

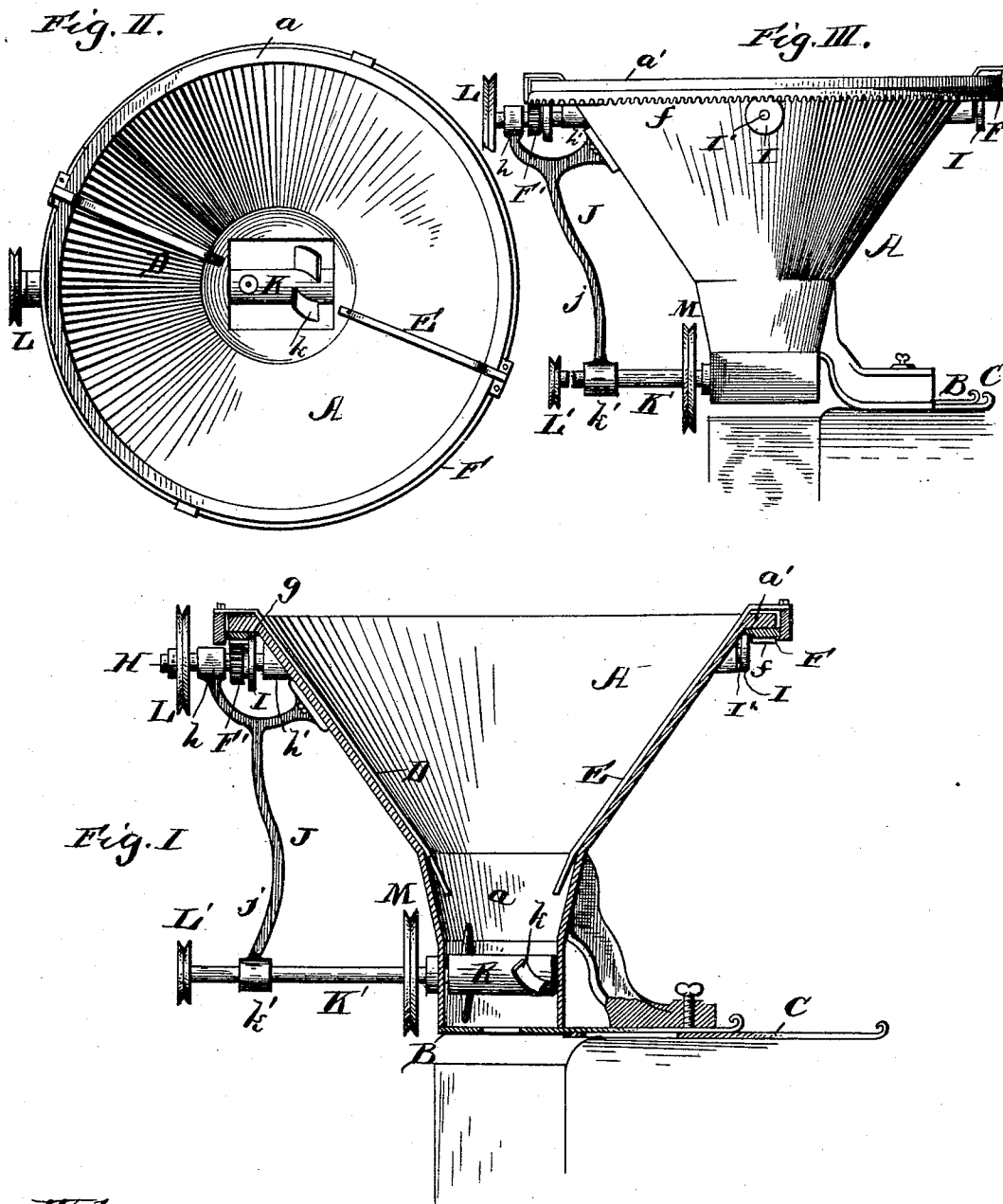
(No Model.)

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FEEDING MECHANISM FOR COTTON SEED DELINTING MACHINES.

No. 458,435.

Patented Aug. 25, 1891.



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UNITED STATES PATENT OFFICE.

JOHN WALDRON AND CHARLES H. SPROUT, OF MUNCY, PENNSYLVANIA.

FEEDING MECHANISM FOR COTTON-SEED-DELINTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 458,435, dated August 25, 1891.

Application filed April 2, 1891. Serial No. 387,426. (No model.)

To all whom it may concern:

Be it known that we, JOHN WALDRON and CHARLES H. SPROUT, citizens of the United States, residing at Muncy, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Feeding Mechanism for Cotton-Seed-Delinting Machines; and we 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.

Our invention relates to agitating and feeding mechanism especially adapted for cotton-seed machines; and the object is to obviate the liability of cotton-seed adhering to the hopper and bridging in the throat thereof, and to insure a steady and free feeding of the cotton-seed through the throat of the hopper.

With these ends in view our invention consists of agitators (one or more) arranged to travel around the interior of the hopper, preferably close to the inner surface thereof, and also operating in the throat, in combination with means for imparting positive movement to said traveling agitators.

In practice we prefer to attach the agitators to a revoluble rim or annulus supported on the hopper and driven by a shaft, which in turn is belted or geared to the shaft which carries the rotary feed-cylinder operating in the throat of the hopper.

Our invention further consists in the novel combination of devices and peculiar construction and arrangement of parts, as will be hereinafter more fully described and claimed.

To enable others to understand our invention more readily, we have illustrated the same in the accompanying drawings, in which—

Figure I is a vertical sectional view through a hopper with our improvements applied thereto. Fig. II is a plan view, and Fig. III is an elevation.

Like letters of reference denote corresponding parts in the several figures.

A designates an ordinary bell-mouth hopper provided with the contracted throat *a*, and B C are the perforated regulating-slides, arranged one above the other and operating across the throat *a* of the hopper to vary the feed of

cotton-seed in the manner well understood in the art.

D E are the agitator-arms of our invention which are arranged on the inside of the hopper close to the surface thereof to sweep off any seed which may adhere to the hopper. Said agitator-arms are inclined to conform to the angle or position of the hopper, and the lower ends of said agitator-arms extend into the throat *a* of the hopper to more effectually prevent the cotton-seed from bridging in the throat *a*, or accumulating therein to such an extent as to choke the throat, which is one of the objections heretofore made to this class of machines. The agitator-arms are placed at points diametrically opposite in the hopper, and the upper ends of said arms are rigidly attached by any preferred means to a horizontal ring or annulus F, which is supported on the hopper so as to rotate around the same, and which is driven positively by suitable connections with the power-shaft of the machine. This rotary annulus or ring is concentric with the hopper, and it is situated partially below an overhanging ledge or flange *a'*, formed around the mouth of the hopper. The lower or under surface of the rotary ring or annulus has continuous gear-teeth *f* near the outer edge, while the inner edge of the ring is left smooth or plain, as at *g*, to adapt the friction-rollers I to bear against the same and support the ring or annulus in operative position. A series of these friction-rollers I are employed in order to properly uphold the ring or annulus, which is confined between the ledge or flange *a'* and the rollers, and all of said rollers, except the one on the shaft H for driving the ring, are loosely mounted on studs or pins I', which are fixed to the hopper A below the ring or annulus. The horizontal shaft H is journaled in the bearings *h h'*, one of which is made integral with a bracket J and the other is fixed to the hopper, and said shaft carries a gear-wheel F', which meshes with the rack *f* on the under side of the ring or annulus to effect the rotation of the annulus or ring and the agitator-arms around the hopper when the shaft H is driven.

In the lower end of the throat *a* we also provide a feed-cylinder K, having the radial or spiral blades *k*, and this cylinder is carried by a shaft K', which has one end extended

beyond the throat. This extended end of the feed-cylinder shaft is journaled in a bearing k' , formed on the lower extremity of depending arm j , which is made integral with the bracket J , and the belt-pulleys $L L'$ are placed on the ends of the shafts $H K'$ in vertical alignment with each other to receive a belt which operates to transmit motion from the shaft K' to the shaft H . The shaft K' is provided with another belt-wheel M , around which passes a belt (not shown) that runs to a power-shaft or other part of the machine to which the hopper is applied.

The operation of our invention is simple, and may be described briefly as follows: Motion being communicated to the shaft K' , the latter rotates the feed-cylinder in the throat a and the shaft H mounted on the outside near the upper end of the hopper. The shaft H in turn revolves the ring or annulus through the medium of the gear pinion and rack, and the ring or annulus carries the agitator-arms positively around the inner surface of the hopper. As said agitator-arms are arranged closely to the sides of the hopper and extend into the throat thereof, the cotton-seed is swept from the walls of the hopper and prevented from clogging in the throat by the action of such arms, and the clogging of seed in the throat is further reduced to a minimum by the use of the rotary feed-cylinder, to which the seeds are forced by said arms. The quantity of seed passing through the hopper can be regulated by adjusting the slides.

Although we have shown and described two agitator-arms in the hopper, we do not confine ourselves to the use of any particular number, nor do we limit ourselves to the details of construction and form and proportion of parts herein shown and described as an embodiment of our invention, as we are aware that changes can be made therein without departing from the spirit or sacrificing the advantages of our invention.

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

1. The combination, with a hopper, of a movable support or annulus mounted externally on said hopper, and traveling agitators

carried by said support and arranged within the hopper to sweep close to the sides thereof, substantially as described.

2. The combination, with a hopper having the contracted throat, of a rotary feed-cylinder arranged transversely to and within the contracted throat of said hopper, a movable support or annulus mounted externally on the hopper, and the traveling agitators carried by the movable support or annulus and arranged within the hopper, the lower ends of said agitators being extended into the throat of the hopper, substantially as described.

3. The combination, with a hopper, of a movable external rack, the agitators arranged within the hopper and carried by said rack, and means for positively moving said rack, substantially as and for the purpose stated.

4. The combination, with a hopper, of an annular rack supported concentric with the hopper, the agitator-arms carried by said rack, and a shaft geared to the rack, substantially as and for the purpose set forth.

5. The combination, with a hopper, of a rotary ring or annulus supported externally on said hopper, the agitator arranged within the hopper and attached to said exterior ring or annulus, the rotary feed-cylinder arranged within the throat of the hopper, and a shaft driven by the feed-cylinder shaft and connected to said annulus or ring to rotate the same around the hopper, as herein set forth.

6. The combination, with a hopper, of the annulus or ring fitted around said hopper and provided with the rack, the frictional rolls supported on the hopper below the ring and on which said ring rests, the shaft having a pinion which meshes with the rack, the agitator-arms situated within the hopper and attached to said ring or annulus, and the feed-cylinder having its shaft belted to the aforesaid shaft which operates the ring or annulus, as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN WALDRON.

CHARLES H. SPROUT.

Witnesses:

D. B. DYKINS,

H. H. RING.