

J. H. Jenkins,
Derrick

No 51,190,

Patented Nov. 28, 1865.

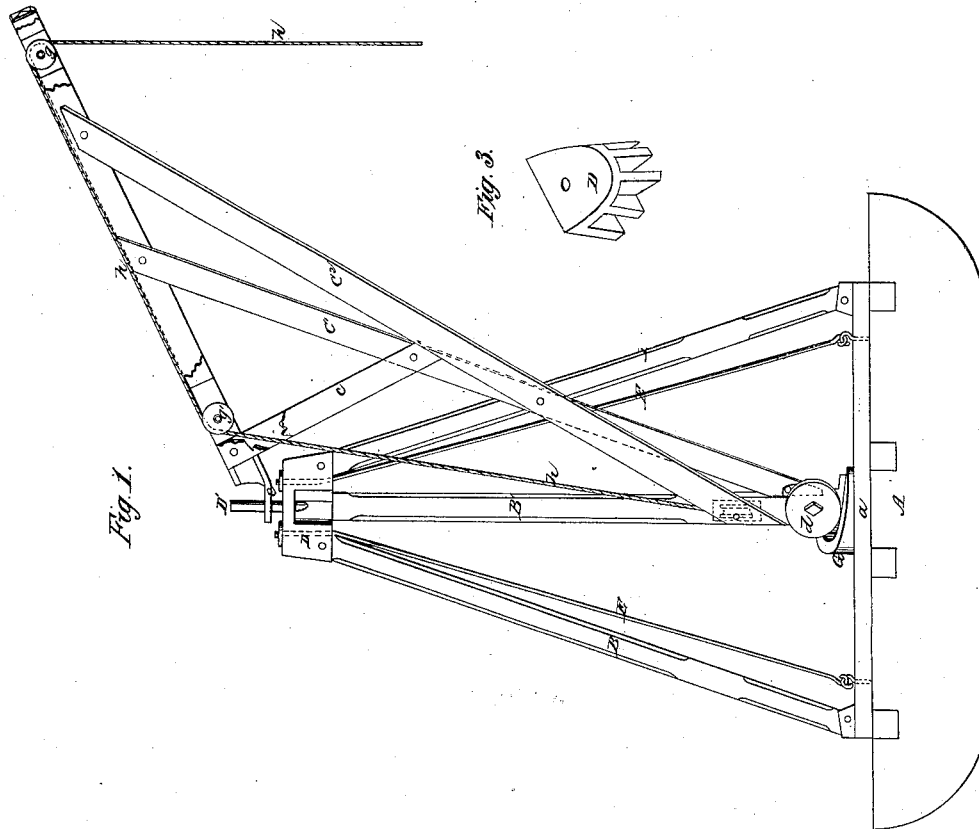
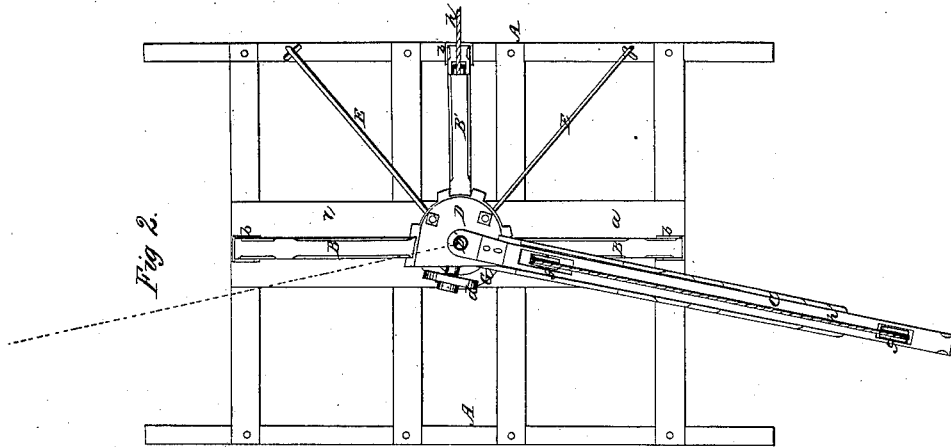
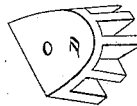


Fig. 3.



Witnesses
R. F. Campbell.
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Inventor
John H. Jenkins
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Mein Patrick & Co.

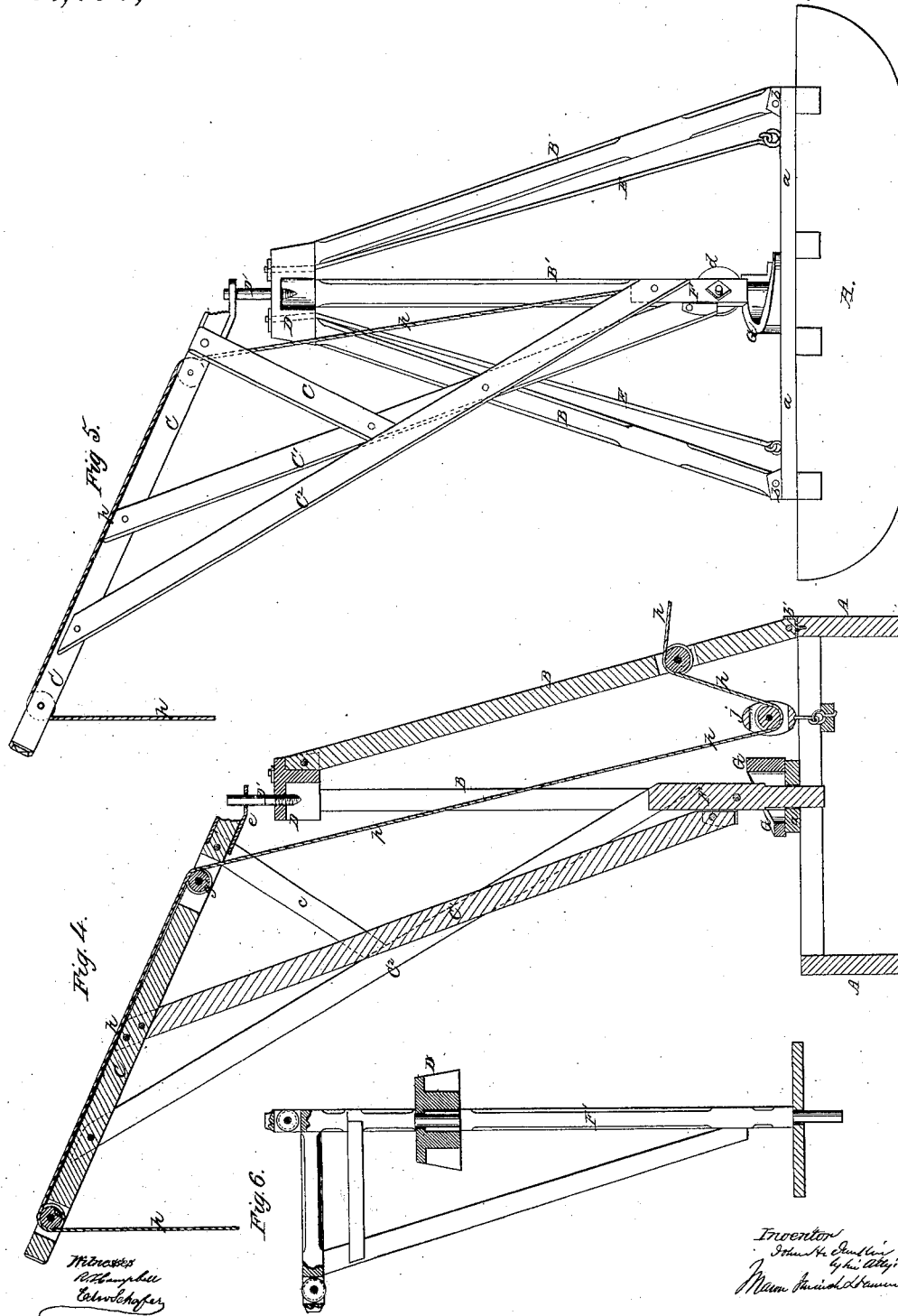
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Sheet 2 of 2 Sheets.

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UNITED STATES PATENT OFFICE.

JOHN H. JUNKINS, OF UPPER SANDUSKY, OHIO.

IMPROVED HAY-ELEVATOR.

Specification forming part of Letters Patent No. 51,190, dated November 28, 1865.

To all whom it may concern:

Be it known that I, JOHN H. JUNKINS, of Upper Sandusky, Wyandot county, State of Ohio, have invented a new and Improved Hay-Elevator; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, Sheet 1, is an elevation of the front of the elevator, showing the crane in a position for discharging the load upon the stack. Fig. 2, Sheet 1, is a top view of the machine. Fig. 3, Sheet 1, is a perspective view of the metallic cap for securing together the upper ends of the tripod-frame. Fig. 4, Sheet 2, is a vertical sectional view of the machine when the crane-arm is in a line with the line of draft. Fig. 5, Sheet 2, is an elevation of the front of the machine, showing the crane-arm in a position for receiving the load. Fig. 6, Sheet 2, shows a crane-arm secured to a central swinging post, it being a modification of the crane-arm without a central post.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements in the construction of machines which are adapted for elevating hay and depositing it upon stacks in the field.

The main object of my invention is to so construct a hay-elevator that the crane-arm, from which the load of hay is suspended by means of a fork and draft-rope, will automatically swing from the point at which said arm is loaded to the desired position over the stack for discharging the load, thereby relieving the horse of much labor and greatly facilitating the work of transferring hay from a wagon to a stack, as will be hereinafter described.

Another object of my invention is to arrange the pulleys over which the draft and suspension-rope is passed, in such manner that the act of drawing on one end of this rope will not be liable to upset or tilt the machine, for the reason that the weight on one side, and the power which is applied on the opposite side to lift this weight, will about balance the machine, as will be hereinafter described.

Another object of my invention is to so construct the frame which sustains the crane-arm,

and to apply this frame to a portable sled, that it shall have a very wide base and yet allow the crane to describe nearly a half-circle in swinging to and from the stack, said frame also being provided with tie-rods and a metallic cap, which latter is adapted to receive and confine the upper ends of the frame-beams in place and to serve as a bearing for the axis of the crane, whether a central post be used or not, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a sled, consisting of two side runners, which are connected together by means of transverse beams, upon which a longitudinal beam, *a*, is secured.

B B B' are three beams, which form a tripod for sustaining the crane-arm C upon the sled. The upper ends of these beams are secured in slots or sockets, which are formed in the sides of a cast-metal cap, D, shown in Fig. 3, and the lower ends of said beams are secured in shoes *b b b'*, which are bolted to the sled. The two shoes *b b* are located at the extremities of the central beam, *a*, and the shoe *b'* is bolted upon the upper edge of one of the sled-runners, as shown in Figs. 2 and 4. By thus arranging the legs of the tripod a free space is left between the two legs B B for the crane-arm braces to swing from one end to the other of the machine—a distance which is nearly equal to a semicircle. The overhanging load of the crane-arm and the weight which is added to this arm are sustained partly by the leg B' and partly by the tie-rods E E, which are attached by means of eyebolts to the sled at their lower ends, and to the cap D by means of nuts, by means of which latter this cap is drawn down firmly upon the legs of the tripod, so as to stiffen the entire structure and secure it rigidly to the sled.

At an intermediate point between the two legs B B, and in the center of the sled, is a circular inclined plane, the axis of the circle coinciding with the axis of motion of the crane-arm C, which would be indicated by a line dropped from the center of the pin B' projecting from the top of the cap D, as shown in Figs. 1, 2, 4, and 5.

The crane-arm C consists of an inclined beam,

which is sustained by means of inclined braces, $C' C^2$, that are connected at their lower ends to a short vertical post, F , the lower end of which passes loosely through the beam a . The braces $C' C^2$ are secured by means of short braces c to the lower end of the crane-arm, as shown in Figs. 1, 4, and 5. The lower part of the frame of the crane is supported upon the inclined plane G by means of a roller, d , the shaft of which passes transversely through the post F and is secured to this post. The upper end of the crane is pivoted to the vertical pin D' by means of a perforated plate, e , which is bolted to the lower end of the crane-arm. This crane may be constructed with a central post, F' , extending from the beam a on the sled through the cap-plate D , and projecting some distance above this plate. In this form of crane the arm C may be secured to its post in a position perpendicular to it, and braced by means of horizontal and inclined braces, as represented in Fig. 6.

The cap-plate D should be made in two sections to receive the cylindrical portion of the post F' , and to allow this post to rise or fall as it is turned to the right or to the left. Where the central post, F' , is employed the roller-bearing d is applied to it and moves upon the circular inclined plane G precisely in the manner described for the crane, (shown in Figs. 1, 2, 4, and 5,) which has no central post extending from the beam a to the cap-piece D .

Near the upper end of the jib or crane-arm C is a pulley, g , and near the lower end of this jib is another pulley, g' . Over these two pulleys g g' passes the draft-rope h , which is carried down and passed through a pulley-block, j , that is secured to the sled at an intermediate point between the inclined plane G and the foot of the beam B' , as shown in Fig. 4. From this block j the rope passes over a pulley on the beam B' , and thence to the horse, which walks in a line with the line of the pulleys. To the opposite end of the rope h a fork of any suitable description may be attached for gathering the load of hay and holding it until elevated and moved to a proper position over the stack for discharging it thereon.

The operation of transferring hay or other

product from a wagon to a stack is as follows: The horse is hitched to one end of the rope h , and a guy-rope attached to the fork, which is fastened to the other end of this rope. The machine is properly staked to the ground in such position with respect to the stack that this stack is at one end of the machine and the wagon at the opposite end. The operator now draws the crane-arm round over the wagon, which lifts the roller-bearing d to the highest point of the inclined plane. The fork is then loaded, after which the horse is started from the machine, so as to elevate the fork with its load to the proper height. This being done the horse is stopped and the crane-arm allowed to swing round of itself over the stack. After the hay has been dropped from the fork upon the stack the operator draws the crane-arm around over the wagon again for another load, and at the same time backs the horse so that he can start off again when the fork has been loaded. It is not intended that the horse should have any other work to perform than that of elevating the load of hay. The weight of such load will cause the crane or jib to swing around to the position for discharging the load, in consequence of its lower end being supported upon an inclined plane. When the load has been dropped upon the stack the attendant having hold of the guy-rope can easily move the jib back and draw down the fork.

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

1. So constructing a machine adapted for elevating hay or other material that it will automatically convey its load to the point of delivery at the pleasure of the attendant, substantially as described.

2. A swinging crane or jib of an elevating-machine, in combination with a sled, tripod-frame, tie-rods $E E$, and cap D , all arranged substantially as described.

Witness my hand in the matter of my application for a patent on an improved hay-elevator this 2d day of September, 1865.

JOHN H. JUNKINS.

Witnesses:

R. T. CAMPBELL,
EDW. SCHAFER.