(No Model.) 3 Sheets—Sheet 1.

C. L. BESSONETTE.

GIN FEED FOR ROLLER COMPRESSES.

No. 588,812. Patented Aug. 24, 1897.

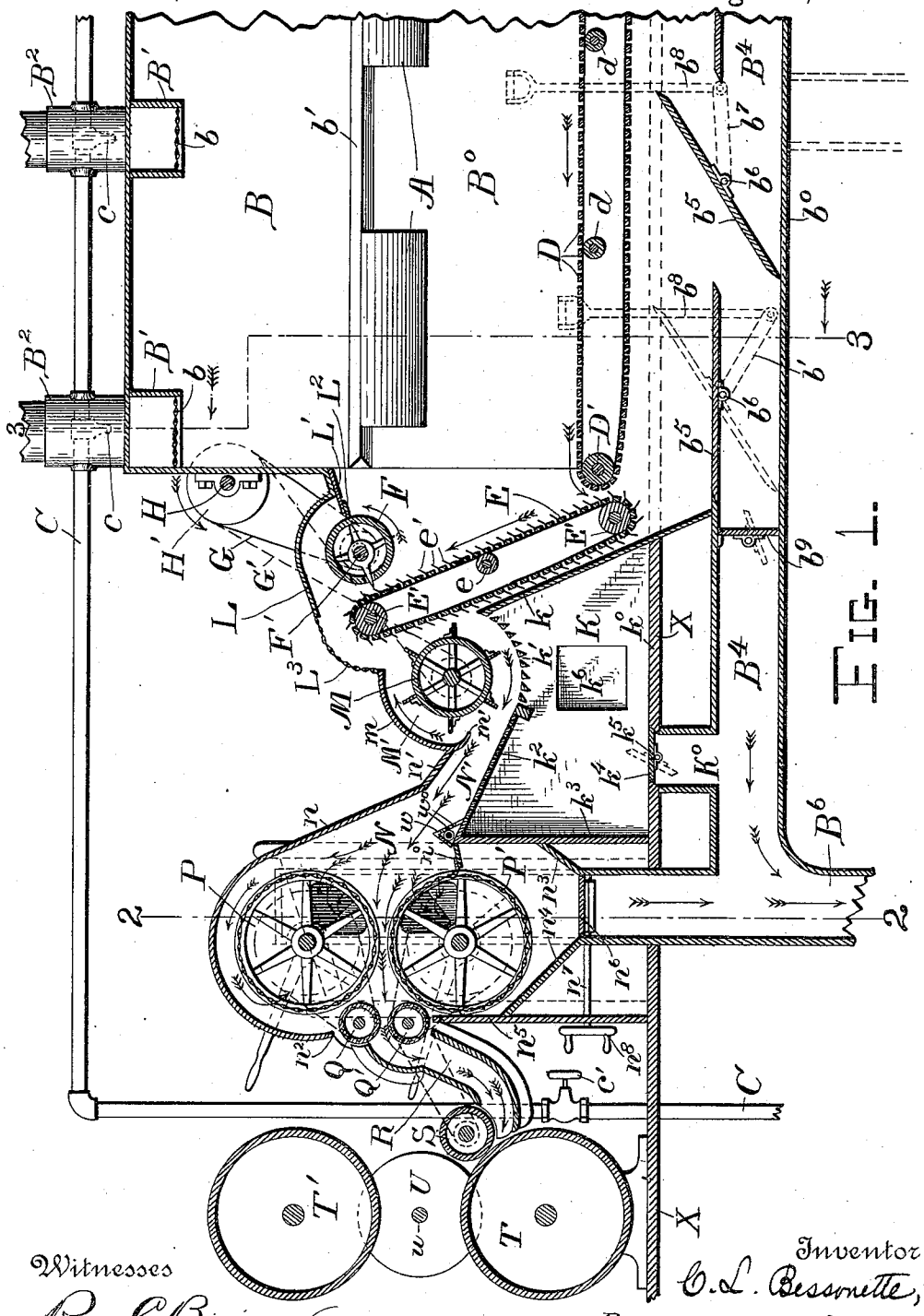


FIG. 1.

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(No Model.) 3 Sheets—Sheet 2.

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FIG. 1.

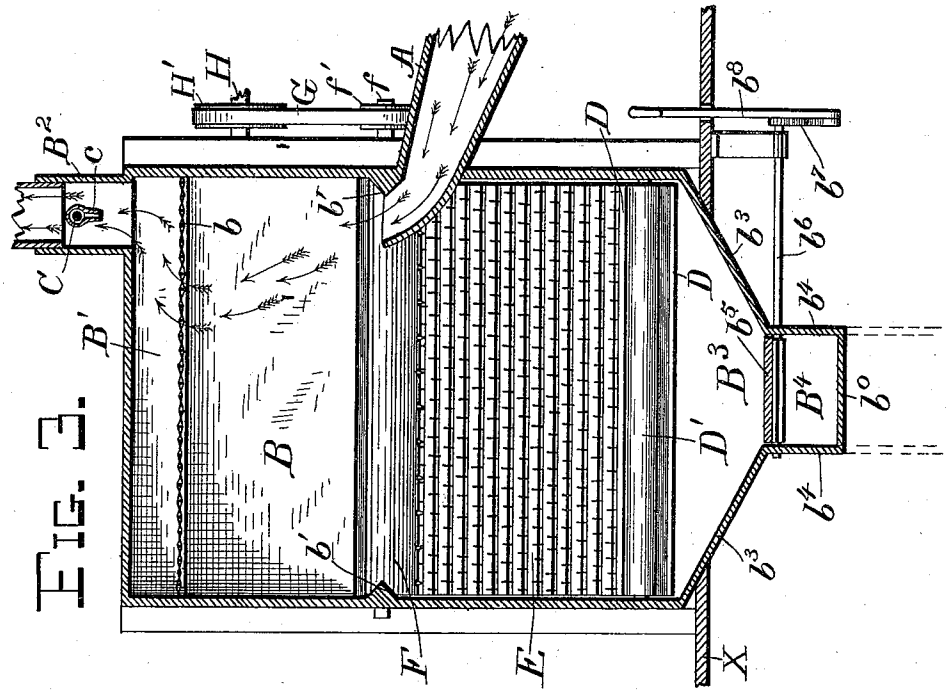
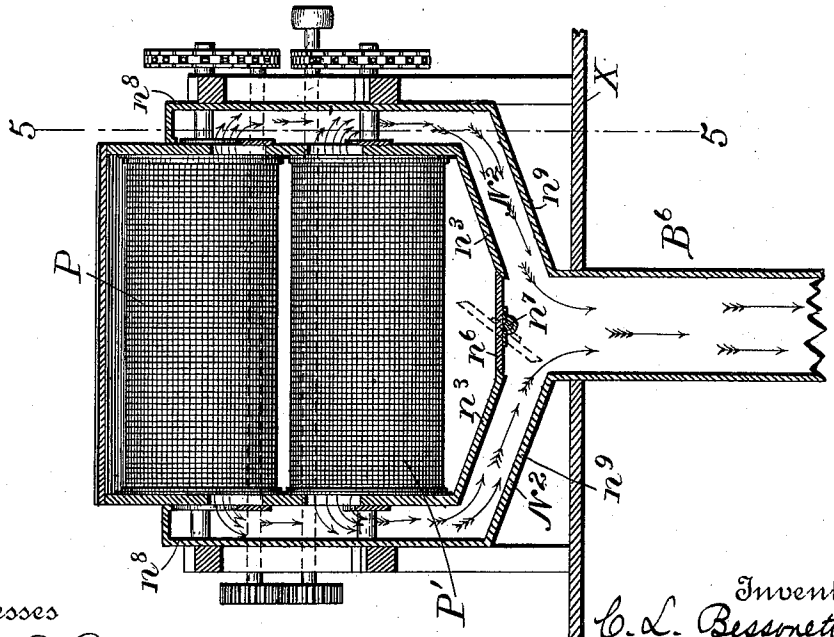


FIG. 2.



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FIG. 4.

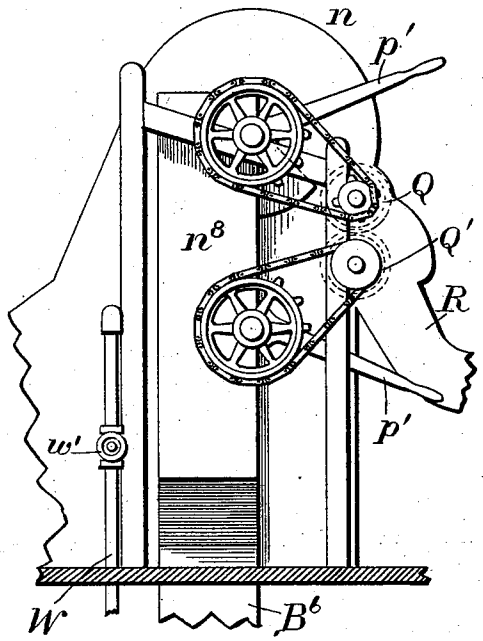


FIG. 5.

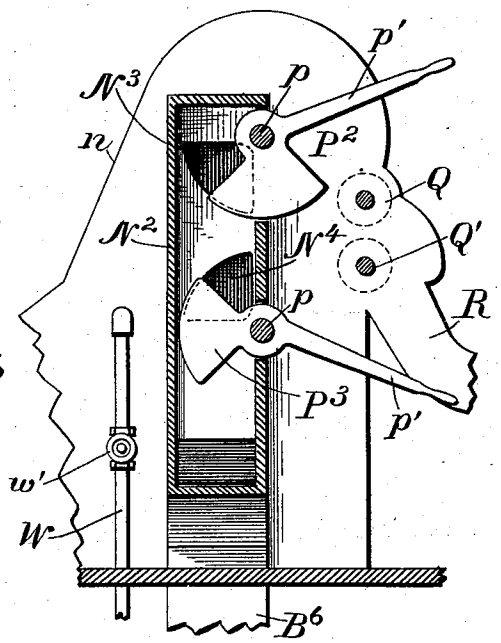


FIG. 6.

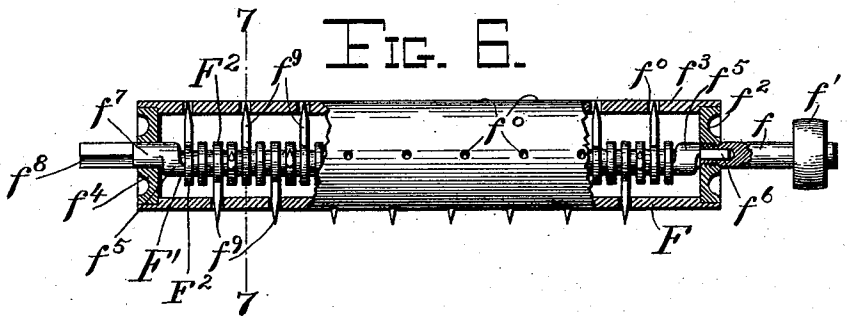
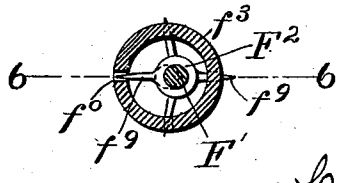


FIG. 7.



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UNITED STATES PATENT OFFICE.

CHARLES L. BESSONETTE, OF WACO, TEXAS, ASSIGNOR OF ONE-HALF TO CHARLES W. WHITE, OF SAME PLACE.

GIN-FEED FOR ROLLER-COMPRESSES.

SPECIFICATION forming part of Letters Patent No. 588,812, dated August 24, 1897.

Application filed March 10, 1896. Serial No. 582,594. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. BESSONETTE, a citizen of the United States, residing at Waco, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Gin-Feeds for Roller-Compresses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in gin-feeds for roller cotton-compresses; and it consists in certain improved means for carrying the cotton from the gin or gins, in cleaning the same, and in preparing the same until it is in the form of a bat suitable for feeding to a roller cotton-compress.

The said invention also consists in certain novel features of construction and certain novel parts and combinations of parts, which will be hereinafter described and claimed.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a transverse section through my improved apparatus, showing the gin-cases at one end, from which the cotton is fed to the apparatus, and a cross-section of the roller-compress in which the cotton is wound into a cylindrical bale at the other end of the apparatus. Fig. 2 represents a section along the line 2 2 of Fig. 1 and looking to the left, the gauze rollers of the condenser being shown in elevation and not in section. Fig. 3 represents a section along the broken line 3 3 of Fig. 1 and looking in the direction of the arrows or toward the left of the said figure. Fig. 4 represents an end view of the condenser-chamber and the parts immediately connected thereto, the view being taken as seen from the right of Fig. 2. Fig. 5 represents a section along the line 5 5 of Fig. 2 and looking to the left. Fig. 6 represents a detail view, parts being broken away, of the roller with claws moving in and out through the periphery thereof adapted to remove the excess of cotton from the feeding-apron and at the same time to partially clean the cotton carried forward by said apron; and Fig. 7 represents a section along the line 7 7 of Fig. 6.

A represents one of the flues leading from one or more gins (not shown) to the chamber B.

The number of gins and corresponding flues may be varied within wide limits, but in ordinary practice there are preferably about eight gins of ordinary size to one roller-compress. These flues empty into the chamber B just above the inclined rib b', and the cotton is blown up into the said chamber in a fluffy state. The air from the gin escapes through the wire-gauze screens b and the air-flues B′ and pipes B^2, while the cotton drops down into the lower chamber B^0 and falls on the slatted carrier D.

In order to put out any fire that may occur in either of the chambers B or B^0 or in any of the passages leading therefrom, steam-jets c, leading from the steam-pipe C, open downward in the air-pipes B^2, whereby the entire apparatus may be filled with steam. Moreover, steam in limited quantities may be admitted in order to moisten the cotton in the chamber B^0 or the passages connected thereto, but it will ordinarily be preferable to add any steam for moistening purposes farther along in the apparatus.

The flow of steam in the pipe C is controlled by means of the valve c', preferably located near the press, so as to be conveniently reached by the attendant at the compress.

The cotton from the flues A falls in a mass on the moving carrier D, which is supported on the rollers d and driven by the drum D′ in the direction indicated by the arrows.

Much of the dirt in the cotton which is carried over from the gin falls through the slats of the carrier D onto the pivoted bottom plates b^5, which are pivoted, as at b^6, on the rock-shafts, which shafts are provided at their outer ends with cranks b^7, operated by hand-rods b^8. The bottom of the chamber B^0 is made sloping, as at b^3, to form a bottom air-passage B^4, having flat bottoms b^0 and vertical sides b^4, between which the said pivoted bottom plates fit snugly. This air-passage B^4 is closed on top by means of these plates b^5 and fixed boards to form a closed air-

passage which is controlled by means of the damper b^9. It will be seen that if one or more of these bottom plates be tilted up, as shown in Fig. 1, and the damper be partly opened, as shown in dotted lines in the said figure, part of the air from the gins may be blown down through the carrier D and out through the closed air-passage B^4 into the air-trunk B^6, to which all the air-passages leading from the machine downward are connected. This air-trunk should preferably be connected to a fan or other apparatus (not shown) for exhausting air. Thus it will be seen that the dirt falling through the carrier D may be blown out through the air-trunk B^6 and so gotten rid of.

The cotton which is collected on the carrier D is fed to the apron E, provided with upwardly-projecting teeth e'. This apron runs over the drums E' and the roller e, all as shown in Fig. 1. The cotton is carried by this apron in an irregular mass to the doffing-roller F, which is rotated in the direction of the arrow. This doffing-roller is provided with a plurality of perforations f^0 in its shell, through which project intermittently the points or claws f^9, secured to the rings F^2 on the crank-shaft F', which is connected by the crank f^5 to the journals f^6 and f^7, upon which journals the roller F revolves. The crank-shaft is held in a fixed position by means of the squared ends f^8 and a suitable wrench or other equivalent device. (Not shown.)

The shaft f is driven by the pulley f' and is screwed into or otherwise rigidly attached to the cylinder-head f^2, which is rigidly attached to the shell f^3 of the roller. The other end of the shell is secured to the head f^4, which is journaled on the bearing f^7, and thus the whole roller is revolved, while the crank-shaft, with the teeth loose thereon, is held fast, the teeth rotating about the shaft with the shell of the cylinder and alternately projecting beyond and being drawn within the periphery of the said shell, as shown most clearly in Fig. 7. These teeth are so arranged that they will protrude and catch in the cotton on the apron E, pressing it down between the teeth e' and carrying off the surplus, which is dropped when the doffing-teeth are withdrawn inside of the doffing-roller shell, which will happen when the said roller is revolved through about one hundred and eighty degrees.

A flap or wiper L^2, made of leather or other material, is attached to the board L' and fits close against the surface of the doffing-roller when the teeth are withdrawn, whereby any cotton is prevented from sticking to said roller and being carried over and winding around the same. In place of a leather flap L^2 a brush may be provided, if desired.

It will be evident that the teeth e' and the teeth f^9, which move in opposite directions, will tend to mix and clean the cotton and to a certain extent to comb the same, while the particles of dirt combed out will drop through the apron and fall on the inclined board k.

H represents the drive-shaft, driven by any suitable source of power (not shown) and provided with pulleys, such as H', engaging in suitable belts, such as G and G', for driving the other parts of the apparatus.

In order to avoid complexity in the drawings the various mechanical means for driving the various parts are in the main omitted, as it will be obvious that from a given drive-shaft any number of other shafts may be driven in a great variety of ways well known to mechanics.

Above the roller F is a partition L, forming in reality part of the walls of the chambers B and B^0, and this partition L terminates in a wire screen L^3 to supply air to the fan M, which revolves between the fan-casing m and the grate-bars k' in the fan-chamber M'. This fan rotates in the direction indicated by the arrows, and the casing m is inclined inward, as at m', so as to shoot the air from the fan and with it the cotton drawn from the apron up the throat N' of the condenser-chamber N.

It will be seen that after the apron E passes over the upper drum the points e' will be reversed and the cotton will be readily detached therefrom by the fan M and will pass over the grate-bars k', through which much of the dirt remaining in the cotton will drop into the chamber K. Beyond the grate-bars the top of this chamber K is perforated, as at k^2, so that the cotton as it passes through the throat N' of the condenser-chamber will drop still more of its impurities through these perforations.

The condenser-throat N' and the portion inclosing the fan, apron E, and doffing-roller F form a passage connecting the chamber B^0 with the condenser.

The chamber K is shut in by the walls k and k^3 and the bottom k^0, and it may be cleaned out either by an attendant coming in through the door k^6 or by allowing the dirt dropped into the said chamber from the cotton to be blown out past the damper k^4, hinged, as at k^5, and operated in the same manner as the bottom plates b^5, already referred to. This damper k^4 controls the passage K^0, which is connected to the air-trunk B^6, which has been already described.

The condenser-chamber N is completely shut in by the walls n n' n^2 n^5 and the sloping bottom pieces n^3 and n^4 and the swinging door n^6, pivoted on the shaft n^7 and operated by the hand-wheel n^8, whereby any dirt that falls to the bottom of this chamber may be dumped out into the air-trunk B^6 when desired. Within this chamber N and set transversely therein are the two condenser-rolls P and P', covered with wire-gauze, as shown most clearly in Fig. 2. The condenser-chamber proper is inclosed in an outer chamber N^2,

shut in by the walls n^8 and n^9 and opening directly into the air-trunk B^6, as shown in Figs. 2, 4, and 5.

The cotton is blown from the fan M to this condenser-chamber and passes between the condenser-rolls, as indicated by the arrows in Fig. 1. The air is drawn through the wire-gauze screen into the interior of the condenser-rolls and out through the ports N^3 and N^4. (Shown most clearly in Fig. 5.) These ports made in the walls of the condenser-chamber are controlled by the valves P^2 and P^3, (see Fig. 5,) which valves are pivoted, as at p, and are regulated by means of the hand-levers p'. By altering the opening of these ports the quantity of air passing through the condenser-rolls may be varied at will, and, moreover, the bottom of the condenser-chamber may be blown through by simply closing these valves and allowing the air to go twice through the gauze and down past the door n^6. In order to prevent any of the cotton from falling in the bottom of the condenser-chamber before it reaches the condenser-rolls, a flap or brush n^0 is provided, as shown in Fig. 1.

The cotton is doffed from the condenser-rolls P and P′ by means of the small rollers Q and Q′, driven at a high rate of speed by means of the sprocket-chains q and q'. From these smaller rolls Q and Q′ the cotton is fed into the closed duct R, which is curved, as shown, and from whence it is nipped in the requisite quantity between the small roller S and the lower roller T of the compress and is wound up into the bale U on the core u between the rolls T and T′.

It frequently becomes desirable to moisten the cotton somewhat, where the latter is excessively dry, and for this purpose a steam-jet w opens into a perforated box w^0 in the throat of the condenser-chamber, and steam is sprayed into the cotton as it enters the condenser. A very small quantity of moisture will relieve the excessively dry cotton of its highly-charged electrical state, when the fibers will stand out in every direction and cannot be satisfactorily operated upon. This steam-jet may also be used to quench any fire that may occur in the condenser proper. The steam is supplied to this jet from the steam-pipe W, controlled by the valve w', as shown in Figs. 4 and 5.

The operation of the device, in brief, is as follows: The cotton is blown from the gin through the flues A and falls on the carrier D, part of the dirt falling through the carrier being carried off through the trough B^4. The cotton which is piled up more or less irregularly on the carrier D is taken therefrom by means of the apron E, and the excess over the regulation feed to the said apron is wiped off by the doffing-roller F, while at the same time it is partially combed and cleaned by means of the teeth e' on the apron and the claws in the doffing-roller. The cotton left on the apron then passes through the fan-chamber, dropping much of the dirt therein into the chamber K, while the cotton itself enters the condensing-chamber, where the air passes through the condensing-rolls, and the cotton is caught on the outside thereof, from whence it is removed and fed to the duct R, and from this duct it is drawn off by the press proper. The cotton may be wadded up in this closed duct R, as would happen if the press be stopped while the condenser is in operation, and yet be withdrawn therefrom without any difficulty when the press starts up again. Furthermore, the gins can continue in operation while the rest of the apparatus is stopped with no other effect than to pile up cotton in the chamber B^0 on the carrier D, which can be later worked off gradually by means of the apron E and the doffing-roller F.

Independent means for regulating the speed of the carrier D should be provided where it is desired to run the gins continuously and making frequent stops with the rest of the apparatus.

It will be obvious that the gins may feed directly on the apron E instead of feeding on the carrier D, as shown, and thus this carrier D and connected parts may be omitted, when desired, and the apron E may be extended or otherwise arranged in connection with the various parts to receive the cotton coming from the various gins. Moreover, the apron E may be arranged horizontally, or approximately so, when the carrier is omitted, and thus the two parts D and E may be replaced by a single carrier.

It will also be obvious that chemicals adapted to extinguish fires may be fed through the pipes C and E or through branch pipes connected thereto or through separate pipes, if desired. Moreover, it will be obvious that in an apparatus of this character a great many modifications might be made by any skilled mechanic which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for feeding cotton to roller-compresses, the combination with a chamber provided with a false bottom composed of a plurality of pivoted portions abutting against each other with an air-passage beneath the same, of an endless apron carried in said chamber immediately above said false bottom, and a plurality of gins adapted to deliver the lint-cotton into said chamber above said endless apron, substantially as described.

2. In an apparatus for feeding cotton to roller-compresses, the combination with a chamber provided with a false bottom composed of a plurality of pivoted portions abutting against each other with an air-passage beneath the same, of an endless apron carried within said chamber immediately above said false bottom, gins adapted to deliver cotton

into said chamber above said apron, a condenser and means for delivering cotton from said apron to said condenser and then to the roller-compresses, substantially as described.

3. In an apparatus for feeding cotton to roller-compresses, the combination with a chamber provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions abutting against each other with an air-passage beneath the same, of an endless apron carried in said chamber above said false bottom, a plurality of gins adapted to deliver the lint-cotton into said chamber, a condenser and means for conveying the cotton from said chamber to said condenser and then to the roller-compresses, substantially as described.

4. The combination with a roller-compress and means for feeding cotton thereto, of a chamber provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions abutting against each other, with an air-passage beneath the same, lever-arms for operating the pivoted portions of said false bottom, flues for conveying cotton into said chamber, an endless apron carried within said chamber immediately above said false bottom, substantially as described.

5. In an apparatus for feeding cotton to roller-compresses, the combination with a chamber provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions abutting against each other with an air-passage beneath the same, gins, flues for conveying the cotton from the gins, connected to the said chamber, an endless belt carried within the lower portion of said chamber beneath the said flues, a condenser, means for conveying the cotton from the said chamber to said condenser and then to the roller-compresses, a main dust-trunk communicating with the air-passage beneath said chamber and with said condenser, substantially as described.

6. In an apparatus for feeding cotton to roller-compresses, the combination with a closed chamber connected to the gins and receiving cotton therefrom, of air-passages opening upward through the top of said chamber, steam-pipes opening into said chamber and adapted to either moisten the lint-cotton or serve as a fire-extinguisher as may be desired, and a plurality of pivoted plates or boards abutting against each other and forming a false bottom for said chamber, with an air-passage beneath the same, an endless apron carried in said chamber beneath the said gin connections, a condenser, means for conveying the cotton from said apron to the condenser and then to the compresses, substantially as described.

7. In an apparatus for feeding cotton from gins to roller-compresses, the combination with a closed chamber connected to the gins, and provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions with an air-passage beneath the same, of steam-pipes opening in said air-passages, of an endless apron adapted to move in said chamber beneath the gin connections, a second endless apron for taking the cotton from the first apron, means for limiting the supply of cotton delivered by said second apron, a condenser, means for delivering the cotton from said second apron to said condenser and then to the roller-compresses, substantially as described.

8. In an apparatus for feeding cotton from gins to roller-compresses, the combination with a closed chamber connected to the gins, and provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions with an air-passage beneath the same of steam-pipes opening in the said air-passages, of an endless apron adapted to move in said chamber beneath the gin connections, a second endless apron for taking the cotton from the first apron, means for limiting the supply of cotton delivered by said second apron, a condenser, a fan interposed between said second apron and said condenser for blowing cotton from said second apron to said condenser, and means for conveying the cotton from said condenser to the roller-compresses, substantially as described.

9. In an apparatus for feeding cotton from gins to roller-compresses, the combination with a closed chamber connected to the gins, and provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions with an air-passage beneath the same, of steam-pipes opening in said air-passages, of an endless apron adapted to move in said chamber beneath the gin connections, a second endless apron for taking the cotton from the first apron, means for limiting the supply of cotton delivered by said second apron, a condenser having air passages and valves controlling the supply of air in the said condenser, a fan interposed between said second apron and said condenser for blowing cotton from said second apron to said condenser, a main dust-trunk and troughs leading from said closed chamber beneath the false bottom thereof, the condenser, and from below the said fan into said main trunk and valves in the said troughs for controlling the flow of the air and dust through the same, substantially as described.

10. In an apparatus for feeding cotton from gins to roller-compresses, the combination with a closed chamber connected to the gins, and provided with air-passages through the upper portion thereof and a false bottom composed of a plurality of pivoted portions with an air-passage beneath the same, of steam-pipes opening in the said air-passages, an

endless apron moving in said chamber beneath the gin connections, a second endless apron taking the cotton from the first apron, means for limiting the supply of cotton delivered by said second apron, a condenser having air-passages and valves controlling the supply of air in the said condenser, a fan interposed between said second apron and said condenser for blowing cotton from said second apron to said condenser, and a roller-compress receiving the cotton in a bat from said condenser, substantially as described.

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

CHARLES L. BESSONETTE.

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PERCY C. BOWEN,

JOHN C. WILSON.