Jan. 14, 1941. B. McGINNIS 2,228,963

DUPLEX TRUMPET AND SLIVER DIVIDER PLATE

Filed April 18, 1938 2 Sheets-Sheet 1

Fig. 1.

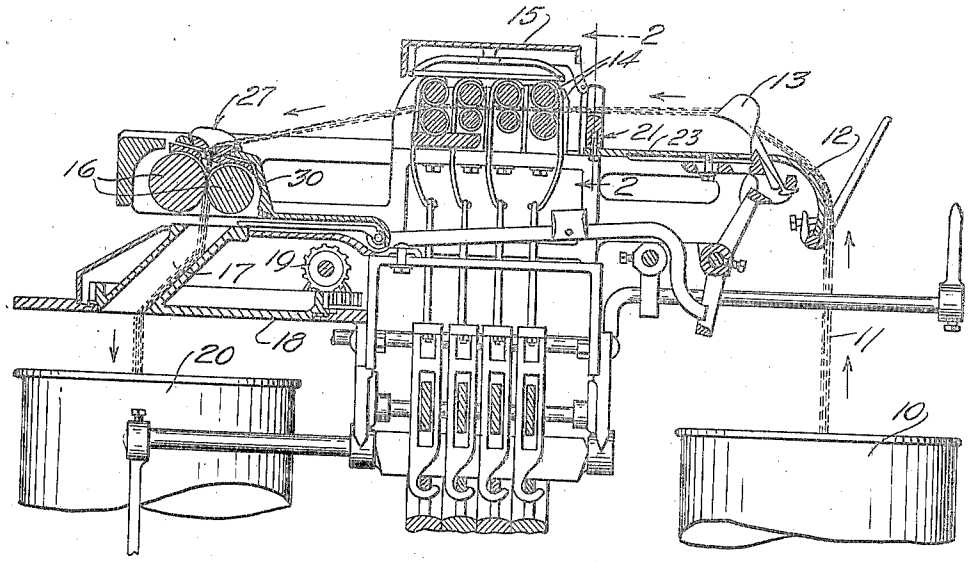


Fig. 2.

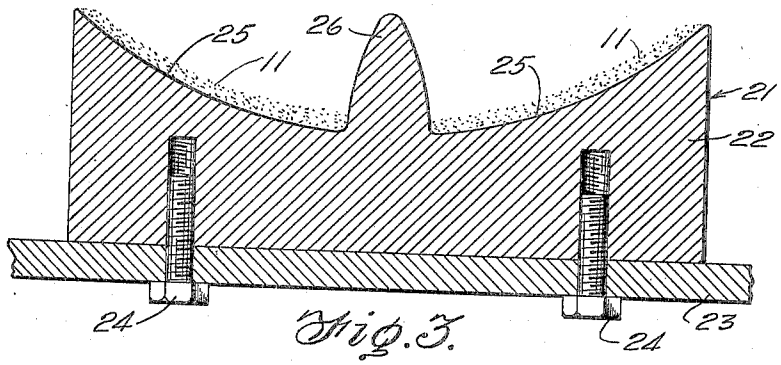
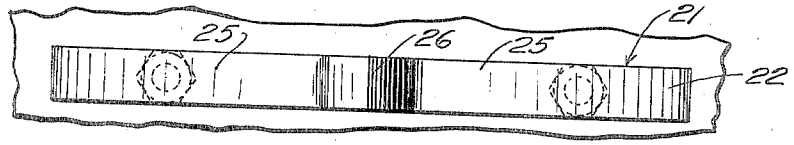


Fig. 3.



Inventor

BALDY McGINNIS,

By Kimmel & Crowell,

Attorneys.

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Filed April 18, 1938 2 Sheets-Sheet 2

Fig. 4.

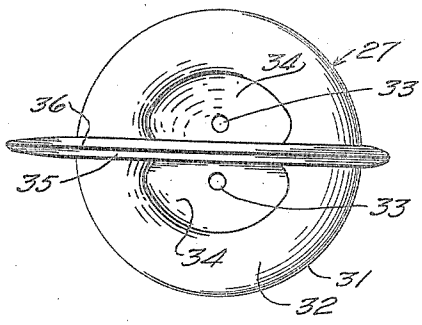


Fig. 5.

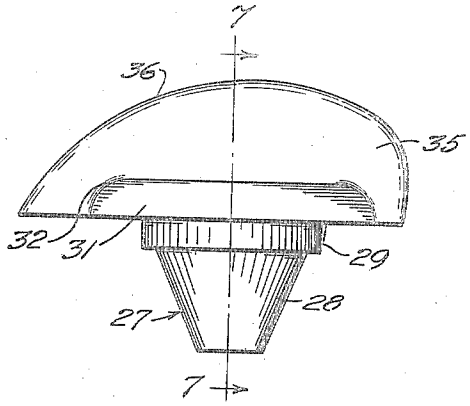


Fig. 6.

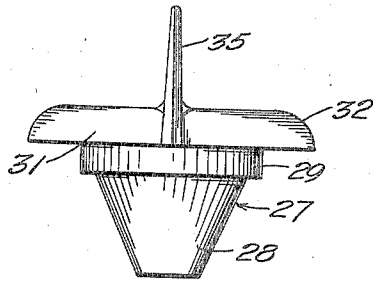


Fig. 7.

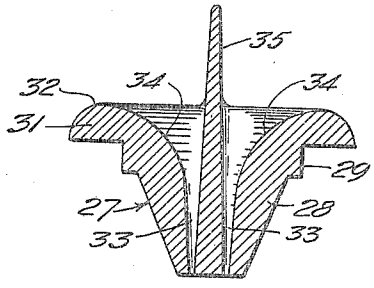
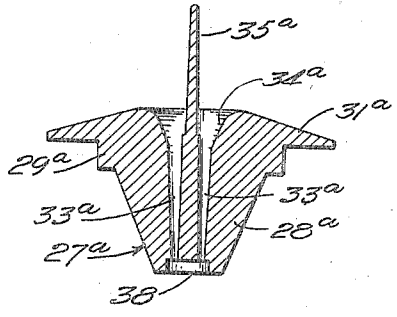


Fig. 8.



Inventor
BALDY McGINNIS,

By Kimmel & Crowell
Attorneys

Patented Jan. 14, 1941 2,228,963

UNITED STATES PATENT OFFICE

2,228,963

DUPLEX TRUMPET AND SLIVER DIVIDER PLATE

Baldy McGinnis, Roswell, Ga.

Application April 18, 1938, Serial No. 202,746

5 Claims. (Cl. 19—157)

This invention relates to cotton mill machinery, and more particularly to an improvement in the drawing frames for the sliver.

An object of this invention is to provide an improved method of drawing the sliver or roving so that a plurality of slivers or rovings may be coiled in a container at the same time, in such a manner that a plurality of spindles may be wound from the slivers or rovings removed from the container.

Another object of this invention is to provide an improved trumpet which is so constructed that a plurality of slivers or rovings may be compressed at the same time by a single trumpet, and such slivers or rovings coiled in the usual manner in a container so that at least one process in the completion of the article is eliminated.

A further object of this invention is to provide in combination with a multiple trumpet, a sliver guide means which is adapted to separate the slivers which are passing through the drawing machine, thus maintaining the slivers in separated condition during the drawing thereof and prior to the compressing of the combined slivers in the trumpet.

A still further object of this invention is to provide an attachment in the form of a trumpet which may be used with the present construction of drawing machines embodying improved features whereby a finer grade of sliver is produced, thus eliminating the necessity of passing the combined sliver through a slubber or the like.

Still another object of this invention is to provide an improved method of producing slivers by means of which a plurality of slivers may be coiled in a single container, thus eliminating the necessity of providing a separate container for each sliver, as is at present the case.

Still another object of this invention is to provide an improved method of producing a sliver or roving which is so constructed that the quantity of material in a single container may be greatly increased, thus providing a longer strand and eliminating broken ends while at the same time decreasing the amount of labor involved in the production of the slivers and also providing an improved product.

Embodying the objects aforesaid, and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawings, wherein embodiments of the invention are shown, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a fragmentary vertical sectional view of a railway header having an improved trumpet and sliver separating means constructed according to an embodiment of this invention mounted thereon,

Figure 2 is an enlarged front elevation of the sliver divider or separator taken on the line 2—2 of Figure 1,

Figure 3 is a fragmentary top plan of the divider shown in Figure 2,

Figure 4 is a detailed top plan of an improved trumpet constructed according to an embodiment of this invention,

Figure 5 is a detailed side elevation of the trumpet shown in Figure 4,

Figure 6 is a detailed front elevation of the trumpet,

Figure 7 is a transverse vertical section of the trumpet, on the line 7—7 of Figure 5,

Figure 8 is a transverse vertical section of a modified form of this trumpet.

Referring to the drawings, the numeral 10 designates a container which is adapted to have disposed therein a coiled sliver or roving. The coiled sliver or roving 11 is drawn upwardly from the container 10 and passes over a guide member 12. After passing the guide 12 the sliver 11 passes over a second guide 13 and then enters a plurality of pairs of drawing rolls 14 which are carried by a frame structure generally designated as 15. The rolls 14 are rotated by power means (not shown) and form a part of the conventional drawing machine or header. After passing through the drawing rolls 14 the sliver 11 enters a pair of calender rolls 16. The sliver 11 then drops downwardly through an obliquely inclined channel 17 which is carried by a rotatable carriage 18. The carriage 18 is rotated by means of a gear train 19 or the like and provides a means whereby the finished sliver or roving may be wound spirally within a second or receiving container 20.

All of the above described structure is conventional and provides a means whereby a plurality of slivers 11 may be passed through the drawing rolls 14 and then combined on the delivery side thereof and passed through the calender rolls in a single sliver into the container 20.

In order to provide a means whereby a plurality of slivers may be passed through the drawing rolls 14 in spaced apart parallel relation I have provided a stationary guide member 21. The

guide member 21 is constructed in the form of an upstanding or vertically disposed blade 22 which is secured to a supporting bar 23 by means of bolts 24. The upper or guiding edge of the guide member 21 is provided with a concave surface 25 over which a plurality of slivers are adapted to pass. By providing the guide surface 25 in concave form the different slivers which are drawn from separate receptacles 19 are guided toward the center of the guide member 21. In order to hold certain of the slivers in spaced apart relation as they are passing over the guide member 21, I have provided an upstanding spacer 26 of substantially semi-elliptical contour disposed in substantially the longitudinal center of the guide member 21. In this manner where two or any other even number of slivers are passing over the guide member 21, the slivers may be separated and maintained in separate condition during the passage of such slivers through the drawing rolls 14. It is the practice in a machine of the character hereinbefore described to pass about six slivers through the machine, at the same time drawing each sliver from a separate container 19 and then combining the slivers on the delivery side of the machine. With a guide member similar to that disclosed at 21 there will be at least three slivers in edge abutting relation disposed on opposite sides of the upstanding spacer member or divider 26.

After the combined slivers have passed the drawing rolls 14 and before they enter the calender rolls 16 they pass through a trumpet or compressing member generally designated as 27. The trumpet 27 as shown in Figures 4 to 7 inclusive comprises a substantially inverted frusto-conical base or body part 28 having an outstanding flange 29 on the upper or base portion thereof which is adapted to engage a supporting member 30 provided on the frame of the machine. A second outstanding flange 31 is disposed above the flange or annulus 29 and is provided with a curved or rounded upper face portion 32. The outer end surface and the inner end surface of the base 28 are disposed in parallelism throughout. The trumpet 27 is provided with a pair of vertically disposed spaced apart parallel passages or channels 33 of like form each including a front wall, a rear wall, an inner side wall and an outer side wall. The said passages 33 open at the upper and lower ends of the base 28. Each passage 33 for a portion of its length is tapered and the remaining portion thereof is flared. The upper end of said tapered portion merges into the lower end of the flared portion at a point substantially at the transverse median of the passage.

The base 28 flares outwardly, as at 34 from each passage 33 so as to provide a relatively large open upper end for the sliver compressing passages 33. Each passage has an outer end of substantially ovoidal contour and an inner end of circular form. A vertically disposed divider or blade 35 extends upwardly from between the outer ends of the passages 33. As shown the base 28 includes a vertical central part of rectangular cross section which is common to and forms the inner side walls of the passages 33. The divider 35 is arranged on its lower edge, which is one of the lengthwise edges thereof. The divider 35 has its bottom for a portion of its length inset and the wall of such inset portion is integral with the top of the vertical part aforesaid of the base 28 and overlaps and is integral with diametrically opposed portions of the curved or rounded upper face portion 32 of the flange 31. The remaining portion of the bottom of the divider 35 is flush with the lower face of flange 31. The divider 35 is of stream like form as shown at 36, Figure 5, and in elevation it is of substantially semi-egg contour. The divider 35 is disposed relative to the base 28 at the horizontal diametric center of the latter and is of a length to extend laterally in opposite directions from the flange 31. The divider 35 is formed with a pointed forward end 37 adapted to face the slivers or rovings as they enter the trumpet 27. In Figure 8 there is disclosed a slightly modified form of this trumpet wherein there is provided a vertical frusto-conical body member 28a having an annular shoulder 29a at the outer end thereof which merges into an outstanding flange 31a. In this form there are provided a pair of downwardly tapering passages 33a which flare outwardly as at 34a at their upper ends. A divider or blade 35a similar to the blade 35 is disposed between the outer ends of the openings 33a and extends upwardly therefrom. The lower ends of the passages 33a communicate with a common opening or chamber 38 in the lower end of the trumpet member 27a.

In the use of the improved guide means and trumpet hereinbefore described, a plurality of receptacles 19 are positioned on the receiving side of the header and the slivers passed over the guide means 12 and 13 and then over the concave guide surfaces 25 provided on the upper edge of the guide member 21. The drawing rolls 14 will act or work upon the spaced apart slivers drawing such slivers through the machine, and on the delivery side of the drawing rolls the slivers which are at this time disposed in two strands are passed through the holes 33 with one strand on each side of the divider or blade member 35. By the method hereinbefore described, as the coiling member 17 is rotated by the gear train 19 there will be at least two strands or slivers disposed in coiled form in the container 20. In the subsequent process of winding or twisting the slivers onto spindles the two strands in the container 20 may be drawn out at the same time so that at least two spindles may be wound up simultaneously from slivers positioned in the same container. In addition the method and means hereinbefore described will provide a finer product and will eliminate certain subsequent operations in the treatment of the stranded material, such eliminations including the elimination of the slubbing machine as the slivers disposed in the container 20 may be conveyed or passed to a finer process machine such as the speeder instead of the slubbing machines. While I have disclosed the divider or blade 35 as being integral with the trumpet body 27 it will be understood that this blade 35 may be detachably secured to the base portion 28 of the trumpet 27 where it is desired to provide a means for facilitating the cleaning of the trumpet. Where this latter form is used, a core or stem portion may be provided at the lower end of the blade or divider 35 which may extend downwardly into the body 28 and serve in itself as a means for providing the two spaced apart sliver compressing openings in the body 28.

What I claim is:

1. In an attachment for a cotton drawing machine, a combined sliver guide and separator element, said element formed of an upstanding blade having a concaved upper surface and a vertically disposed separator member on said surface intersected by the vertical median of the blade, said member being spaced from the ends

of the blade, and a base secured to the bottom of the blade.

2. In an attachment for a cotton drawing machine, a blade adapted to be positioned on the receiving side of the machine and having a concaved surface for guiding slivers and a sliver separator integral with and extended from said surface, said separator being intersected at its lengthwise median by the vertical median of the blade and spaced from the ends of said surface, a trumpet adapted to be disposed at the delivery side of the machine and provided with a plurality of separated sliver compressing passages therethrough, and a combined wall forming and separator element including a stem positioned in the trumpet and forming the inner side walls of said passages and a blade positioned between, outwardly of and disposed at right angles to said passages for separating the slivers.

3. In an attachment for cotton drawing machines, a combined sliver guide and separator element adapted to be positioned on the receiving side of the machine, said element formed of an upstanding blade having its upper surface constituting a support for the slivers and concaved throughout and a vertically disposed separator on said surface at the center of the latter and intersected at its longitudinal median by the vertical median of the blade, said separator having its sides spaced from the ends of said surface and being substantially of semi-elliptical contour, and a supporting base for said blade.

4. In an attachment for cotton drawing machines, a trumpet adapted to be disposed on the delivery side of the machine consisting of an inverted frusto-conical body part having a lower outstanding peripheral flange adapted to engage a supporting member for the trumpet, an upper outstanding peripheral flange at its upper end formed with a curved upper face portion and a pair of spaced parallel sliver passages having continuous walls open at their upper and lower ends, said passages being formed with ovoidal shaped upper ends and circular lower ends, each of said passages having a vertical tapered inner portion and a flared outer portion merging at its lower end into the upper end of said inner portion, said body part including a central portion of rectangular cross section common to and forming the inner side walls of said passages, a horizontally disposed vertically arranged divider of stream-line form and of substantially semi-egg shaped contour disposed relative to said body part at the horizontal diametric center of the latter between the upper ends of said passages, said divider having a part of its bottom inset and with said part integral with said central portion and with diametrically opposed parts of the curved upper face portion of the upper flange, and said divider extending laterally in opposite directions from and having parts of its lower portion flush with the lower face of the upper flange.

5. In an attachment for cotton drawing machines, a trumpet adapted to be disposed on the delivery side of the machine consisting of an inverted frusto-conical body part having a lower outstanding peripheral flange adapted to engage a supporting member for the trumpet, an upper outstanding peripheral flange at its upper end formed with a curved upper face portion and a pair of spaced parallel sliver passages having continuous walls and open at their upper and lower ends, said passages being formed with ovoidal shaped outer ends and circular inner ends, each of said passages having a vertical tapered inner portion and a flared outer portion merging at its lower end into the upper end of said inner portion, said body part including a central portion of rectangular cross section common to and forming the inner side walls of said passages, a horizontally disposed vertically arranged divider of stream-line form and of substantially semi-egg shaped contour disposed relative to said body part at the horizontal diametric center of the latter between the upper ends of said passages, said divider having a part of its bottom inset and with said part integral with said central portion and with diametrically opposed parts of the curved upper face portion of the upper flange, said divider extending laterally in opposite directions from and having parts of its lower portion flush with the lower face of the upper flange, the points of mergence of the tapered vertical lower portions of said passages with the flared upper portions of the latter being substantially at the transverse medians of said passages.

BALDY McGINNIS.