(No Model.) 2 Sheets—Sheet 1.

R. L. COOLEY.

AUTOMATIC FEEDER FOR THRASHING MACHINES.

No. 522,451. Patented July 3, 1894.

Fig. 1.

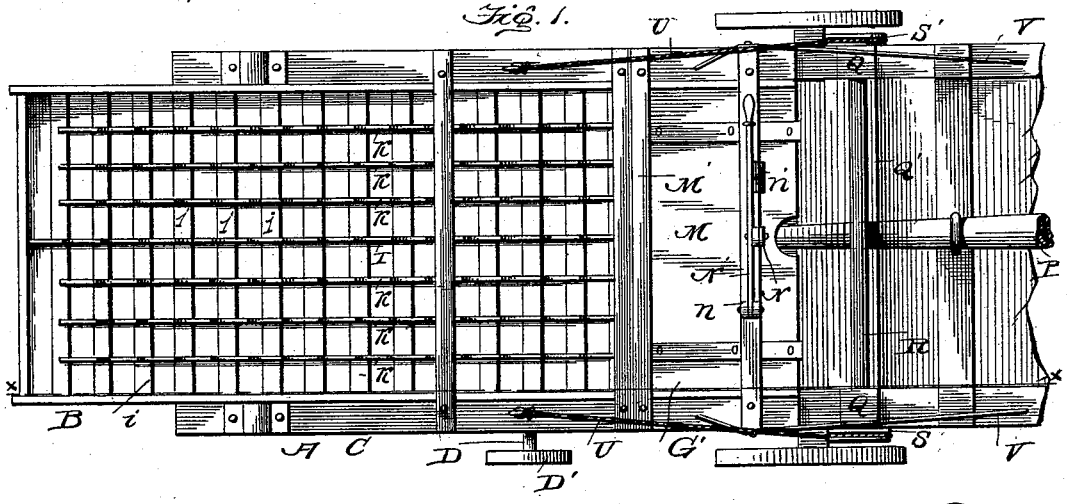
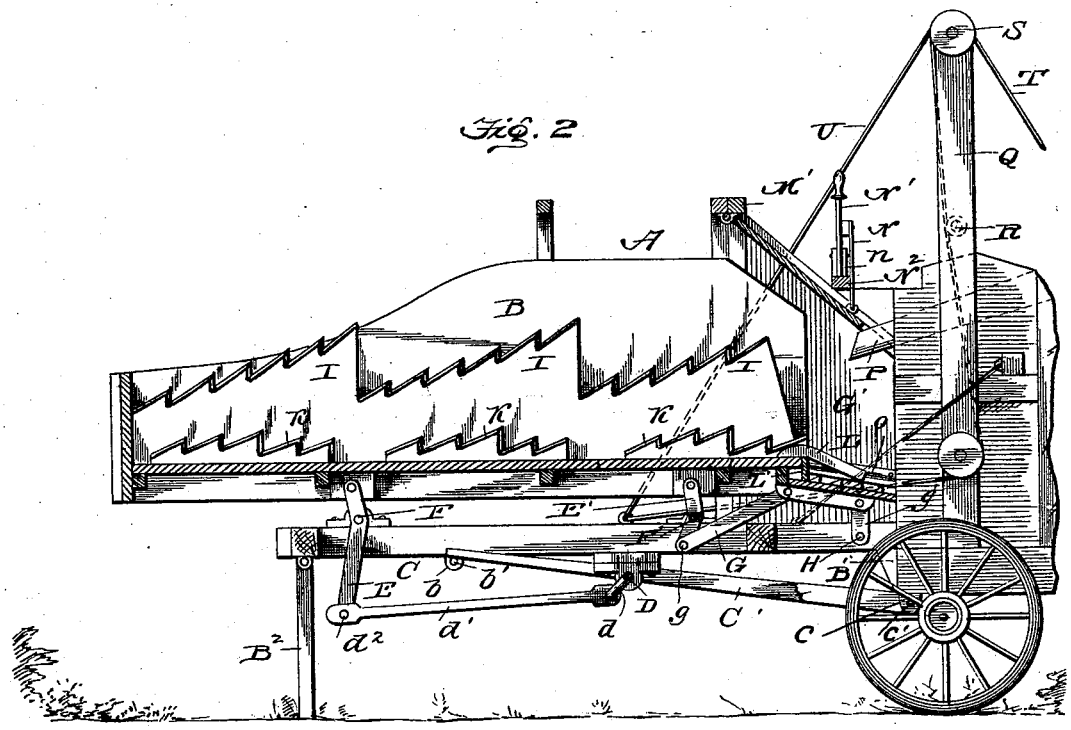


Fig. 2



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(No Model.) 2 Sheets—Sheet 2.

R. L. COOLEY.

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Fig. 3.

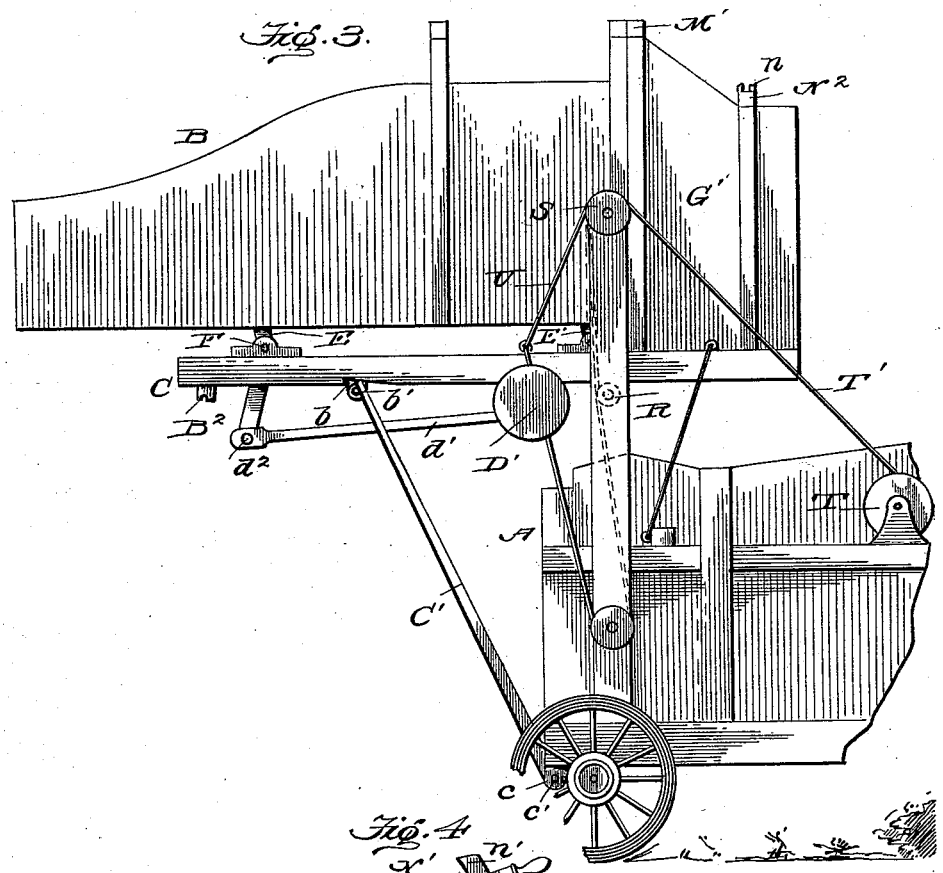
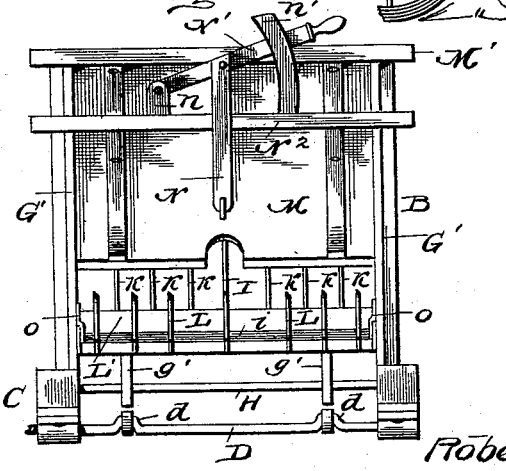


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT L. COOLEY, OF ABILENE, KANSAS, ASSIGNOR OF ONE-HALF TO JOHN T. PRENDERGAST, OF SAME PLACE.

AUTOMATIC FEEDER FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 522,451, dated July 3, 1894.

Application filed February 19, 1894. Serial No. 500,758. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. COOLEY, a citizen of the United States, residing at Abilene, in the county of Dickinson and State of Kansas, have invented certain new and useful Improvements in Automatic Feeders for Thrashing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in mechanism for automatically feeding grain to thrashing machines and the main object of the invention is to provide an apparatus which can easily be attached to any style of machine and by which the grain will be uniformly and evenly fed to the thrashing mechanism.

Another object of the invention is to provide an automatic feeder, for the purpose stated above, which will occupy a minimum amount of space and which, when not in use, can be easily secured in position on top of the thrashing machine.

With these and such other objects in view as pertain to my invention, it consists in the novel combination of devices, and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings,—Figure 1 is a top plan view of my improved automatic feeder for thrashing machines. Fig. 2 is a vertical longitudinal sectional view on the line *x x* of Fig. 1. Fig. 3 is a side elevation showing the arrangement of parts when the machine is not in use and the feeder is supported on top thereof. Fig. 4 is a front elevation of the feeder.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates a thrashing machine which may be of any desired style and size and, B, designates the main shaker or vibrating receptacle of my improved automatic feeder.

My improved feeder is supported, in a manner and by means to be hereinafter particularly pointed out, on a frame, C, which is itself primarily supported, when the apparatus is in use by inclined braces or arms, C′, which are connected with the forward axle of the thrashing machine at one end and with said frame, C, at their other ends. The upper ends of the inclined braces, C′, preferably extend between parallel depending ears or plates, *b*, attached to the longitudinal members of the frame, C, and are pivotally supported in that position by transverse pivot-bolts, *b′*; while the lower ends of said braces extend between parallel ears or plates, *c*, on the forward axle of the thrashing machine and are held in such position by transverse pivot-bolts, *c′*.

When the feeder is in position for use the rear ends of the frame, C, thereof rest on and are partially supported by suitable castings, B′, attached to the forward end sills of the supporting frame of the thrasher; and the outer end of the feeder may in some cases be further supported by uprights or standards, B^2. A main operating shaft, D, is journaled in suitable bearings on the under side of the side members of the frame, C, and at one end said shaft is provided with a suitable driving pulley, D′, belted to any desirable power mechanism. The main shaker, B, is supported by arms, E, E′, which are rigidly connected, at intermediate points of their length to transverse rock shafts, F, F′, journaled in bearings in the side pieces of the frame, C, on opposite sides of the main shaft, D. The arms, E, are connected, near their lower ends, with cranks, *d*, on the driving shaft by means of suitable rods, *d′*, which are in turn preferably connected by a transverse rod or bar, d^2. The arms, E′, are connected, near their lower ends, to rearwardly and upwardly extended arms, G, the rear ends of which are rigidly attached to an auxiliary shaker, G′, while said arms are connected, near their lower ends, by a transverse bar, *g*. Said auxiliary shaker, G′, is further supported by depending pieces, *g′*, which are connected, at their lower ends, to a transverse rock shaft H.

The interior of the main shaker, B, is preferably divided into two longitudinal compartments by a series of knives or cutters, I, secured along the median line thereof and extending at their highest points substantially to the top of said shaker. The bottom of the

shaker, B, which may be made of metal or covered with metal is provided with a series of parallel transverse slats or ribs, *i*, which extend throughout the length of the shaker and in each compartment of the shaker are arranged series of knives or cutters, K, of less height than the central knives I. The cutters, K, which as well as the cutters, I, may be attached to the bottom of the shaker by any suitable means, are preferably arranged in groups as shown in Fig. 1 of the drawings.

At its rear end the main shaker, B, is provided with a series of parallel knives, L, which project beyond the end of said main shaker and downwardly over the auxiliary shaker, G'. The knives, L, are preferably arranged between the knives, K; and to the forward end of the main shaker is attached the upper end of a curtain or strip, L', which contacts at its lower end with the upper surface of the auxiliary shaker and prevents any grain that may fall into said auxiliary shaker from escaping below the main shaker. The upper surface of the auxiliary shaker is provided with a series of transverse slats or ribs similar to those in the bottom of the main shaker. The auxiliary shaker is partially covered and the size of the throat or opening at the forward end of the feeder is regulated by an adjustable feed board, M, which is hinged at its upper end to the upper transverse member of the frame, M', the lower ends of the vertical members of which are adapted to fit into sockets in the frame, C. The feed board is connected, by an arm, N, with a lever, N', fulcrumed at one end to a support, *n*, carried by the upper member of a frame, N^2, the lower ends of the vertical members of which are adapted to fit into sockets formed in the frame, C, in advance of the frame, M'. The outer end of the lever, N', extends through a suitable guide, *n'*, and may be held in any desired position by a pawl engaging with teeth on said guide or by any other suitable means. The frames, M', N^2, are connected by side pieces, O, the inner faces of which contact with the ends of the adjustable feed board. On the inner faces of said side pieces are secured guard strips, *o*, of leather or similar material which extend over the sides of the auxiliary shaker as shown in Fig. 4 of the drawings.

As shown in Fig. 2 of the drawings the forward end of the tailings spout, P, of the thrasher extends through an opening in the adjustable feed board.

In order that the feeder when not in use may be hoisted into position on top of the thrashing machine as indicated in Fig. 3 of the drawings I arrange on opposite sides of said machine, near the rear end thereof, a pair of parallel vertical standards, Q, which are connected by a transverse bar or brace, Q', that extends just below the tailings spout of the machine. A supporting roller, R, is mounted on trunnions which are journaled in the uprights, Q, above the cross piece, Q', and on said roller the automatic feeder rests when hoisted to the position shown in Fig. 3. On the outer faces of the uprights, Q, near both ends thereof are mounted pulleys, S, S'. A windlass or winding shaft, T, is supported above the thrasher in rear of the uprights, Q, and to said windlass are connected one end of ropes or cables, T', which extends over the upper pulleys, S, and are attached at their other ends to the side pieces or members of the feeder supporting frame, C. When the feeder is in position for use auxiliary cables, U, may be brought from the side pieces of the frame, C, under the pulleys, S', and over the pulleys, S, back to the winding shaft. When in this position the feeder is also connected with the thrashing machine by brace rods, V, which can be connected to the frame, C, of the feeder at one end and provided with hooks adapted to take into suitable eyes or staples on the machine at their other ends.

The operation of my invention may be briefly stated as follows:—The sheaves of grain to be thrashed are pitched into the main or primary shaker, B, at the forward end thereof. The vibrating motion of the shaker forces the sheaves toward the thrashing machine and as such sheaves move longitudinally of the feeder the bands thereof are severed by the stationary knives or cutters. The slats on the bottom of the shaker assist in forcing the grain therethrough. As the grain passes from the main to the auxiliary shaker the heads thereof being heaviest drop between the knives, L, into the auxiliary shaker, which feeds them to the cylinder of the thrasher, while the butts of the grain are elevated and spread out by said knives, L, thus effectually preventing irregular feeding or clogging of the cylinder.

The adjustable feed board can be easily adjusted to vary the size of the throat of the feeder according to the condition of the grain being thrashed.

The central knives or cutters, I, besides aiding in severing the bands of sheaves pitched onto the main shaker also operate to prevent any sheaves, which may be thrown across the shaker, from being fed in that position. In case it is desired to thrash loose unbound grain such knives, I, may be removed.

When the desired amount of grain has been thrashed or for any reason it is desired to move the machine, the feeder can be raised by means of the ropes or cables, T', and drawn over and upon the supporting roller, R, as indicated in Fig. 3 of the drawings. The inclined braces, C', are pivoted at both ends so that they do not interfere with the movement of the feeder just described.

If desirable a spout may be arranged at the rear end of the auxiliary shaker in order that any grain which might be freed before reaching the thrashing mechanism will be conducted to a suitable receptacle and not lost.

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

1. In an automatic feeder for thrashing machines, the combination of a main shaker provided with a longitudinal central knife or cutter and the series of auxiliary knives on opposite sides of the central cutter, an auxiliary shaker below the inner receiving end of said main shaker to receive therefrom, and mechanism for reciprocating said shakers, substantially as and for the purposes described.

2. In an automatic feeder for thrashing machines, the combination of a main shaker provided with band cutting knives, an auxiliary shaker situated below the inner end of said main shaker, and the knives L carried by the main shaker, at the inner end thereof, and projecting over the auxiliary shaker, substantially as and for the purposes described.

3. An automatic feeder for thrashing machines consisting of a main shaker having its interior divided into two parallel compartments by a central knife or cutter, and a series of knives or cutters arranged in each compartment, an auxiliary shaker arranged below and in rear of the main shaker, and means for communicating motion to said shakers, substantially as described.

In testimony whereof I affix my signature in presence of witnesses.

ROBERT L. COOLEY.

Witnesses:
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A. W. LIVINGSTON,
JON: MIDDLETON.