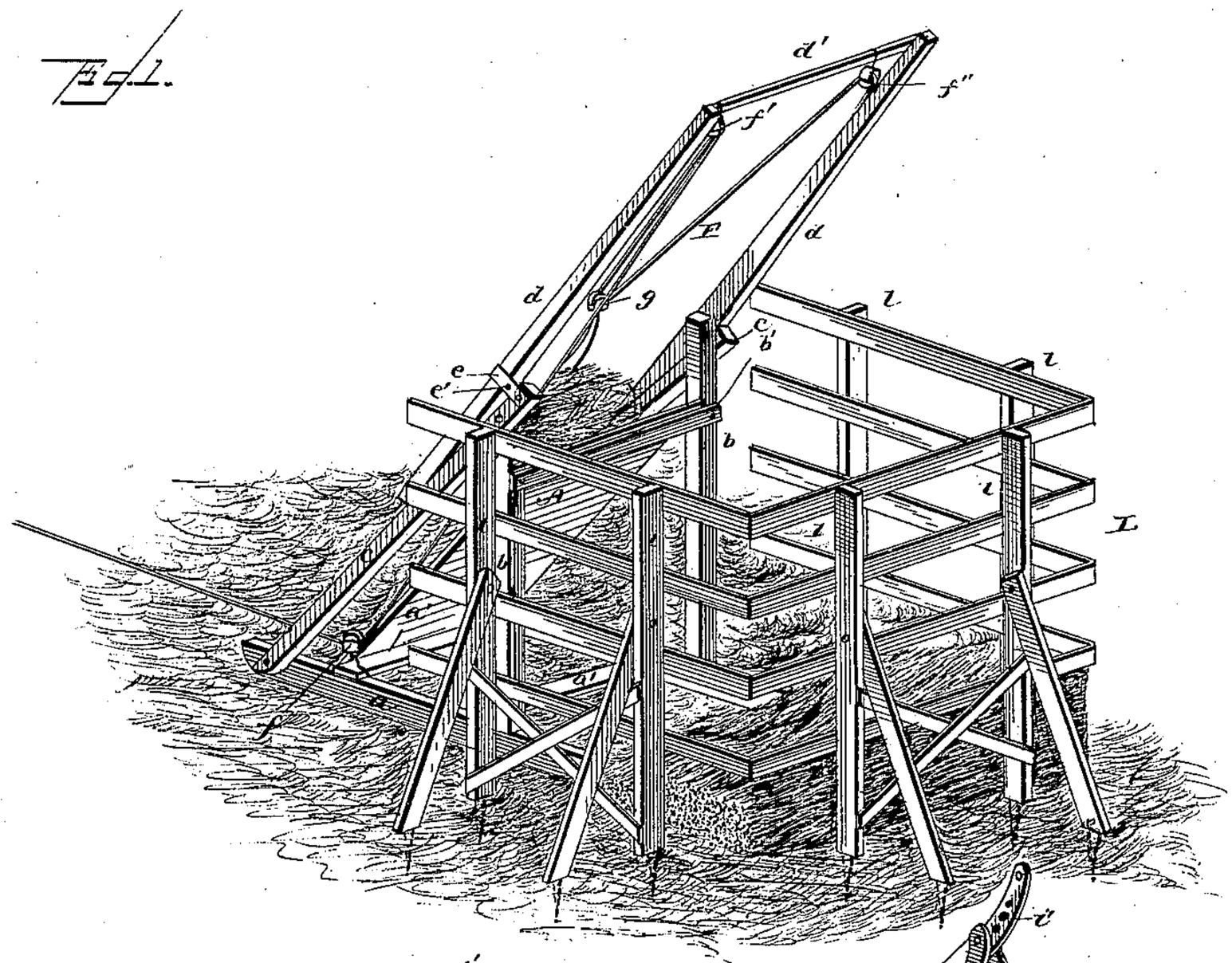

Fig. 2.

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

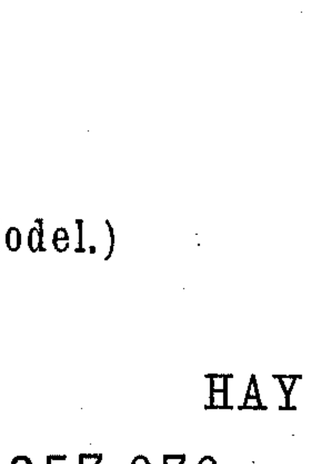

Fig. 4.

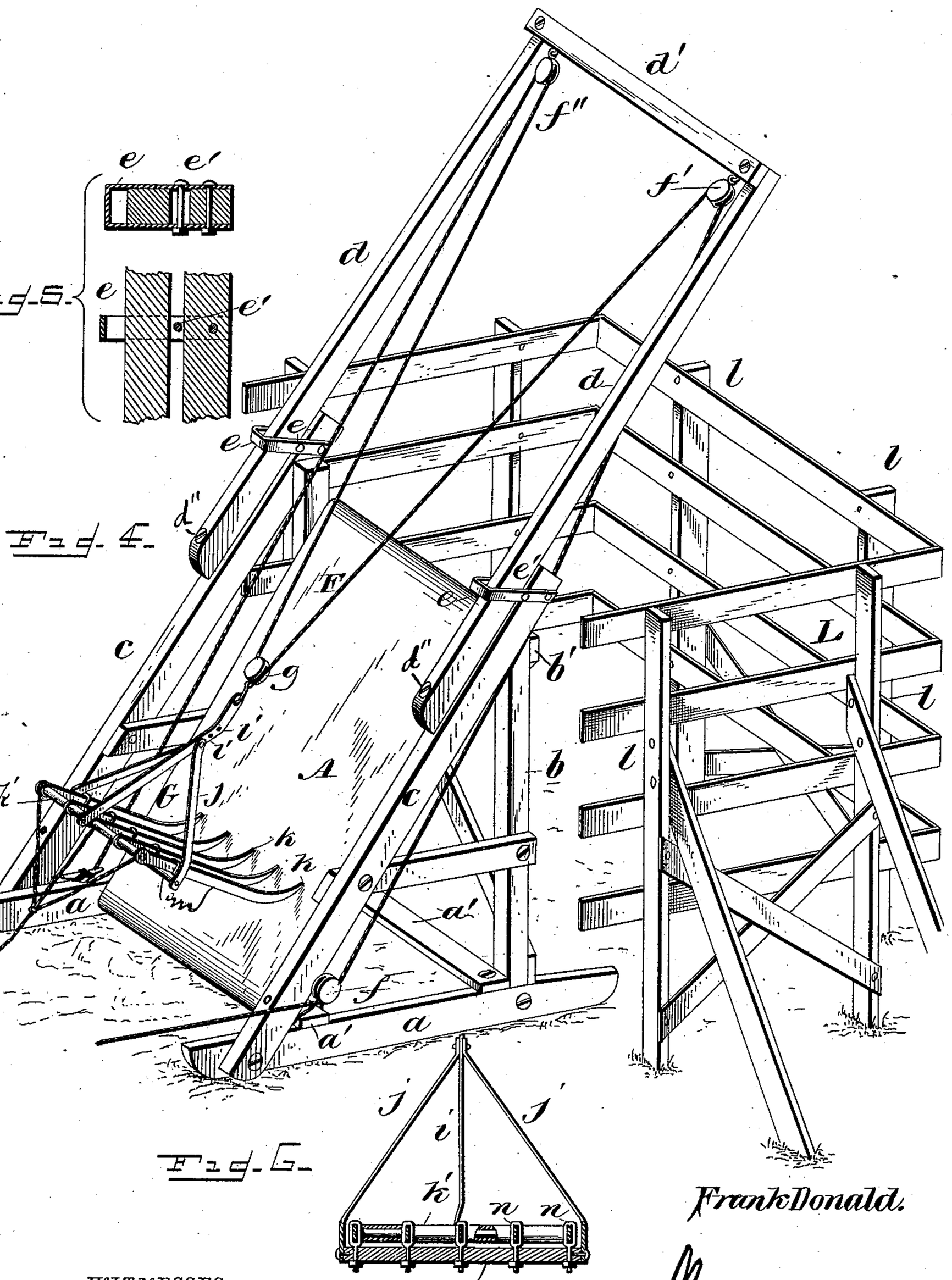

Fig. 6.

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FRANK DONALD, OF GAINESVILLE, TEXAS.

HAY PITCHING AND STACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 357,070, dated February 1, 1887.

Application filed November 12, 1885. Serial No. 182,590. (No model.)

To all whom it may concern:

Be it known that I, FRANK DONALD, a citizen of the United States of America, residing at Gainesville, in the county of Cook and State of Texas, have invented certain new and useful Improvements in Hay Pitching and Stacking Machines; 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 or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in hay pitching and stacking machines, the object of the same being to provide a device for pitching and stacking hay, the parts of which can be easily and quickly taken apart or adjusted, and which may be employed in making stacks of hay or straw; and my invention consists in the construction and arrangement of the parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view looking toward the rear and side of the machine when the parts are arranged in a position for use. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a detail perspective view of the rake and its draft attachments. Fig. 4 is a perspective view of the machine, looking toward the front and side of the same. Fig. 5 are sectional views through the adjustable and inclined beams, showing the means for connecting them; and Fig. 6 is a sectional view of the rake.

a a represent a pair of runners, which are suitably connected to each other by cross-bars *a'*, which are attached to said runners by bolts.

b refers to the vertical posts, which are suitably secured at their lower ends to the runners and are braced to each other by an upper cross-bar, *b'*, said upper cross-bar serving as a support for an inclined plane, A, which is attached at its lower end to a cross-bar, *a'*, of the runners, as shown. The usual diagonal braces may also be used to connect the vertical parts, if desired.

At a point near the upper ends of the posts or supports *b* are secured inclined beams *c*, the lower ends of which are bolted to the runners, as shown.

d represents beams, which are connected to the inclined beams *c* by means of bolts *d''*, which pass through perforations in their lower ends so as to enter the upper edge of the beams *c*. The upper ends of the beams *c* have attached thereto loops *e*, which have cross-bolts *e'*, upon which the under edge of the beam *d* bears, thus throwing the beams *d* nearer to a vertical position than the beams *c*, to which they are connected. The upper ends of the beams *d* are connected to each other by the cross-bar *d'*.

f represents a pulley or block, which is connected to the cross-bar *a'* by a suitable loop, so that it can be slid on said cross-bar so as to occupy a position near either end of the same, said pulley serving as a guide for a rope, F, which is used for elevating the rake. The rope F, after passing under the pulley *f*, extends upwardly to a pulley, *f'*, attached to the upper cross-bar, *d'*, and from thence the rope passes downwardly through a pulley, *g*, which is attached to the rake. Said rope then passes upwardly to the pulley *f''*, attached to the upper cross-bar, and thence to a cleat in the runner or other fastening. Each runner may have a cleat attached thereto, so that the end of the rope may be fastened on the opposite side of the machine from which it is desired to have the draft. By providing the upper cross-bar, *d'*, with two pulleys, *f'* and *f''*, the rope can be adjusted by varying the position of the pulleys *f' f''*, so that the draft can either be on the right or left hand of the stacking device.

When it is desired to change the draft end of the rope F from one side of the stacking device to the other, the pulley *f*, which has a loop of ordinary construction which encircles the cross-bar, is slid upon the cross-bar *a'* to the opposite side, the rope being first removed from the pulley and made fast to a cleat or suitable fastening device, which is attached to the frame. The opposite end of the rope is then passed under the pulley, the looped or central portion passing through a pulley, *g*, attached to the rake. In hoisting, the rake will have an easy and steady draft.

h represents a rope, which is attached to the rake so as to pull the same back after the hay

or straw has been delivered therefrom over the inclined plane, said rope being made fast to the rake, as fully shown in Figs. 3 and 4 of the drawings.

G represents the rake, which is provided with a bar, *i*, the extreme upper end of which is perforated for the reception of the hook attached to the pulley *g*, and below this perforation are other perforations, *i'*, to which the diverging arms *j* are pivotally connected. The bar *i*, hereinbefore referred to, is attached at its lower end to the central tooth, *k*, of the rake, which central tooth projects or extends beyond the back of the rake, as shown in Fig. 3. The teeth or tines of the rake are each attached to the rear cross-bar, *k'*, over which are placed sleeves, which separate the tines from each other at their rear ends. In front of the cross-bar *k'* and under the tines is attached a bar, *m*, to the outer ends of which the ends of the bars *j j* are secured. The bar *m* has attached thereto loops *n*, which embrace the tines.

It will be seen that by moving the bar *m* longitudinally upon the tines that the position of the upper end of the bar *i* will be changed, so that the angle of the rake will be varied with respect to the inclined plane when the draft-rope is tightened, so that the hay will be dropped at a greater or less distance from the inclined plane, as may be desired, as by varying the angle of the teeth with respect to the inclined plane, as hereinbefore described, when the hay on the rake reaches the upper end of the plane it will be dumped when the rake reaches said point if the angle of the teeth is sufficiently acute to permit the hay to slide off of the same. When it is desired to dump the hay at a considerable distance beyond the upper edge of the platform, by adjusting the teeth so as to occupy a nearly horizontal position the hay will be held upon the rake, so that the load will swing beyond the upper edge of the inclined plane, and by drawing upon the cord suddenly the rake will be pulled from under the hay and the same will fall at a considerable distance beyond the upper edge of the inclined plane.

L represents a portable frame, which is made of similarly-constructed sections having two or more upright posts, *l l*, which are connected to each other by braces and inclined stakes, said inclined stakes and posts having spikes secured to their bases so as to enter the ground and hold the sections in a vertical position. These sections are provided with horizontal boards, as fully shown, and when used in connection with a hay-stacker, as herein described, the frames will keep the sides of the stack vertical, and also prevent the same from spreading.

The beams *d* being extended above the inclined plane and the cross-beam provided with pulleys, the rake is swung beneath said cross-beam, and the hay or straw can be dumped when desired by drawing or pulling upon the cord *h* after the rake has been elevated, and said cord *h* is also employed to return the rake over the incline A after its discharge has been effected.

I claim—

1. In a hay pitching and stacking machine, the hay-rake herein described, comprising a rear cross-bar, a set of tines attached thereto, a cross-bar, *m*, provided with loops *n*, through which the tines pass, bar *i*, attached to the rear projecting portion of the center tine, and diverging bars *j j*, attached near the upper end of the bar *i* and to the outer ends of the bar *m*, substantially as shown, and for the purpose set forth.

2. A hay pitching and stacking machine consisting of a main supporting-frame, an inclined plane, A, bars *d* and *d'*, secured above the main supporting-frame, pulleys *f' f''*, attached to the cross-bar *d'*, an elevating-rope, F, and a rope, *h*, for effecting the return of the rake after the load has been discharged over the inclined plane, substantially as shown, and for the purpose set forth.

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

FRANK DONALD.

Witnesses:
J. A. SCOTT,
J. W. BLANTON.