No. 732,969. PATENTED JULY 7, 1903.

M. A. STEPHENSON.

MEANS FOR EQUALIZING THE DISTRIBUTION OF COTTON IN COTTON BOXES.

APPLICATION FILED DEC. 26, 1901.

NO MODEL.

Fig. 1.

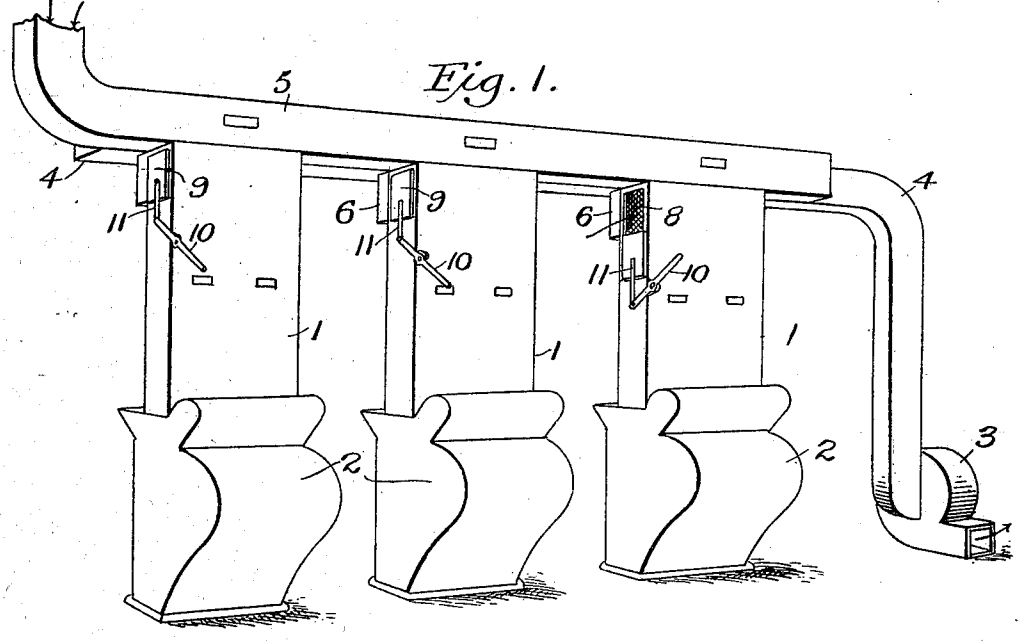


Fig. 2.

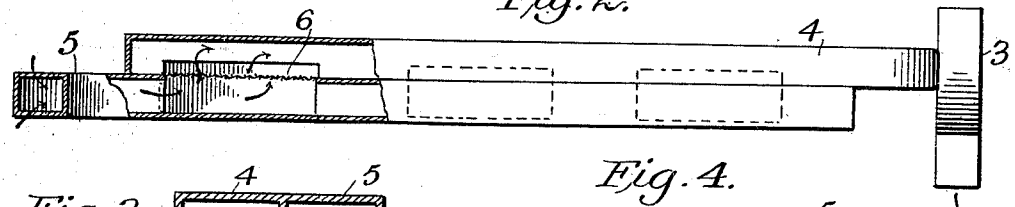


Fig. 3.

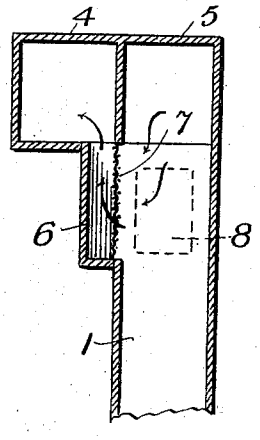
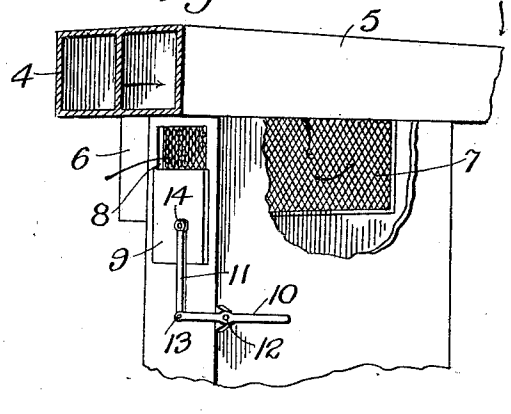


Fig. 4.



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No. 732,969. Patented July 7, 1903.

UNITED STATES PATENT OFFICE.

MINER ALLEN STEPHENSON, OF TAYLOR, TEXAS, ASSIGNOR OF ONE-HALF TO THEODORE AUGUST BRANDES, OF TAYLOR, TEXAS.

MEANS FOR EQUALIZING THE DISTRIBUTION OF COTTON IN COTTON-BOXES.

SPECIFICATION forming part of Letters Patent No. 732,969, dated July 7, 1903.

Application filed December 26, 1901. Serial No. 87,159. (No model.)

To all whom it may concern:

Be it known that I, MINER ALLEN STEPHENSON, a citizen of the United States of America, and a resident of Taylor, county of Williamson, State of Texas, have invented certain new and useful Improvements in Means for Equalizing the Distribution of Cotton in Cotton-Boxes, of which the following is a specification.

This invention relates to an improved apparatus for evenly distributing cotton conveyed by air-draft elevators from a depository thereof to a series of cotton-boxes, so that each box may receive its proper supply, or for shifting a surplus from one or more stands to others in the same series lacking a supply.

Another purpose of the invention is to relieve a jam or choked condition in the flue or elevator-shaft, for it often happens that there is a stoppage of the cotton in transit through the flues, such stoppage taking place from some unknown cause, which results in a congestion taking place at that point, choking the flue so that the air-current ceases, and under these circumstances it becomes more or less difficult to remove the jam, and often much time is lost and power wasted. Among the advantages of the improvement which might be mentioned is consequently that of smoothness and ease in the running of the machinery, which is equivalent to a gain in power estimated at not less than twenty-five per cent.

The invention therefore consists, essentially, in the construction, arrangement, and combination of the various parts, substantially as will be hereinafter described, and then more fully pointed out in the following claims.

In the accompanying drawings illustrating my invention, Figure 1 is a side elevation of a series of cotton-gin stands with the elevator air-flues traversing the upper extremities of the cotton-boxes and clearly indicates the application of my present improvements for regulating the supply of cotton that passes into the cotton-boxes. Fig. 2 is a horizontal sectional plan view of the air-flues and indicates their positions relatively to each other. Fig. 3 is an enlarged cross-sectional detail, and Fig. 4 is a sectional perspective of the parts constituting my present improvement.

Similar characters of reference designate corresponding parts throughout the different figures of the drawings.

It will be understood, of course, that my invention is primarily adapted for application to a modern cotton-elevator by which cotton is conveyed from a vehicle-body without the building or from some depository or storage place to be fed to the gins.

1 denotes the cotton-boxes, being in the main of a common and well-known construction, consisting simply of rectangular boxes of suitable width, depth, and height, and situated in a suitable position. These cotton-boxes 1 are seated upon the gin-stands 2, that contain the gin-saws whereby the cotton lint is separated from the seed, the lint being conveyed to a condenser to be baled, while the seed is dropped behind the gin-stands and driven by an air-blast into the storage-room; but it will be understood, of course, that I lay no particular claim on the form or function of the gin-stands and their gin-saws.

At the right-hand end of the apparatus shown in Figs. 1 and 2 is a fan-casing 3, containing a suitable fan operated by a steam-engine or other source of power for the purpose of creating an air-draft through the elevator-flues 4 and 5. These flues for a certain portion of their length lie alongside of each other in a horizontal position at the top of the cotton-boxes 1, as shown in Figs. 1 and 2, it being noted that the flue 4 alone connects with the fan-casing 3, while the flue 5 alone leads away from the gin-stands upward and outward until it reaches and communicates with the cotton to be brought in. These flues have horizontal connections with each other. Therefore the draft starts in the flue 4, which connects directly with the fan, and said draft is communicated to the flue 5 through connections back of each cotton-box. These connections consist of a box 6 of an elongated rectangular form closed on the bottom, at each end, and on one of the sides and open on the other side and on the top, said other side being covered by a wire-gauze screen 7. A box 6 is located behind each cotton-box 1 in

such a manner that the wire-gauze 7 fills an opening into the gin-stand 1, while the open top of box 6 opens into the interior of the flue 4 through an opening in the bottom of said flue. The position and arrangement of said box 6 are indicated very clearly in Figs. 3 and 4 as well as in Fig. 2. Hence there is a point of communication between flues 4 and 5 behind each of the gin-stands, and this communication is through the wire-gauze 7, by means of which the current of air is allowed to pass from flue 5 to flue 4; but while the air is admitted the cotton is excluded, so that the cotton is retained in the flue 5 at the top of each cotton-box, from which it is permitted to drop toward the bottom thereof. Of course it will be understood that the several stands are open at the top into the flue 5. By an arrangement like this the air-draft is maintained from the cotton-storage room or a wagon which may be unloaded to the fan at 3, while the cotton is arrested when it arrives at the open upper end of the gin-stand box, and thus allowed to drop by gravity into said box.

In the sides of each gin-stand box 1, near the upper end thereof and adjacent to the gauze-screen 7, is an opening 8, provided with a sliding door or gate 9 for partially or wholly closing the opening when desired. The movement of this gate is effected by means of a lever 10, pivoted to the side of the gin-box 1 at the point 12, and likewise pivoted at 13 to a link 11, the other end of which is pivoted at 14 to the gate 9. The function of this gate-controlled opening 8 is as follows: Should there be a surplus of cotton in a box or if a box is too full while others to the right thereof are too scantily supplied, the opening 8 may be opened by sliding the gate 5 downward more or less, the result of which will be to allow a current of air to enter the cotton-box from without, and this will cause the surplus of cotton in said box to be lifted out of it and wafted onward through the flue 5 to the other box. Should but a small part of the surplus cotton be desired to be removed, the gate or door 9 would be drawn downward only a little way and the cotton then would be removed to a level in the box even with the top of the depressed gate. Should it be desired to fill up a box which is intermediate in the series from any one preceding it, it would only be necessary to close the gate of the box to be filled and open the gate of the box from which cotton is to be taken. These gate-controlled openings are of particular value in destroying a jam in the flue, which jam clogs and injures the correct working of the apparatus. Suppose a jam occurs in flue 5, just at the left of the first gin-stand 1, a jam consisting of a collection or aggregation of cotton crowded or congested together into a hard and almost immovable knot. In the absence of my present improvement this solidified cotton could only be removed with great difficulty, for the current of air which is being drawn in by the fan 3 would have to be stopped and the work of the apparatus suspended until the obstruction could be removed, thus causing loss of time and seriously straining the machinery. With my present improvement, however, the opening of the gate 9 will set up a current of air from without, which will act upon the inner or advancing side of the congested cotton, carrying it gently away, and thus obviating the trouble. Without my improvements it often happens that some of the cotton-boxes are empty while one or more may be filled to a greater or less extent, and thus a certain quantity of cotton in the process of ginning is not finished until the last gin-stand is emptied, some of the gin-stands being thus compelled to run empty for a considerable time; but with my improvements, whereby the proper distribution of the cotton is effected, it is supplied evenly in all the stands and is ginned out in all of them at once, thus saving the time that would be wasted in running empty gins.

I am aware of Letters Patent granted to S. D. Murray for an apparatus for feeding seed-cotton to gins, No. 488,446, dated December 20, 1892, and do not intend herein to claim anything set forth and described in said patent.

Numerous changes in the exact construction and arrangement of the various parts may be made without departing from the true intent and scope of my invention as embraced in the claims.

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

1. In a cotton-ginning apparatus, the combination with a flue for delivering cotton thereto, of a cotton-box provided with an opening thereon for the purpose of admitting air in order to shift cotton contained between the opening and the flue from one gin to another.

2. In a cotton-ginning apparatus, the combination of the gin-stands and a flue or flues for delivering cotton thereto, and means consisting of a box for supplying the air-blast at the top of each gin-stand, there being a gate-controlled opening in each gin-stand for admitting air in order to shift cotton contained between the opening and the flue from one gin to the other and thus prevent clogging.

3. In combination with a flue for furnishing an air-blast whereby cotton may be delivered to a cotton-ginning apparatus, a flue for supplying cotton, a series of gin-stands having openings provided with covers or doors, which openings admit air in order to shift cotton contained between the opening and the flue from one gin to another.

4. The combination of the gin-stands having gate-controlled openings to admit air in order to shift cotton contained between the opening and the flues from one gin to another,

a pair of flues, one connected with the fan and the other with the cotton-supply, there being screen-covered passages between the flues at the top of each stand, said stands opening into the flue that leads from the cotton-supply.

5. The combination with a flue or flues through which cotton is supplied by means of an air-blast, a series of gin-stands each having near its upper end an opening for the purpose of admitting air in order to shift cotton contained between the opening and the flue from one gin to another, a door or gate for said opening, and suitable means for operating it.

Signed at Taylor this 27th day of November, 1901.

MINER ALLEN STEPHENSON.

Witnesses:

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P. O. WILLSON.