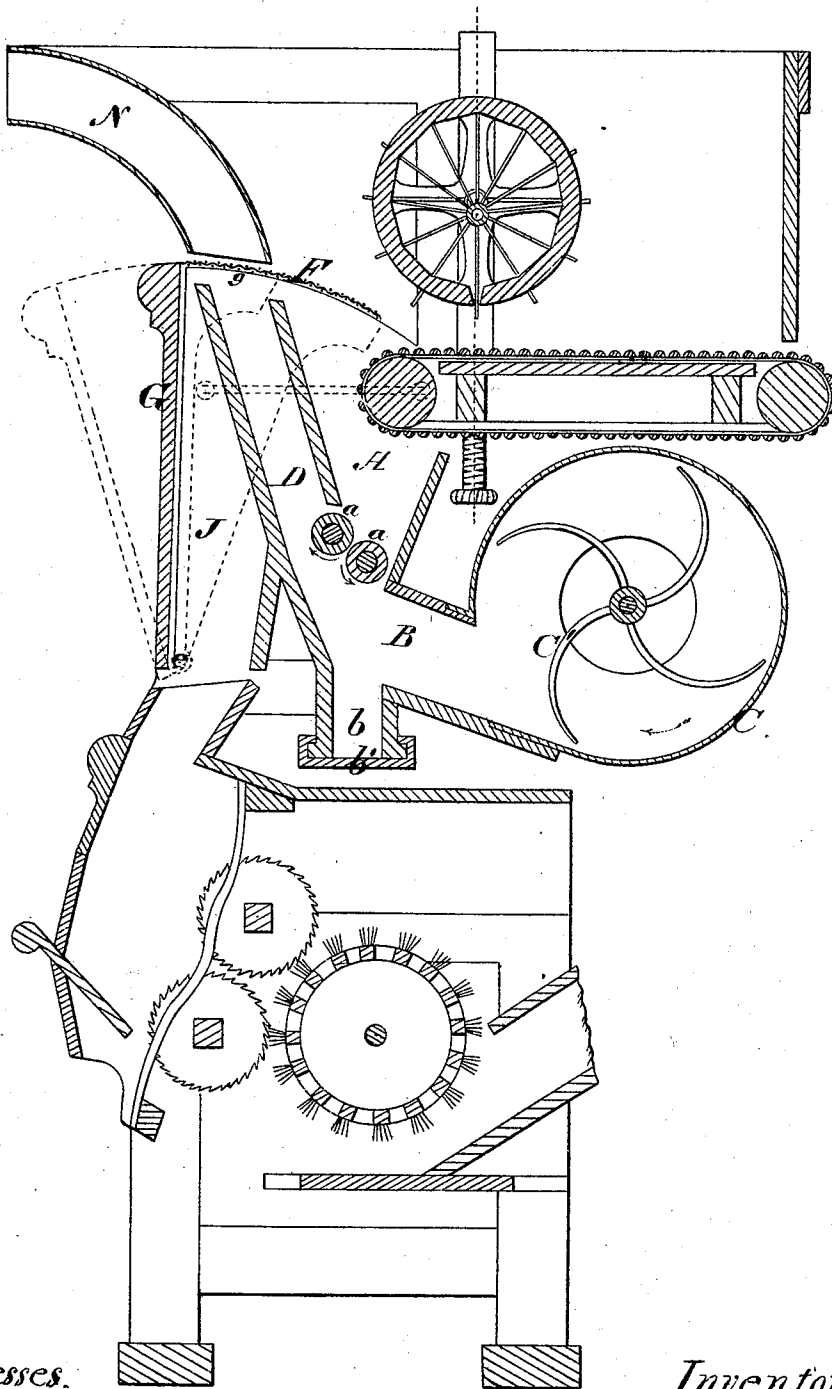


T. C. CRAVEN.

Cotton-Cleaners for Cotton-Gins.

No. 146,876.

Patented Jan. 27, 1874.



Witnesses.

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UNITED STATES PATENT OFFICE

THOMAS C. CRAVEN, OF HUDSON, NEW YORK, ASSIGNOR TO GEORGE H. POWER, OF SAME PLACE.

IMPROVEMENT IN COTTON-CLEANERS FOR COTTON-GINS.

Specification forming part of Letters Patent No. **146,876**, dated January 27, 1874; application filed September 20, 1873.

CASE B.

To all whom it may concern:

Be it known that I, THOMAS C. CRAVEN, of Hudson, in the county of Columbia and State of New York, have invented a new and valuable Improvement in Cleaning Seed-Cotton; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a vertical section of my cotton-cleaner.

This invention relates to certain novel means for cleaning seed-cotton of leaf, false seed, dust, stones, pieces of iron, and all other light and heavy impurities, and preparing it in a more perfect manner for the ginning mechanism. It consists in combining a movable leaf-breaking screen and dust-spout with blast-spouts, whereby the cotton is forcibly driven against said screen and the leaves broken up or disintegrated, and, with the dust and other foreign matters, blown through the screen and driven out of the machine; also, in the employment, at the lower end of a receiving-hopper, of elastic feeding-rollers, between which the cotton is passed before it is delivered into the blast-spout to be driven against the said movable breaking-screen, and by means of which rollers a positive and regular feed is maintained; also, in a peculiar arrangement of a receiving-hopper or feed-box, a blast-spout, and a discharging-spout, over which moves the vibrating breaking-screen, which also serves to allow the cleaned cotton to be delivered into the discharge-spout, and the cotton which is only partly cleaned to be returned into the receiving-hopper again to be re-treated, all as will be hereinafter explained.

In the accompanying drawing, I have represented, in connection with my improved cleaner, an endless belt and vertically-adjustable toothed feeding-drum for feeding the cotton uniformly to the cleaner. This feeder I do not claim under this application, as it forms the subject of another application, marked Case A, and bearing even date with the filing of this. I have also represented in the an-

nexed drawings a machine for receiving the cleaned cotton and ginning it, but I do not herein claim anything connected with the machine.

The cotton in the seed is delivered from the feeder, as shown in the drawings, into a hopper, A, at the lower end of which are two horizontal transverse rollers, *a a*, which are properly geared together, and which are made of india-rubber or other suitable elastic yielding substance. Directly beneath the elastic rollers *a a* is a trunk, B, which is slightly inclined, and which leads from a fan-case, C, in which is a blast-fan, C', to the lower end of an ascending spout, D. At the junction of the trunk B with the spout D, and below the rolling hopper-bottom, is a trap, *b*, having a movable bottom, *b'*. It is into this trap that nails, stones, and all substances which cannot be forced up the spout D by the blast will fall and be retained out of the way until taken out by means of the removable bottom *b'*. F represents a vibrating grid or screen, which is arranged so as to vibrate over the hopper A, and also over the upper end of the ascending spout D, and which is applied to a frame, G, having its center of motion at *e*. The front board of the frame G forms the front side of a descending spout or passage, J, which, in the present instance, is arranged so as to discharge the cleaned cotton directly into the feed-hopper of a cotton-gin.

The operation of the cleaner is as follows: The seed-cotton is delivered from the feeder directly into the hopper A, the rollers *a a* and fan C' being revolved in the direction indicated by the arrows. The cotton in the hopper is taken by the rollers *a a* and compressed between them in front of the blast from the fan. These rollers *a a* operate on the cotton, so as to feed it positively and in regular determined quantities before the blast at the throat or lower end of the ascending spout D. At this point the blast will drive the cotton up through the spout D, and against the screen or grid F, with such force as to break up or disintegrate the leaves and compel them, together with the sand, dust, and other light foreign matters, to pass through said screen F, after which they

will be conducted off through a conductor, N, which is above the screen and in line with the spout D.

During the operation above described the screen F receives a regular reciprocating motion, first moving over the hopper A, and then receding therefrom, but always remaining over the ascending spout D, as indicated by the full and dotted lines. There is a space, *g*, between the upper end of spout D and the screen sufficient to allow the cotton to be drawn by the screen both over the discharge-passage J and the hopper A. The object of this arrangement is to allow the cotton which is deprived of the leaf and other foreign matters to be immediately discharged by the retrocession of the screen into the passage J, while the cotton which has not been thoroughly cleaned will be drawn from over the spout D and discharged back again into the hopper A during the backward stroke of the screen. In this way, and by these simple means, the cleaned cotton is sent to the gin, and the cotton which has been only partially cleaned is returned to the hopper and again subjected to the blast.

The greatest advantage derived from my improvement is the thorough disintegration of the leaves and their separation from the cotton by the action of a powerful blast and the sudden arrest of the cotton against a screen, which operation does not in any manner injure the staple.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Elastic feed-rollers *a a*, arranged between a hopper, A, ascending spout D, and trunk B, leading from a blast-fan and over a trap, *b*, as and for the purpose set forth.

2. The arrangement of the ascending spout D below a vibrating screen, F, and communicating with a blast-fan case and a discharge-passage, J, substantially as and for the purpose mentioned.

3. The ascending spout D, arranged below a vibrating screen, F, and communicating with a blast-fan case, and also with the hopper A, substantially as specified.

4. The arrangement of the ascending spout D and the vibrating screen F, forming the passage *g*, as and for the purpose mentioned.

5. The conductor N, arranged directly over the vibrating screen F and ascending spout D, as and for the purpose set forth.

6. A receiving-trap, *b*, with removable bottom *b'*, arranged below the hopper A and ascending spout D, as and for the purpose mentioned.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

THOS. C. CRAVEN.

Witnesses:

PHIL. C. MASI,
JOS. B. LOOMIS.