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COTTON CLEANER.

APPLICATION FILED AUG. 26, 1908.

917,693.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

WITNESSES

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INVENTOR

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BY Munn & Co.

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Fig. 3.

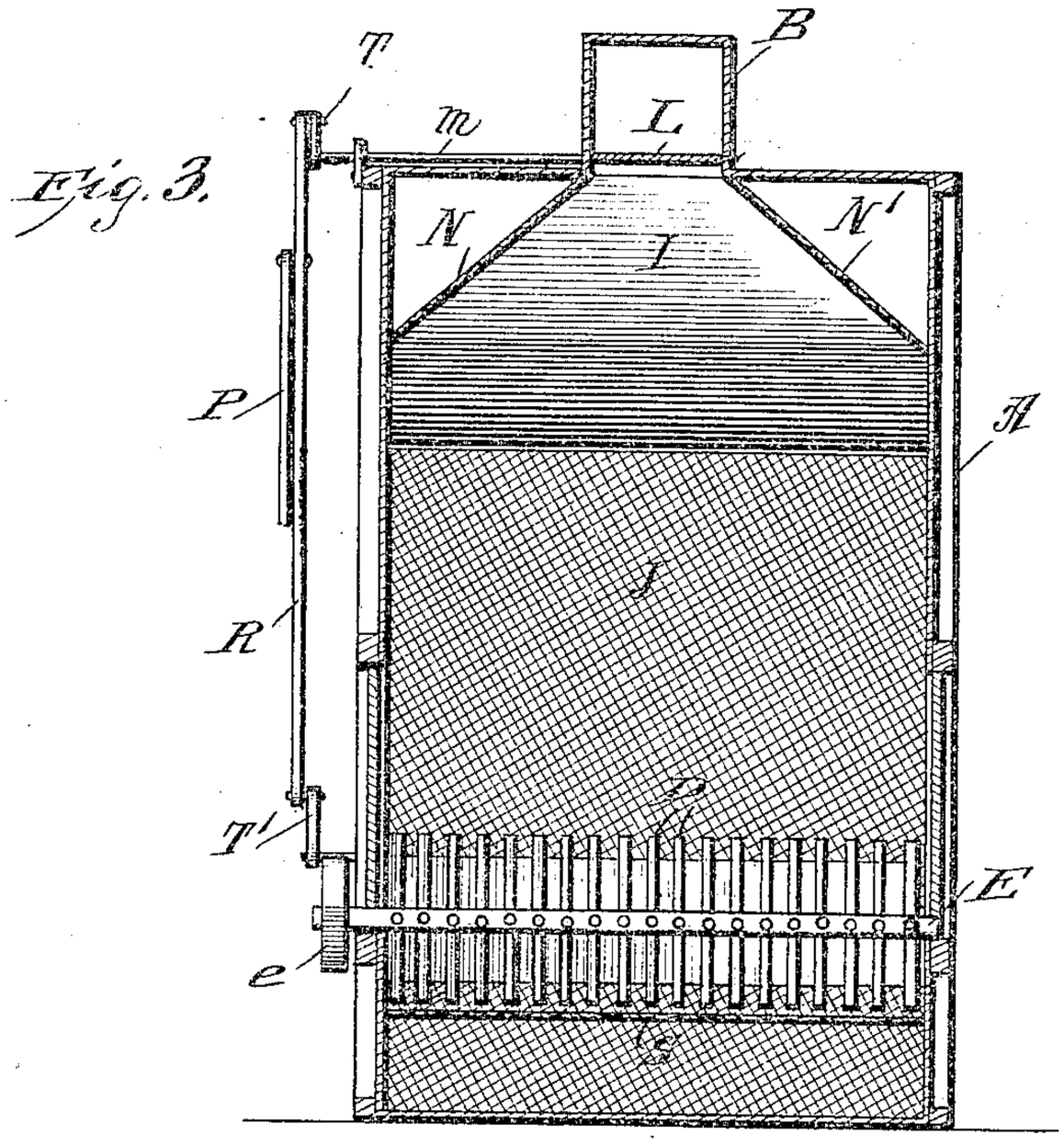
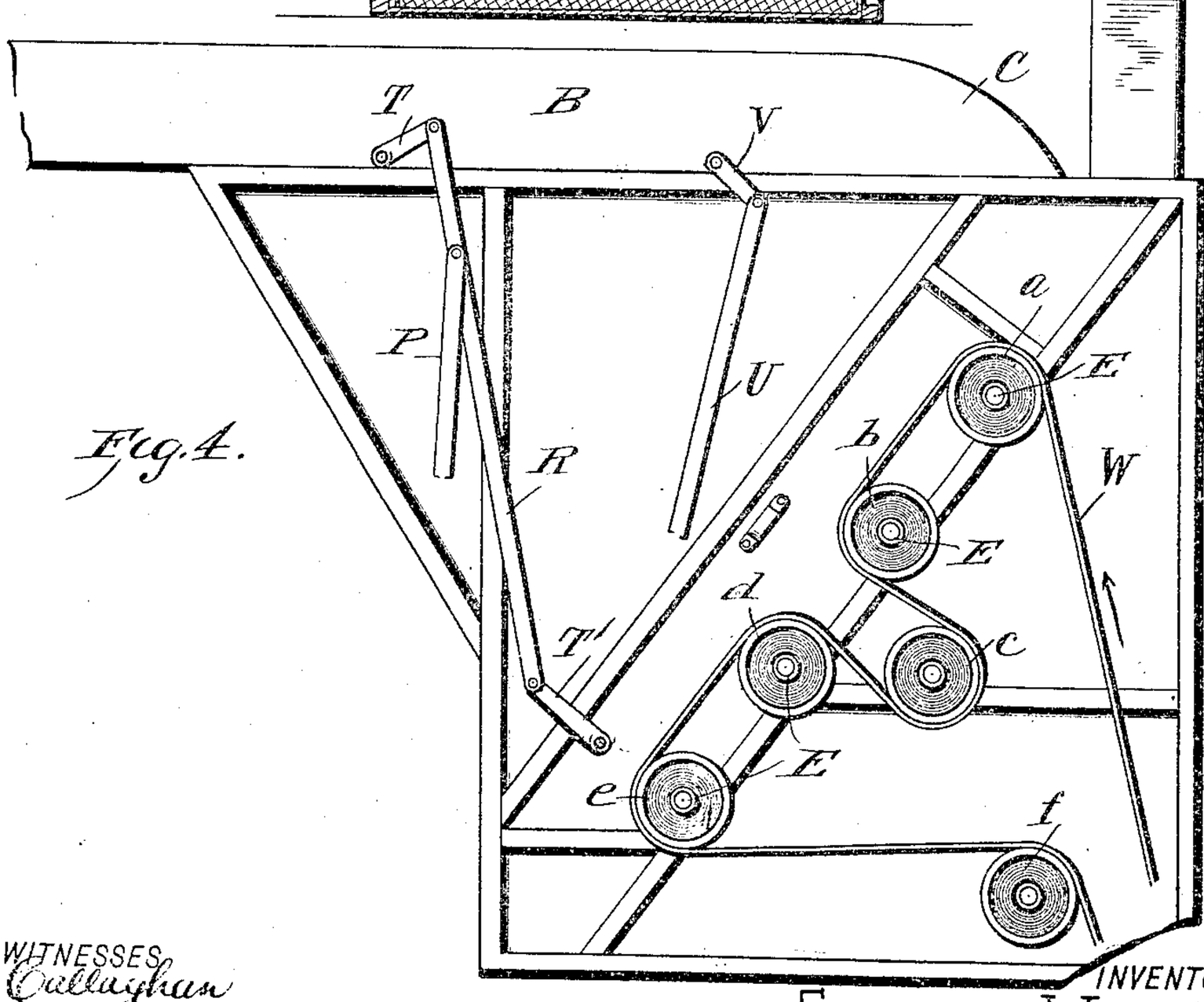


Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL WILLIAMS, OF TEXOLA, OKLAHOMA.

COTTON-CLEANER.

No. 917,693. Specification of Letters Patent. Patented April 6, 1909.

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To all whom it may concern:

Be it known that I, SAMUEL WILLIAMS, a citizen of the United States, and a resident of Texola, in the county of Beckham and State of Oklahoma, have made certain new and useful Improvements in Cotton-Cleaners; of which the following is a specification.

My invention relates to improvements in cotton cleaners and it consists in the combinations, arrangements and constructions herein described and claimed.

The object of my invention is to provide a device in which seed cotton in various states of cleanliness can be treated and then passed directly into the gins. It is a well known fact that the less the cotton is handled to put it into condition for the spinner, the better, since in the various cleaning operations, the fiber is apt to get broken, thereby impairing its usefulness.

In carrying out my invention I provide a device which is designed to give each batch of cotton coming to the machine a treatment which is especially adapted for the particular batch being cleaned, and in which the treatment may be varied.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows an enlarged central vertical section through the cleaner. Fig. 2 is a view of the beaters. Fig. 3 is a transverse section along the line 3—3 of Fig. 1, looking in the direction of the arrow, and Fig. 4 is an exterior side view of the machine.

Referring now to Fig. 1, A denotes in general an upright box or casing. Leading into the top of this box is a suction pipe B, which communicates with a feed hopper, not shown. The suction pipe B terminates in a downwardly curved end C immediately above the uppermost beaters. The beaters themselves consist of a series of arms D, mounted on a shaft E capable of rotation in the direction indicated by the arrow in Fig. 1. There are four sets of these beaters shown in Fig. 1, although it is obvious that a greater or less number could be used. The axes of the beaters are arranged in an inclined position relatively to each other and they extend through the box A from one side to the other, as shown in Fig. 3, being journaled in the side walls of the box. Immediately underneath each set of beaters I arrange a curved screen S, having a small clearance. These screens may be separate or in one continuous screen having curved sections. The screen extends from the partition F to the bottom G of the box.

Projecting downwardly from the upper part of the box A are the partitions H and I, and a screen J extends from the top of the box down to a door K, adjacent to the lowermost set of beaters. The space between the partitions H and I forms a curved chute, and at the top of this chute there is a hinged door L, pivoted at *k* and arranged to swing upwardly into the position indicated by the dotted lines, thereby closing the pipe B and providing an opening into the top of the chute. A similar door M is provided and is pivoted at *m* to swing upwardly into the position indicated by the dotted lines and to serve as a deflector to turn the cotton into the chute, which is provided between the screen J and the inclined wall O of the casing. Inclined screens N and N′ extend from the top of the casing A to the sides as clearly shown in Fig. 3. This provides a triangular air duct at the upper end of the casing communicating with the air outlet X. In order to operate the doors M and K simultaneously, I have provided the shifting lever P. This lever is pivoted at Q to a cross bar R, the latter being in turn pivoted to an upper laterally extending arm T of the door M, and to a laterally extending arm T′ of the door K. It will be seen that in the position of the doors K and M in Fig. 1, a downward pull of the lever will result in opening the door M and closing the door K. The pull rod U is provided for the purpose of opening the door L, and this is accomplished through the medium of the extension of the downwardly extending arm V attached to the latter door.

The arrangement of the pulleys for driving the beaters is shown in Fig. 4. It will be seen that the belt W passes over the pulleys *a* and *b*, then underneath an idler *c* and over the pulleys *d* and *e*, thence to an idler *f*. This arrangement provides for driving all of the shafts E in the same direction.

X indicates the air outlet.

Y and Y′ are doors, and Z indicates the outlet opening for the cleaned cotton.

From the foregoing description of the various parts of the device, the operation will be readily understood. In practice the cotton is carried through the pipe B from the hopper, and if the cotton is dirty, it is permitted to pass through to the end of the pipe and be projected downwardly upon the arms

of the uppermost set of beaters, where it is carried around rapidly and the dirt therefrom is screened out through the screen S. In passing the screens N and N′, any loose dirt is drawn through the screens, while the cotton is deflected down the chute. The uppermost beater tosses about the cotton and delivers it to the next beater, which, in turn, subjects the cotton to a similar beating action, and passes it on to the third, and thence to the fourth, from which it is finally delivered through the exit opening Z into the gin. If, however, a batch of cotton is being treated which does not contain as much dirt, and therefore should not be subjected to the thorough beating which it will receive by being passed through the entire series of beaters, it may be deflected downwardly through the chute formed by the partitions H and I, by pulling downwardly on the pull rod U and thereby raising the door L to its deflecting position as shown by the dotted lines in Fig. 1. In this position the cotton would be deflected so as to be acted on by the last two beaters only. If, now, a batch should be encountered which it was desirable to pass directly into the gin, the pull rod P would be operated, thereby opening the upper door M and closing the lower door K, thereby passing the cotton directly into the gin without subjecting it to the action of the beaters.

It will be observed that the air space under and behind the beaters is large, and the air being scattered over such an area of screen, as indicated by the arrows, allows the heavy dirt, sand, trash and other matter to settle to the bottom of the cleaner instead of being carried out through the air outlet. The provision of the doors Y and Y′ allows free access to the interior of the device for cleaning purposes.

It will thus be seen that I have provided a device in which the cleaning operation can be varied to suit various batches of cotton by a similar arrangement of deflecting doors and levers therefor and chutes to coöperate therewith.

I claim—

1. In a cotton cleaner, an air pipe, a cleaning chamber communicating therewith, said cleaning chamber having downwardly extending partitions forming chutes, doors at the tops of said chutes arranged to swing upwardly into said pipe and to constitute deflecting members, an inclined series of beaters arranged underneath said chutes, a screen underneath said beaters, means for conveying cotton through said air pipe to said beaters, and means for opening said doors to deflect the cotton into said chutes.

2. In a cotton cleaner, an air pipe provided with doors in its bottom, chutes communicating with said air pipe, an inclined series of beaters, means for passing cotton through said air pipe and through the entire series of beaters, and means for deflecting the cotton through a chute and thereby passing the latter through only a portion of the series of beaters.

3. In a cotton cleaner, an air pipe conveyer, a cleaning chamber communicating therewith and provided with a downwardly extending partition at one side thereof, said partition constituting with the adjacent exterior wall a chute, a series of beaters arranged between said partition and the opposite wall, a door in said air conveyer communicating with the top of said chute, a door at the bottom of said partition opening into said chute, and means for simultaneously moving said doors to cause the material conveyed by the pipe to pass through the beaters or through the chute according to the position of the doors.

4. In a cotton cleaner, a cleaning chamber, beaters arranged therein, a screen arranged underneath said beaters, an air pipe conveyer communicating with said chamber and arranged to deliver material to said beaters, a door in said air pipe for deflecting the conveyed material through a portion of the series of beaters, and other means for deflecting material through the entire series of beaters.

5. In a cotton cleaner, an air pipe conveyer, a cleaning chamber, a series of beaters arranged in said cleaning chamber, the first of said beaters being immediately beneath the mouth of said conveyer, a screen for separating the dirt, means in said air conveyer for deflecting material through certain of said beaters and other means in said conveyer for deflecting material through the entire series of beaters.

6. In a cotton cleaner, a cleaning chamber provided with beaters and screens, an air conveyer for delivering material to said beaters, and means for passing material from the conveyer at will through the entire series of beaters or through a portion of the series.

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Witnesses:
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