

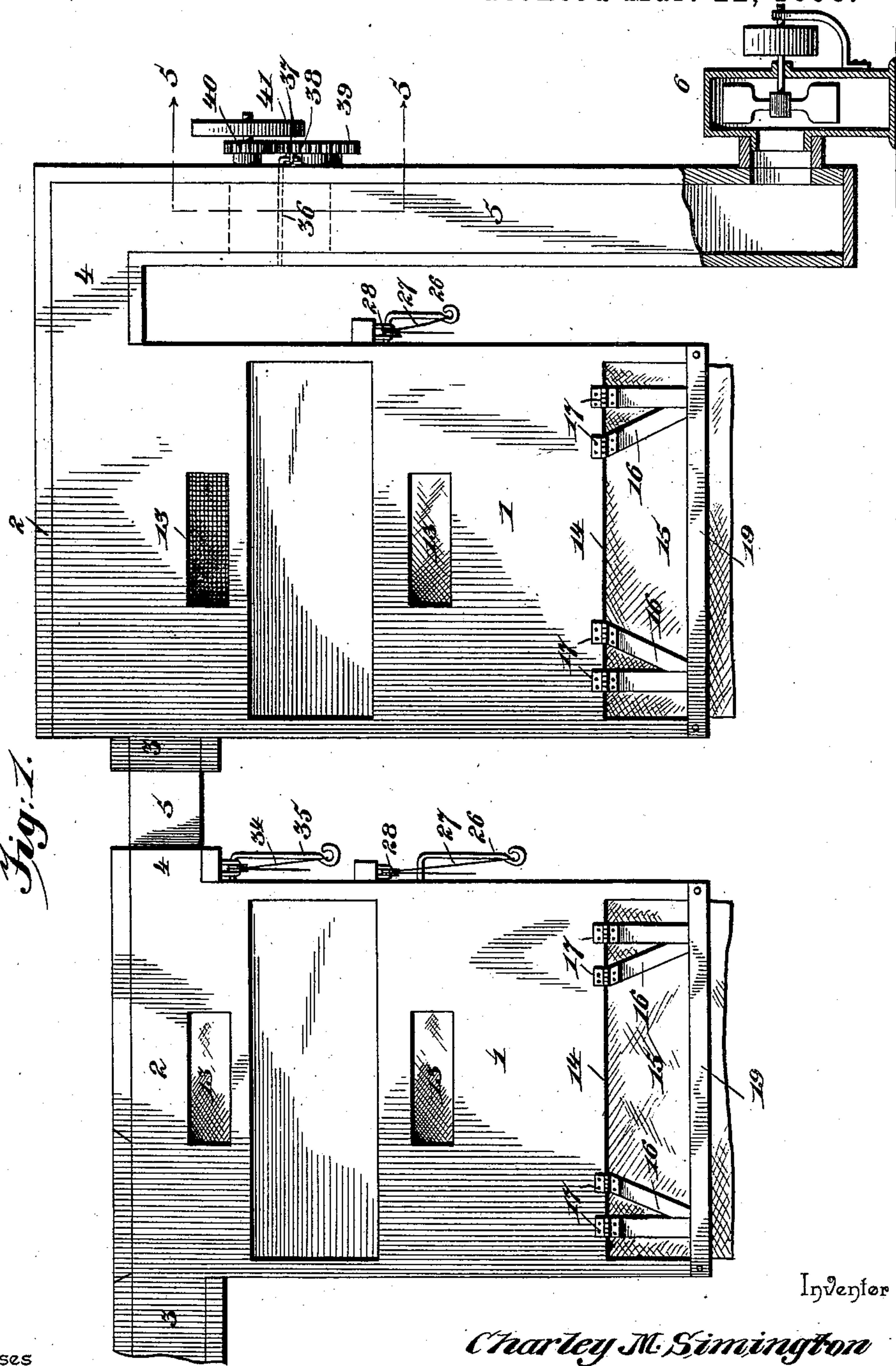
(No Model.)

2 Sheets—Sheet 1.

C. M. SIMINGTON.  
SEED COTTON DISTRIBUTER AND FEEDER.

No. 601,174.

Patented Mar. 22, 1898.



Inventor

Charles M. Simington

Witnesses

H. G. Dieterich

By his Attorneys,

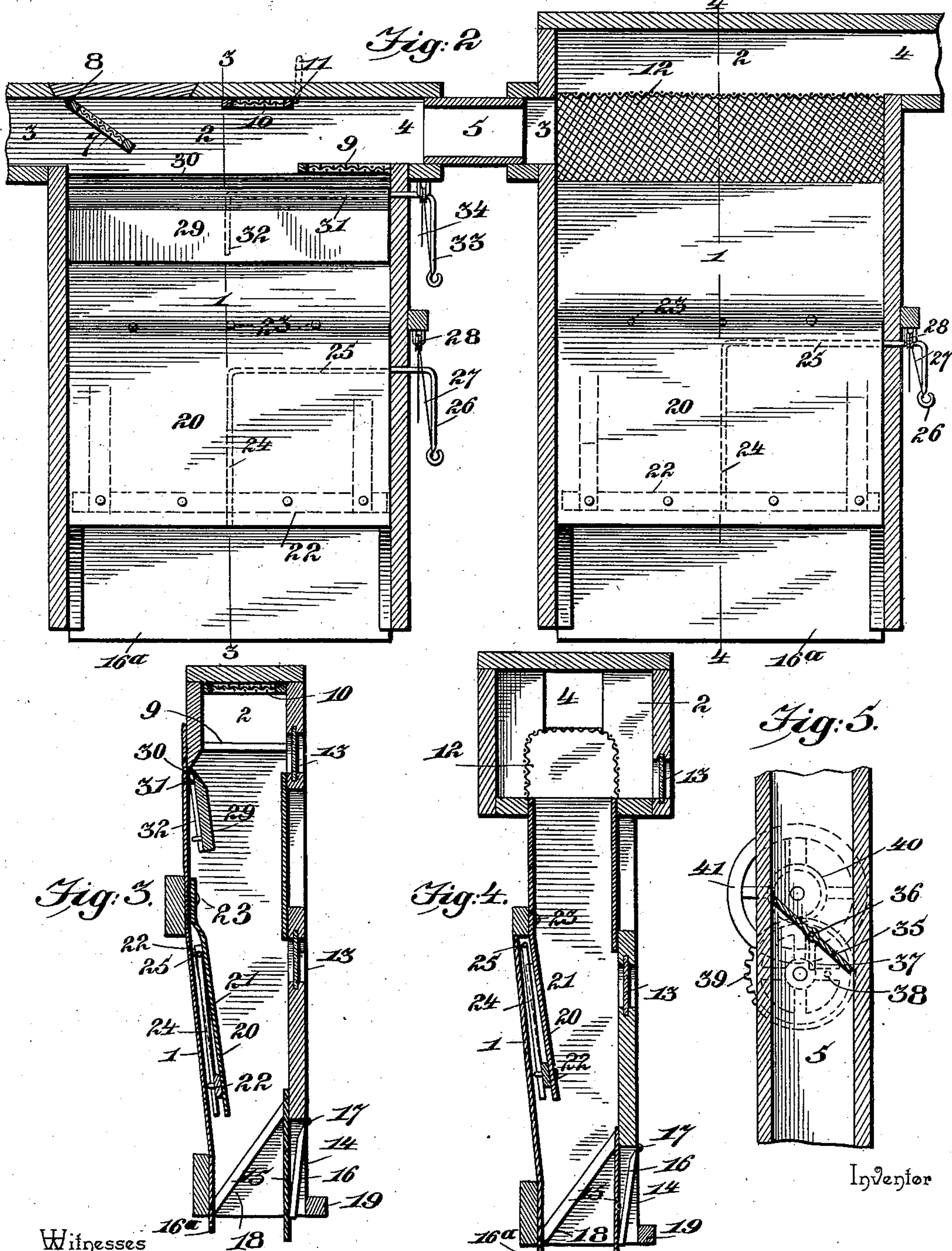
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By *his* Attorneys, *Charley M. Simington,*

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# UNITED STATES PATENT OFFICE.

CHARLEY M. SIMINGTON, OF LOCKHART, TEXAS.

## SEED-COTTON DISTRIBUTER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 601,174, dated March 22, 1898.

Application filed April 5, 1897. Serial No. 630,856. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLEY M. SIMINGTON, a citizen of the United States, residing at Lockhart, in the county of Caldwell and State of Texas, have invented a new and useful Seed-Cotton Distributer and Feeder, of which the following is a specification.

This invention relates to distributors and feeders for cotton-gins; and it has for its object to effect certain improvements in apparatus of this character whereby the same shall be more positive and efficient in their operation of evenly distributing and feeding seed-cotton to a number or battery of gins arranged in series. In the accomplishment of this result the invention primarily contemplates a construction making provision for a practically straight uninterrupted passage for the air throughout the entire series of feeders and also for properly regulating the supply of cotton fed to each gin, as well as automatically controlling said supply.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a side elevation of a cotton distributing and feeding apparatus embodying the features of this invention. Fig. 2 is a vertical longitudinal sectional view of the construction illustrated in Fig. 1. Fig. 3 is a vertical sectional view on the line 3 3 of Fig. 2. Fig. 4 is a similar view on the line 4 4 of Fig. 2. Fig. 5 is a detail sectional view of the automatic cut-off valve on the line 5 5 of Fig. 1.

Referring to the accompanying drawings, the numeral 1 designates an upright air-tight feeder-box provided with a lower open end adapted to be arranged directly over the roll-box of a cotton-gin to provide for delivering the seed-cotton to the saws thereof. The upright feeder-box 1 is formed at its upper end with a horizontal longitudinal suction-flue 2, having oppositely-located inlet and outlet necks 3 and 4, respectively, which are suitably coupled with the separate portions of the main suction pipe or flue 5. The main suction pipe or flue 5 connects a series of the

feeder-boxes 1 together in the same air-circuit and leads from its connection with the outlet-neck 4 of the last feeder-box 1 in the series to a suitably-arranged suction-fan 6, which fan is continuously operated to provide for maintaining a constant air-suction within all of the feeder-boxes, so that the cotton will be drawn in and out of the same. It will be understood that since the several feeder-boxes are connected in the line of the same suction pipe or flue 5 a certain amount of cotton will be drawn successively from one feeder-box to another, and so on until the last feeder-box of the series is reached, said last feeder-box being located nearest or next to the suction-fan.

All of the feeder-boxes 1 connected with the suction-pipe 5, excepting the box nearest or next to the fan, have the inlet and outlet necks 3 and 4 thereof in horizontal or lineal alinement, so that there will be a straight and practically uninterrupted passage for the air through and across the top portions of all of said feeder-boxes. The feeder-boxes 1, excepting the one referred to, have arranged within their upper ends or top suction-flues 2, at a point adjacent to the inlet-neck 3, a normally pendent inclined deflecting-screen 7, having a hinge connection at its upper edge, as at 8, with the top of the feeder-box in which it is arranged. The said pendent hinged deflecting-screen 7 for the several feeder-boxes, except the one nearest the fan, is of a sufficient length to provide for obstructing the direct passage of the cotton from one suction-pipe opening to the other, while, of course, not interfering with the free and direct passage of air. The deflector, therefore, serves to cause a certain amount of cotton to fall downward toward the lower open end of the feeder-box, while the remaining cotton suspended in the air-current is drawn out of the box by the suction in the pipe 5 and distributed to the next succeeding feeder-box, by which arrangement a regulated quantity of cotton is distributed to each feeder-box, so that all of the gins will be fed with the proper supply of cotton.

Those feeder-boxes of the series provided with the pendent hinged deflecting-screen 7 in their upper ends are also provided with a



stationary horizontal guard-screen 9, arranged transversely within the box and disposed at the inner lower edge of the outlet neck or opening 4. The screen 9, by reason of its particular disposition, serves to retain the cotton within the feeder-box after being deflected downward by the screen 7, and thereby prevents cotton from being drawn by the suction from one box to another, where a large suction-fan is employed in connection with the apparatus.

The feeder-box 1 immediately preceding the last one in the series is designed to have the outlet neck or opening thereof temporarily closed, when necessary, by a hinged screen-valve 10. The screen-valve 10 is hinged at one edge, as at 11, to the top of the feeder-box in which it is located, and is designed to be swung down to a position against the stationary guard-screen 9, immediately therebelow, so as to stop or cut off the flow of cotton to the last feeder-box in the series when the gin under such box is being overfed or has become impaired by such overfeeding. In the normal operation of the apparatus the valve 10 is swung up against the top of the feeder-box in which it is located, so as to be entirely out of the way of the free passage of cotton into the last feeder-box of the series.

While the hinged deflecting-screen 7 provides for deflecting a quantity of cotton downward within all of the feeder-boxes, excepting the box nearest or next to the fan, the said latter box is not provided with a hinged deflecting-screen referred to, but in place thereof has its top suction-flue 2 enlarged, so as to accommodate therein a horizontal arched separating-screen 12. The horizontal arched separating-screen 12 is of a less width than the top suction-flue 2, in which it is located, and has the opposite side edges thereof secured to the front and rear sides of the feeder-box, so that all of the cotton which passes within the said screen 12 will be separated from the air and caused to fall into the portion of the box below the screen. The inlet and outlet necks 3 and 4 of the feeder-box having the arched separating-screen 12 are located in different horizontal planes, so as to permit a free passage of the air through the screen 12 into the upper portion of the flue 2, and thence through the outlet-neck 4 and into that portion of the suction-pipe 5 leading directly to the fan 6. The screen 12 extends longitudinally across the entire upper end portion of the last feeder-box in the series, so that the cotton will evenly distribute or impact itself against the entire inner surface of the screen 12 before it falls into the lower portion of the feeder-box, when the suction is relieved in the suction-pipe and its connections, thereby providing for an even distribution of the cotton into the last feeder-box of the series, as will be readily understood by those skilled in the art.

Each feeder-box 1 is provided in its front side with a glass-covered observation-opening 13, through which may be observed the falling cotton, whereby a failure of the cotton to feed downward into the box may be readily noted. Near its lower end the feeder-box 1 is further provided in the front side thereof with a valve-opening 14, at the inner side of which opening is arranged to work a flexible suction-closed discharge-valve 15. The suction-closed discharge-valve 15 is made of suitable cloth material impervious to air and is secured at its upper and side edges within the open lower end portion of the box 1 at the inner side of the opening 14, while the lower edge of said valve 15 remains unattached and free to be drawn by the suction within the box toward and against the rear side at the lower edge thereof. At the rear lower edge of the box is arranged a short pendent flexible discharge-apron 16<sup>a</sup>, which is designed to be drawn by the suction within the box into tight contact with the free lower edge of the flexible valve 15.

The flexible discharge-valve 15 at the lower front side of the feeder-box has suitably secured to the opposite outer sides thereof the triangularly-shaped braces 16, hinged at their upper edges, as at 17, to the upper edge of the valve-opening 14, and said hinged braces 16 are designed to move inward against the inclined stop-cleats 18, fitted to opposite inner sides of the box 1 at the lower end thereof, and said braces 16 are limited in their outward movement by the rail 19 at the lower edge of the opening 14. The said braces 16 serve to stiffen the side edges of the flexible valve 15 and positively limit the inward and outward movement of such valve, while at the same time being especially useful in firmly holding the side corners of the flexible valve against the rear side of the feeder-box, so as to effectually cut off the outside air while the partial vacuum is being maintained within the box.

Directly above the suction-closed flexible discharge-valve 15 all of the feeder-boxes 1 in the series have arranged therein a regulating-valve 20, preferably consisting of a flexible body 21, having a stiffening-frame 22, and secured at its upper edge, as at 23, to the rear side of the feeder-box. The fastening of the valve-body 20 at its upper edge to the rear side of the feeder-box provides a hinge for such valve, so as to permit the free edge thereof to be readily swung toward and away from the front side of the box to provide for regulating or controlling the cotton that is to be fed to the gin below the box, and said hinged regulating-valve 20 has suitably attached thereto the inner angled end portion 24 of a valve-rod 25, extending through one side of the feeder-box and formed at its outer end with a crank-arm 26, to which is preferably connected one end of an operating-cord 27, passing over a guide-pulley 28, mounted ad-



5 adjacent to the arm 26. By pulling the cord 27 the free edge of the valve 20 can be moved toward the front side of the feeder-box when required to regulate or control the amount of cotton to be fed to the gin. The real purpose of the valve 20 is to separate one bale from the other in the operation of ginning; but it will also be understood that, normally, the valve 20 remains in a pendent position, so as not to obstruct the free fall of cotton to and through the lower open end of the feeder-box.

10 In all of the feeder-boxes excepting the last one in the series there is arranged in the upper part of the box above the lower regulating-valve 20 an upper cut-off valve 29. The upper cut-off valve 29 is hinged at its upper edge, as at 30, to the rear side of the feeder-box and is of a width corresponding to the transverse width of the feeder-box, so that the valve when swung upward on its hinge will entirely close the passage through the feeder-box and cut off the downward fall of cotton. The valve 29 is arranged immediately below the plane of the top suction-flue 2 of the feeder-box, so that when the valve is elevated or closed the same practically forms a bottom for the flue 2 at the upper end of the box, so that the air and cotton suspended therein will have a free passage directly through said flue into the succeeding feeder-box, it of course being understood that the hinged deflecting-screen 7, when the valve 29 is closed, will rise sufficiently to permit of the passage of the cotton. The valve 29 has suitably attached thereto the inner angled end 31 of a valve-rod 32, the outer end of which exterior to the box is provided with a crank-arm 33, having an operating-cord connection 34 therewith. The valve 29 is used to cut off the feed of cotton through the box in which it is located when this becomes necessary for any reason.

15 In connection with the apparatus just described there is preferably employed an automatic suction cut-off valve 35, arranged to work in that portion of the suction-pipe 5 leading directly to the fan 6. The automatic cut-off valve 35 is of a rectangular form to agree with the interior shape and size of the pipe 5 and is provided intermediate its ends with a pivot-shaft 36, the extremities of which are journaled respectively in opposite sides of the pipe 5; and one of the shaft extremities 36, exterior to the pipe, is formed with a crank-arm 37, adapted to be engaged intermittently or at intervals by the trip-pin 38, projected from the inner side of a trip-wheel 39, mounted on the pipe 5. The trip-wheel 39 is preferably a cog-wheel and meshes with an adjacent pinion 40, carried at the inner side of a pulley 41, adapted to receive a suitable belt for imparting a continuous motion thereto, (the belt not being shown,) as the same may be run from any convenient part of the apparatus. The rotation of the trip-wheel 39 carries the pin 38 thereof at intervals against the crank-arm 37, and this en-

gagement of the trip-pin serves to turn the valve 35 to a closed position, thereby relieving the suction within all of the feeder-boxes, so that the valves 15, under the weight of the cotton in the boxes, will open and permit the discharge of the cotton into the gin. After the trip-pin 38 passes the arm 37 the suction or draft immediately reopens the valve 35 and again creates a partial vacuum within all of the feeder-boxes, which serves to immediately close the flexible valves 15 and permit such boxes to refill with the cotton until the valve 35 again relieves the suction.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a cotton distributor and feeder, an upright feeder-box having suction-pipe connections with its upper end and provided in its front side at the lower end with a valve-opening, the lower side of which valve-opening forms a horizontal stop-rail 19, a flexible suction-closed valve arranged at the inner side of said valve-opening and of a greater width than the same whereby its lower unattached edge will normally project below the plane of the extreme lower end of the box, the upper edge of said valve being fastened to the inner side of the box at the upper edge of the valve-opening, rigid braces attached to the outer side of the flexible valve and hinged at their upper ends directly to the upper edge of the valve-opening, the lower ends of said braces extending below the plane of the upper edge of the rail 19 at the inner side thereof, and oppositely-located inclined stop-cleats 15, extending diagonally across the feeder-box at opposite inner sides thereof and forming shoulders for the hinged braces to be drawn against, substantially as set forth.

2. In a cotton distributor and feeder, an upright feeder-box formed at its upper end with a horizontal suction-flue and provided at its lower end with a suction-closed valve, a normally pendent inclined deflecting-screen arranged within the top suction-flue adjacent to the inlet-opening, a stationary horizontal guard-screen projected inwardly from one side of the feeder-box at the inner lower edge of the outlet-opening, an upper cut-off valve arranged within the upper portion of the feeder-box and, when closed, forming a bottom for said flue, and a suitably-operated regulating-valve arranged in a plane intermediate of the suction-closed and cut-off valves, substantially as set forth.

3. In a cotton distributor and feeder, an upright feeder-box, formed at its upper end with a horizontal suction-flue and provided at its lower end with a suction-closed valve, a normally pendent inclined deflecting-screen hinged at its upper edge to the upper side of



said top suction-flue, a stationary horizontal  
guard-screen projected inwardly from one  
side of the feeder-box at the inner lower edge  
of the outlet opening or neck of the suction-  
5 flue, and a screen cut-off valve hinged within  
the said outlet neck or opening of the suc-  
tion-flue, substantially as set forth.

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

CHARLEY M. SIMINGTON.

Witnesses:

JAS. G. BURLESON,  
J. B. SUBLETT.