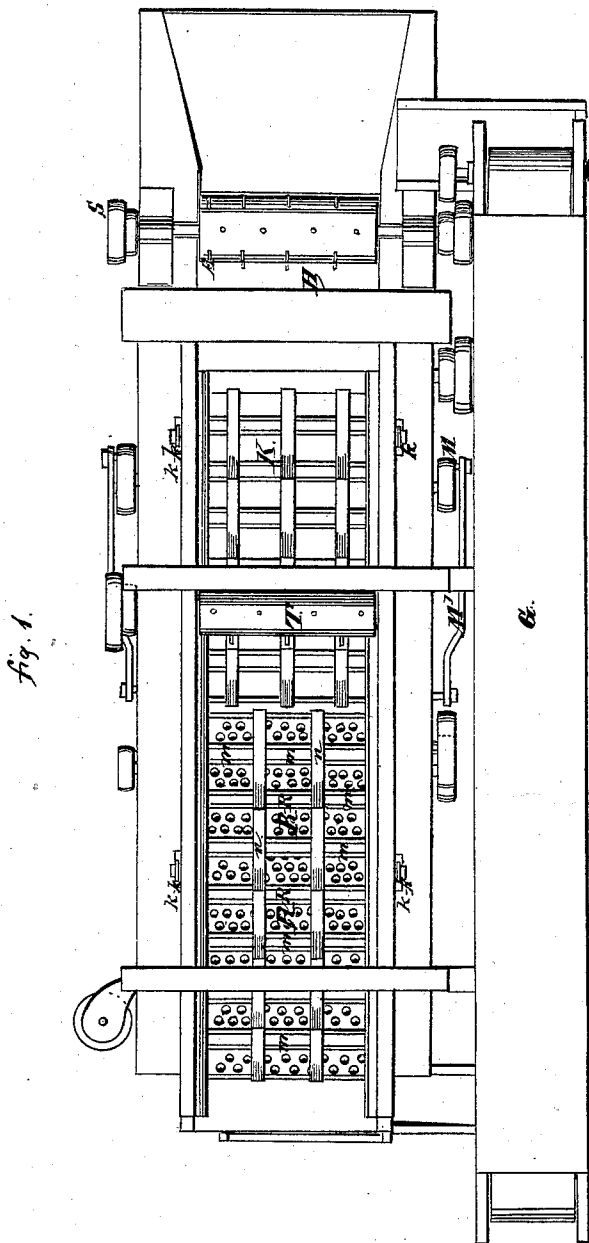


I. T. BARTON.

Machines for Thrashing and Hulling Clover.

No. 138,366.

Patented April 29, 1873.



Witnesses:

Heinrich L. Bruns.
C. B. Dennis

Inventor:

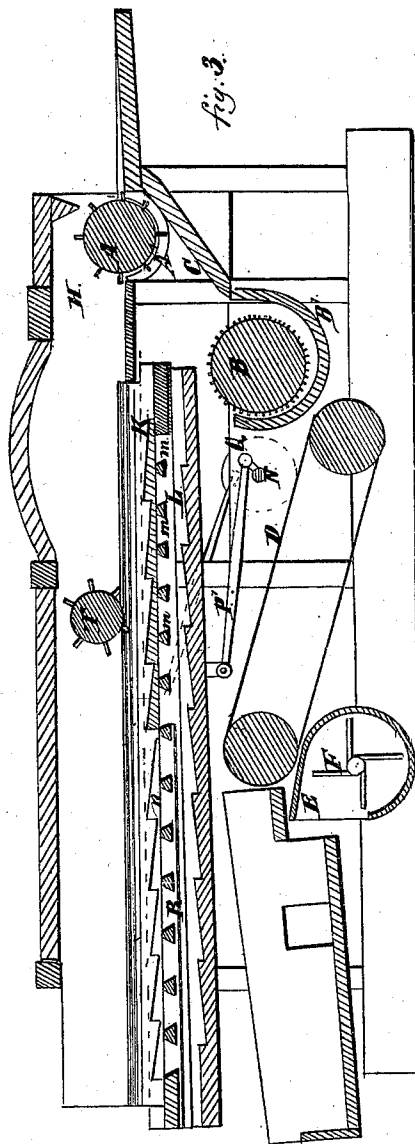
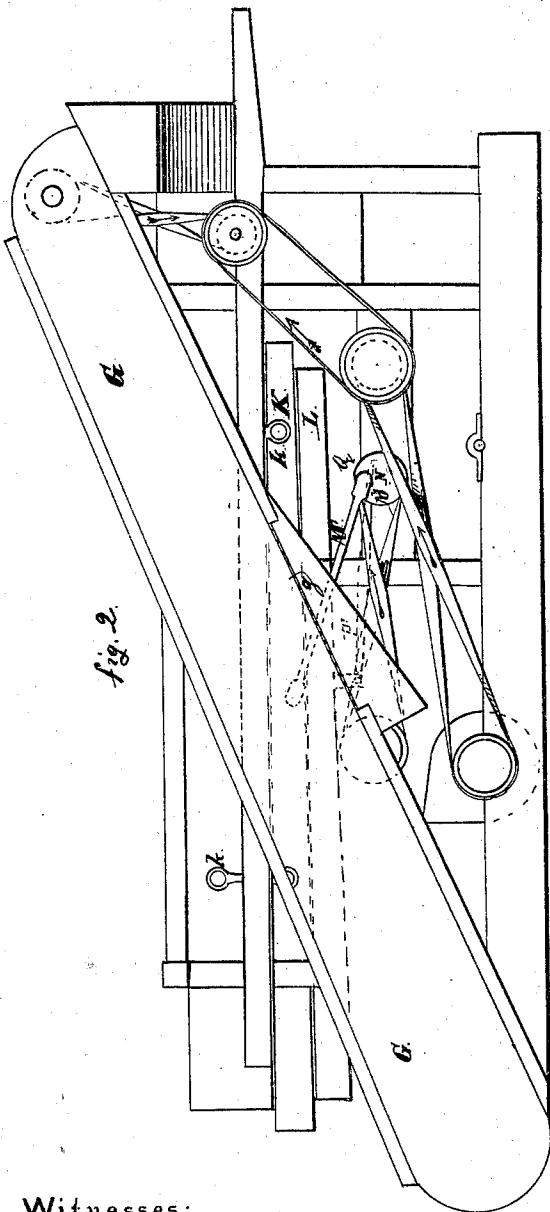
Isaac S. Barton
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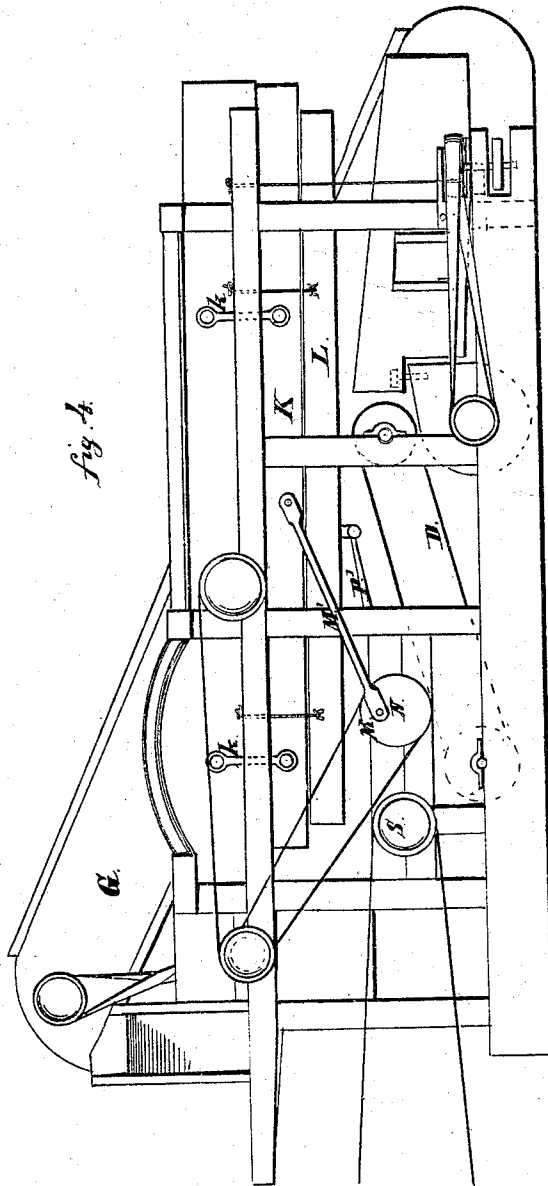
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UNITED STATES PATENT OFFICE.

ISAAC T. BARTON, OF UNION CITY, MICHIGAN.

IMPROVEMENT IN MACHINES FOR THRASHING AND HULLING CLOVER.

Specification forming part of Letters Patent No. **138,366**, dated April 29, 1873; application filed February 14, 1873.

To all whom it may concern:

Be it known that I, ISAAC T. BARTON, of Union City, in the county of Branch and State of Michigan, have invented certain Improvements in Machines for Thrashing, Hulling, and Separating Clover, of which the following is a specification:

Nature of the Invention.

This invention relates to improvements in the construction and arrangement of the several devices and mechanisms described, constituting a machine for thrashing, hulling, and separating clover-seed; and the invention consists in employing a slotted concave for the thrashing-cylinder, below which is an inclined way so arranged that the greater portion of the chaff and seed mingled therewith is taken from the thrashing-cylinder by said inclined feed-board directly to the hulling-cylinder without going with the straw; and it further consists in the construction of a reciprocating straw-carrier with inclined ratchet-ribs on its upper surface, a bottom of slats, or a coarse riddle and a supplemental riddle or sieve underneath of finer meshes or perforations; and it further consists in the construction and employment of an imperforate ratchet-ribbed conveyer beneath the straw-carrier depressed toward the tail of the machine and rising toward the cylinders to convey to the hulling apparatus the mingled chaff and seed from which the straw is separated by the straw-carrier; and it also consists in applying to the bottom of the elevator, which conveys the chaff, &c., from the fan back to the thrasher, a sieve or sifter about half way up its length to eliminate such seed as may fall through in the passage.

In the accompanying drawing, which forms a part of this specification, Figure 1 is a top or plan view of the machine with the covering removed. Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal vertical section taken on the line *x x* of Fig. 1. Fig. 4 is a side elevation of the machine from the other side.

Like letters of reference made use of in the several figures indicate like parts wherever used.

General Description.

In said drawing, A represents the thrashing-cylinder, which plays in a slotted concave, A'.

B is the hulling-cylinder placed behind and below the thrashing-cylinder, and playing in the casement or concave B', which is of considerably larger diameter than the cylinder, and placed eccentric thereto, as shown clearly in section at Fig. 3 of the drawing. This construction of huller allows the chaff to feed in as fast as it can be hulled, and dispenses with the feed-rollers usually found necessary. From below the thrashing-cylinder to the mouth of the huller extends the inclined feed-way C, upon which falls the larger portion of the chaff from the thrasher, said chaff going directly into the huller along the feed-way without again mixing with the straw. I find that about nine-tenths of the chaff is so disposed of. From the huller the seed and chaff are discharged upon an endless apron, D, and by it conveyed to the sieve or fanning-mill E, of which F is the blast-fan. The seed is here cleansed in the usual manner by appropriate and well-known mechanism. The tailings are delivered to the elevator G and conveyed back again to the huller by way of the thrashing-cylinder. About half way up the elevator G, and in the bottom thereof, is a sieve or screen, g, which, if desired, may be vibrated by any common mechanism. Through this sieve passes such of the seed as may have found its way to the under side of the belt, and is caught in a trough (not shown in the drawing) and delivered again to the fanning-mill to be cleaned with the rest. The straw or stalks of the clover and such portion of the chaff as is not forced through the slots of the thrasher-concave are forced by the cylinder through the throat H or hood, and cast upon the sifting conveyer K, which, vibrating, shakes the chaff through its slats and conveys the stalks and straw out of the machine. The chaff falls through upon the conveyer L, which carries it back into the huller. The sifting-conveyer K is made with transverse slats or bars *m*, upon which rests a series of longitudinal ribs, *n*, the upper surface of which are serrated ratchet fashion with the lowest ends of the serrations or ratchets toward the thrashing-cylinder. The whole conveyer K is swung from the frame-work of the machine by the pivoted connections *k*, so that it is free to vibrate longitudinally. Motion is communicated to it by

means of cranks M situated at the outer extremities of the crank-shaft N. From each of these two cranks a pitman, M', proceeds to the body of the conveyer, where it is pivoted. The cranks M are so quartered upon the shaft as to give the conveyer K an up-lift while it is going to the rear or away from the thrashing-cylinder. By this peculiar motion the stalks and straw are lifted along readily to the discharge.

The lower conveyer L is made in a similar manner, except that the flooring is imperforate and the incline of the ratchets is in the opposite direction. The crank Q, which operates this latter conveyer through the pitman P', is also upon the crank-shaft N; but is located in the middle of the shaft, and the pitman is connected to the under side of the conveyer. This arrangement of the cranks serves to steady the machine. The crank Q which operates the lower conveyer is set at a different quarter to the outer cranks, so that said lower conveyer has the "up-lift" in the opposite direction to the conveyer K, and the chaff lying upon it is consequently carried toward the hulling-cylinder and delivered into it. I find it desirable to provide the upper conveyer K with a screen or sifter, R, placed below the slats, so that the chaff-conveyer shall not be deluged with the blossom and leafage of the clover, which, being light, goes with the straw to this point, and, if not sifted, would pass back with the chaff to the huller in an endless round. The disposition of the shafting and belting and transmission of power are sufficiently explained by the drawing and the arrows marked thereon, and it is deemed unnecessary herein to further describe it. The

power to drive the machine is applied to the driving-pulley S, and from its shaft communicated by belting and cranks to the various mechanisms. Above the conveyer K is placed a revolving beater or separating-cylinder, T, for the purpose of stirring up and further separating the chaff, seed, and straw as it passes beneath. This cylinder also assists in crowding along the straw and stalks toward the discharge.

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

1. The combination of the thrashing-cylinder A, slat concave A', hulling-cylinder B, and concave B', arranged, as herein described, to separate the straw from the mingled chaff and seed, and cause the bulk of the latter to pass from the thrasher through the concave directly to the hulling-cylinder, as explained.

2. The conveyer K with ratchet-teeth or ribs *n*, slat bottom *m*, and supplemental riddle R, all constructed and arranged substantially as herein described.

3. The reciprocating imperforate ratchet-conveyer L depressed toward the tail of the machine, and employed, in combination with the reciprocating straw-carrier K, constructed as described, to convey to the huller the seed and chaff separated from the straw by the said carrier K, as explained.

4. The sieve *g* placed in the bottom of the elevator G, in combination therewith, substantially as specified.

ISAAC T. BARTON.

Witnesses:

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HEINRICH F. BRUNS.