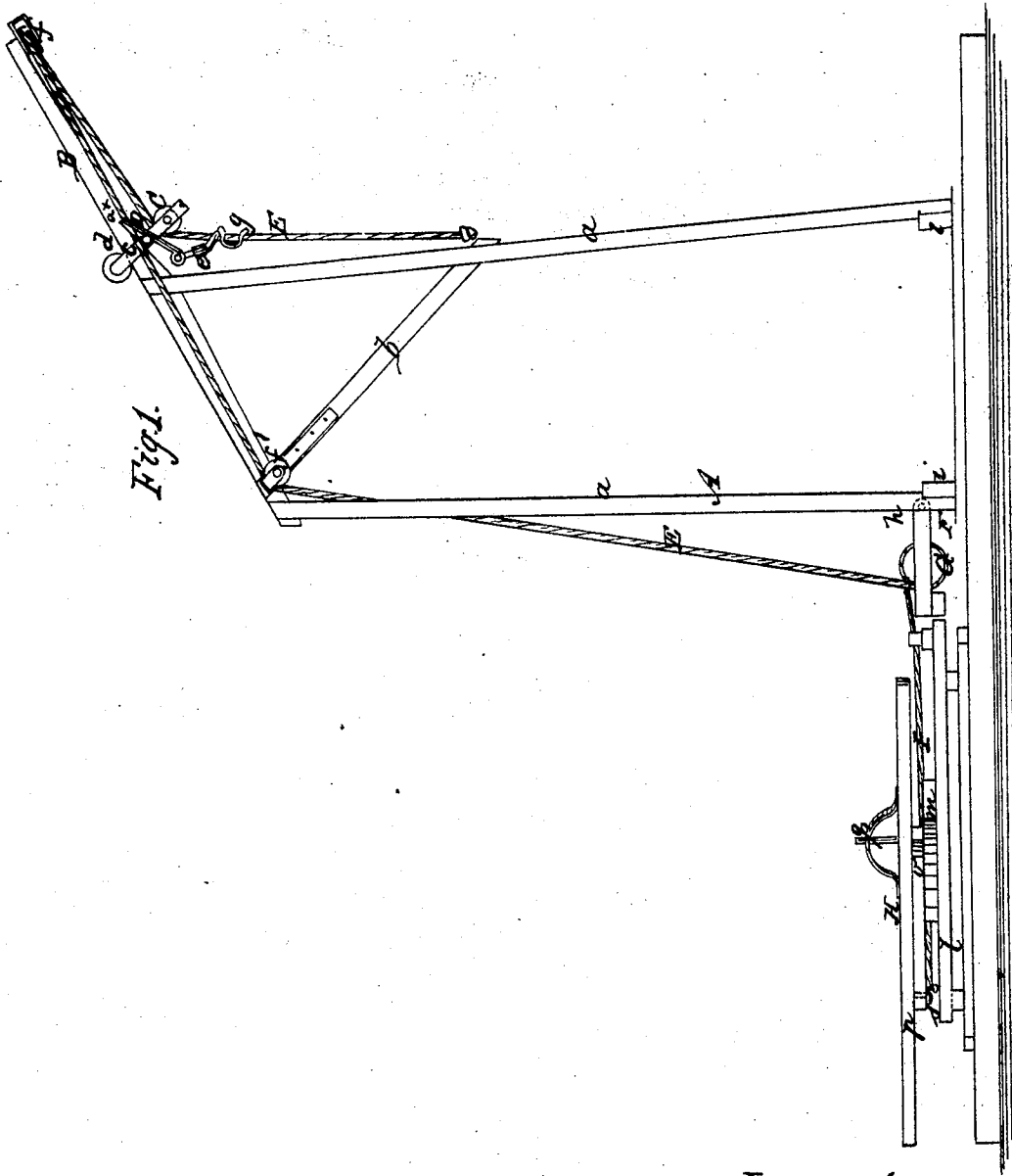


W. Louden.

Hoisting Mach. for Stacking Hay.

N^o 71771

Patented Dec. 3, 1867.



Witnesses
Thos Lusk
Wm. Truwin

Inventor
W^m Louden
Per Mmupl^o
Attorneys

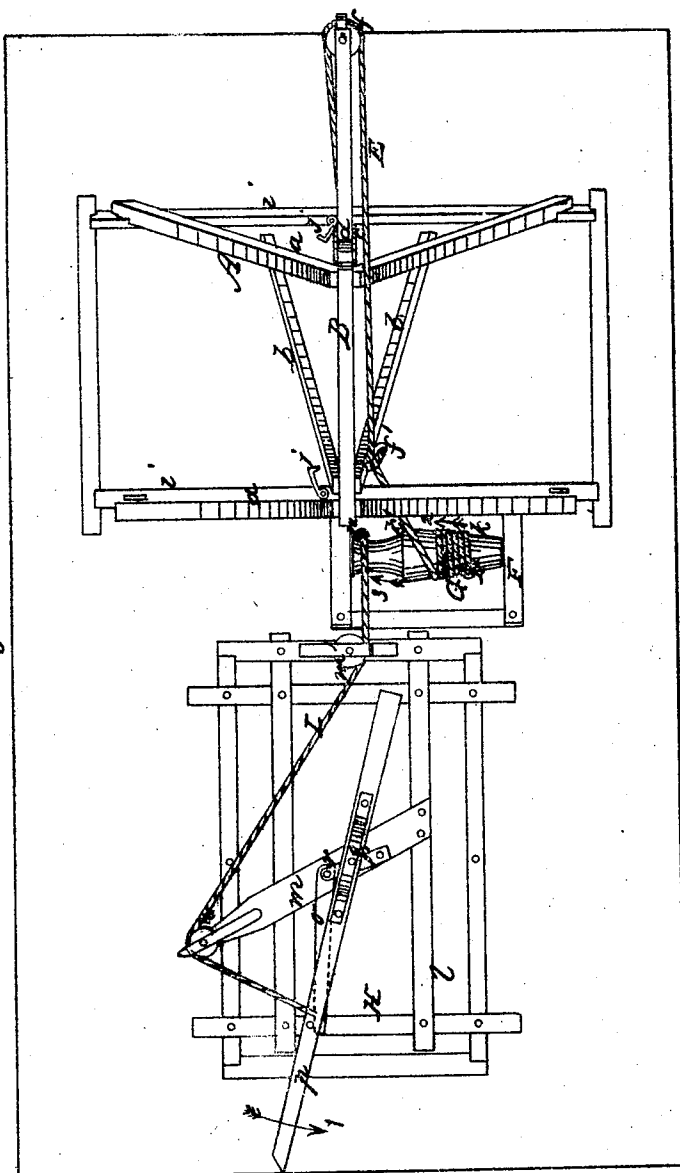
W. Loudon.

Hoisting Mach. for Stacking Hay.

N^o 71771

Patented Dec. 3, 1867.

Fig. 2.



Witnesses
Geo. Lusk
Wm. Brown

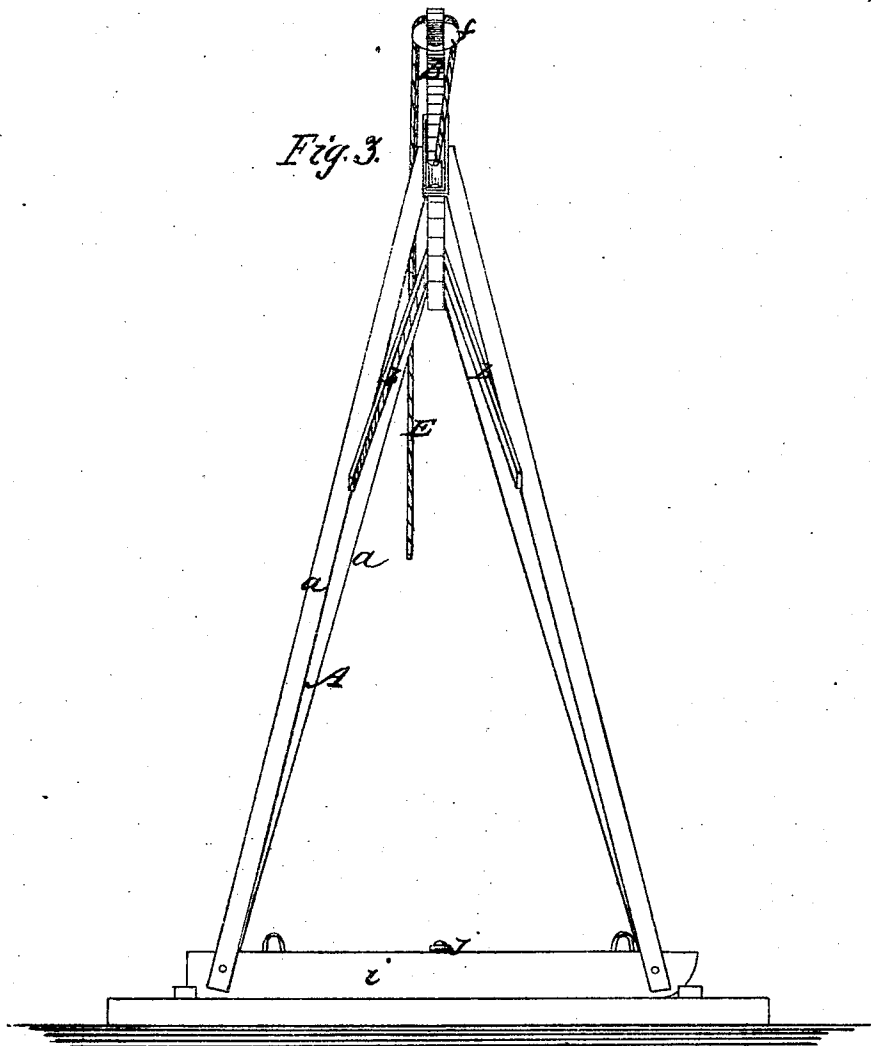
Inventor
W^m Loudon
Per Munnell
Attorneys

W. Louden.

Hoisting Mach. for Stacking Hay.

N^o 71771

Patented Dec. 3, 1867.



Witnesses
Geo. Trach
Wm. Truurn

Inventor
H. M. Loudon
Per Mmuy &
Attorneys

United States Patent Office.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

Letters Patent No. 71,771, dated December 8, 1867.

IMPROVED HOISTING-MACHINE FOR STACKING HAY.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM LOUDEN, of Fairfield, in the county of Jefferson, and State of Iowa, have invented a new and improved Machine for Stacking Hay; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my invention,

Figure 2 a plan or top view of the same, and

Figure 3 an end view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved device for stacking hay, as hereinafter fully shown and described, whereby several important advantages are obtained over other devices hitherto devised for the purpose, and a great saving in labor effected.

A represents a derrick, composed of two triangular frames *a a*, in the upper parts of which a bar, B, is secured, inclined at an angle of about thirty degrees from a horizontal plane, as shown in fig. 1. The bar B and frames *a a* may be stiffened by braces *b*, arranged or applied in any suitable manner. C represents a travelling pulley, which is fitted in a small frame, *c*, having a roller, *d*, in its upper end, which roller works on the upper surface of the bar B, as shown clearly in fig. 1. This frame, *c*, has a lever-catch, D, applied to it, the lower end of which has a weight, *e*, attached, said weight having a tendency to keep the front or outer end of said catch in contact with the under side of the bar B, as will be understood by referring to fig. 1. The use of this weight and catch will be presently explained. E represents an elevating-rope, which passes around pulleys *f f'*, one, *f*, being at the outer end of the inclined bar B, and the other, *f'*, at the upper part of one of the braces *b*, and near the rear end of the bar B. The rope E also passes over the travelling pulley C, and has any suitable fork attached to its lower end. On the rope E there is a knob or stop, *g*, the use of which will be presently seen. F represents a small frame, in which a drum, G, is fitted. This frame F is attached to the lower part of one of the triangular frames *a* by joints or hinges, and the lower parts of the frames *a a* are attached to runners *i i*, which admit of the whole device being readily drawn from place to place. H is an elevating or hoisting-power, which, when the machine is to be drawn from place to place, is adjusted on the runners *i i*, and secured in position by hooks *j*, or other suitable fastenings, and the frame F is turned up out of the way.

This arrangement, it will be seen, renders the device very compact, and admits of it being drawn through any farm-gate without any difficulty or inconvenience whatever.

The draught-chains being attached to the hoisting-power H, the drum G is composed of two parts *k k'*. The part *k* is a frustum of a cone, and has one end of the elevating or hoisting-rope E attached to it, and the other part, *k'*, is of biconical form, and has the power-rope I attached to it. The form or shape of this drum G is shown clearly in fig. 2.

The elevating or hoisting-power H is constructed as follows, to wit, of a rectangular frame, *l*, having a bar, *m*, upon it, with a pulley, *n*, at its outer end, an arm, *o*, pivoted to the bar *m*, and a sweep, *p*, which works on an upright arbor, at a short distance from the pivot *r* of the arm *o*, as shown clearly in fig. 2. The stop *g* has a pendent hook, *s*, attached to it, which engages with the arm *o*, and causes said arm to rotate or travel around with the stop *g* a certain distance, the arm being freed from the hook of the sweep at a certain point, owing to the centres of the arm and sweep not coinciding with each other, as will be fully understood by referring to fig. 2.

The operation is as follows: The elevating or hoisting-power is placed by the side of the derrick A, the frame F turned down, and the derrick and hoisting-power secured to the ground by stakes or other suitable means. The hay to be stacked is to be brought, within the derrick A, between the two triangular frames *a a*, and the stack is built under the projecting end of the bar B. The elevating-rope E is down and unwound from the part *k* of the drum G, when the fork, which is attached to E, is inserted in the hay to be raised and deposited on the stack, and the rope I is wound upon the part *k'* of said drum, and the travelling pulley C is down on the bar B, near the outer triangular frame *a*, the catch D being engaged with a notch, *t*, in the under side of said bar. The sweep *p* is drawn around by the draught-animal in the direction indicated by arrow 1, and the rope

I unwinds from the part k' of said drum, and the rope E is wound upon it in a direction indicated by arrow 2, the rope unwinding from k' in the direction indicated by arrow 3. At the first elevating-movement of the fork, it will be seen that an increased power is obtained as E winds upon the small part of k , and I unwinds from the large part of k' .

This increased power is necessary, as more power is required to draw the loaded fork from the mass of hay within the derrick, the hay grasped or held by the fork being more or less entangled with said mass.

As the loaded fork is elevated, the power gradually decreases, and speed proportionably increases as E gradually winds upon the increasing diameter of k , and I unwinds from the larger diameter of k' towards the gradually decreasing diameter of the same, and then unwinding from the increasing diameter of k' . By this arrangement the power required to raise the loaded fork is rendered nearly constant or uniform. The loaded fork ascends until the stop g on the rope E comes in contact with the lower end of the catch D, and throws the front end of the latter out from notch a^x in the under side of B, and this admits of the frame c travelling outward on B under the pull of rope E, the fork with its load moving outward from the derrick until the arm o is disengaged from the sweep p , when the hay is discharged from the fork, and the frame c , by its own gravity, will descend or move down the bar B, carrying of course the fork with it over the hay within the derrick. The rope I passes around the pulley n of the bar m , and also around a pulley, m' , on frame l , which pulleys serve as guides for the rope, keeping it clear from the arm o and sweep p .

From the above description it will be seen that the device may be manipulated with the greatest facility, all the parts being under the complete control of the operator.

The ropes E and I are attached to the drum G by means of staples b^x , which admit of the ropes being attached to the drum at different points to regulate the hoisting distance of the fork, as may be desired.

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

1. In the construction of a hay-elevating device, I claim a derrick, composed of two flexible supporting-frames, so arranged that they shall be extended sufficiently to allow a load of hay to pass through between them, or contracted so as to pass through an ordinary farm-gate, substantially as described.

2. Supporting an elevated bar, B, by means of two independent supporting-frames, one of which is securely braced to it, so as to impart sufficient rigidity, while the other is loosely pivoted, so that as the base of the derrick is extended or contracted, the inclination of the bar B will be varied, for the purpose of preserving the proper inclination of the bar on slanting ground, and to facilitate the labor of putting up or taking down, substantially as shown and described.

3. In the arrangement for conveying the hay over the stack or other place where it is to be deposited, I claim the combination of the travelling pulley C, provided with a frame which straddles the bar upon which it works, the latch D applied to the frame of the travelling pulley, and working into a notch or catch on the under side of the bar, as herein shown and described.

4. Placing the drum G in a frame, F, connected to the derrick by joints or hinges, h , so that in hauling or moving the derrick it may be turned over in the centre, substantially as and for the purpose set forth.

5. The pulleys n m' on the hoisting-power frame l , the pendent hook s on the sweep p , in combination with the pivoted arm o , all arranged to operate in the manner substantially as and for the purpose set forth.

6. Arranging the hoisting or elevating-power H on the runners i i' of the supporting-frames, and securing it in this position to render the derrick rigid, substantially as herein shown and described.

WILLIAM LOUDEN.

Witnesses:

MORTIMER CRAIG,
R. A. DOUGHERTY.