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Prattville, Ala.
Continuation of application Ser. No.
719,500, Apr. 8, 1968, now abandoned.

[56] **References Cited**
UNITED STATES PATENTS
3,029,477 4/1962 Wildbolz et al. 19/2
3,408,115 10/1968 Reiterer 302/28
FOREIGN PATENTS
956,073 4/1964 Great Britain.....
Primary Examiner—Dorsey Newton
Attorney—Mason, Fenwick & Lawrence

[54] **APPARATUS FOR PREPARING FIBROUS MATERIAL FOR A CARDING MACHINE**
14 Claims, 7 Drawing Figs.

[52] U.S. Cl. 19/105
[51] Int. Cl. D01g 15/40
[50] Field of Search 19/105, 65,
205, 97.5; 302/23, 27, 28, 33, 36, 39, 12

ABSTRACT: An apparatus for preparing cotton after it has been removed from a compressed bale and without the use of the picker, the picker lap, the lap handling, the creeling and other operations sometimes employed prior to delivery to the carding machine. In the present method the fiber is supplied in very small, open tufts carried by air into a rectangular flue which passes over or into a smaller round or polygonal shaped flue across a series of carding machines, where the fibers are loosely collected and fed through a bellows action mechanism which alternatively compresses and releases, removing a substantial portion of the air and allowing the fibers to fall by gravity into any spaces formerly occupied by air producing a uniform batt.

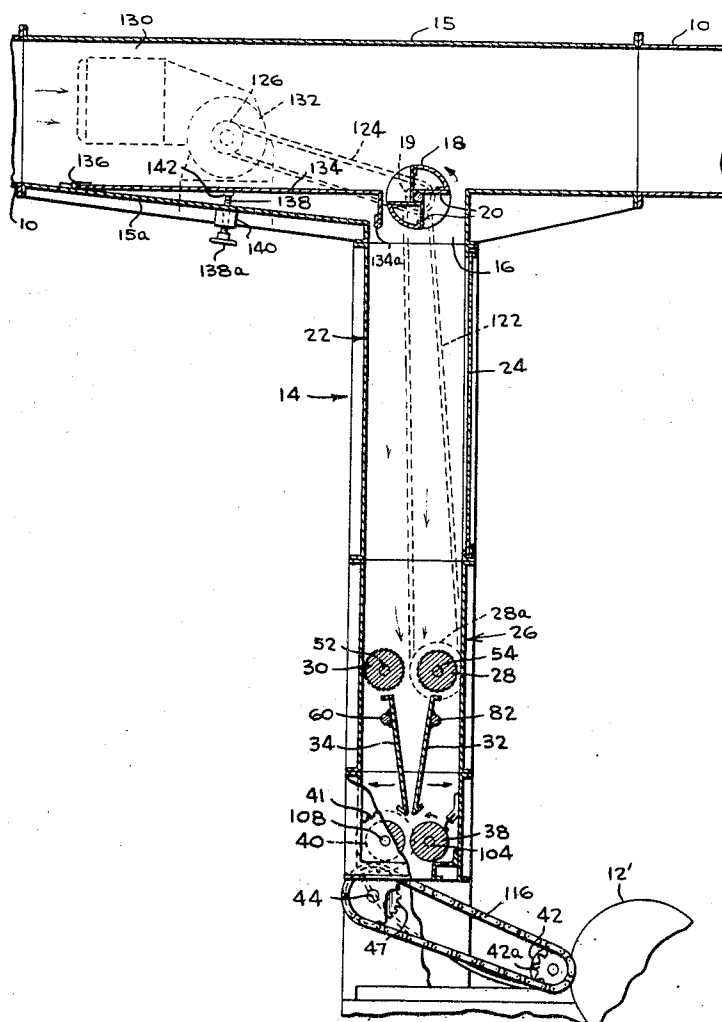


Fig-2

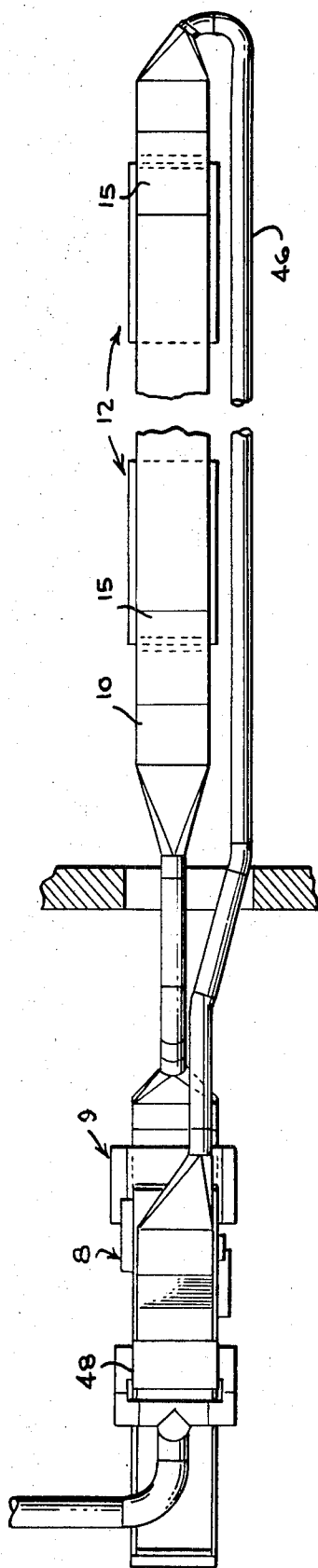
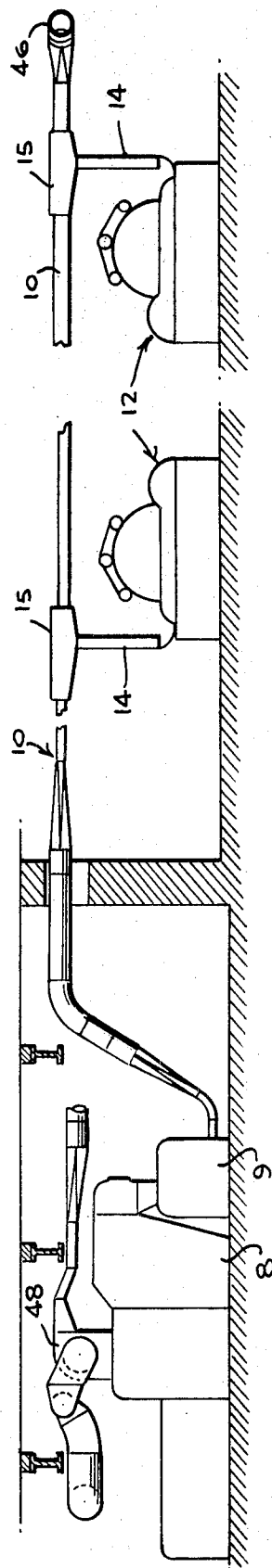


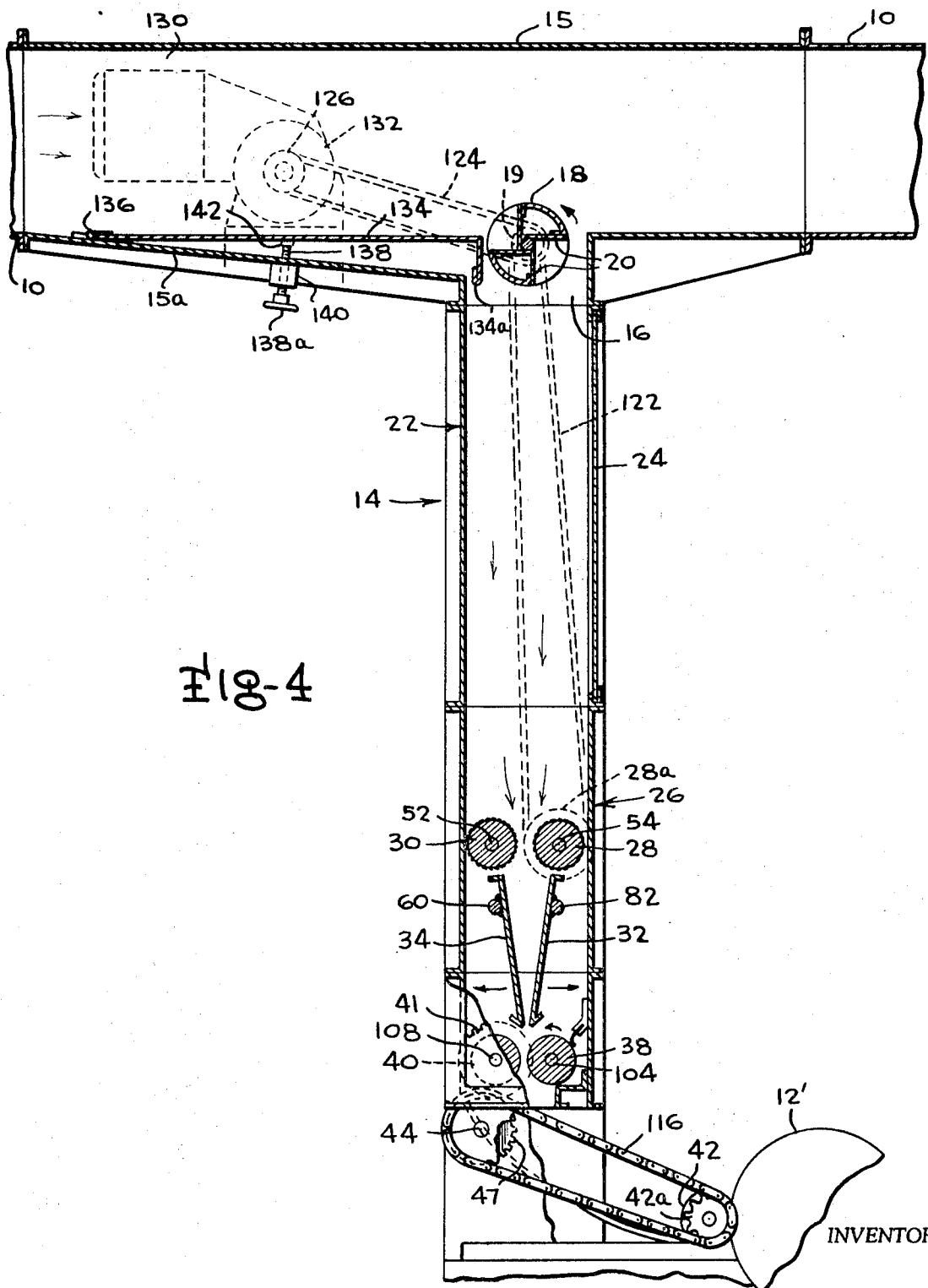
Fig-1



Patented May 11, 1971

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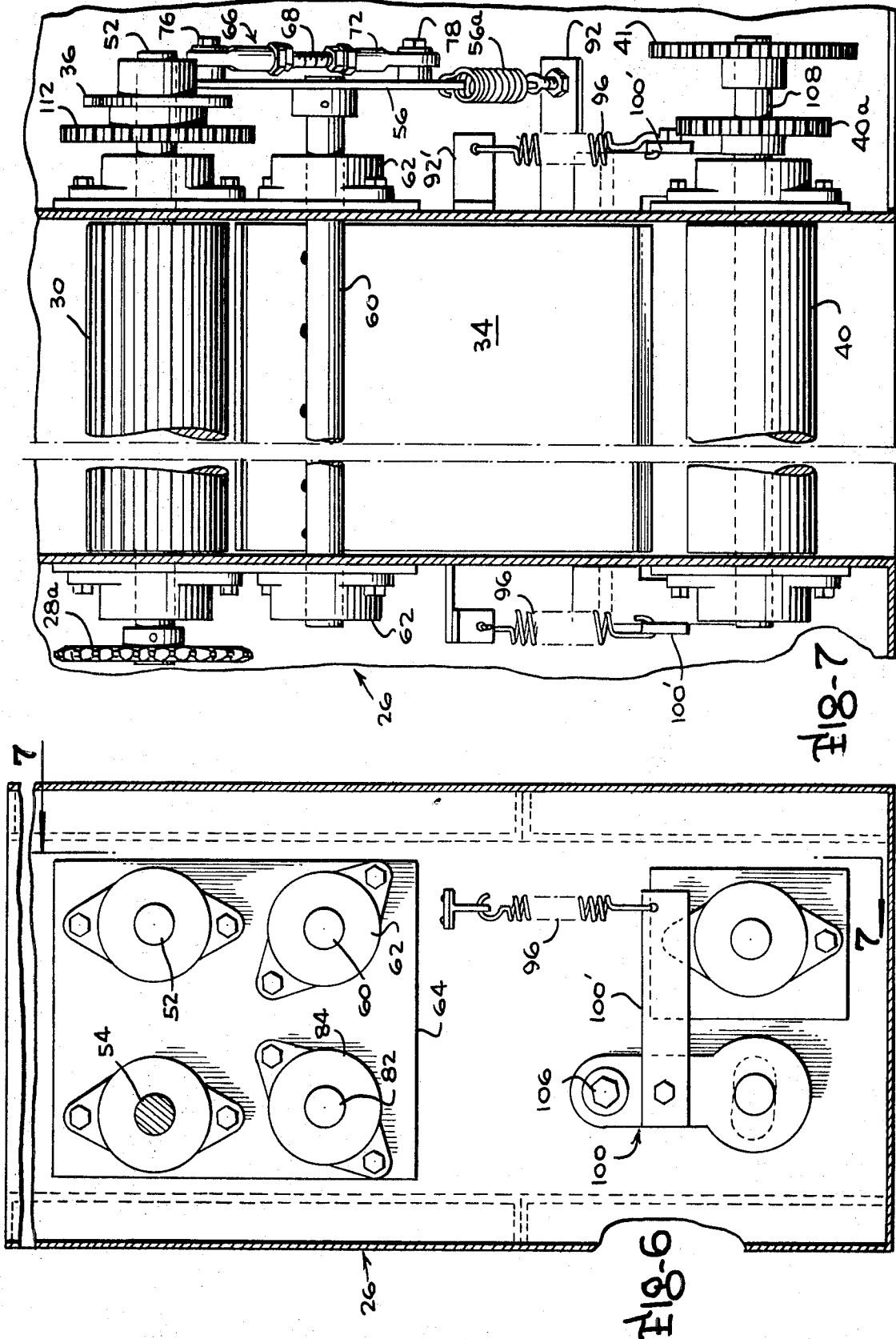
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APPARATUS FOR PREPARING FIBROUS MATERIAL FOR A CARDING MACHINE

This application is a continuation of application Ser. No. 719,500 filed Apr. 8, 1968, now abandoned.

In the apparatus or system of the present invention, fibers discharged in large, dense tufts from a controlled blending feeder are discharged into the feed works of a fiber opener that separates the fiber into smaller, open tufts. These are carried by air into a rectangular flue passing over or across the carding machines and beneath which are a series of feed chutes. The flue is of such size and configuration as to cause the fiber to move as slowly as possible across the tops of the feed chutes, each of which has a fiber extractor roller in the top in the form of a revolving baffle with multiple blades to discharge the fiber into the feed chute at a selected speed such as 50 r.p.m. Accumulator rollers within the chute and below the extractor roller rotate in opposite directions and have fluted surfaces with a selected spacing between the rollers, such as three-quarter inch, allowing the loose fibers to enter a sort of bellows arrangement, sometimes referred to as the accumulator plates, for compressing and releasing the fiber alternatively to create a uniform batt which is fed through adjustable compression rollers and to the lickerin of the carding machine. Multiple carding machines may be fed from one source with suitable arrangement for handling surplus and conveying the same back into the input end of the flue.

DESCRIPTION OF THE PRIOR ART

U.S. Pat. No. 454,146 broadly shows an apparatus for handling and cleaning seed cotton, but without suitable methods or apparatus for preparing the cotton to be fed to the carding machines. Likewise, Swiss Pat. No. 309,886 of 1956 issued to SCHMOLLER shows the use of a vertical chute and counter-rotating wheels for starting the preparation of fibers, but with no provision for properly working the fibers into an acceptable, continuous batt suitable for the carding machine. U.S. Pat. No. 2,057,641 shows a single process picker system and U.S. Pat. No. 2,890,496 shows an apparatus for making a fiber mat. SCHWAB in U.S. Pat. No. 3,070,847 shows the use of vibration and tensioning means in a type of chute feed for preparing cotton for the cleaning and opening machines. Other patents of interest may be U.S. Pat. Nos. 3,145,426 and 3,062,392. U.S. Pat. No. 2,900,670 shows the more conventional arrangement of the picker, the picker lap, the lap handling, the creeling, etc., in FIG. 1, which is replaced by the present method and arrangement. A separating, distributing device for textile fibers and having to do with the handling of cotton fibers fed to carding machines is presented in U.S. Pat. No. 3,284,140.

THE DRAWINGS

Other and further objects and advantages and details, as well as operation, will be apparent from reading the following specification in conjunction with the accompanying drawings, in which:

FIG. 1 is a somewhat diagrammatic elevation view of a typical installation of the apparatus of the present invention with overhead conveyors and carding machines;

FIG. 2 is a diagrammatic top plan view of the installation shown in FIG. 1;

FIG. 3 is a perspective view of the exterior of fiber-feeding apparatus of the present invention;

FIG. 4 is a vertical section view of the structure shown in FIG. 3 taken along the line 4-4, with a fragmentary lower portion thereof shown in elevation;

FIG. 5 is an enlarged elevation view of the accumulator section of the structure shown in the lower portion of FIG. 4, with the side cover removed to reveal the drive mechanism;

FIG. 6 is a fragmentary elevation view of the accumulator section, viewed from the side opposite that seen in FIG. 5, also with the cover removed; and

FIG. 7 is a section view of the accumulator section taken along the line 7-7 of FIG. 6.

DESCRIPTION OF A PREFERRED EMBODIMENT

Background of the Invention

Cotton is delivered to the mill in varying densities. Even the lowest density bales are considerably compressed and it is necessary to loosen the cotton before the cleaning and carding operation and to remove as much of the heavy dirt as possible. Opening machinery normally both loosens the cotton into small tufts and removes as much dirt as possible. Picking is a continuation of the opening and cleaning, but it is usually done in an entirely separate room and uses control type of equipment and as such is not normally considered part of the opening process. The usual purpose of picking is to continue the cleaning, especially of heavier wastes, and to form the cotton into a continuous sheet, or lap, as uniform as possible, usually by drawing the fiber onto one or more screen drums with accurate control of the quantity, distribution, and uniformity. The product of the pickers is called a lap, which is a continuous, considerably compressed and felted sheet of cotton tufts rolled under pressure into a package approximately 40 inches long by 15 to 18 inches in diameter, and 50 or more yards long. The compression of the loose sheet of cotton binds the tufts together so as to retain the sheet form and usually under compression from 3,000 to 4,000 pounds. The compressed sheet is fed to the lap arbor on which it is wound and then transferred to a lap pin and necessarily must be transported to the cardroom either by truck or some mechanical means and then must be positioned and fed initially by hand to the back of the card where the end of the sheet is started beneath the feed roll. The present method and apparatus eliminates the need for the picker, the picker lap, the lap handling, the creeling, and in fact any other equipment normally used in similar circumstances to prepare the fiber for the card. The present method provides a continuous feed of uncompressed tufts arranged in a batt, rather than a compressed lap. Uniformity of the tufts is equal to a condenser-formed lap, provided the fiber tuft size is no greater than that coming from the opening cylinder or the beater of a picker.

GENERAL ARRANGEMENT OF THE PREFERRED EMBODIMENT

The fiber-feeding apparatus of the present invention is designed to be employed in a fiber-processing line including a number of carding machines, as illustrated in FIGS. 1 and 2, wherein a controlled blending feeder 8, of conventional construction, processes the cotton into large, dense tufts and feeds them to a fiber opener 9, which then delivers the cotton to an elongated, rectangular flue 10, which passes overhead through the cardroom over each of a line of carding machines 12 of conventional construction and conveys the cotton by vehicle air to the series or line of carding machines. The flue 10 extends the length of the line of carding machines 12, for example a line of eight such machines, and distributes the fiber to each carding machine 12 in the line served by that flue through respective feed units, each having a substantially vertical feed chute, indicated generally at 14, terminating at its lower end immediately adjacent the lickerin roll 12' of the associated carding machine 12 for direct delivery of the prepared batt of fiber into the carding machine 12, and each having a horizontal head section 15 interposed in the flue. The flue 10 is of such size as to cause the fiber, which is designated herein by means of small lines with arrowheads thereon shown in FIG. 4, to move as slowly as possible through the horizontal head section 15, across the open top 16 of the chute 14, above which is located a fiber extractor roller 18, forming a revolving baffle with multiple blades 20 thereon. Fiber extractor roller 18 discharges the fiber into the chute 14 through the top 16 at a substantially constant speed, by rotating, for example at a speed of 50 r.p.m. The upper section of the chute 14 is termed the bin section 22 and has a glass or other transparent side 24 shown in FIGS. 3 and 4 facing the delivery end of the carding machine 12. The height of bin section 22 can be varied to suit the overhead space available in the card room of the particular installation.

The lower or bottom section of the chute 14 is referred to as the accumulator section 26. Supported for rotation in the section 26 are a pair of oppositely rotatable accumulator rollers 28, 30, each of which is fluted on the peripheral surface thereof and rotate in opposite directions at a selected and constant speed as for example 20 r.p.m., to cause the fiber to enter between rollers 28, 30. The rollers 28, 30 are spaced apart, for example, approximately three-fourths of an inch, to allow the loose fiber to be fed therebetween substantially without compression to the space between a pair of oscillating accumulator plates 32, 34 which are supported for movement in a manner described more fully hereinafter. Accumulator plates 32, 34 move in a manner causing them to act much like bellows, alternatively and repetitively compressing the fiber and then releasing the fiber. In any loose fiber mass, voids or spaces may be found. By compressing the fiber mass, the air which is in these voids or spaces is forced out and the fiber drops into place by gravity or otherwise to substantially fill the void or space formerly occupied by air. In this manner the uniformity of the batt is improved. The accumulator plates 32, 34 are oscillated at a substantially constant and selected speed, which may be within the range of about 40 to 100 r.p.m., preferably about 80 r.p.m., and are driven by a four-lobe cam 36 attached to the accumulator roller 28.

Beneath the accumulator plates 32, 34 and adapted to receive the fiber from the exit end of the accumulator plates, 32, 34, is located a pair of oppositely rotatably compression rollers 38, 40 geared together with one of the rollers movably mounted in bearings and spring loaded to apply pressure to the other roller. It may be necessary to adjust the tension or draft on the batt between the compression rollers 38, 40 and a card feed roller 42 which is accomplished by means of a countershaft 44 directly below the compression rollers.

The feed of the fiber mass from the feed chute 14 is controlled by the carding machine 12 itself. The correct weight of the stock (fiber mass) delivered by the card is controlled by the conventional card draft gear (not shown). The card feed roller 42 and the card draft gear are parts of a conventional carding machine 12 and do not per se form a part of this invention except to the extent of being associated with the chute 14 and especially the accumulator compression rolls 38, 30 thereof.

Multiple carding machines (sometimes referred to in the trade simply as cards) are fed from the one flue 10. As the chute 14 fills with the fiber, the fiber extractor roller 18 continues to feed the fiber into the top of the chute top 16, or at least attempts to feed the fiber into the top 16 of the chute 14, but if the bin section 22 is full of fiber, any surplus is conveyed beneath the fiber extractor roller 18 across the top 16 and back into the flue to continue its travel in the direction of the arrows shown in FIG. 2, representing the flow of the fiber. By virtue of this, a constant density or head of fiber is maintained in the bin section 22. Of course, after the fiber has traveled past all of the open tops 16 of the respective chutes 14 and there is no longer any open top in which the fiber may be forced, the surplus fiber must be handled. This may be accomplished in a number of ways as by means of a return flue 46 connected to the downstream end of the flue 10 beyond the last carding machine 12 in the line for returning any surplus fiber to a condenser 48 mounted above the control blending feeder 8, which may be controlled by means of a solid-state rectifier on a direct current motor driving the lifting apron of the blending feeder 8. A remote potentiometer located at the last carding machine 12 can be used to set the speed of the lifting apron in the controlled blending feeder 8 to provide just enough fiber to supply all feed chutes 14, particularly the last.

DETAILS OF CONSTRUCTION

The arrangement for the accumulator rollers 28, 30 is seen in FIGS. 4 to 6. Rollers 28 to 30 are fixedly mounted for rotation on shafts 54 and 52. A crank arm 56 has a cam follower 58 engaging part of the lobe cam 36 and is pivotally mounted on a shaft 60 in a bearing 62 mounted on the support plate 64

on the accumulator section 26. A longitudinally adjustable link 66 has a central screw-threaded portion 68 with opposite, screw adjustment connector ends 70, 72 having adjustment nuts 74. The end 70 is coupled to a crankpin 76 connected to the crank arm 56 and the opposite end 72 is coupled to a crankpin 78 on a lever 80 rigidly attached to a shaft 82 supported in a bearing 84 on plate 64. A heavy coil spring 56a has one end attached to the bottom portion of the crank arm 56 and the other end attached by means of an adjustable fastener 90 to the frame 92 of the accumulator section 26. Compression roller 38 is spring loaded for movement toward and away from companion roller 40 by means of a bearing bracket 100 pivotally supported above the roller 38 by pivot pin 106. An arm 100' of the bracket 100 projects substantially horizontally over the axis of roller 40 and has a coil spring 96 connected thereto and to the frame 92'.

DRIVE ARRANGEMENT

The card feed roller 42 forms the drive source for the supporting roller 40 and the compression roller 38. Keyed on the shaft of the card feed roller 42 is a sprocket 42a. A chain 116 is trained about this sprocket 42a and a sprocket attached to a change gear 47 to drive the latter. The change gear 47 has teeth which mesh with and drive the drive gear 41 mounted on the common shaft 108 for the supporting roller 40 to drive this roller. Also located on the shaft 108 is a gear 40a having teeth that mesh with and drive gear 38a mounted on the common shaft 104 with the compression roller 38 to drive the latter.

Attached to the top section of the feed chute 14, which section forms a part of the overhead flue 10, is a gear-head motor 130 and an associated transmission 132, shown particularly in FIG. 3, having a sprocket 126 for driving chain 124 trained about the sprocket 126 and sprocket 19 mounted on the shaft which supports the fiber extractor roller 18. Another sprocket on the same shaft which supports the sprocket 19 drives chain 122 trained about a sprocket 28a mounted on the shaft 54 which supports the accumulator roller 28. Also mounted on the shaft 54 is a gear 110 having teeth which mesh with the teeth of gear 112 mounted on the shaft 52 supporting the accumulator roller 30. This shaft 52 also supports the lobe cam 36. Thus, upon rotation of the shaft 52, and the lobe cam 36 carried thereby, the cam follower 58 is caused to move in an arc controlled by the crank arm 56 fixed to the shaft 60 journaled for rotation in the bearing 62.

The adjustable linkage 66, shown in FIGS. 5 and 7, which is pivotally coupled by pin 76 at one end to the crank arm 56 and is pivotally attached by pin 78 to the crank arm 80 fixed to the shaft 82, transmits rocking motion to the shaft 82 related to the motion imparted to the crank arm 56 attached to the shaft 60. Thus, the accumulator plates 32 and 34 fixed to the shafts 60 and 82 are caused to move in arcs about their respective shafts. The amount of motion imparted to the accumulator plates 32 and 34 is, of course, determined by the length of the lobes of the cam 36 and the adjusted length of the link 66. The compressing action of the accumulator plates 32 and 34 on the fiber disposed therebetween is adjustable by regulating the tension on the spring 56a coupled to the lower end of the crank arm 56 and to the threaded anchoring pin 90 attached to the end frame member 92.

DEFLECTOR PLATE CONSTRUCTION

It is important that tuft size be maintained as small as possible within the chute 14 to fill the voids that may occur. To accomplish this, as well as maintain a uniform head within the chute, an adjustable deflector plate 134 is hinged at its upstream end, relative to flow in the flue, by hinge 136 to the somewhat downwardly inclined bottom wall 15a of the head section, and has a depending flange 134a at its free end adjacent the extractor roll 18. The deflector plate 134 is readily adjustable to the desired angular position by a manually operable screw 138 threaded through a threaded boss 140 on the bottom wall 15a and having a handle 138a on its exterior

end and its upper end journaled in a socket member 142 fixed to the deflector plate 134. By adjusting the deflector plate 134 just so, the blades 20 of the extractor roll 18 penetrate the air-fiber mixture moving through the flue 10 and head section 15 enough to fill the chute 14 with a minimum of overflow. In the case of some synthetic fibers, compaction of fiber around the extractor roll 18 could otherwise cause large masses of fiber to leave one chute unit and be presented to the next following chute unit. By adjusting the deflector plates 134 of all chute units accordingly, a uniform density is maintained within the chute 14, further improving the batt delivered to the card feed roller 42.

The drive from the card feed roller 42 permits the flow of fiber to be stopped by disengaging the conventional draft gear of the carding machine in the normal manner well known to those skilled in the art. The batt continuity is not broken within the feed chute when rotation of the compression rollers is terminated. Also, in conventional operation, the carding machine continues to operate with or without the flow of stock. Hence, it is possible to connect the extractor roller drive, the accumulator roller drive and the accumulator plate drive directly to the continuously moving card, permitting the operation described, but without the necessity of another motor on the upper section of the feed chute associated with the carding machine.

While I have shown and described a particular method and an apparatus for performing the method, this is by way of illustration only, since various alterations, changes modifications, adjustments, omissions, changes, eliminations, additions, substitutions, ramifications and departures may be made in the method and apparatus shown without departing from the scope of my invention, as shown in the appended claims.

I claim:

1. Apparatus for conveying fibers to the feed end of a carding machine from a substantially horizontal overhead supply flue supplying fiber tufts by vehicle air along a supply path and concurrently forming the fibers into a batt suitable for delivery into the carding machine, comprising a vertically elongated feed chute forming a laterally closed tubular passageway having an open top directly joining and opening into the flue and an open bottom adjacent said feed end for receiving fiber tufts from the flue and directing them downwardly along a generally vertical feed path therein, the width of said chute being coextensive throughout its height with the full width of the carding machine, a pair of spaced opposed compression plates in the lower region of said chute at opposite sides of the feed path pivoted in the upper regions thereof for rocking movement about horizontal pivot axes paralleling said feed path and having substantially planiform confronting surfaces defining a continuously unobstructed space therebetween for reception of the fiber tufts, a pair of opposed, rotating feed cylinders located at opposite sides of the feed path immediately above said plates for feeding fiber tufts downwardly into said unobstructed space between said plates, a revolving extractor baffle having plural radially extending blades rotatable about a horizontal transverse axis at said open top for mechanically withdrawing fiber tufts from the vehicle air in said supply path and mechanically conveying the tufts downwardly into the upper region of said chute to substantially fill said upper region and then maintain a head of fiber therein, the interior of said chute being unobstructed between said extractor means and said feed cylinders whereby gravity and forces produced by the head of fiber in and conveyance by said baffle of tufts into said upper region move the fiber tufts downwardly from the extractor baffle to the feed cylinders, driving means for oscillating said plates about their pivot axes to cyclically swing said confronting surfaces through a range of downwardly converging positions to compress the fiber tufts therebetween into a batt, and a pair of opposed rotating compression cylinders disposed on opposite sides of said feed path below said plates for compressing the batt discharged below said plates and feeding the same from the chute for delivery to the feed end of the carding machine.

2. Apparatus as defined in claim 1, wherein said driving means includes a rotating plural lobe cam, a first lever supported for rocking movement about one of said axes having cam follower means tracking on said lobe cam for rocking the lever, and means coupling said lever to said plates for rocking the latter about their axes through arcs correlated to the contours of the lobes of said lobe cam to effect selected uniform compression of the fiber tufts into said batt.

3. Apparatus as defined in claim 1, wherein said feed chute includes a horizontally elongated head section interposed in said flue, said extractor baffle being disposed at the juncture of said feed chute and head section forming a revolving baffle in the top of said chute with said blades penetrating the lower strata of the conveying airstream in said flue for mechanically transferring fiber tufts from said supply path downwardly into the upper region of said feed chute for gravity discharge to said feed cylinders, a deflector plate member disposed upstream of said extractor baffle hinged at an upstream edge thereof about a hinge axis substantially aligned with the bottom of said flue and having a free edge closely adjacent said extractor baffle, and adjustment means for positioning said deflector plate member at selected angular positions to vary the spacing between said free edge and the periphery of the extractor baffle to thereby regulate the size of tufts delivered by the extractor baffle into said feed chute to selected small tuft sizes and to regulate the extent of extractor baffle penetration into the air-fiber mixture flowing through the flue.

4. Apparatus as defined in claim 2, wherein said feed chute includes a horizontally elongated head section interposed in said flue, said extractor baffle being disposed at the juncture of said feed chute and head section forming a revolving baffle in the top of said chute with said blades penetrating the lower strata of the conveying airstream in said flue for mechanically transferring fiber tufts from said supply path downwardly into the upper region of said feed chute for gravity discharge to said feed cylinders, a deflector plate member disposed upstream of said extractor baffle hinged at an upstream edge thereof about a hinge axis substantially aligned with the bottom of said flue and having a free edge closely adjacent said extractor baffle, and adjustment means for positioning said deflector plate member at selected angular positions to vary the spacing between said free edge and the periphery of the extractor baffle to thereby regulate the size of tufts delivered by the extractor baffle into said feed chute to selected small tuft sizes and to regulate the extent of extractor baffle penetration into the air-fiber mixture flowing through the flue.

5. Apparatus as defined in claim 1, wherein said extractor baffle is in the shape of an interrupted baffle cylinder having a diametrically opposed pair of right-angular recesses extending substantially the axial length of the baffle cylinder and having their apexes closely adjacent the center axis of the baffle cylinder to define pockets for receiving tufts from said supply path and carrying them into the upper portion of said chute for gravitational movement downwardly to said feed cylinders.

6. Apparatus as defined in claim 2, wherein said extractor baffle is in the shape of an interrupted baffle cylinder having a diametrically opposed pair of right-angular recesses extending substantially the axial length of the baffle cylinder and having their apexes closely adjacent the center axis of the baffle cylinder to define pockets for receiving tufts from said supply path and carrying them into the upper portion of said chute for gravitational movement downwardly to said feed cylinders.

7. Apparatus as defined in claim 4, wherein said extractor baffle is in the shape of an interrupted baffle cylinder having a diametrically opposed pair of right-angular recesses extending substantially the axial length of the baffle cylinder and having their apexes closely adjacent the center axis of the baffle cylinder to define pockets for receiving tufts from said supply path and carrying them into the upper portion of said chute for gravitational movement downwardly to said feed cylinders.

8. Apparatus as defined in claim 1, wherein said extractor baffle has outwardly opening recesses therein forming pockets for receiving tufts from the supply path and transporting them

downwardly in circular paths into the top portion of said chute, said baffle being operative when the upper portion of said chute is full of tufts to convey the tufts across the top of the chute and back into said supply path to be conveyed downstream from said chute.

9. Apparatus as defined in claim 2, wherein said extractor baffle has outwardly opening recesses therein forming pockets for receiving tufts from the supply path and transporting them downwardly in circular paths into the top portion of said chute, said baffle being operative when the upper portion of said chute is full of tufts to convey the tufts across the top of the chute and back into said supply path to be conveyed downstream from said chute.

10. Apparatus as defined in claim 3, wherein said extractor baffle has outwardly opening recesses therein forming pockets for receiving tufts from the supply path and transporting them downwardly in circular paths into the top portion of said chute, said baffle being operative when the upper portion of said chute is full of tufts to convey the tufts across the top of the chute and back into said supply path to be conveyed downstream from said chute.

11. Apparatus for conveying fibers to the feed end of a carding machine from a substantially horizontal overhead supply flue supplying fiber tufts by vehicle air along a supply path having a width coextensive with the carding machine and concurrently forming the fibers into a batt suitable for delivery into the carding machine, comprising a vertically elongated feed chute forming a laterally closed tubular passageway having an open top directly joining and opening into the flue and an open bottom adjacent said feed end for receiving fiber tufts from the flue and directing them downwardly along a generally vertical feed path therein, said chute having spaced planiform vertical front and backwalls extending from said open top to said open bottom and laterally spaced sidewalls, the width of said chute between said sidewalls being coextensive throughout its height with the full width of the carding machine, a pair of spaced opposed compression plates in the lower region of said chute at opposite sides of the feed path pivoted in the upper regions thereof for rocking movement about horizontal pivot axes spaced inwardly from said front and backwalls in parallelism with said feed path and having substantially planiform confronting surfaces defining a continuously unobstructed space therebetween for reception of the fiber tufts, a pair of opposed, rotating feed cylinders located at opposite sides of the feed path immediately above said plates for feeding fiber tufts downwardly into said unobstructed space between said plates, a revolving extractor baffle having plural radially extending blades rotatable about a horizontal transverse axis at said open top for mechanically withdrawing fiber tufts from the vehicle air in said supply path and mechanically carrying the tufts downwardly into the upper region of said chute, to substantially fill said upper region and then maintain a head of fiber therein, the interior of said chute being unobstructed between said extractor means and said feed cylinders whereby gravity and forces produced by the head of fiber in and conveyance by said baffle of tufts into said upper region move the fiber tufts downwardly from the extractor baffle to the feed cylinders, driving means for oscillating said plates about their pivot axes to cyclically swing said confronting surfaces through a range of downwardly converging positions to compress the fiber tufts therebetween into a batt, and a pair of opposed rotating compression cylinders disposed on opposite sides of said feed path below said plates for compressing the batt discharged below said plates and feeding the same from the chute for delivery to the feed end of the carding machine.

12. Apparatus for conveying fibers to the feed end of a carding machine from a substantially horizontal overhead supply flue supplying fiber tufts by vehicle air along a supply path having a width coextensive with the carding machine and concurrently forming the fibers into a batt suitable for delivery into the carding machine, comprising a vertically elongated feed chute forming a laterally closed tubular passageway hav-

ing an open top directly joining and opening into the flue and an open bottom adjacent said feed end for receiving fiber tufts from the flue and directing them downwardly along a generally vertical feed path therein, said chute having spaced planiform vertical front and backwalls extending from said open top to said open bottom and laterally spaced sidewalls, the width of said chute between said sidewalls being coextensive throughout its height with the full width of the carding machine, a pair of spaced opposed compression plates in the lower region of said chute at opposite sides of the feed path pivoted in the upper regions thereof for rocking movement about horizontal pivot axes spaced inwardly from said front and backwalls in parallelism with said feed path and having substantially planiform confronting surfaces defining a continuously unobstructed space therebetween for reception of the fiber tufts, a pair of opposed, rotating feed cylinders located at opposite sides of the feed path immediately above said plates for feeding fiber tufts downwardly into said unobstructed space between said plates, a revolving extractor baffle having plural radially extending blades rotatable about a horizontal transverse axis at said open top for mechanically withdrawing fiber tufts from the vehicle air in said supply path and mechanically carrying the tufts downwardly into the upper region of said chute, to substantially fill said upper region and then maintain a head of fiber therein, the interior of said chute being unobstructed between said extractor means and said feed cylinders whereby gravity and forces produced by the head of fiber in and conveyance by said baffle of tufts into said upper region move the fiber tufts downwardly from the extractor baffle to the feed cylinders, driving means for oscillating said plates about their pivot axes to cyclically swing said confronting surfaces through a range of downwardly converging positions to compress the fiber tufts therebetween into a batt, a pair of opposed rotating compression cylinders disposed on opposite sides of said feed path below said plates for compressing the batt discharged below said plates and feeding the same from the chute for delivery to the feed end of the carding machine, said driving means including a rotating plural lobe cam, a first lever supported for rocking movement about one of said axes having cam follower means tracking on said lobe cam for rocking the lever, and means coupling said lever to said plates for rocking the latter about their axes through arcs correlated to the contours of the lobes of said lobe cam to effect selected uniform compression of the fiber tufts into said batt.

13. Apparatus as defined in claim 12, wherein said feed chute includes a horizontally elongated head section interposed in said flue, said extractor baffle being disposed at the juncture of said feed chute and head section forming a revolving baffle in the top of said chute with said blades penetrating the lower strata of the conveying airstream in said flue for mechanically transferring fiber tufts from said supply path downwardly into the upper region of said feed chute for gravity discharge to said feed cylinders, a deflector plate member disposed upstream of said extractor baffle hinged at an upstream edge thereof about a hinge axis substantially aligned with the bottom of said flue and having a free edge closely adjacent said extractor baffle, and adjustment means for positioning said deflector plate member at selected angular positions to vary the spacing between said free edge and the periphery of the extractor baffle to thereby regulate the size of tufts delivered by the extractor baffle into said feed chute to selected small tuft sizes and to regulate the extent of extractor baffle penetration into the air-fiber mixture flowing through the flue.

14. Apparatus as defined in claim 13, wherein said extractor baffle is in the shape of an interrupted baffle cylinder having a diametrically opposed pair of right-angular recesses extending substantially the axial length of the baffle cylinder and having their apexes closely adjacent the center axis of the baffle cylinder to define pockets for receiving tufts from said supply path and carrying them into the upper portion of said chute for gravitational movement downwardly to said feed cylinders.