

No. 651,979.

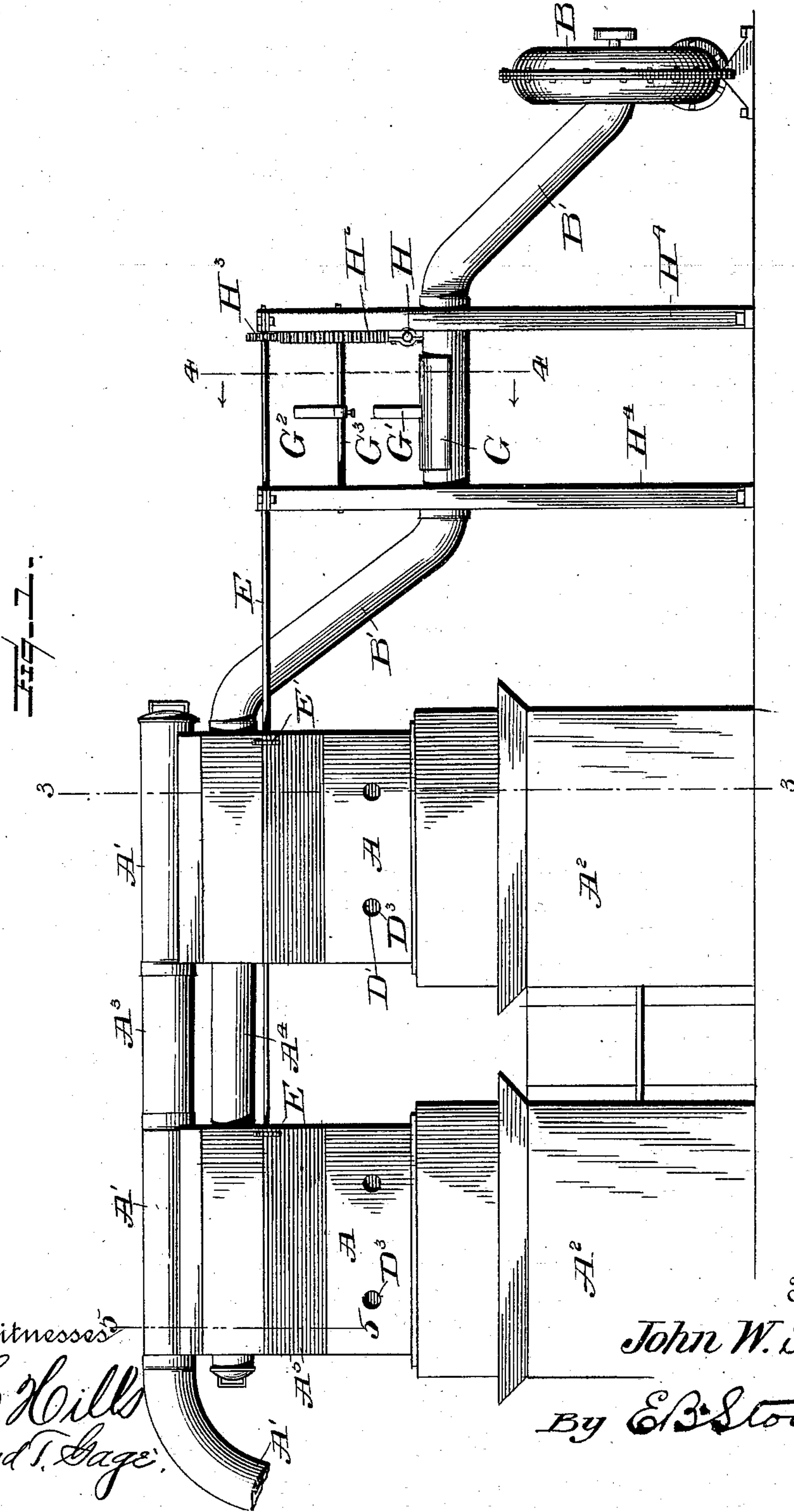
Patented June 19, 1900.

J. W. SEIFERT.  
COTTON CLEANER AND FEEDER.

(Application filed Feb. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
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Attorney

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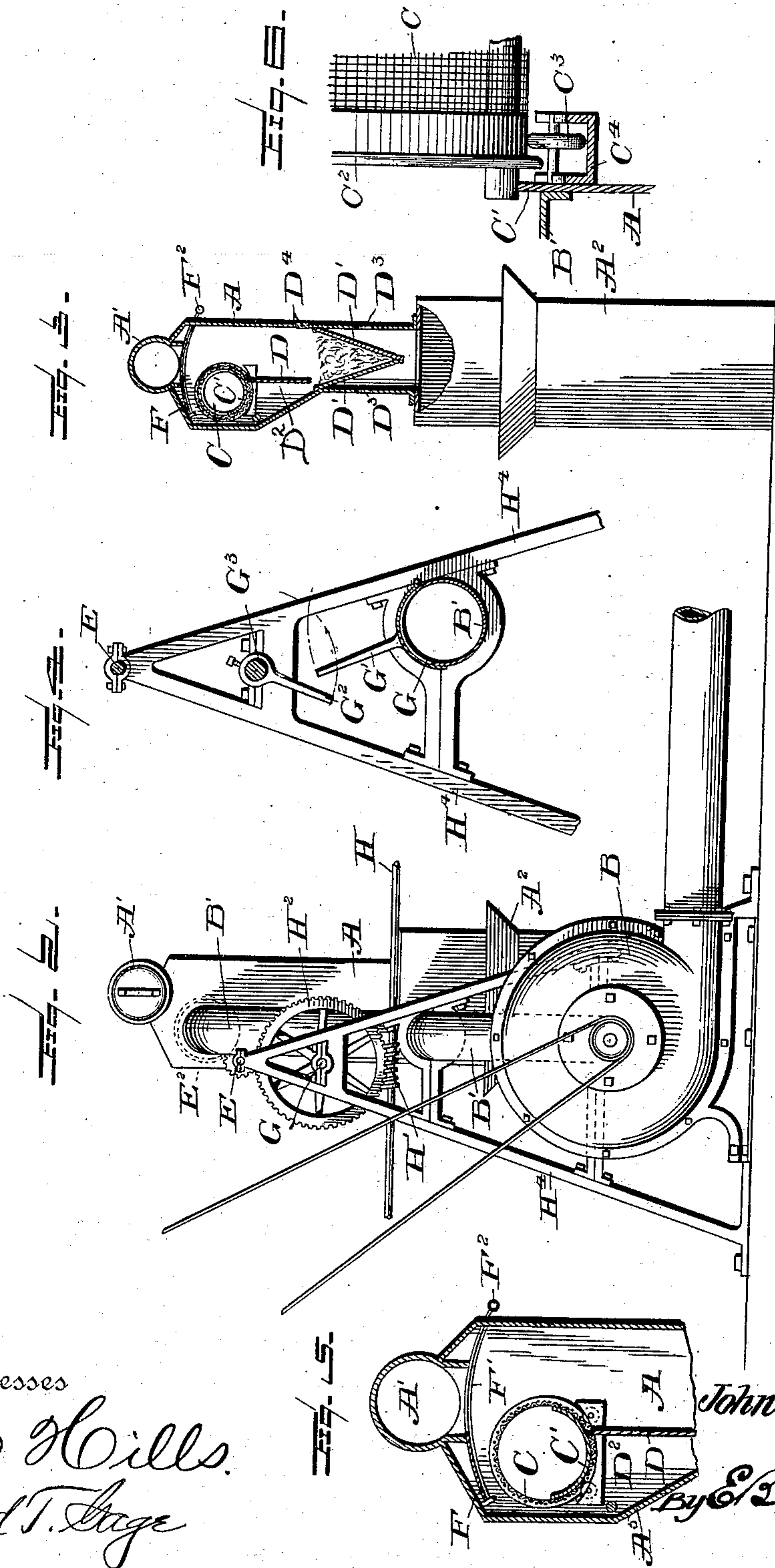
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Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN W. SEIFERT, OF WACO, TEXAS.

## COTTON CLEANER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 651,979, dated June 19, 1900.

Application filed February 24, 1900. Serial No. 6,348. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. SEIFERT, a citizen of the United States, residing at Waco, in the county of McLennan, State of Texas, have  
5 invented certain new and useful Improvements in Cotton Cleaners and Feeders, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to cotton cleaners and distributors, and more particularly to an improvement upon the structure shown in my prior patent, No. 604,426, dated May 24, 1898.

15 The invention has for one of its objects to simplify and improve the construction of the cleaning-cylinder and the valve controlling the admission of cotton thereto.

20 A further object of the invention is to improve the structure for providing a suction of air through this cylinder, so that the air-pressure may be intermittently reduced and also the pressure upon the lower segment of the cylinder relieved, so that the cotton adhering thereto will be free to drop in the rotation of  
25 the cylinder.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

30 In the drawings, Figure 1 is a side elevation of two of the cleaners located in connection with cotton-gins. Fig. 2 is an end elevation of Fig. 1. Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is an enlarged vertical section upon the line 4 4 of Fig. 1. Fig. 5 is a similar section upon the line 5 5 of Fig. 1, and Fig. 6 is a detail elevation showing the supporting-rollers at the ends of the  
40 rotatable cylinder.

Like letters of reference indicate like parts throughout the several figures of the drawings.

45 The letter A designates a suitable casing within which the operating parts of the cleaning mechanism are located, and A' a conducting-pipe which acts as an elevator to raise the cotton to the upper portion of the casing A. As illustrated in Fig. 1, two or more of the  
50 cleaners and feeders may be assembled in connection with a similar number of cotton-gins

A<sup>2</sup>, so that a single suction device and relieving apparatus will operate the entire series. For the purpose of thus assembling the devices a connecting-joint A<sup>3</sup> may extend between the sections of the feeding-pipe and a similar pipe A<sup>4</sup> between the cleaning-cylinders within each device. These cylinders are also connected to the suction-fan or other apparatus B by means of a conducting-pipe B', which may be of any suitable construction and disposed in any desired position.

Within the casing and in a position beneath the conducting-pipe A' a rotatable cylinder C is located and formed of any desired reticulated material. This cylinder is connected at its discharge end with the pipe B', so that the suction of air therein draws the cotton to the surface of the rotating cylinder and retains it thereon until the pressure upon the surface of the cylinder is relieved. This object is obtained by means of a shield C', extending over the lower segment of the cylinder, and thus relieving the air-pressure thereon, so that the cotton drops from the surface of the reticulated cylinder to the bottom of the feeding device. The descent of the cotton is guided and controlled by means of a collecting-plate D, located adjacent to the under surface of the cylinder C and adapted to discharge the cotton collected thereby upon flexible valves D', located at the lower portion of the casing, as shown in Fig. 3. When a sufficient quantity of cotton has collected upon the valves, the suction is relieved to overcome the pressure of air which holds the valves together. The latter open and permit the cotton to fall into the gin. The shield C' extends longitudinally throughout the length of the cylinder and is stationary, so that the cylinder revolves around and over the same. For the purpose of providing for this rotation of the cylinder the ends thereof are provided with tracks or ways C<sup>2</sup>, each resting upon friction-rollers C<sup>3</sup>, supported in a suitable boxing C<sup>4</sup>, carried by the end walls of the casing A. The cylinder is driven by any suitable means—for instance, by means of a shaft E, provided with a gear-wheel E', extending through the casing and meshing with a peripheral gear E<sup>2</sup> upon one end of the cylinder. At the rear of the vertically-disposed collect-



ing-plate D there is a chamber D<sup>2</sup>, into which any cotton passing the collecting-plate will fall, and the inclined wall A<sup>5</sup> of this chamber will direct the cotton thus collected onto the valve D'.

For the purpose of governing and controlling the amount of cotton fed to the rotating cylinder C, and thus insuring a perfect cleaning of the cotton prior to its introduction to the gin, a controlling-valve F has been provided and is disposed beneath the conducting-pipe A', so as to permit the introduction of more or less cotton from that pipe or, when desired, as in the case of accident, to completely close the entrance from the conducting-pipe A'. This valve F is adapted to slide in ways F', which may be segmental, as shown, or of any other desired configuration. The valve is provided with an operating-handle F<sup>2</sup> on the exterior of the casing, by which it may be effectually operated at any time. Opposite each of the flexible valves D' suitable openings D<sup>3</sup> are provided in the case A for the admission of air to permit the proper closing of the valves, and at a point above the valves the casing is also provided with a glazed aperture D<sup>4</sup>, by means of which the amount of cotton upon the valves may be observed or the condition noted.

It will be understood that there is more or less constant suction-pressure within the whole casing A, which restrains the free action of the collecting and discharging valves D', and for the purpose of insuring a positive operation of these parts I have provided a relieving device to intermittently reduce the suction of air within the casing, thus permitting the cotton upon the valves to drop freely therethrough and into the gin. To this end a portion of the pipe B' has been provided with a pivoted door or valve G, having upon its upper portion a projection G', adapted to be engaged by a tappet G<sup>2</sup>, carried upon a revolving shaft G<sup>3</sup>, so that in the rotation of the tappet the valve will be opened and retained in an open position for a limited time, after which it will automatically close by gravity or may be assisted by any desired means, thus restoring the air-pressure within the cylinder and casing. It will be seen that the length of time which the valve G is to be retained open may be regulated by using a different length of tappet G<sup>2</sup> or projection G', so that the period during which these members are in contact with each other may be increased or decreased, as found desirable. The driving-shaft G<sup>3</sup> may be driven in any suitable manner; but as illustrating a desirable driving mechanism I have provided a shaft H, driven by any suitable power, which is provided with a worm-gear H', meshing with a gear-wheel H<sup>2</sup>, carried upon the shaft G<sup>3</sup>. In order to also drive the revolving cylinder C by this same mechanism through the shaft E', said shaft has been provided with a gear H<sup>3</sup>, meshing with the gear H<sup>2</sup>, but of smaller di-

ameter, so that the shaft E is rotated at a much higher rate of speed than the shaft G<sup>3</sup>, thus permitting a body of cotton to collect upon the valves D' before each intermittent action of the air-relieving device. The pipe B' and driven shafts G<sup>3</sup> and E may be supported by any suitable standards—for instance, as shown at H<sup>4</sup>—by which journaling supports for the several shafts are provided.

From the foregoing description the operation of the several parts will be apparent, and it will be seen that the present structure accomplishes the cleaning operation by the use of a single roller and releases the cotton adhering to this roller at the proper time by means of the stationary shield within the roller and also the suction-relief valve. The dirt and dust falling within the roller is caught by the shield and carried out by means of a discharge-pipe B', thus preventing the dirt from again entering the cotton by falling from the lower portion of the cylinder and keeping the gin-house free from all dust. It will also be seen that the regulating-valve above the cylinder provides for an instant stoppage of the supply of cotton in case of accident to the gin or the regulation of this supply to secure the proper cleaning dependent upon the condition of the cotton and the capacity of the gin with which the feeder is coöperated. The collecting-plate beneath the cylinder receives the cotton as and when the air-pressure upon the surface of the cylinder is relieved by the shield C' and deposits the cotton upon the discharge-valves, while if any of the cotton passes this shield it will be still fed upon these valves by means of the wall of the casing. It will also be apparent that the opening of the valve G in the discharge-pipe B' will relieve the suction or pressure of air in the cylinder and casing, thus permitting the weight of cotton to quickly open the discharge-valve D', while the mechanism provided for operating this air-relieving device provides for the proper regulation of the speed of the several parts and the time which the valve G shall remain open.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of this invention as defined by the appended claims.

Having described my invention, what I claim is—

1. In a cotton-cleaner, the combination of a casing, a rotatable reticulated cylinder therein having its entire upper surface exposed to the cotton-feed, a suction device connected with the interior of said cylinder, and means for automatically relieving the suction within said cylinder; substantially as specified.

2. In a cotton-cleaner, the combination of a casing, a reticulated cylinder therein, a suction device connected at one end with the interior of said cylinder, and means for au-



tomatically and intermittently relieving the suction within said cylinder; substantially as specified.

3. In a cotton-cleaner, the combination of a casing, a reticulated cylinder therein having its entire upper segment exposed to the cotton-feed, a suction device connected with the interior of said cylinder, and a stationary segmental shield disposed entirely within the lower segment of said cylinder adjacent to the surface thereof; substantially as specified.

4. In a cotton-cleaner, the combination of a casing, a reticulated cylinder having its entire upper segment exposed to the cotton-feed, a suction device connected with said cylinder, a stationary shield disposed within said cylinder, a collecting-plate beneath said shield within the cylinder, a regulating-valve to control the supply to said cylinder, discharge-valves located beneath said collecting-plate, and means for relieving the suction within said casing; substantially as specified.

5. In a cotton-cleaner, the combination of a casing having a conducting-pipe at its upper portion, a sliding valve adapted to partially or completely close the discharge from said pipe, a rotatable reticulated cylinder beneath said valve, means for producing an air suction within said casing, and means controlled in the rotation of the cylinder for relieving said suction; substantially as specified.

6. In a cotton-cleaner, the combination of a casing, a reticulated collecting-cylinder rotatably mounted therein, a stationary shield disposed entirely within the lower segment of said cylinder, a vertically-disposed collecting-plate beneath said shield within the cylinder and adapted to receive material from the surface thereof, and means for automatically relieving the air suction within said cylinder; substantially as specified.

7. In a cotton-cleaner, the combination of a casing, a reticulated cylinder rotatably supported therein, bearings for said cylinder at the opposite ends thereof, a stationary shield extending longitudinally of the cylinder entirely within the lower segment thereof, means for producing a suction of air within said cylinder at one end of said shield, a valve for controlling the feed of material to the periphery of said cylinder, and means for automatically relieving the air suction within said cylinder; substantially as specified.

8. In a cotton-cleaner, the combination of a casing, a reticulated cylinder rotatably supported therein, bearings for said cylinder at the opposite ends thereof, a stationary shield extending longitudinally of the cylinder at its lower portion, means for producing a suction of air within said cylinder, a valve for controlling the feed of material to the periphery of said cylinder, a collecting-plate beneath

said cylinder, and means for relieving the air suction within said cylinder and casing; substantially as specified.

9. In a cotton-cleaner, the combination of a casing, a reticulated cylinder rotatably supported therein, bearings for said cylinder at the opposite ends thereof, a stationary shield extending longitudinally of the cylinder at its lower portion, means for producing a suction of air within said cylinder, a valve for controlling the feed of material to the periphery of said cylinder, flexible collecting-valves located opposite apertures in the casing, and means for relieving the air suction within said cylinder and casing; substantially as specified.

10. In a cotton-cleaner, the combination of a casing, a rotatable reticulated cylinder therein, a suction device for producing a suction within said cylinder, a valve in the wall of the suction-pipe for said casing, and means actuated by the cylinder-rotating shaft for automatically opening said valve relative to the movement of the cylinder; substantially as specified.

11. In a cotton-cleaner, the combination of a casing, a reticulated cylinder therein, a suction device connected therewith, a connecting-pipe between said casing and device, a pivoted valve in the wall of said connecting-pipe to admit air therein and relieve the suction within said cylinder, a projecting lug from said valve, a tappet carried by a rotating shaft, and means for driving said shaft; substantially as specified.

12. In a cotton-cleaner, the combination of a casing, a suction device connected therewith, a pivoted valve in a connecting-pipe, a projecting lug from said valve, a tappet carried by a rotatable shaft, means for automatically driving said shaft, a rotatable reticulated cylinder within said casing communicating with said connecting-pipe, a driving shaft for said cylinder, and means carried by said shaft and meshing with the driving means for the tappet-driving shaft; substantially as specified.

13. In a cotton-cleaner, the combination of a casing, a rotatable reticulated cylinder therein, a suction device communicating with the interior of said cylinder, and means actuated by the driving means for said cylinder for automatically relieving the air suction of said device relative to the rotation of said cylinder; substantially as specified.

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

JOHN W. SEIFERT.

Witnesses:

S. B. THAYER,  
P. R. SWANN.