(No Model.) 2 Sheets—Sheet 1.

P. F. FLEMING.

HAY ELEVATOR AND STACKER.

No. 374,787. Patented Dec. 13, 1887.

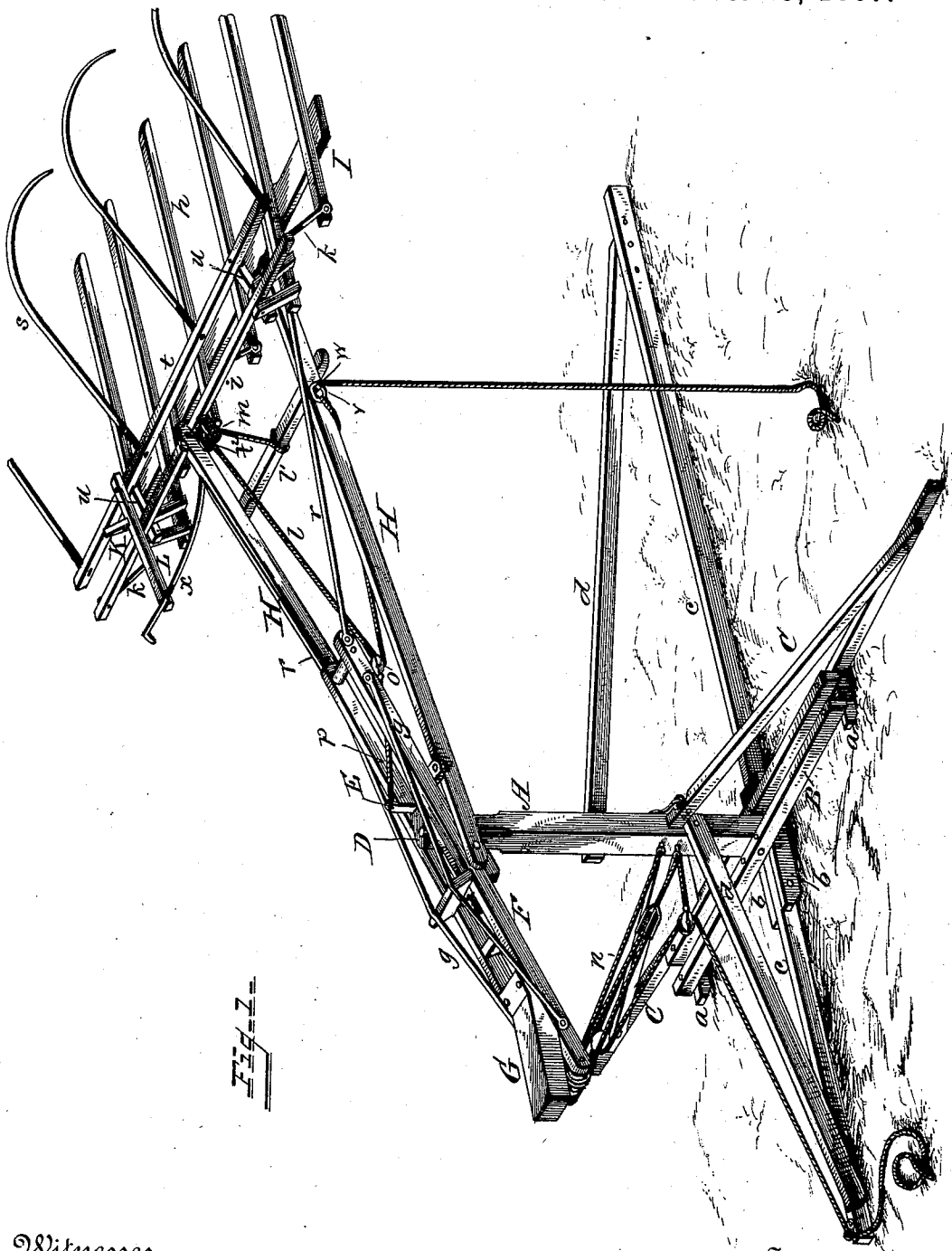

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

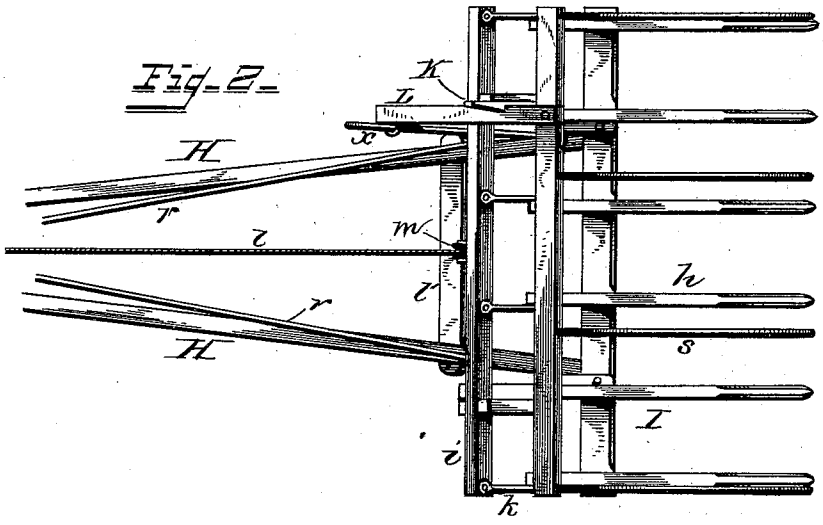


Fig. 3.

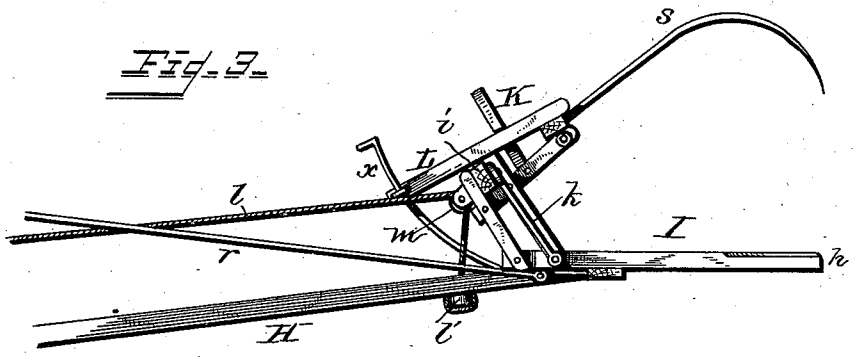
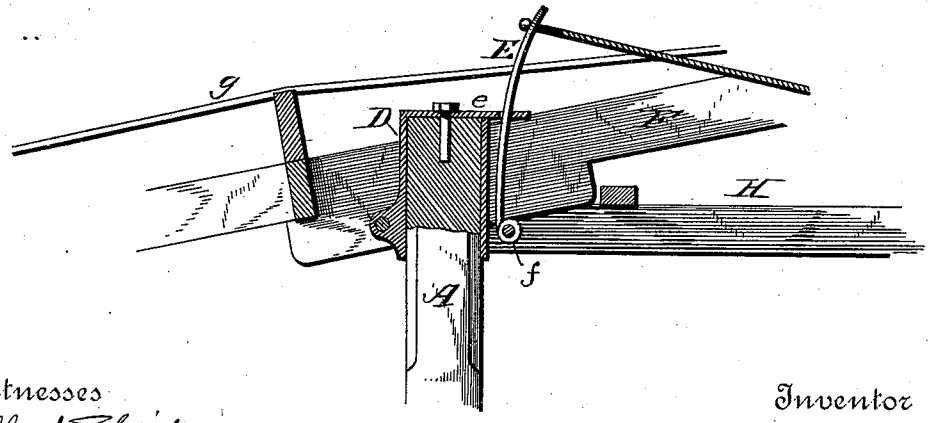


Fig. 4.



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UNITED STATES PATENT OFFICE.

PETER F. FLEMING, OF HUNTSVILLE, MISSOURI.

HAY ELEVATOR AND STACKER.

SPECIFICATION forming part of Letters Patent No. 374,787, dated December 13, 1887.

Application filed August 15, 1887. Serial No. 246,961. (No model.)

To all whom it may concern:

Be it known that I, PETER F. FLEMING, a citizen of the United States, residing at Huntsville, in the county of Randolph and State of Missouri, have invented certain new and useful Improvements in Hay Elevators and Stackers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 of the drawings is a perspective view of my improved hay-elevator; Fig. 2, a top plan view of that portion of the elevator used in grabbing the hay; Fig. 3, a side elevation thereof, and Fig. 4 a detail view of the upper end of the derrick-post and its attachments.

The present invention has relation to devices for elevating hay and other loose substance and depositing it on a hay-stack, wagon, or other convenient place, and is especially designed as an improvement on my former patent of January 13, 1885, No. 310,810; and the invention consists in the several details of constructions, substantially as shown in the drawings, and hereinafter described and claimed.

In the accompanying drawings the derrick or main frame of the machine consists, in part, of the short upright post A, to the lower end of which is suitably connected a cross-head, B, provided at its ends with runners *a*, and at or near its center with runners *b*, to facilitate moving the machine or device. Between the runners *b* are secured the inner ends of supporting-beams *c*, strengthened by braces *d*, attached at one end to the beams and at the opposite end to the derrick-post A. To the post A are suitably hinged supporting-wings C, of any preferred construction, or similar to those shown in the patent above referred to and for the same purpose—viz., to form a supporting-base to steady the derrick-post when the wings are brought out at right angles to the beams; and when the machine is not in use the wings may be folded back against one of the beams *c* and its brace.

By the employment of two supporting-wings and two supporting-beams, *c*, I am enabled to brace and support the derrick-post on its four sides. Besides, the post in the present instance has connected to it the cross-head B, which further steadies the post to render it firm and stationary.

The supporting-beams *c* are pivoted to the runners *b*, so as to allow of the derrick or frame of the machine being adjusted to adapt it to uneven ground upon which it rests, by first loosening the brace or braces *d* at their lower ends and raising or lowering the supporting-beams as required, and afterward attaching the braces to the beams in their adjusted position.

The upper end of the post A has pivotally connected to it a metal cap, D, as shown more clearly in Fig. 4, which supports the operating parts of the machine. The upper portion of the cap D has a plate, *e*, extending forward, and has a slot through which passes a curved metal bar, E, pivoted at its lower end, as shown at *f*, the purpose of which will be hereinafter described.

To the metal cap D is pivoted a beam, F, which preferably consists of parallel bars connected together by transverse braces and strengthened by wire braces *g*, connected to the sides of the bars, the bars being located upon the sides of the metal cap, so as to steady it.

The pivoted cap D and the beam F, pivoted thereto, enable the operating parts of the elevator to be raised or lowered and also moved to the right or left in a horizontal direction, (as in my former patent,) in order to deposit the load at the place required.

The beam F is provided at its rear end with a suitable weight, G, for the purpose of balancing the beam F and assisting the horse in raising the load.

To the sides of the beam F are pivoted the rear or inner ends of arms H, which extend outwardly at an angle as they project forward, and have connected to them, by pivots t^2, a rake-head, I, provided with straight teeth *h*, the cross-bar of the head, as shown at *i*, being connected to the teeth by wire braces *k*. A cord or rope, *l*, has one end connected to a cross-brace of the arms H, as shown at *l'*, said rope passing around pulley *m* upon the cross-bar *i*, thence extends rearwardly and passes around pulley *o*, secured to one end of a short

cord or rope, *p*, the opposite end of said cord or rope being attached to the curved metal bar E. By means of this cord or rope *l* the two sets of teeth are operated, as will be presently described.

The beam F is raised or lowered by the cord or rope *n*, which passes around a suitable arrangement of pulleys connected to the rear end of the beam and to the post A.

The arms H are braced by wires *r*, connected thereto and to the beam F, said arms forming a support for the grabbing device, as well as greatly strengthening the machine over the single arm shown in my former patent.

The cross-bar *i* and wire braces *k* form together a platform for the hay or other loose substance being elevated, and as an auxiliary to the teeth *h*, I provide the curved teeth *s*, secured to the cross-head *t*, which is pivoted to the arms *u*, projecting from the cross-bar *i*, said teeth being used as grab-teeth to hold the hay upon the straight teeth *h*.

In operation, the grabbing device, consisting of the two sets of teeth, is lowered to the desired position by means of the cord or rope *n*, and the hay placed on the straight teeth *h*, after which the curved wire teeth *s* are brought down on the load to hold the hay on the teeth *h*, and, with its load, the device is elevated by means of the cord or rope *n*, which raises the front end of the beam F, and with it the arms H. While this is being done the cord or rope *l* should be pulled down upon, in order to keep the teeth *s* down against the hay, and also prevent the rake-head I from tipping and accidentally discharging its load. By means of the cord or rope *l* and cord or rope *p*, connected to the curved metal bar E, the teeth *s* are retained in a level position when the load is being elevated.

It will be noticed that when the several operating parts of the device, with the load, are being elevated they will at the same time swing around, the metal cap turning on the end of the post A.

To avoid the necessity of pulling on the cord or rope *l* when elevating the load, the cord or rope is kept taut by fastening it to the side of one of the arms H, a ring, *v*, being provided for this purpose to hook onto a pin, *w*, as shown in Fig. 1.

When the device is swung around to the place where the load is to be deposited, the cord or rope *l* is released, which will allow the tilting rake-head I to discharge its load; and at the same time this is done the teeth *s* are raised and held in such position by a spring-latch, K, engaging with the keeper L, a guide-rod, *x*, being employed to insure the latch and keeper engaging with each other.

Any suitable latch device may be substituted for that shown, so long as it will serve the purpose of holding the teeth *s* in an elevated position while the load is being taken on the teeth *h* and when being discharged.

I do not desire to be understood as confining myself to the precise construction of the various parts, as it is evident that many changes may be made that would come within ordinary mechanical skill and judgment, and such changes I reserve the right to make without departing from the principle of my invention.

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

1. In a hay-elevator, the post A, provided with the pivoted cap D, having slotted plate *e*, in combination with the curved metal bar E, extending up through the slot, the cord or rope *p*, attached to the bar and provided with a pulley, *o*, and the cord or rope *l*, and the teeth *s*, connected to a suitable pivoted head, to which the latter-mentioned cord or rope is attached, substantially as and for the purpose set forth.

2. In a hay-elevator, the pivoted rake-head I, having straight teeth *h*, in combination with the cross-head *t*, pivoted to the support of the teeth *h* and provided with curved teeth *s*, and a latch device for holding said head and teeth elevated, substantially as and for the purpose specified.

3. In a hay-elevator, the tilting and swinging beam F, provided with weight G, in combination with the arms H, pivoted to said beam and carrying the grabbing device, and braces *r*, connecting the beam and arms and operating substantially as and for the purpose set forth.

4. In a hay-elevator, the post A, provided with the metal cap D, having slotted plate *e* extending beyond the side thereof, combined with the bar E, pivoted at *f* and extending up through the slot of said plate, the arms H, the grabbing device carried by said arms, and the rope connecting said arms with the bar E, all substantially as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

PETER F. FLEMING.

Witnesses:
C. B. SHAEFER,
W. F. HAMMETT.