

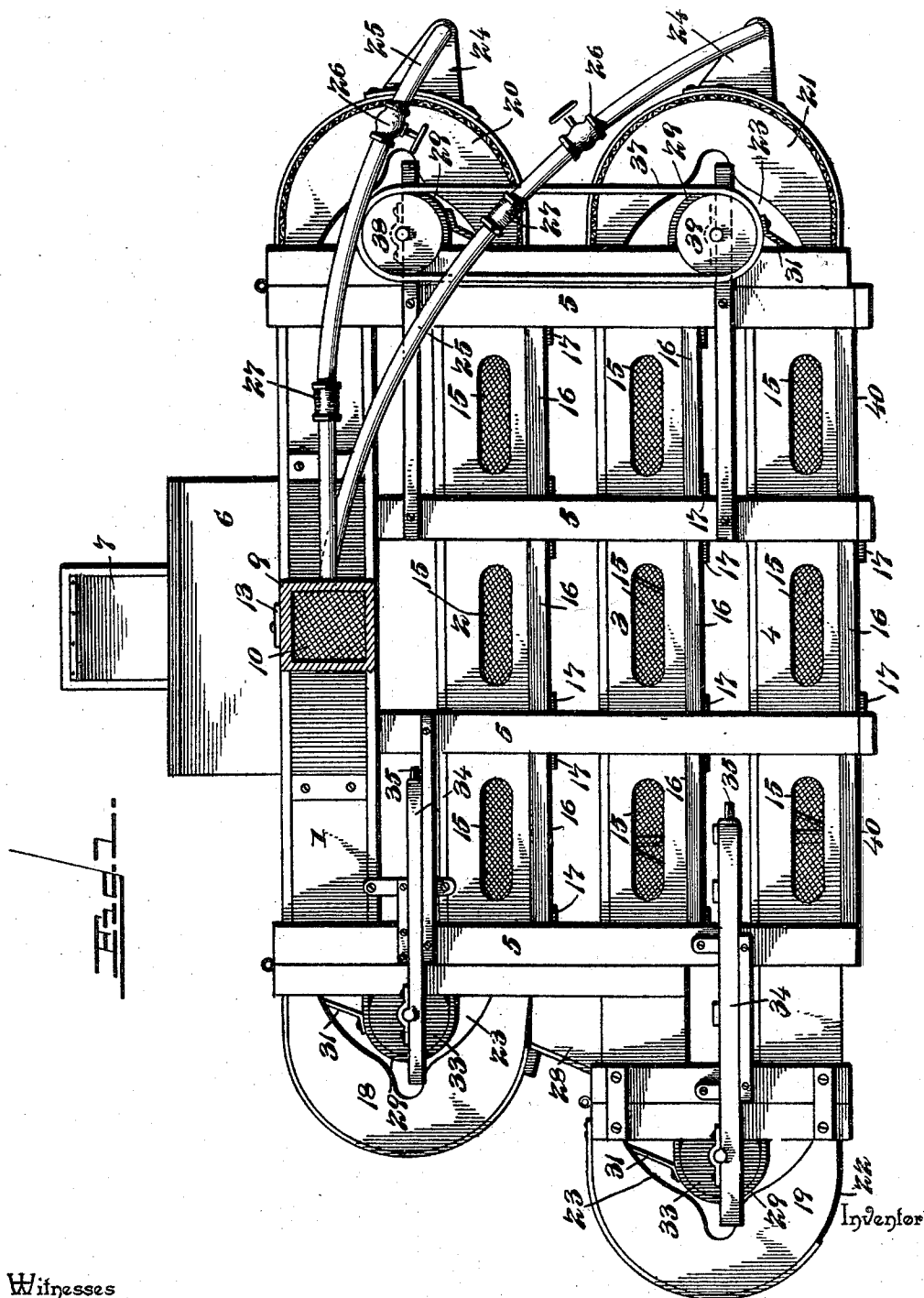
(No Model.)

3 Sheets—Sheet 1.

A. B. CARTER.
COTTON DISTRIBUTER AND CLEANER.

No. 585,430.

Patented June 29, 1897.



Witnesses

E. B. Stewart
V. B. Willyard.

By *Two* Attorneys, *Albert B. Carter*

C. Snow & Co.

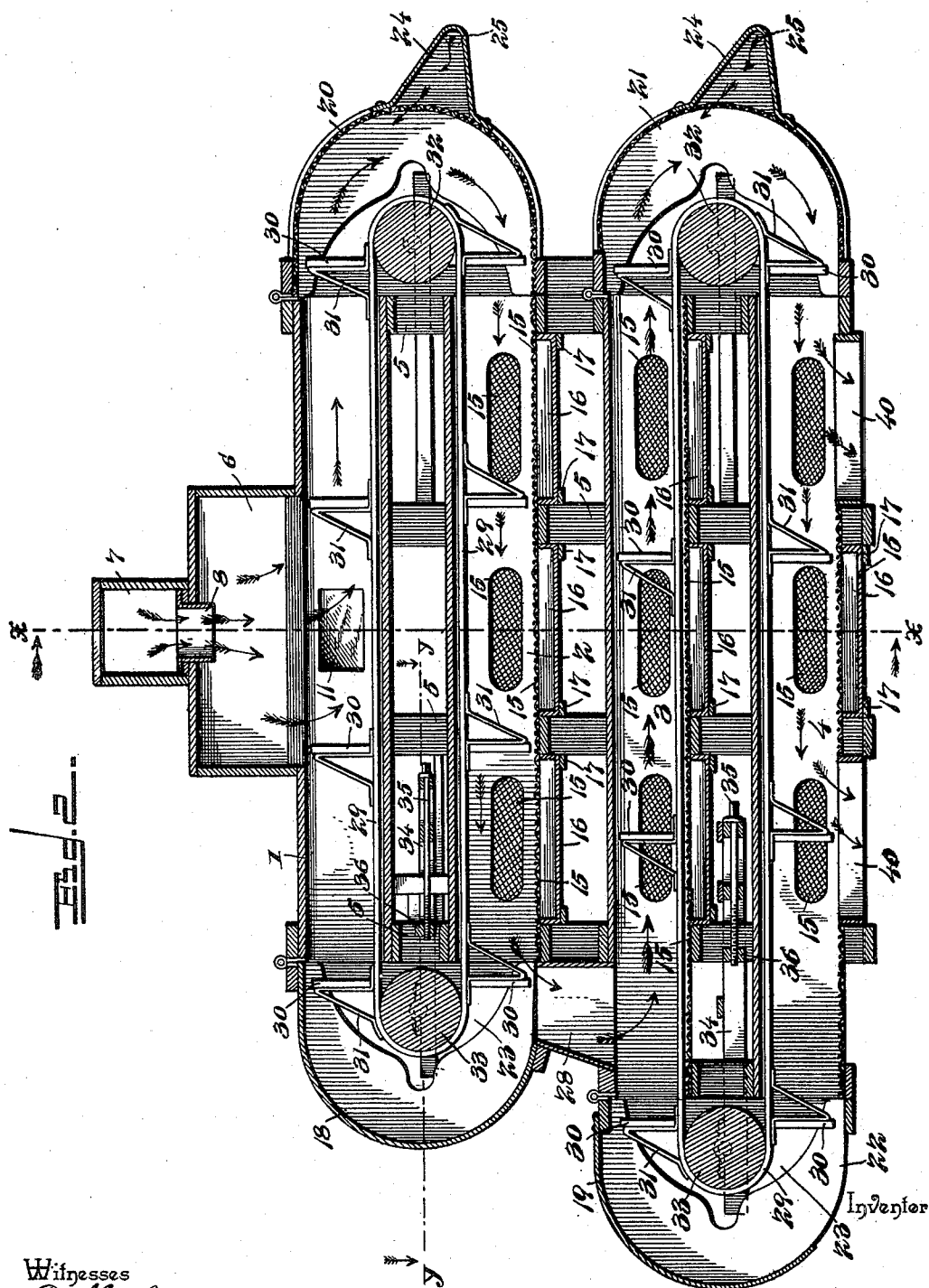
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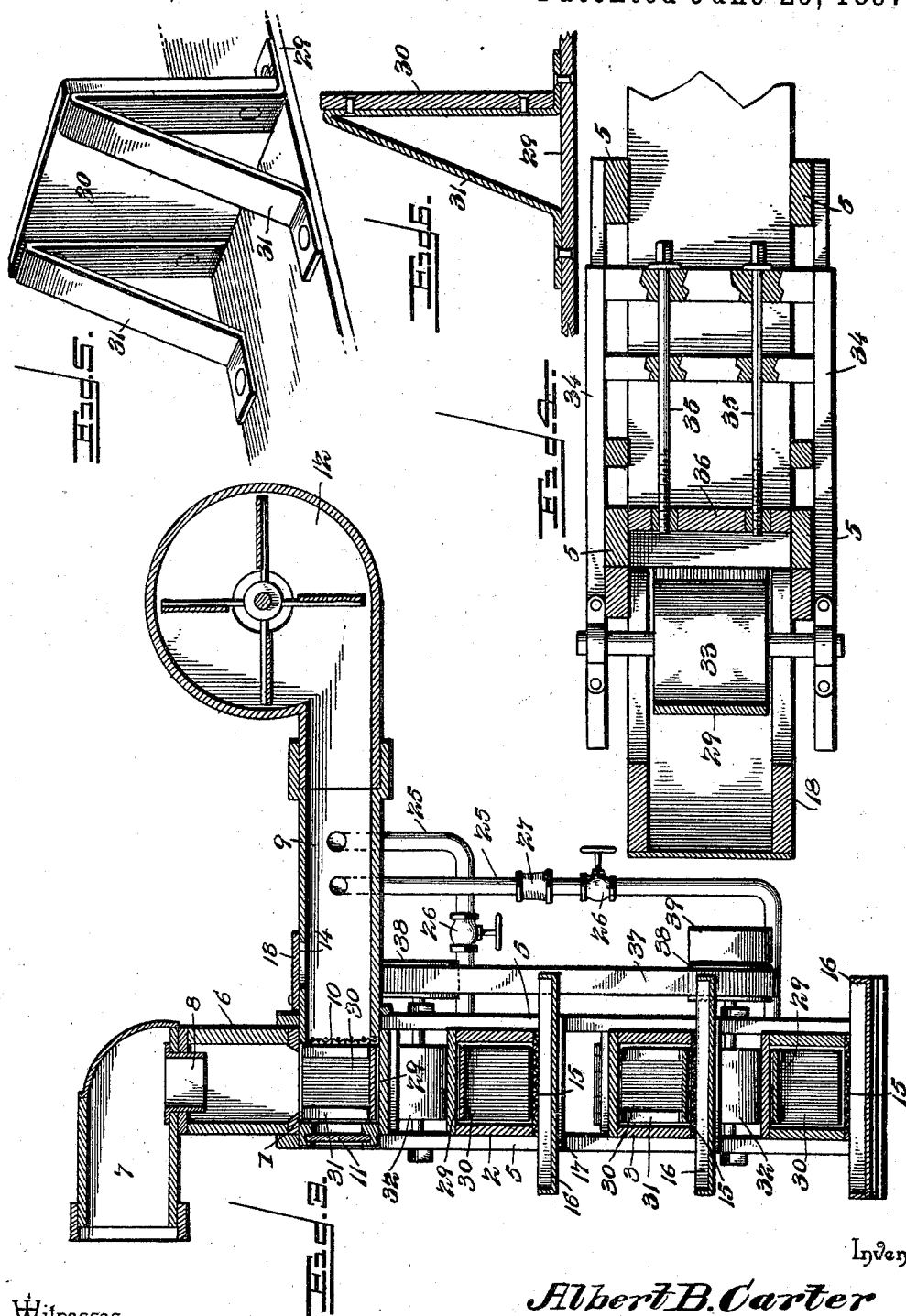
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Inventor

Albert B. Carter

By His Attorneys,

C. A. Snow & Co.

Witnesses

E. B. Stewart

V. B. Willard.

UNITED STATES PATENT OFFICE.

ALBERT B. CARTER, OF HAZLEHURST, MISSISSIPPI.

COTTON DISTRIBUTER AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 585,430, dated June 29, 1897.

Application filed September 10, 1896. Serial No. 605,443. (No model.)

To all whom it may concern:

Be it known that I, ALBERT B. CARTER, a citizen of the United States, residing at Hazlehurst, in the county of Copiah and State of Mississippi, have invented a new and useful Cotton Distributer and Cleaner, of which the following is a specification.

This invention relates to cotton-treating machinery whereby the grade of the marketable product is increased, thereby materially enhancing the value and quality of the article without materially adding to the cost of the treatment over the process generally in vogue.

The invention deals with the cotton prior to the ginning operation and loosens and lightens it and removes all dirt, trash, and foreign matter and supplies the cotton to the gin in such a state that the ginning is facilitated and the product rendered more marketable, cleaner, brighter, and in better condition for spinning than is generally obtained from the gin without subsequent treatment.

To those versed in the art to which this invention appertains objects and advantages other than those referred to herein will suggest themselves as they are made acquainted with the detailed construction of the apparatus, and to this end and for a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of an apparatus of particular construction for attaining the ends of this invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section of the complete apparatus on the line *xx* of Fig. 2, looking in the direction of the arrow. Fig. 4 is a plan section on the line *yy* of Fig. 2. Figs. 5 and 6 are detail views of a portion of a conveyer for moving the cotton through the conductor.

A vital feature of the invention is to secure a maximum length of travel of the cotton in

the smallest space possible, to agitate the cotton during its travel to break and loosen the hulls and detach dirt and foreign matter, to locate guarded openings at intervals in the length of the conductor through which the cotton travels for the liberated dirt to escape through, to provide escapes at the ends of the sections forming the cotton-conductor for the heavier and larger particles of foreign matter separated from the cotton, and to direct currents of air upon the moving cotton, so as to supplement the action of the mechanical devices and insure a thorough cleaning and loosening of the cotton prior to its being fed to the gin-stand to be ginned.

Corresponding and like parts are referred to in the following description and indicated in the several views of the accompanying drawings by the same reference-characters.

The cotton-conductor is composed of a number of sections 1, 2, 3, and 4, disposed in vertical relation, the one directly above the other, and connected by strips 5, the whole forming a substantial structure which is adapted to be applied to the stand of one or more cotton-gins for supplying the latter with cotton thoroughly cleaned and loosened. The length and number of the sections comprising the cotton-conductor will depend upon the capacity of the apparatus and the number of gins to be supplied thereby. The topmost section 1 is closed at its top, bottom, and sides and is surmounted by a box 6, into which the cotton to be treated is fed in any convenient way, a spout 7 being provided and having connection with the top of the box by means of a thimble 8. A blast-pipe 9 communicates with a side of the section 1 for forcing a current of air therein across the path of the incoming cotton, thereby loosening the latter and the dust and foreign matter adhering thereto. The opening is protected by wire fabric 10, so as to prevent the entrance of any cotton or matter into the pipe 9. An observation-opening is located in the opposite side of the section 1 about in register with the blast-pipe 9 and is protected by a glass plate 11, thereby admitting of the interior of the conductor being inspected at a point where the cotton is supplied thereto. The blast of air is supplied to the pipe 9 from any suitable source, and, as shown, a fan-blower 12

is provided and attached to the said pipe. The force of the blast is adapted to be mod-
 erated by a gate 13, which is pivoted to one
 side of an opening 14, formed in a side of the
 blast-pipe, and which is adapted to be turned
 so as to uncover the opening 14 more or less,
 whereby the strength of the current can be
 varied.

The sections of the conductor immediately
 below the topmost section have perforations
 in their bottoms and sides, the perforations
 or openings having any desired shape and size
 and being protected by wire fabric or other
 suitable material, so as to retain the cotton in
 its passage through the conductor and yet
 admit of the escape of dust and foreign mat-
 ter. These guarded or protected openings
 15 are located at intervals in the length of
 the conductor-sections and will be in suffi-
 cient number to effect the desired end. Trays
 or pans 16 are located below the openings 15
 in the respective sections and extend beyond
 the sides thereof a sufficient distance to catch
 the dirt escaping through the said openings,
 thereby preventing the dirt falling from an
 upper section entering the openings of the
 section immediately below. These pans or
 trays 16 are removably fitted in place and are
 slidingly supported upon cleats 17, secured
 to the vertical strips 5. By this means the
 trays can be removed and the accumulations
 therein emptied and again replaced.

The cotton-conductor sections are connect-
 ed at their ends in pairs by similarly-formed
 hoods, the hoods 18 and 19 being of similar
 construction and the hoods 20 and 21 of like
 formation. The hood 18 connects the adja-
 cent ends of the sections 1 and 2, and its end
 is imperforate. The hood 19 connects the
 contiguous ends of the sections 3 and 4 and
 has an imperforate end with a lower portion
 removed, forming a discharge-opening 22.
 The hood 20 establishes communication be-
 tween the adjacent ends of the sections 1 and
 2, and the hood 21 performs the same office
 for the contiguous ends of the sections 3 and
 4. The ends of the hoods 20 and 21 are per-
 forate, being formed by wire fabric, so as to
 admit of dust and trash escaping through the
 meshes of the said fabric when passing from
 one section to the other. The hoods are
 hinged at their upper ends, so as to be thrown
 upward when it is required to gain access to
 the interior of the sections for removing ob-
 structing matter, cleaning, repairing, or for
 any other purpose. The sides of the hoods
 are cut away, as shown at 23, forming open-
 ings for the escape of trash, detached hulls,
 and such foreign matter of such size as not
 to pass readily through the meshes of the
 fabric protecting the openings 15. Bonnets
 24 are applied to the ends of the hoods 20 and
 21 and communicate with the blast-pipe 9 by
 means of pipes 25 and are adapted to direct
 a blast of air into the said hoods 20 and 21,
 so as to remove foreign matter from the cot-
 ton and loosen and lighten the latter. The

wire fabric forming the perforate ends of the
 hoods 20 and 21 closes the inner ends of the
 bonnets 24 and prevents the cotton passing
 therein in its travel through the conductor
 and from one section thereof to the other.
 The pipes 25 are supplied with valves 26 for
 regulating the blast of air passing there-
 through to the bonnets, and at a convenient
 point in their length the pipes 25 are supplied
 with unions or couplings 27 to admit of the
 parts being disconnected when it is required
 to move the hoods 20 and 21 for any of the
 purposes aforesaid. Communication is es-
 tablished between the sections 2 and 3 at one
 end by means of a tubular section 28 and
 through which the cotton passes in its travel
 through the conductor.

As previously intimated, the cotton-con-
 ductor sections are coupled in pairs by means
 of the hoods, and each pair of sections is sup-
 plied with an endless conveyer for moving the
 cotton therethrough and simultaneously agi-
 tating it. Each endless conveyer consists of
 a belt 29, of leather, canvas, or other suitable
 material, leather being preferred because of its
 stiffness, wings 30, secured at intervals in the
 length of the belt, and braces 31 for stiffen-
 ing and strengthening the said wings. The
 wings 30 are of leather or similar material
 and nearly fill the space formed between the
 inclosing walls of the conductor, so as to pre-
 vent the lodging of cotton or other matter
 therein when the apparatus is in operation.
 The upper leaf or portion of each conveyer
 operates in the uppermost conductor-section
 and the lower leaf or portion operates in the
 lowermost conductor-section of the pair, cou-
 pled in the manner set forth.

The endless conveyers are supported at one
 end upon pulleys 32 and at their opposite
 ends by pulleys 33, journaled in frames 34,
 slidingly supported relative to the frame-
 work of the apparatus and comprising longi-
 tudinal and transverse connecting-bars. Ten-
 sion-screws 35, mounted in the transverse
 bars of the sliding frames 34 and having their
 inner threaded ends engaging with threaded
 openings in a cross-piece 36 of the framework,
 are adapted to move the frames 34, so as to
 secure the requisite tension upon the convey-
 ers and provide for taking up any slack there-
 in. The pulleys 32 are connected by a belt
 37, passing around pulleys 38 on the shafts
 or journals upon which the pulleys 32 are se-
 cured. A band-pulley 39 is secured upon a
 shaft of one of the pulleys 32 and is adapted
 to have motion imparted thereto from any
 suitable source of power for driving the en-
 less conveyers. The lowermost conductor-
 section has discharge-openings 40 for the es-
 cape of the cotton into the gin stand or stands
 prior to the ginning operation.

In assembling the parts of the apparatus
 the bonnets 24 are disposed so as to direct
 the blast of air into the upper conductor-sec-
 tion connected therewith, and the air moving
 in an inverse direction to the cotton agitates

the latter in a more effective manner and thoroughly loosens it and adhering matter clinging thereto. If found of advantage, a blast of air may be delivered to the conductor at any point in its length, so as to effect a thorough separation and cleaning of the cotton passing therethrough. The cotton to be treated is supplied to the apparatus in any convenient way by means of the spout 7 and box 6, and immediately upon its entrance into the conductor it is subjected to a blast of air from the pipe 9 and is moved forward through the top section 1 by means of the uppermost conveyer, and when the end of the section 1 is reached the cotton entering the hood 20 is again subjected to a blast of air from the bonnet 24 and the dust and small particles are caused to escape through the perforate end of the hood 20. The cotton is moved positively through the conductor-section 2 by means of the lower portion of the conveyer, which operates in the sections 1 and 2, which are coupled together, and some of the foreign matter, such as dust and small particles, escapes through the guarded openings 15 in the bottom and sides of the section 2. When the rear end of the conductor-section 2 is reached, the cotton passes through the tubular section 28 into the section 3 and is moved through the latter and the section 4 by the endless conveyer operating therein and is delivered through the openings 40 to the gin-stand to which the apparatus is applied. The cotton in its passage through the coupled sections 3 and 4 is cleaned by the action of the blast of air therethrough and by means of the protected openings 15, through which the foreign matter escapes. When the cotton is passing from the section 3 into the section 4 through the hood 21, it is subjected to the full action of the blast of air from the bonnet 24 applied to the hood 21, thereby removing the last traces of dust, trash, and any foreign matter remaining therein.

Having thus described the invention, what is claimed as new is—

1. In apparatus for cleaning cotton, the combination of a conductor composed of an intercommunicating vertical series of independent sections having openings in the length of their bottom for the escape of impurities, and means for positively moving the cotton through each section of the conductor and alternately in opposite directions, substantially as described.

2. In apparatus for cleaning cotton, the combination of a conductor composed of an intercommunicating vertical series of independent sections having openings in their sides and bottom protected by meshed fabric, means for supplying a blast of air to the sections for removing the impurities from the cotton and forcing them through the aforesaid protected openings, and conveyers for positively moving the cotton through each section of the series, substantially in the manner set forth.

3. In apparatus for the purpose set forth,

a conductor composed of a vertical series of sections in communication, hoods connecting corresponding sections in pairs and having their side portions cut away to provide escape-openings, and movably held in place, and endless conveyers for the sections coupled in pairs, substantially as set forth.

4. In apparatus for the purpose set forth, a conductor composed of a vertical series of communicating sections, hoods connecting corresponding sections at one end and having imperforate ends, other hoods connecting the opposite terminals of the said sections and having perforate ends, and endless conveyers for the pairs of coupled sections, for the purpose described.

5. In apparatus for treating cotton, a conductor composed of a vertical series of communicating sections, the topmost section having its inclosing walls imperforate and the remaining sections having escape-openings at intervals in their length protected by meshed fabric, means for supplying the cotton to the topmost section, and a blast-pipe communicating with the topmost section at the point of entrance of the cotton, substantially as and for the purpose set forth.

6. In apparatus of the character set forth, a conductor composed of a vertical series of communicating sections having escape-openings at intervals in their length protected by meshed fabric, means for moving the material to be treated through the said sections, and trays placed beneath the respective sections opposite the escape-openings to receive the dirt and foreign matter separated from the material undergoing treatment, substantially as set forth.

7. In cleaning apparatus for the purpose described, a conductor composed of a vertical series of communicating sections having openings at intervals in their length protected by meshed fabric, means for positively moving the material to be treated through the sections, and trays removably supported beneath the openings of the respective sections to receive the dirt separated from the material during the cleaning operation, substantially as described.

8. In cleaning apparatus of the type specified, a conductor composed of vertically-related sections, pulleys located at the ends of and opposite the space formed between contiguous sides of adjacent sections, an endless conveyer supported by the pulleys and having its parts operating in the said adjacent sections, hoods connecting the ends of the aforesaid sections and inclosing the pulleys and the end portions of the endless conveyer and a blast-pipe having connection with a hood of each pair of sections, substantially as set forth.

9. The herein-described cotton-cleaning apparatus, comprising a conductor composed of a vertical series of sections in communication, the topmost section having its inclosing walls imperforate and the other sections hav-

ing escape-openings in their bottom and sides
protected by meshed fabric, trays removably
supported beneath the respective sections and
opposite the escape-openings therein, hoods
5 connecting the terminals of adjacent sections,
one set of hoods having imperforate ends and
the other set having perforate ends, bonnets
applied to the perforate ends of the hoods, a
blast-pipe communicating with the topmost
10 section and with the said bonnets, a box
placed upon the topmost section and commu-

nicating therewith at a point opposite the
juncture of the blast-pipe therewith, and end-
less conveyers operating in the sections, sub-
stantially as set forth. 15

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

ALBERT B. CARTER.

Witnesses:

S. G. SALTER,
J. M. NORMAN.