No. 751,638. PATENTED FEB. 9, 1904.

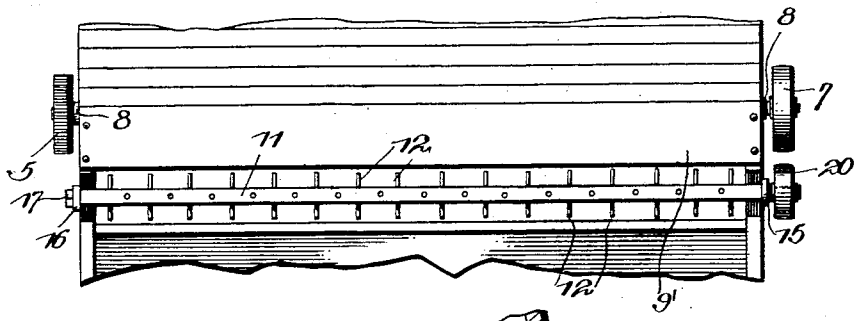
J. W. HARRINGTON.

ATTACHMENT FOR COTTON SEED LINTERS.

APPLICATION FILED MAY 2, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



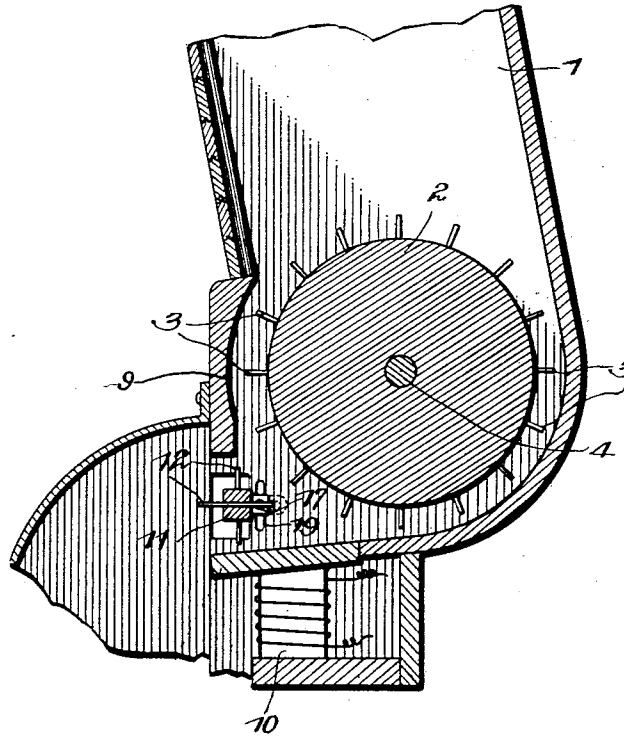


Fig. 2.

Witnesses
E. F. Stewart
Baxter Morton

John W. Harrington, Inventor:
by C. A. Snow & Co
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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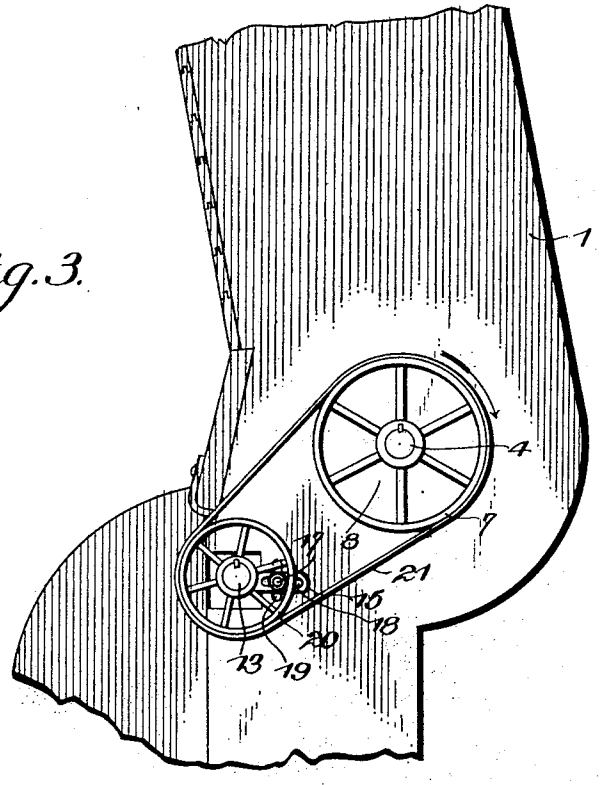
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ATTACHMENT FOR COTTON SEED LINTERS.

APPLICATION FILED MAY 2, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



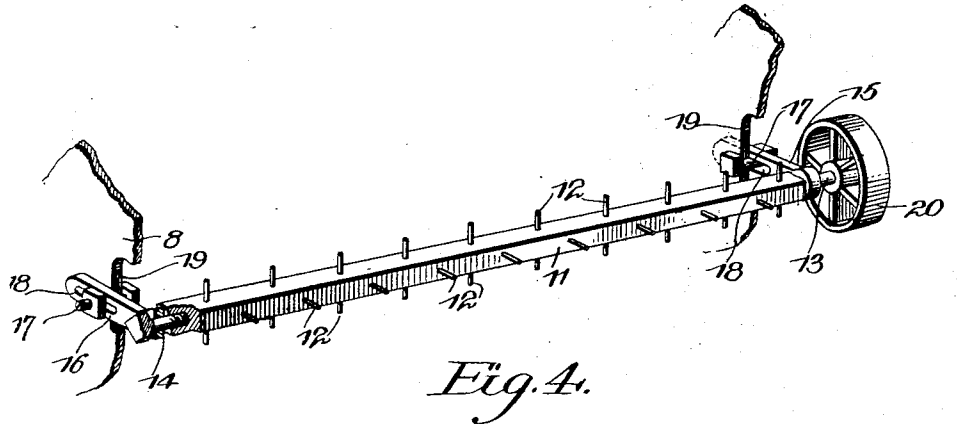


Fig. 4.

Witnesses
E. H. Stewart
Baxter Morton

John W. Harrington Inventor.
by C. A. Snow & Co
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 751,638. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

JOHN W. HARRINGTON, OF EASTPOINT, GEORGIA.

ATTACHMENT FOR COTTON-SEED LINTERS.

SPECIFICATION forming part of Letters Patent No. 751,638, dated February 9, 1904.

Application filed May 2, 1903. Serial No. 155,410. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HARRINGTON, a citizen of the United States, residing at Eastpoint, in the county of Fulton and State of Georgia, have invented a new and useful Attachment for Cotton-Seed Linters, of which the following is a specification.

This invention relates to attachments for cotton-seed linters, and more especially to attachments designed for increasing the efficiency of magnetic separating devices sometimes employed in cotton-seed linters for separating nails and other bits of iron which are frequently mixed with the cotton-seed and which if allowed to enter the linter will work considerable injury to the saws or other devices employed in removing the lint from the cotton-seed.

In cotton-seed linters as ordinarily constructed the cotton-seed is fed downward through a chute into the machine, the rate of entry of the cotton-seed being determined by a feed-roll placed near the lower end of the chute and ordinarily provided with a plurality of wings or equivalent structures radially disposed on the outer surface of the feed-roll. In order to separate nails and other bits of iron that are frequently mixed with the cotton-seed, electromagnets have been placed at the lower end of the feed-chute, which is ordinarily so formed that the cotton-seed is compelled to move in a horizontal path just previous to its entry into the machine, and means have been provided for causing the cotton-seed to pass over said electromagnets just previous to entering the machine. The electromagnets so employed have been of sufficient strength to attract into contact therewith and to hold securely small particles of iron mixed in with the cotton-seed when said particles come into contact with the electromagnets, the passage of the cotton-seed thereover not being interrupted in any way by the magnets and the engagement of the cotton-seed with the bits of iron attracted to the magnets not exerting sufficient force thereon to dislodge the bits of iron from contact with the magnets and to carry them forward into the machine. It has, however, been observed that electromagnets disposed in the manner above described are not alone sufficient to completely separate from the cotton-seed the bits of iron mixed therewith, the reason for the failure of the magnets to effect complete separation being found in the fact that the cotton-seed tends to accumulate in masses or rolls, within which the small bits of iron are frequently found, and when the bits of iron are so incased in the cotton-seed it is impossible for the magnets to attract the bits of iron from the seed. Consequently those pieces of iron which are incased in the mass of cotton-seed as it passes into the machine are not separated from the seed, but pass into the machine with the cotton-seed and frequently damage to a considerable extent the lint-saws or other devices for removing the lint from the cotton-seed.

My invention has for its object to provide an effective and simple mechanism by means of which the masses of cotton-seed which are fed forward by the feed-roll toward the machine may be so disintegrated and distributed over the surface of the electromagnetic separator that all small bits of iron contained therein will be brought within the range of the attractive influence of the magnet, so that said pieces of iron may be arrested in their forward passage and caught and held upon the surface of the magnet.

With the above and other minor objects in view, which will appear as the invention is better understood, the same consists in the construction, combination, and arrangement of elements hereinafter described, shown in the accompanying drawings, in which corresponding parts are designated by the same characters of reference throughout, and having the novel features thereof pointed out in the appended claims, it being understood that changes in the form, proportions, and exact mode of assemblage of the elements may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings, Figure 1 is a view in front elevation of the lower portion of the feed-chute of a cotton-seed linter with the attachment in operative position thereon. Fig. 2 is a transverse vertical section, on an enlarged scale, through the lower end of the feed-chute

of a cotton-seed linter with the attachment applied thereto. Fig. 3 is a view in side elevation of the lower end of the feed-chute and the structures connected therewith, showing the mechanism for imparting movement to the attachment. Fig. 4 is a view in perspective of the attachment and the means for adjusting it in position.

Referring to the drawings by reference characters, 1 designates the feed-chute of a cotton-seed-linting machine, provided at its lower end with a feed-roll 2, having a plurality of radially-disposed wings 3, said wings being of such length that they come almost into frictional contact with the curved surface of the lower end of the chute. The feed-roll 2 is rigidly mounted upon a shaft 4, provided at one end with a gear 5, by means of which motion is imparted to the shaft from an adjacent driving-gear. At the end of the shaft 4 opposite that upon which is mounted the gear 5 is a pulley 7, the use of which will afterward be explained. The shaft 4 has bearings provided therefor in castings 8 at either side of the feed-chute, as shown.

Adjacent to the feed-foll 2 on the side opposite the curved lower terminal of the chute is a feed-board 9, the inner surface of which is also curved to correspond to the curvature of the feed-roll and which lies in close proximity to the wings 3, as shown. Below the feed-roll and forming a portion of the terminal of the feed-chute is an electromagnet 10, which may be of any preferred form and which extends entirely across the lower end of the feed-chute, as best seen in Fig. 1.

In the space between the electromagnet and the feed-roll and feed-board is supported the attachment which forms the essence of my invention and which consists, essentially, of a square bar 11, preferably of steel, which extends across the mouth of the chute, as seen in Fig. 1, and which is provided with a plurality of spikes 12. The bar 11 is preferably square and of three-fourths of an inch thickness, and the spikes 12 are formed from wire of any desired diameter and are preferably three inches in length, measuring from end to end. The spikes are arranged in two rows disposed at right angles to each other and extend entirely through the bar 10 practically equal distances on either side, so that with the bar and spikes of the dimensions above specified the length of the spikes projecting beyond any face of the bar will be substantially one and one-eighth inches. The bar is provided at its ends with journals 13 and 14, the former formed integral with or permanently secured to the end of the bar and the latter having a threaded end adapted to engage a threaded socket provided therefor in the end of the bar, as shown. The journals 13 and 14 are rotatably mounted in bearings provided in brackets 15 and 16, attached to the castings supporting the feed-roll by means of bolts 17, extending through slots 18 in the ends of the brackets and slots 19, provided in castings 8. In this way the distributer is made adjustable both horizontally and vertically.

At the end of journal 13 is detachably mounted a pulley 20, over which runs a belt 21, which passes over the pulley 7 at the end of the feed-roll shaft 4, thus forming means for imparting motion from the feed-roll to the distributer.

It will be seen that the distributer is supported in such position that the ends of the spikes carried thereby come almost into contact with the upper surface of the magnets and with the wings of the feed-roll and the lower margin of the feed-board, making it impossible for any considerable mass of cotton-seed to pass into the linter without coming into contact with the spikes of the distributer. These spikes are spaced apart preferably just one inch and are effective, as will be readily understood, in disintegrating thoroughly any mass of cotton-seed which passes downward through the feed-chute and is not broken up by the wings upon the feed-roll. The spikes so disintegrate the mass of cotton-seed and distribute the seed over the surface of the magnet that almost every particle of iron contained in the cotton-seed is brought into contact with the magnets and is held thereby, thus increasing the efficiency of the magnets as separators and positively preventing any damage from this cause to the linter.

The distributer as described consists of very few parts, is easily and inexpensively constructed, can be applied to a linter in a very few moments with little labor, and may be detached therefrom almost instantly, as the pulley 20 is readily removable from the journal 13, to which it is secured in any preferred manner which will hold the pulley and journal in rigid association, and the journal 14 may be quickly removed from the end of bar 11 by unscrewing the end of the journal from the socket provided therefor in the end of the bar.

The dimensions of the bar and spikes given in the preceding description will be found suitable for most linting-machines employing the type of separator described; but, if necessary, the length of the spikes and the size of the bar may be modified without difficulty to suit the requirements of any individual case, the essential feature of the construction being that the spikes be of such length and the bar so placed that the possibility of any cotton-seed passing into the machine without coming into contact with the spikes on the distributer is completely obviated.

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

1. The combination with the feed-chute of a cotton-seed linter, of a feed-roll disposed adjacent to the lower end of the chute, a fixed magnetic separator disposed in the bottom of

said chute beneath and slightly in front of said feed-roll, and a rotary cotton-seed distributer mounted above said magnetic separator in the space between the separator and the feed-roll.

2. The combination with the feed-chute of a cotton-seed linter, of a feed-roll mounted near the lower end of the chute, a fixed magnetic separator mounted at the lower end of said chute beneath and in front of said feed-roll, a feed-board disposed in front of said feed-roll and spaced above said separator, and a rotary cotton-seed distributer disposed between said separator and said feed-board.

3. An attachment for the feed-chutes of cotton-seed linters provided with fixed magnetic separators and rotary feed-rolls disposed above the separators, said attachment comprising a rotary cotton-seed distributer and means for removably supporting said distributer between the feed-roll and the separator.

4. The combination with the feed-chute of a cotton-seed linter of a fixed magnetic separator therefor provided at the terminal thereof, a rotary distributer adjustably mounted above said separator, and a feed-roll above said distributer.

5. The combination with the feed-chute of a cotton-seed linter of a fixed magnetic separator provided at the lower terminal thereof, a rotary distributer having a plurality of projections adapted to pass in close proximity to said separator, and a feed-roll located adjacent to said distributer.

6. The combination with the feed-chute of a cotton-seed linter of a fixed magnetic separator located at the lower terminal thereof, a rotary distributer supported above said magnet and comprising a bar having a plurality of radially-disposed rows of spikes projecting therefrom, said spikes being adapted to pass in close proximity to said separator, a feed-roll mounted adjacent to said distributer, and driving connections between said feed-roll and said distributer.

7. The combination with the feed-chute of a cotton-seed linter of a fixed magnetic separator, a rotary distributer mounted above said separator and comprising a bar having a plurality of projections radially disposed thereon and adapted to pass in close proximity to said separator, and journals for said bar mounted in bearings at the sides of said feed-chute, one of said journals being detachable from said bar.

8. The combination with the feed-chute of a cotton-seed linter, of a fixed magnet disposed at the discharge end thereof in the bottom of the chute, a rotary cotton-seed-distributing device having a removable journal at one end thereof, and adjustable brackets within which said distributing device is mounted for rotary movement above the magnet.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN W. HARRINGTON.

Witnesses:

F. M. PARKS,

J. G. BELDING.