(No Model.)

H. BRYAN.

SHOE FOR THRASHING MACHINES.

No. 418,862. Patented Jan. 7, 1890

Fig. 1.

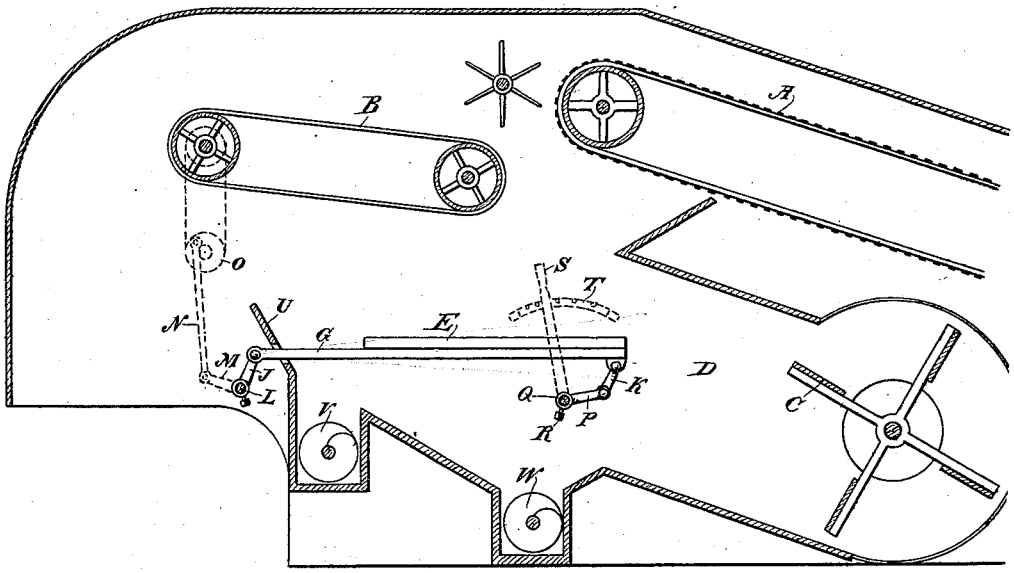


Fig. 2.

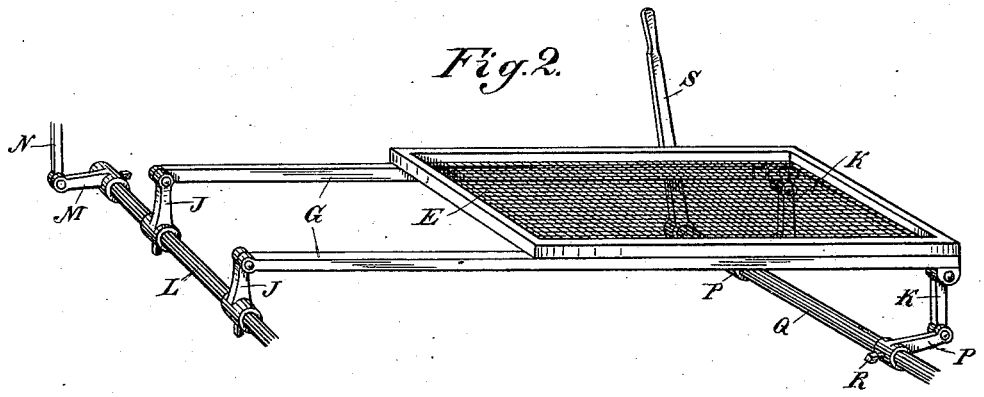
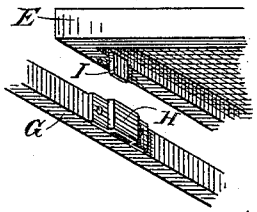


Fig. 3.



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UNITED STATES PATENT OFFICE

HENRY BRYAN, OF MODESTO, CALIFORNIA.

SHOE FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 418,862, dated January 7, 1890.

Application filed September 10, 1889. Serial No. 323,555. (No model.)

To all whom it may concern:

Be it known that I, HENRY BRYAN, of Modesto, Stanislaus county, State of California, have invented an Improvement in Cleaning-Shoes for Thrashing-Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in thrashing-machines, and it is especially applicable to the shoe in which the sieves or screens are fixed; and it consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

Figure 1 is a vertical longitudinal section taken through the rear portion of the thrashing-machine. Fig. 2 is a perspective view of the screen-frame and its supporting, oscillating, and adjusting devices. Fig. 3 is an enlarged view showing the means for attaching the screens to the oscillating frame.

A is the carrier by which the straw and grain are brought from the thrashing-cylinder. (Not here shown.) B is the straw-carrier, these parts being constructed in the usual manner and forming no part of my present invention. At the proper point beneath the discharge end of the carrier A is situated a screen or sieve, upon which the grain to be cleaned is allowed to fall, passing between the discharge end of the carrier A and the receiving end of the straw-carrier B in the usual manner.

C is the fan by which the blast of air is discharged through the trunk or channel D, part of it passing above and the other part below the sieve E, upon which the grain falls. This sieve consists of the usual frame with the wire cloth or netting stretched across it and fastened to it, and it is supported upon the two side bars G in the following manner: Upon each of these bars are fixed sockets H, and upon each corner of the sieve-frame are fixed the angle-pieces or lugs I, which are adapted to slip into the sockets H and thus hold the sieve in place while allowing it to be easily removed whenever necessary.

The bars G G take the place of the ordinary shoe in which the cleaning-sieves are usually fixed. At each end they are supported upon the crank-arms J and K. The crank-arms J are fixed by adjusting-screws to the shaft L, which extends across the rear portion of the machine, just behind and below the tail-board, this shaft extending through the sides of the machine and having its journal-boxes upon the outside, so as to be clear of the dust and dirt which collect within the machine.

Upon the outer end of the shaft L is the rocker-arm M, and this is connected, by means of a rod N, with an eccentric or crank-wheel O, which is situated preferably in line above the rocker-arm M, so that the motion is transmitted vertically, or nearly so, to this arm, and through it the oscillations of the shaft L and the arms J take place and are communicated through the side bars G to the similar crank-arms K at the front end of the sieve. These arms K are pivoted to other arms P, which are fixed in turn to the shaft Q by means of set-screws or other suitable fastening devices. Upon the outer end of the shaft Q is the lever-arm S, which engages with a rack T, so as to be held in any desirable position. By moving the lever-arm S the shaft Q will be turned, and either raise or depress the arms P, thus correspondingly raising or depressing the arms K and the front or receiving end of the sieve E. By altering the position of the arms P upon the shaft Q the position of the end of the sieve may be correspondingly changed with reference to the rear end, which is supported by the crank-arms J, while the adjustability of both sets of arms J and K enable me to give a more or less vertical oscillation to the sieve. The arms G are of suitable length, and pass through slots in the tail-board U, connecting with the crank-arms J, which are situated behind the tail-board and out of the way of the greater portion of the dirt and dust which comes from the sieve. The crank-arms J and K are set at such an angle with reference to the shaft L that when the crank-wheel O is rotated by its connection with some convenient driving portion of the machinery, these arms will produce a rising-and-falling movement of the arms G and the sieve E. This movement is especially useful in clearing the sieve of green heavy weeds, which are often cut and carried through the thrashing and cleaning machinery, and which are very liable to clog the cleaning-sieves. With the usual rotary or tossing motions, which give the sieve a movement to

the rear in addition to the upward movement, if this movement is violent enough to lift and throw off the green weeds it will also throw the grain off with it; but by the comparatively vertical movement which I give to the sieve by the peculiar motion herein described I lift the weeds continuously and allow the grain to settle through and separate from them. The blast of air passing through the trunk D is discharged through and above the sieve, the front end of which is suspended, as shown in Fig. 1, within the discharge end of the trunk.

By changing the position of the arms P upon the shaft Q, I am enabled to raise or depress the front or receiving end of the sieve, and thus increase or retard the movement of the material over it. This adjustment also enables me to vary the proportion of air which passes below and above the sieve by simply raising or depressing the receiving end.

V is the auger which carries the unthrashed heads and such heavy material as is discharged over the rear end of the machine to one side to be returned to the thrashing-cylinder, and W is the auger which delivers the clean grain to the proper elevator in the usual manner.

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

1. A grain-cleaner consisting of the independent parallel bars G, the sieve or screen removably supported upon said bars, the crank-arms J and K, by which the opposite ends of the bars G are supported, and the shafts L and Q, the rocker-arm M, adjustable on said shaft L, the crank-wheel O, and the intermediate connecting-rod N, substantially as described.

2. The vertically-oscillating parallel bars G, having the sockets H fixed upon them, in combination with sieves E, having the angle-irons or lugs I fixed to the corners and adapted to enter the sockets, substantially as described.

3. In a grain-cleaning device, the parallel bars G, having the screen or sieve removably supported upon them, and the crank-arms by which opposite ends of said bars are supported, shafts L, to which the rear crank-arms are fixed, turning in stationary journal-boxes, the shaft Q, having the arms P, to which the front crank-arms are pivoted, said arms P being adjustable so as to raise or depress the front end of the screen with reference to the rear end, a fan, and an air-trunk, in which the front end of the bars G and sieve are suspended, substantially as described.

4. In a grain-cleaning device, the parallel bars having the sieve fixed upon them, an air-trunk in which the front of the bars and sieve are suspended, crank-arms by which a vertical tossing movement of said bars and sieve is produced, a shaft extending beneath the front portion of the sieve and having supplemental arms to which the front crank-arms are pivoted, a fan, adapted to discharge a part of its blast above and a part below the sieve, the lever by which said shaft may be turned so as to raise or depress its arms and the sieve, and the holding-rack, substantially as described.

In witness whereof I have hereunto set my hand.

HENRY BRYAN.

Witnesses:
GEO. H. STRONG,
S. H. NOURSE.