

(No Model.)

J. HAWK.
THRASHING MACHINE.

No. 521,497.

Patented June 19, 1894.

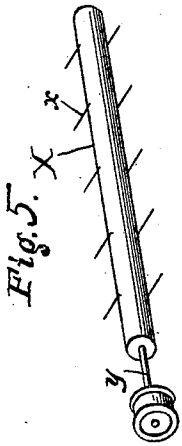
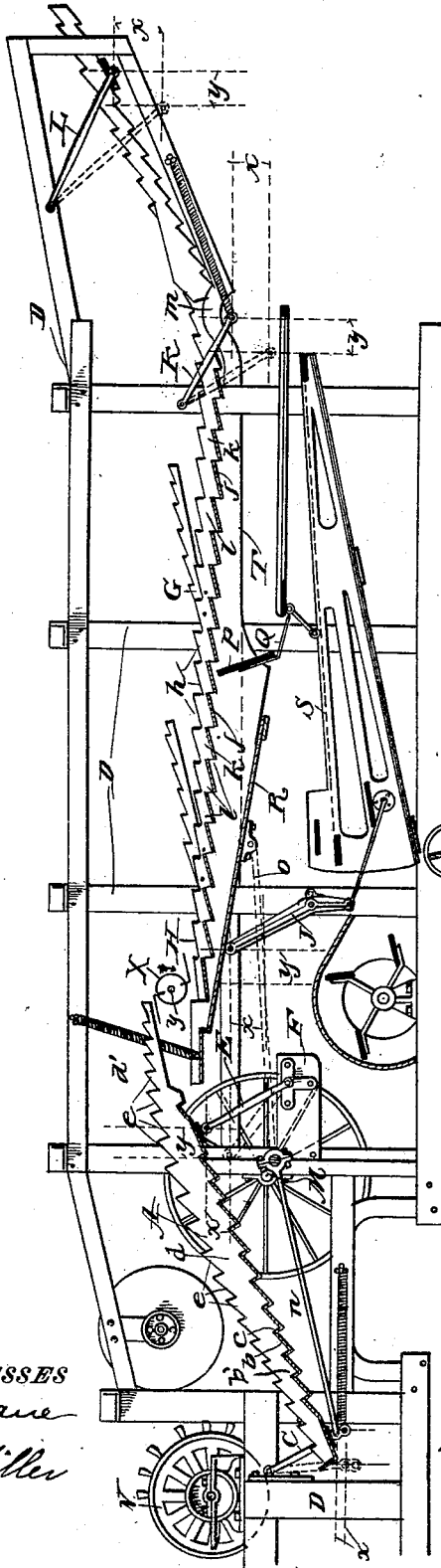


Fig. 1.

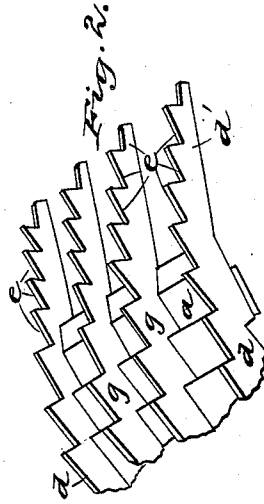


Fig. 2.

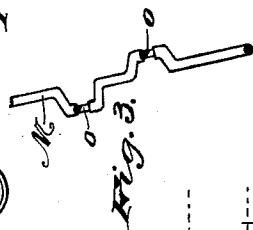


Fig. 3.

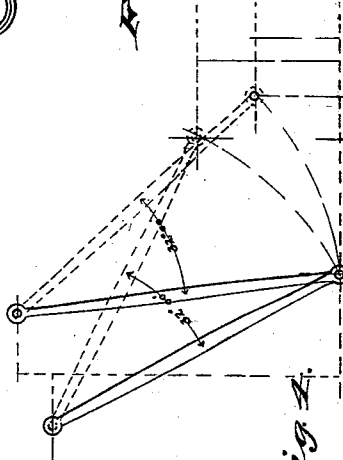


Fig. 4.

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UNITED STATES PATENT OFFICE.

JACOB HAWK, OF CANTON, OHIO.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 521,497, dated June 19, 1894.

Application filed January 22, 1894. Serial No. 497,609. (No model.)

To all whom it may concern:

Be it known that I, JACOB HAWK, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Thrashing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in thrashing machines and consists of certain features of construction and combination of parts as will be hereinafter described and pointed out in the claims.

Figure 1, of the accompanying drawings is a longitudinal section of a thrashing machine illustrating my invention. Fig. 2, is a perspective of the upper end portion of the elevator or mechanism for raising the grain up from the cylinder to the vibrator and grain board and table. Fig. 3, is a plan view of a fragment of the crank shaft. Fig. 4, is a diagram of the hangers. Fig. 5 is a perspective of the picker.

A represents the elevator, having buckets *a* formed by the bottom boards *b* and vertical boards *c*, and side boards *d*, forming buckets *b'*, the sides having in their upper edge a series of notches *e*, said boards having a projected portion *d'*, extending rearwardly beyond the body or bucket portion of the elevator to a point over and beyond the front end of the vibrator G. Between the side boards *d* is provided a series of division boards *g*, having an extended end portion *d''*, and notches *e* in the upper edge to correspond with the side boards *d* and extensions *d''*. The front and lower end portion of the elevator A is supported on a hanger C, that has a pivotal connection with the machine frame D and the end portion of the elevator, the upper or rear portion is supported on a rocker E, similar to the hanger C, placed below the elevator, pivotally secured to the elevator, and a support F provided therefor.

At the rear of the described elevator is provided a vibrator G, formed of a series of boards as H, having notches as *h*, cut in the upper and lower edges, placed side by side and spaced apart by the bottom board *j*, which form a series of drops or cells *k*, that open to the front as shown at *l*. This vibrator is

made in two parts and hinged together as shown at *m*, the front end is supported on a rocker J as shown, and the rear end on hangers K and L. The elevator A is connected with the crank shaft M, by a pitman *n*, and the vibrator G has also a pitman shown by dotted lines connected with a similar crank *o*, on the opposite side of the shaft M, (see Fig. 3,) by which arrangement the elevator and vibrator are moved to and from each other.

N represents the thrashing cylinder between which and the crank shaft, is formed the usual belt connection by which said shaft is rotated to vibrate the elevator and the vibrator which in addition to their together and apart movement, have a peculiar vertical movement, and to this peculiarity, I wish to call particular attention.

The position of the elevator A, being oblique to a line drawn longitudinally through the central portion of the body of the machine and centrally transverse, the crank shaft, the front end a distance below the crank shaft, the forward and back movement of the front end of the elevator, will be less than the throw of the crank. For the purposes of this case, the crank is supposed to have a throw of four and one half inches, the relative positions of the parts as show the front end of the elevator will be limited to three inches, and the vertical movement limited to one inch because of the peculiar and precise location of the supporting hanger C, while the rear end of the elevator supported on the rocker E, with the same forward and back movement, will have a vertically oblique movement; the vertical movement will be three and one half inches less than the throw of the crank. The object sought and attained by this movement of the elevator is an increased progressive movement of the grain and straw on the elevator, and a thinning or spreading out of the straw over the portion, the grain and straw being thrown or tossed higher and farther to the rear, the receding elevator will take farther back under the straw at the upper or rear portion of the elevator than at the front portion; this pitching and raking movement of the elevator will pull apart or thin out the straw over the elevator, to allow the grain to fall into the buckets *a* from the front row of which it is

pitched to the upper or rear bucket, to the front end of the vibrator G from which it falls to the grain board or table R, over which it flows to the riddle S, in the fanning mill, the straw passing on and over the open extension d'' from which it is thrown onto the vibrator G.

The front end of vibrator G supported as shown on rocker J, has a horizontal forward and back movement of four and a half inches, and a vertical movement of three inches, and at the hanger K a vertical movement of four inches, and at hanger L a vertical movement of five inches, the object of which is to attain a progressive elevation of the vibrator as it is moved rearwardly, the hangers K, and L, are pivoted to the frame a point below the length of the arms, when raised vertically above the point of connection with the vibrator, thus placing the arms at such an angle as will cause the described vertical movement, the object of which is to accelerate the movement of the straw as it approaches the rear end of the vibrator, thus pulling it apart and spreading it more thinly over the surface of the vibrator to allow the grain to fall through to the grain boards R and T, from which it will flow to the riddle S.

To further agitate and thin out the thrashed straw for the purpose of separating the grain therefrom, I have placed between the rear end portion of the vibrator A and the front end portion of the vibrator G, a revolving picker X located below the elevator A, and above the vibrator G as shown, having wire fingers x' projecting rearwardly from the line of rotation. The body or roller portion X is supported and rotated on journals y that rotate in journaled boxes secured to the sides of the machine.

In operation the picker is rotated with just such rapidity as to prevent the straw from winding about the body portion, the fingers passing between the extensions d' of the board d , that form the elevator A, and the boards H of the vibrator G, by which movement the straw is tossed up and rearward, and the grain separated therefrom. To prevent the short straw that falls from the separator falling endwise into the riddle, and thereby choking and filling the riddle with

straw, I have provided a drop board P, having at its lower end a shelf or rearwardly projected portion Q, the straws falling on this shelf will be turned rearwardly and as they fall from the shelf Q, will be caught by the wind from the fan and carried over the shoe, or if they do fall upon the riddle will fall sidewise and not through the riddle.

The diagram Fig. 4, simply illustrates that the position of the hangers serves to give such elevation as may be required to produce the desired elevation of the vibrator during its rearward movement. Lines x indicate the vertical movement and lines y the horizontal movement of the elevator and vibrator. For convenience I have referred to the vibrator separator G, as the vibrator.

Having thus fully described the nature and object of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a thrashing device, and supporting frame, of a vibrating elevator secured to said frame by links C and E, to vibrate diagonally and vertically to the frame, and having buckets as a and extended end portions d'' , a vibrating table G, and a picker X, located between said tables, the fingers x of the picker to pass up between the extended end portions d' , of the elevator, substantially as described and for the purpose set forth.

2. The combination with a thrashing device, and supporting frame, of a vibrating elevator A, having buckets a , and extended end portions d'' , a vibrating table G secured to the frame on links J, K and L to vibrate longitudinally and vertically thereon, the vertical movement to increase gradually from the front to the rear portion, of the picker X located between the rear end of the elevator A and the front end portion of the vibrator G, the fingers of said picker to pass up between the extended end portions d' of the elevator, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 13th day of June, A. D. 1893.

JACOB HAWK.

Witnesses:

W. K. MILLER,
BURT A. MILLER.