(No Model.)

R. S. MUNGER.

MACHINE FOR HANDLING AND FEEDING SEED COTTON.

No. 509,759. Patented Nov. 28, 1893.

Fig. 1.

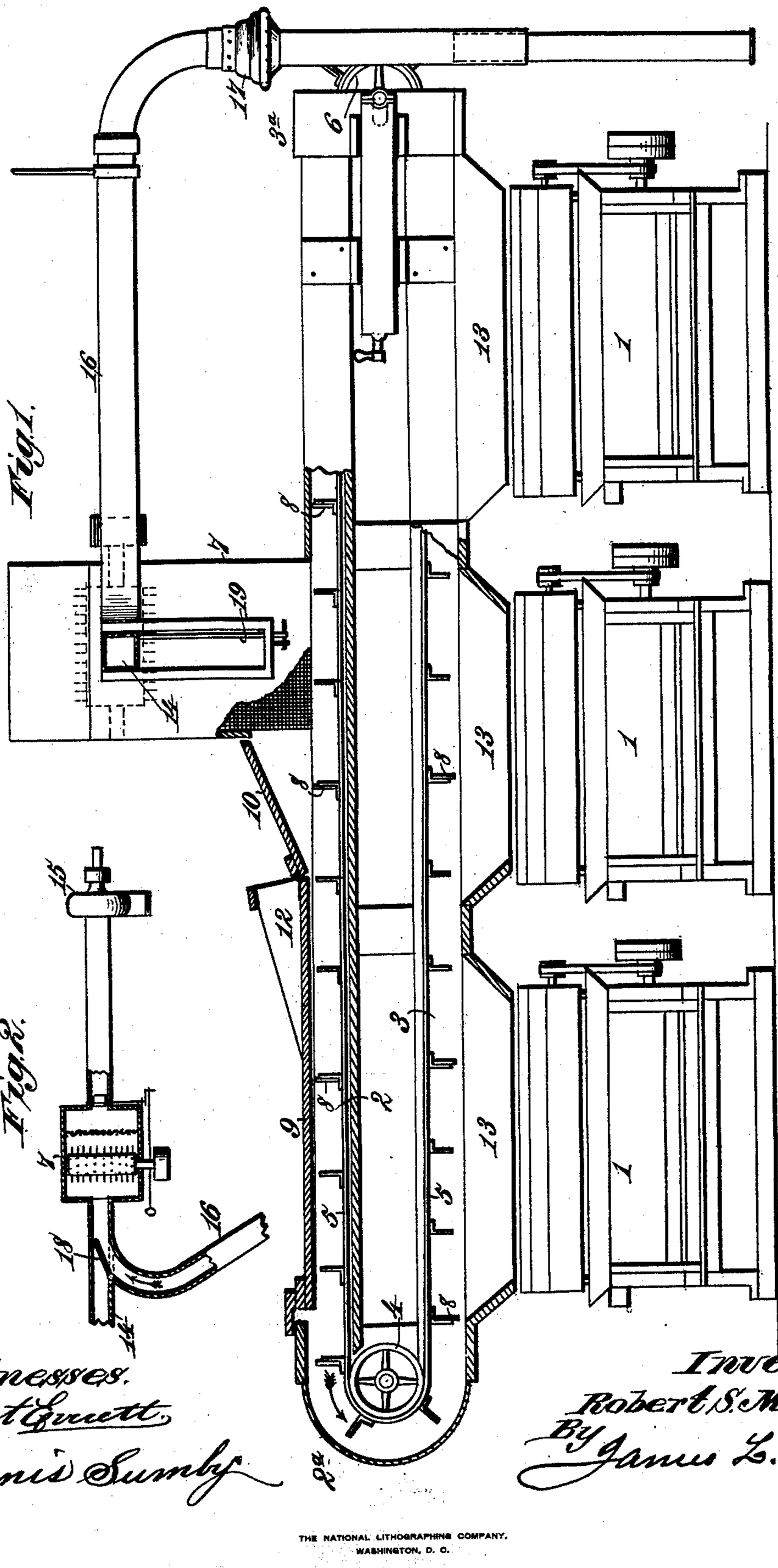

Fig. 2.

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MACHINE FOR HANDLING AND FEEDING SEED-COTTON.

SPECIFICATION forming part of Letters Patent No. 509,759, dated November 28, 1893.

Application filed March 31, 1891. Serial No. 387,180. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. MUNGER, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Machines for Handling and Feeding Seed-Cotton, of which the following is a specification.

My invention relates to that type of mechanism for handling seed cotton for which Letters Patent of the United States were granted me, dated the 2d day of December, 1884, Nos. 308,788 and 308,790. In the former patent I show and describe means whereby the cotton is automatically fed to a gin, or to a series of gins, by a distributer which is adapted to keep each gin-feeder level full. In the latter patent I show and describe a complete apparatus for handling the seed-cotton, whereby it is conveyed directly from the wagon, or from the cotton-house, to the ginning-room, being cleansed and dried during its passage and delivered directly to the ginning-mechanism through the agency of a distributer similar to that described and shown in the patent first above named. In supplying the gins by a distributer of the kind shown in said patents, it is not possible to graduate the feed of the cotton to the capacity of the gins with perfect accuracy, and as it is desirable that the gin-feeders shall be provided with a constant and sufficient supply, whereby they shall be kept level-full, it is indispensable that the quantity delivered to the distributer shall be somewhat in excess of that required for the actual feed. It will be seen therefore, that some disposition must be made of this surplus or excess of cotton, and it is the purpose of my present invention to provide simple means whereby the amount of surplusage delivered to the distributer shall be allowed to escape therefrom, and whereby also, the portion thus discharged may be automatically gathered and returned to the vacuum-feeder, or to the device supplying the gins, at any suitable moment to be again delivered therefrom to the distributer, thereby preserving an abundant supply of cotton in each gin-feeder, avoiding waste of time between bales by the utilization of the overflow in supplying the gins, avoiding also waste of cotton and effecting a considerable economy in the manual labor required in feeding the gins and in gathering up the excess, or overflow of cotton.

My invention consists, to these ends, in the several novel features of construction and new combinations of parts hereinafter fully described, and then pointed out in claims following this specification.

To enable others skilled in the art to understand and practice my invention, I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1, is a sectional elevation of a series of gins, showing the vacuum-box, distributer, and return-conveyer for taking up the overflow of cotton. Fig. 2, is a detail section of the vacuum-box, showing the connection of the return-pipe, or conveyer, with the feeder supplying the gins, and the valve governing the suction through to these pipes, whereby the blast may be diverted into either one of said pipes, at will.

In the said drawings the reference numeral 1 designates a series of cotton-gins, although the invention is applicable to, and operates in the same manner in the case of a single gin only. Extending over the entire series of gins is a distributer, consisting of a continuous casing 2, curved at one end 2^a, to have communication with a lower, parallel and similar casing 3, both casings being left open at their opposite extremities 3^a. In the closed end, and concentric therewith, is arranged a pulley 4, over which runs an endless belt 5, carried by a second and adjustable pulley 6, in the open end of the casing. This latter pulley is rendered adjustable in order that the distributer-belt may be always stretched to the proper tension, and the devices for adjusting the pulley may be of any form preferred, such for example as those shown in an application filed by me of even date herewith, Serial No. 387,178.

The numeral 7 in said drawings indicates the vacuum-box, which does not differ materially from that shown in the Letters Patent granted me the 2d day of December, 1884, No. 308,790; but in the present invention this box is seated directly upon the upper member of the distributer-casing, and the valve-chamber and valve-shaft shown in said patent are dispensed with. In place thereof, and in order

to preserve the suction in the vacuum-box, I mount upon the endless belt 5 of the distributer, at suitable intervals, flexible or elastic valve-plates, or strips 8, which closely fit the interior of the distributer-casing and which cut off ingress of air upon each side of the opening communicating with the vacuum-box. These valve-plates are arranged at such intervals that at least two of them are always in engagement upon each side of said opening, in the upper member of the distributer-casing.

The upper portion 9, of the distributer-casing, upon one side of the vacuum-box, is rendered longitudinally movable, and upon the end adjacent to the vacuum-box is a hinged section 10, the end of which rests against the wall, of said box, or against a support thereon, forming a hood which facilitates the passage of the cotton from the vacuum-box to the distributer-belt. Upon each vertical wall of the casing is mounted a triangular plate 12, between which the hinged sections 9 and 10 may rise and fall, to permit the entrance of unusually large clots, or bodies, of cotton, and to avoid crowding between the belt and the casing. These triangular pieces may extend to any limit desired, and may even be co-extensive with the hinged parts of the casing 9 and 10, although this will not ordinarily be necessary.

Upon the lower section or portion of the distributer-casing, the spiked belt passes over the hoppers 13 of the gins, and deposits therein the cotton received from the vacuum-box 7, keeping said hoppers, or feeders, level-full. In order to remove the surplus of cotton from the distributer-casing, and in order that there may be no crowding, or choking, at the point where the cotton is discharged from the vacuum-box into the distributer, the extremity 3^a of the distributer-casing is left open, whereby the belt, as it passes over the pulley 6 may throw the cotton still remaining therein either upon the floor, at the end of the casing, or into a receptacle of suitable form placed to receive the overflow.

Communicating with the vacuum-box 7 is a pneumatic-conveyer 14, by which the cotton is drawn into the vacuum-box from any distant point, through the agency of a suction-fan 15. Communicating with the pneumatic tube or conveyer 14, is a second tube 16, having a flexible joint 17, arranged in the portion of the tube which is curved downward, to bring its open end, or mouth, close to the ground, or floor. This second tube is united with the main conveyer on the suction-side of the vacuum-box 7, as shown in Fig. 2, and a valve 18, common to both pipes, or tubes, is hinged, or pivoted, at the point of union, and provided with a valve-stem 19, by which the valve may be turned to direct the suction through either of the two pipes. When the supply of cotton through the main conveyer is cut off, from any cause, the valve 18 is swung into such position as to close the main conveyer 14 and open the second tube 16, thus diverting the entire suction, or draft, into said tube, as shown in Fig. 2, whereby the pipe is enabled to pick up the overflow from the distributer and return it to the gins, or offer it to the spiked belt 5. When the overflow has all been taken up and sucked into the vacuum-box, the valve is turned back into position shown in dotted lines in Fig. 2, thereby closing the second tube 16 and opening the main conveyer 14. Thus, the surplus, or overflow, may be allowed to collect on the floor until the wagon is emptied, and the time usually lost between bales may be saved by supplying the gins from the surplus upon the floor, or in the receptacle provided to receive the overflow.

Heretofore it has been commonly necessary to supply the gins from the field-wagons, and inasmuch as there is always more or less delay in removing the empty wagon and bringing up the second, or succeeding wagon into proper position, attention is necessary to carry on the operation of the gins between bales, as it is usually termed, as much more care is required to keep the feeders 13 just full when the overflow is not used. By my invention I entirely avoid this necessity, as I use the surplus, or overflow of cotton accumulating upon the floor, to supply the gins and keep the gin-feeders level-full by automatic means. This is a very material and important advantage, and in addition thereto I am able to secure all the advantages resulting from the suction-delivery of the cotton, and the automatic feeding of the gins in such manner as to keep the hoppers always even, or level-full.

What I claim is—

1. In an apparatus for handling seed-cotton, the combination with a series of gins, of a casing having an upper and a lower channel arranged over said gins and closed throughout save at one end of said casing, an endless distributer-belt arranged to travel in said channels and provided with valve-strips, and a pneumatic conveyer to pick up the overflow from the distributer-casing and return the same to the gins, substantially as described.

2. In an apparatus for handling seed-cotton, the combination with a series of gins, of a casing having an upper and a lower channel arranged over said gins and closed throughout save at one end of said casing, an endless distributer-belt arranged to travel in said casing, and a pneumatic conveyer to pick up the overflow from the distributer-casing and return the same to the gins, substantially as described.

3. In an apparatus for handling seed-cotton, the combination with a series of gins, of a distributer-casing arranged over said gins and closed throughout, save at one end, an endless belt arranged to travel in said casing and to deliver the cotton from its under side into the gins, a pneumatic conveyer to pick up the overflow and return the same to the gins, a vacuum-box, and means for establishing

suction in said conveyer, substantially as described.

4. The combination with one or more gins and with a vacuum-box feeding the cotton, of a distributer-casing, a belt moving therein, and a return-flue taking up the overflow from said distributer, and returning it to the vacuum-box, said flue being connected with the main flue and provided with a valve common to both flues, substantially as described.

5. A cotton gin provided with means for carrying the accumulated cotton to one side of the gin and dropping it upon the floor, a main pneumatic conveyer, a second pipe having communication with said conveyer, and means for diverting the suction, or exhaust-blast, into either the conveyer, or the second pipe, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

ROBERT S. MUNGER.

Witnesses:
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