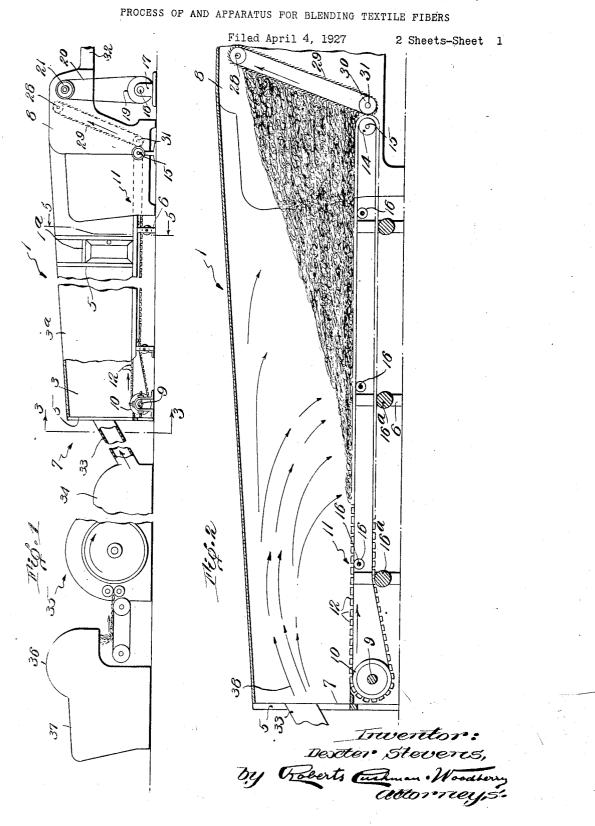
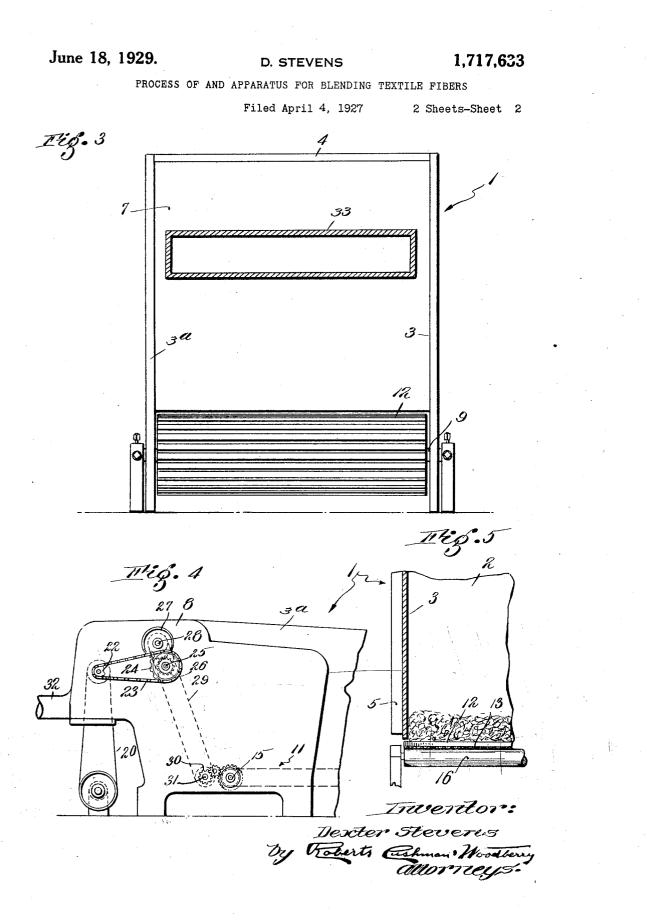
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D. STEVENS



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DEXTER STEVENS, OF ESMOND, RHODE ISLAND.

PROCESS OF AND APPARATUS FOR BLENDING TEXTILE FIBERS.

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This invention pertains to a process of and apparatus for mixing and blending fibrous materials preparatory to the manu-facture of textile yarns and fabrics. For 5 the production of certain types of textile fabrics it is necessary to mix or blend two or more batches of fiber in order to obtain the requisite characteristics or to secure uniformity of color, quality, feel, etc. through-10 out the entire product. For example, mixtures of cotton fiber with wool, hair, silk, etc., are frequently employed as well as mixtures of fibers of the same kind, for example, cotton but of different staple or which have 15 undergone different preliminary treatments. Likewise fibers of the same or different kinds but differently colored are frequently mixed to produce intermediate shades or tints or to give mottled effects while, on the other 20 hand, it is essential even when the fiber em-

ployed is all of the same kind, quality and color, to open out the fiber as received at the mill (whether in bales, sacks, or other form of package) and to mix it thoroughly be-25 fore it is spun into yarn in order to produce yarn of uniform quality.

While many processes of and machines for mixing textile fiber are well known, I have found that many of the usual processes, even 30 if productive of reasonably good results, consume an undue amount of time and power,

and demand the use of machines or appliances which occupy a great deal of floor space, while such machines and appliances 35 are often of very expensive character. The principal object of the present inven-

tion is to provide an improved process of mixing and blending fiber and mechanism for use in the practice of the process, both 40 process and mechanism being simple and relatively inexpensive and requiring but little floor space, as compared with the usual blending processes and apparatus, while at the same time producing a more thorough mixing and blending than any process or ap-paratus heretofore known to me, the new 45process and apparatus being fully capable of mixing fibers of different colors so as to produce an even distribution of the color in 50 the mix, this being one of the most difficult

operations to perform successfully which is encountered in the preparatory stages of textile manufacture.

My improved process comprises a plurality of steps and may be varied in minor par- 55 ticulars in accordance with the kind and character of the fiber, the purpose to which the mixed fiber is to be put, and the condition of the fiber as received at the first stage of my novel process. For example, if it be 60 desired to mix batches of red and white fiber, the two batches may conveniently be dumped together into the feed hopper or bin of any one or more of the usual preliminary textile machines such, for instance, 65 as bale breakers, openers, pickers, or feeders, which tend to open out and loosen the fiber. While such machines are often described as "mixing" the fiber, it should be remembered that none of these machines is oper- 70 ating upon more than a few pounds of fiber at any given instant, and while to some extent such machines do mix the fiber which at any given time is within their range of action, they can not be depended upon to 75 blend and produce an uniform mixture throughout a mass running into hundreds and even thousands of pounds, and which passes through the machine in a stream of relatively small volume. 80

Having thus opened up the fiber and separated it into small masses or flocks, as is usual in textile practice, the first essential step in my new process is to spread a thin broad layer of the opened fiber evenly upon a sub- 85 stantially horizontal floor, table, endless belt, or creeper, such belt or creeper being preferred for reasons hereinafter described.

Preferably, though not necessarily, the spreading of the fiber is done pneumatically 90 by delivering the fiber into an air blast from which the fiber is permitted to settle down by gravity onto the floor, table or belt in much the same way that snow accumulates upon the ground. Thin first layer of fiber 95 is followed by a second very thin broad layer similarly deposited, and this by a third, and so on until the accumulated fiber has attained a substantial depth forming a pile, heap or drift preferably from three to five feet 100 deep. If the fiber be deposited pneumatically, as above suggested, there need be no actual interruption between the laying of successive strata or layers, and in fact the strata normally merge imperceptibly into 105 each other by continuous fall of the fiber

particles upon the accumulated mass below. ter procedure may be carried out by con-However, it is to be remembered that the drift or heap necessarily represents the summation of the incremental portions of fiber 5 which at any given moment are falling upon the upper surface of the pile.

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Assuming that this heap or drift of superimposed strata has thus been built up, I next proceed to remove from one face of the 10 drift or heap a thin substantially vertical slice or section, delivering the fiber thus removed by mechanical or pneumatic means to the next machine or process involved in the system of manufacture in which my novel 15 process is interpolated. It must be evident that such a vertical slice, taken from the side face of the pile may be considered as, and in fact is, composed of a series of narrow strands, ribbons or bands, one from each of 20 the several laminæ or layers constituting the heap, and may thus be regarded as constituting an average sample of the entire mass. It is to be remembered that each layer is deposited (preferably by distributing a given and 25 relatively small quantity of the fibrous material over a broad horizontal area) is quite thin. Thus for example, if the fiber be well separated and flocculent, such a layer may conceivably be only a few fibers thick, and, it 30 is evident that such a vertical slice, particularly if quite thin horizontally, constitutes as nearly a perfect representative mixture of the large body of material constituting the entire heap as could well be obtained. Since 35 such a vertical slice is thus representative of means, for example, of separate pneumatic 100 the entire mass, it follows that by continuing to remove such thin vertical sections or slices from the mass and delivering such slices successively to the next machine or op-40 eration I may obtain a nearly perfect mixture of the material. Thus, by making the that mechanical or other means may be emheap of large dimensions, that is to say, for example, making it to consist at any instant moving belt upon which the fiber is placed of several hundred pounds or more of fiber, and which is provided with suitable dis-45 it is evident that a much more uniform mixture can be obtained than by any of the ly over the desired area. usual so-called mixing machines.

I may also continue to remove and deliver vertical slices from the pile until the entire 50 pile is used up, and I find, for example, that if I deliver such successive slices directly to a carding machine, the resulting sliver this particular mechanism or apparatus but from such carding machine is of uniform may be performed by the use of any other character and in the instance above cited, 55contains red and white fibers in the desired proportion and so uniformly distributed as to produce a yarn of extremely uniform shade.

As thus far described the process would 60 be intermittent, but in order that it may be continuous I may proceed either by building up one heap or pile while slicing off scale; a portion of a previously formed pile, or Fig. 3 is a vertical section, substantially preferably I perform both the building and on the line 3-3 of Fig. 1, but to much larger slicing operations simultaneously. This lat-

tinually advancing the growing pile toward the slicing means, as for example by spreading the fiber upon a slowly moving table, belt or creeper, and continuing to deposit the 70 material upon this moving support at substantially the same rate that I remove material in sections from the upright face of the heap.

In practicing this continuous process it is 75 preferable first to build up a heap of the desired depth or number of layers or laminæ before the slicing operation begins, and then to continue to add incremental layers to the heap or drift while moving the latter so bodily, the bodily movement of the heap or pile being substantially equal per unit of time to the thickness of the slice removed by the slicing means.

While it has been suggested that the vari- S5 ous batches of material may advantageously be brought together prior to the first stage of the present process, I contemplate that alternate layers of laminæ of the pile or drift above referred to may each consist wholly of 90 fiber from one of said batches, that is to say, if, as above suggested, one batch of fiber be red and the other white, the first layer deposited may be entirely of red fiber, the second of white, the third of red, and 95 so on. On the other hand, when pneumatic means is employed for delivering the fiber to the pile or heap, the fiber from the several batches may simultaneously be delivered by conveyors and allowed to settle indiscriminately on the heap. Further, while such pneumatic means, that is, an air current, bearing the fiber in suspension is a desirable agent for depositing the fiber, I contemplate 105 ployed for the purpose as, for example, a charge means for distributing the fiber even- 110

In the accompanying drawings I have il-lustrated one form of apparatus useful in practicing the present process, although I wish it to be understood that the process 115 herein described is not necessarily limited to appropriate means.

In the accompanying drawings: Fig. 1 is a diagrammatic side elevation, partly broken away and partly in section, illustrating the preferred apparatus;

Fig. 2 is a vertical section, partly in elevation, showing the central portion of the 125 apparatus illustrated in Fig. 1, but to larger

scale;

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Fig. 4 is a fragmentary side elevation of canvas, or the like, may be arranged at this the right-hand portion of the apparatus (as viewed in Fig. 1), but illustrating the opposite side thereof and to larger scale; and

Fig. 5 is a fragmentary vertical section substantially on the line 5-5 of Fig. 1.

In performing the present process I find it convenient to employ an elongate casing 1 which may be constructed of any desired 10 material such, for example, as wood, sheet metal, composition board, or the like, and which provides a large enclosed chamber 2 in

which the essential steps of the present proc-ess are carried out. The casing 1 prefer-15 ably comprises side walls 3 and 3^a and the top 4, consisting of panels supported by a suitable framework 5. If desired this casing may have one or more doors as indicated, for example, at 1ª to give access to the cham-

20 ber 2 for inspection of the contents of the chamber or for observation of the operation while going on. Preferably the end 7 of the casing 1 is not as high as the opposite end. For good results I have found that a casing

25 of approximately twenty-five feet in length, five feet in width and varying in height from approximately five feet at one end to about eight feet at the other end is suitable for the purpose. While I have just mentioned 30 certain definite dimensions, it is to be understood that these are merely illustrative of the general proportions of parts which I have found suitable and are not in any way

to be regarded as restrictive of the invention. The casing is preferably supported upon legs 6 or other appropriate means so as to space it a little way above the floor of the workroom, and the high or delivery end of the casing preferably merges into a metallic 40 end frame of casing 8 adapted to support

various shafts hereinafter referred to. At a point adjacent to the low end 7 of the casing I mount a shaft 9 in suitable bear-

ings, such shaft supporting a roller 10 forming a guide and support for one end of an 45 endless conveyor belt or creeper 11 consisting of a flexible base member 13 (Fig. 5) of canvas or other suitable material and a series of transverse slats 12 suitably secured to this canvas base. The upper run of this endless 50 belt 11 constitutes the floor of the chamber 2, such upper run being substantially horizontal. The opposite end of this belt passes around a roller 14 mounted upon a shaft 15 journaled in the end casing $\overline{8}$. The upper 55 run of the belt is preferably supported by means of a series of rollers 16, while the lower run of the belt is also preferably supported by rollers 16^{a} , the rollers 16 and 16^{a} being journaled in suitable brackets conven-iently carried by the legs 6. The upper run 60 of the belt 11 fits snugly against the lower edges of the side walls 3 and 3^{a} of the cas-

ing, and if desired suitable packing material 65

point to prevent the escape of air and fiber from beneath the edges of the casing.

A suitable stand 17 provides journal bearings for a main drive shaft 18 which may 70 carry tight and loose pulleys, (not shown) adapted to receive a drive belt leading to a suitable source of power. The shaft 18 also carries a pulley 19 about which the belt 20 passes. This belt 20 engages a pulley upon 75 a shaft 21 extending transversely through the end casing 8 and having secured to its opposite end a sprocket wheel 22 (Fig. 4). The sprocket wheel 22 is connected, by means of a sprocket chain 23, to a sprocket wheel 80 24 turning upon a stud shaft 25 mounted upon the casing 8. This sprocket wheel 24 is fixed to a gear 26 meshing with a gear 27 upon a shaft 28 extending tranversely through the end casing 8. This shaft 28 85 carries a roller supporting the upper end of an endless spike apron 29. The lower end of this apron passes around a roller 20 closely adjacent to the roller 14 and carried by a shaft 31 journaled in the end casing 8 and 90 which drives (by means of suitable speed reducing gearing) the shaft 15 above referred to. As thus arranged the speed of the spike apron 29 is much greater than that of the slat apron or belt 11. As here shown ⁹⁵ the spike apron 29 extends upwardly from the delivery end of the belt 11 and is preferably somewhat inclined from the vertical and away from the belt or apron 11. However, I may, if desired, arrange this slat 100 apron so that its active run will be vertical, or I may arrange it to incline in the opposite direction from the vertical, as compared with the arrangement shown herein.

Furthermore, I contemplate that certain 105 of the desirable results attainable by the practice of my process may be secured by arranging the spike apron or its equivalent so as to move in a horizontal path transverse 110 to the path of movement of the belt 11.

The shaft 21 carries a doffer device, not shown, for removing the fiber from the upper end of the spike apron 29, whereby to deliver it into the mouth of the conveyor pipe 32 which may lead to any desired ap-¹¹⁵ paratus in which the fiber is further treated. For example, this pipe may lead to a carding machine or to a card feeder of usual construction, not herein shown, as it forms no part of the present invention.

At the opposite end of the casing 1 I provide an inlet conduit 33, preferably inclining upwardly at the point where it enters the casing. This conduit 33 is of a cross-sectional area very considerably less than that 125 of the casing 1 so that air entering at a given velocity through the conduit 33 loses its velocity very quickly as it passes into the chamber 2. After the air has flowed at relasuch, for example, as a band of soft leather, tively slow speed longitudinally of the cham- ¹³⁰

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32 where its velocity increases sufficiently to enable it to carry the fiber which is delivered into the conduit 32 by the doffer 5 means on the shaft 21.

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The conduit 33 may lead from any suitable source of supply of the fibrous material to be mixed, but as here shown leads from the casing 34 of a picker 35 of any 10 usual type. This picker in turn is shown as receiving fiber from a feeder 36 of wellknown type having a bin 37 into which the fiber which is to be mixed may be dumped by hand or by suitable feed mechanism. The 15 picker 35 and the feeder 36 are here shown merely as illustrative of means for roughly opening and mingling the fiber before delivery to the casing 1, but the present invention is not concerned with the particular 20 form of apparatus used in the preliminary treatment of the fiber, except that for the specific exemplification of the process herein illustrated, it is desirable to deliver the fiber into the conduit 33 while in suspension in an 25 air current of high velocity adapted to carry it through the conduit 33 and to deliver it into the chamber 2 in the form of a jet.

As the air flowing through the conduit 33 enters the chamber 2 it moves in an upwardly inclined jet or stream, as indicated by the arrows at 38, but as this jet rapidly 30 loses velocity, the fiber which is carried by the jet gradually settles by the action of gravity in a thin layer upon the floor or belt 35 11 and eventually builds up an elongate heap or drift 39 consisting of a large number of superposed layers, strata or laminæ. Since by reason of the momentum of the entering fiber and the draft of air always mov-40 ing longitudinally of the casing, these layers, strata or laminæ tend to be thicker at the right-hand end of the casing (as viewed in Fig. 2) than at the opposite end, and thus the drift usually takes somewhat the form indicated in Fig. 2, that is to say, it is deepest 45 at the point most remote from the conduit 33, from which point it tapers gradually toward the end 7 of the casing, the length of the drift, under proper working conditions, preferably being at least twice its maximum 50 depth. This drift, as diagrammatically indicated in Fig. 2, consists of a great number of thin superposed layers or laminæ since it is evident that at each successive instant in 55 the operation of the apparatus a certain quantity of fiber settles out of the air onto the previously accumulated heap or drift, and thus the material which accumulates during any short interval of time, no matter how short such interval may be taken, may 60 be considered as constituting a distinct laver, although such layers usually merge imperceptibly into one another. Since the area of the floor 11 of the chamber is large, 65

ber 2, it passes out again through the pipe any instant in suspension above it, it is clear that the cotton at any such instant in suspension must be distributed very thinly over the area of the floor, and it is thus highly improbable that fiber of one particular kind 70 would accumulate to any substantial depth at one point upon the floor of the casing.

The spike apron 29 constitutes the effective end wall for the chamber 2, at the end remote from the conduit 33, and the drift of 75 fiber builds up against the active or up-wardly movable run of this spike apron. After the drift has once been built up to a substantial thickness the spike apron and the belt 11 are started into operation, and it so is obvious that the upward movement of the spike apron 29 tends to separate a thin layer of fiber from the end of the pile and to carry such thin layer upwardly to the point where it is doffed from the spike apron by the ⁸⁵ doffer carried on the shaft 21. If the belt 11 were stationary the movement of the spike apron 29 would tear or pull-off a single section or slice from the end of the heap or drift and such single slice or section 90 would consist of portions of each of the many successively deposited layers constitut-ing the heap. Thus the material removed by the spike apron from the end of the heap constitutes a sample or average of the en- 95 tire mass of fiber making up the heap and the fiber delivered by the spike apron represents a very thorough mixture of the material delivered into the casing.

In the continuous course of operation of 100 the mechanism, the spike apron is continuously fed by the forward movement of the belt 11 so that as fast as it removes the fiber from the advancing face of the heap, fresh fiber is presented by the movement of belt 11 105 and the operation is thus uninterrupted. It is thus possible to consider that the spike apron removes a continuous slice from the end of the heap, such slice at any instant consisting of portions of all of the several 110 layers as above referred to. The slow movement of the belt 11 continues to move the pile or heap bodily toward the spike apron, enabling the latter to bite off portions of the end of the heap at substantially the same 115 rate that the heap is built up by deposit of new layers upon its upper surface, and thus the mixing and blending operation may be continued as long as material is furnished to the spike apron. As the rate of the belt is 120 slow, as compared with that of the spike apron, there is no tendency to rotate the heap or drift as a whole and thus the layers constituting the body of the heap keep their relative positions so that only their edges are 125 presented to the spike apron. Moreover, the slow relative speed of the belt also permits the same spike apron to handle fiber of different kinds, for example cotton and wool, with as compared with the quantity of cotton at substantially equal facility, whereas, were 130

the belt driven at the same rate as the spike apron, a selective removal of fiber of one kind from the heap or mass might be expected.

- Since the fiber is deposited so gently, it 5 forms a very loose, light and flocculent heap from which all heavy dirt and dust tends to fall freely onto the belt where it collects in the recesses between the slats and is eventu-
- 10 ally dumped as the belt passes downwardly about the roller 14. Moreover, the low widely extended slowly moving heap, in the presence of the large volume of air moving through the chamber, furnishes ideal condi-
- 15 tions for aeration of the fiber permitting it to "bloom", fluff out, and regain its original shape and elasticity.

While this method of depositing the material pneumatically is very desirable, I con-

template, as above suggested, that the mate-20 rial may be deposited upon the moving floor or belt 11 in other ways than by the use of air. For example, it is conceivable that suitable mechanical means for perform-25 ing the same operation might well be employed, any such device being considered to be the equivalent of the pneumatic means herein specifically illustrated.

While I have illustrated a spike apron 29 30 as the means for slicing off the fiber at the end of the heap I wish it to be understood that this is merely illustrative of suitable means for performing this operation since I contemplate that other means might be

- 35 employed for producing the same result. It is also to be understood that the relative speeds of the spike apron and floor 11 are not necessarily such as herein disclosed but that under other circumstances and in deal-
- 40 ing with fiber of other character a different relative speed of these moving parts might well be found desirable. Moreover, I do not consider that the exact shape of the casing is an essential feature of the invention since
- 45 I contemplate that desirable results may be obtained with casings of other type and conceivably in the open workroom, although it is evident that the latter arrangement would hardly be practical due to the enor-
- 50 mous loss of fiber which would probably occur and the unhealthy conditions of the workroom resulting from the great accumulation of lint and fly in the air. I claim:

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1. That method of mixing textile fibers of a type suitable for spinning which comprises delivering all of the fiber which is to be mixed into air moving at high velocity,

space in which the air current loses velocity, from said end of the drift, the linear speed permitting the suspended fiber to settle and of the spike apron being greater than that form an elongate drift, advancing the drift of the belt. bodily in a longitudinal direction, and con-

given instant constitutes the advancing end of the drift.

2. That method of mixing textile fiber of a kind suitable for spinning which com-prises blowing all of the fiber by means of $_{70}$ an air current into a closed chamber to form an elongate drift in said chamber, that end of the drift remote from the point of entrance of the fiber being higher than the other, moving the drift bodily with its 75 deeper end in advance, and removing vertical sections from its advancing end while continuing to add fiber to its upper surface.

3. Apparatus for use in mixing textile fiber of a kind suitable for spinning, said appa- 80 ratus comprising a substantially air-tight hollow casing providing an elongate chamber, means for delivering a fiber-laden current of air at high velocity and of relatively small cross section, as compared with the 85 section of the chamber, into one end of the chamber, the current moving longitudinally of the chamber the sudden reduction in air velocity of the entering air causing the fiber to be deposited in a drift within the cham- 90 ber, and means moving transversely of the direction of the entering air current for removing fiber from that side of the drift remote from the point of entrance of the air current and pneumatic means for con- 95 veying such removed fiber from the chamber.

4. Apparatus for use in mixing textile fiber suitable for spinning which comprises an elongate substantially air-tight hollow 100 casing higher at one end than the other, a pneumatic conveyor conduit entering the lower end of the casing, means for delivering tiber-laden air into the casing through said conduit whereby to build up a drift of fiber, 105 said drift being higher at the high end of the casing than at the opposite end, an upwardly moving spike apron adjacent to the higher end of the casing, the high end of the drift engaging the upwardly moving 110 apron, and means for moving the apron whereby to remove fiber from the end of the drift.

5. Apparatus for use in mixing textile fiber suitable for spinning comprising a cas- 115 ing providing an elongate chamber, an endless belt constituting the floor of the chamber, means for blowing all of the fiber to be mixed into the chamber at one end of the latter to form a drift of fiber extending 120 toward the remote end of the chamber, such drift being highest near such remote end of the chamber, a spike apron defining the redischarging said fiber-laden air in the form mote end of the drift, and means for moving of an upwardly inclined jet into a closed the spike apron whereby to remove fiber 125

6. Apparatus for use in mixing textile ⁶⁵ stantly removing the fiber which at any fiber suitable for spinning comprising a cas- ¹³⁰

ing providing a substantially air-tight elon- of fiber deepest at its advancing end, and gate chamber, an endless slat apron consti- moving a spike apron at high velocity comtuting the floor of the chamber, a conduit pared with that of the conveyor, along the leading into an end of the chamber, said 5 conduit being inclined upwardly, means for delivering a current of fiber-laden air through said conduit into the chamber in an upwardly inclined jet, the fiber carried by said jet spreading laterally and longi-10 tudinally of the chamber and forming a drift upon the slat apron, an upwardly moving spike apron defining that end of the drift remote from the entering air jet, means for moving the slat apron slowly toward the 15 spike apron, and means for moving the latter at a relatively high speed.

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7. That continuous process of treating textile fiber of a kind suitable for spinning which comprises as steps depositing all of 20 the fiber to be treated in widely extended superposed strata to form a heap, advancing said heap bodily while maintaining said strata substantially undisturbed in relative position, and continuously removing fiber from the advancing layers of the several 25 strata

8. That continuous process of treating textile fibers suitable for spinning which comprises separating all of the fiber to be 30 treated into small flocks, continuously depositing said flocks over a widely extended area to form superposed laminæ which are thicker at one end than at the other and which merge with one another to form a heap 35 which is deepest adjacent to one end, and removing substantially vertical slices from said deeper end of the heap.

9. That continuous process of treating textile fibers suitable for spinning which comprises as steps continuously depositing 40 all of the fiber to be treated in widely extended superposed substantially parallel layers to form a heap, and maintaining the layers substantially undisturbed in relative 45 position while continuously removing the fiber constituting one edge only of each of said layers.

10. That continuous process of treating textile fiber suitable for spinning which $_{50}$ comprises as steps delivering all of the fiber to be treated in flocculent condition and at high velocity and in such a direction into one end of an elongate chamber as to cause the fiber to sweep lengthwise of the chamber 55 and form an elongate drift or heap increasing in depth from one end toward the other, and continuously removing substantially vertical sections from the deeper end of the drift.

11. That process of mixing textile fiber 60 suitable for spinning which comprises as steps delivering all of the fiber to be mixed at high velocity onto a slowly moving conveyor travelling in the same general direc-

advancing face of the heap whereby continuously to remove fiber from said faces. 70

12. That method of cleaning, mixing and aerating textile fiber suitable for spinning which comprises delivering all of the fiber to be treated in loose flocculent condition into a body of air and permitting the fiber to set- 75 tle out of the air upon an endless conveyor having open spaces into which dirt may drop, the fibers forming a loose drift of greater length than height, moving the conveyor to advance the drift bodily, and con- 80 tinuously removing fiber from the entire area of the advancing end of the drift, the speed of the conveyor being so slow as to allow substantial aeration of the fiber with recovery of its normal shape and elasticity 85 before it reaches the spike apron.

13. Apparatus for use in mixing textile fiber of a character suitable for spinning comprising a substantially air-tight casing of a length approximating five times its 90 height at its receiving end, an inlet conduit entering the casing at its receiving end, means for delivering air charged with textile fiber in the form of a high velocity jet through said inlet conduit into the receiving 95 end of the casing, said jet moving toward the delivery end of the casing, a conveyor constituting the effective floor of the casing, means for moving said conveyor slowly toward the discharge end of the casing, a spike 100 apron extending upwardly from the delivery end of the conveyor, means for driving the spike apron at a speed substantially greater than that of the conveyor, a doffer shaft adjacent to the upper end of the spike apron, 105 and a pipe leading from the upper part of the delivery end of the casing, said pipe providing a passage for a fiber conveying air current.

14. Apparatus for use in mixing textile 110 fiber of a character suitable for spinning comprising an elongate substantially airtight casing of a height at its receiving end approximately one-fifth of its length and of a height at its delivery end approximating 115 one-third of its length, said casing comprising fixed side, top and end walls, a floor for the casing comprising an endless conveyor belt whose upper run moves in substantially air-tight contact with the side 120 walls of the casing, a spike apron within the casing at its delivery end, said apron extending upwardly from the delivery end of the conveyor belt, an inlet conduit entering the receiving end of the casing in an up-¹²⁵. wardly inclined direction, and a discharge pipe leading from the delivery end of the casing.

15. In combination with a picker device 65 tion as the fiber whereby to build up a drift for picking textile fiber of a suitable staple 130 for spinning, a conduit leading from said picker through which all of the fiber to be treated is conveyed by an air current, an elongate casing into which said conduit de-5 livers its fiber-laden air current, said casing computing top and ride relations of the delivery conduit. comprising top and side walls defining a Signed by me at Esmon chamber in which the velocity of the air this 1st day of April 1927. current decreases and wherein the fiber settles in an elongate drift, a delivery con-

Signed by me at Esmond, Rhode Island 15

DEXTER STEVENS.