April 7, 1953 J. L. NEWBEGIN ET AL 2,633,607

CLIP

Filed July 29, 1950

Fig. 1.

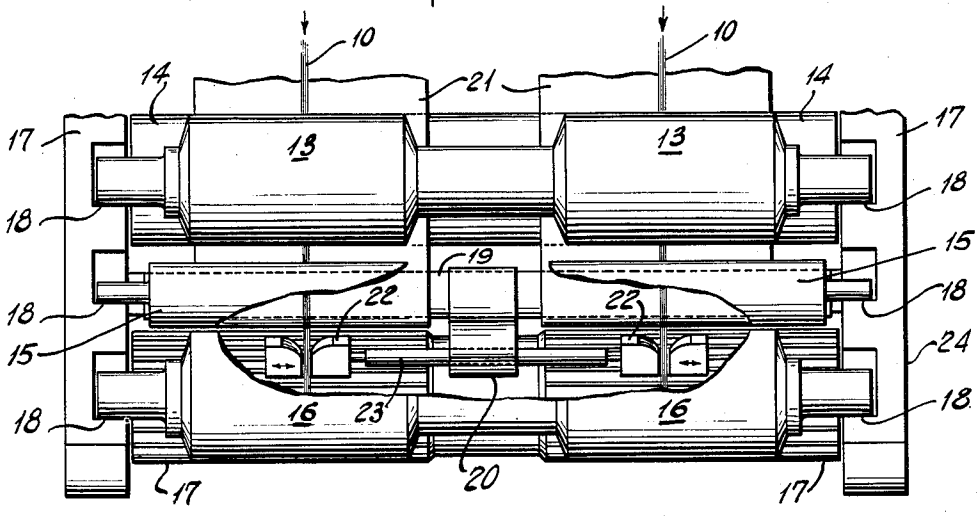


Fig. 2.

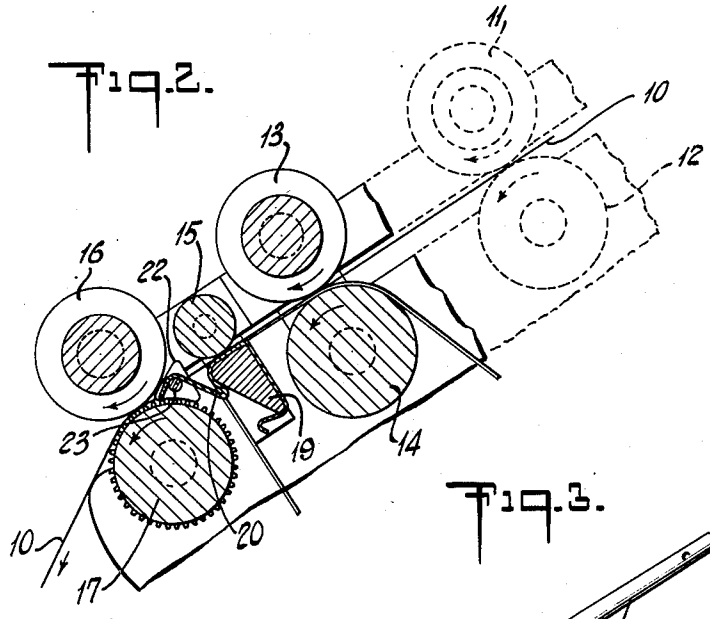


Fig. 3.

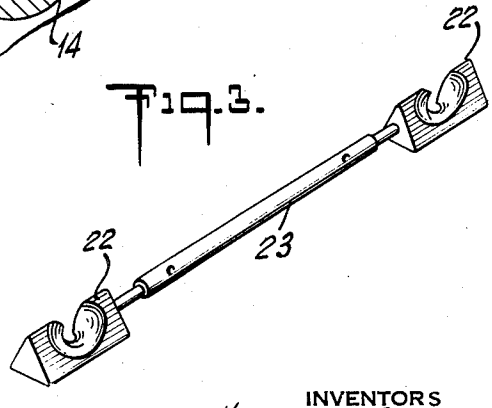
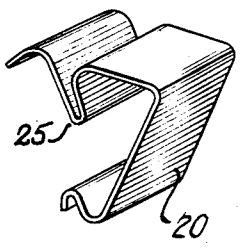


Fig. 4.



INVENTORS
HECTOR W. GRISWOLD
and JOHN L. NEWBEGIN.
BY
J. L. Chisholm
ATTORNEY

Patented Apr. 7, 1953

2,633,607

UNITED STATES PATENT OFFICE

2,633,607

CLIP

John L. Newbegin, Westfield, and Hector W. Griswold, Longmeadow, Mass., assignors to Chicopee Manufacturing Corporation, a corporation of Massachusetts

Application July 29, 1950, Serial No. 176,596

3 Claims. (Cl. 19—131)

1

This invention relates to a condensing trumpet support as an improvement to certain textile drafting mechanisms.

The primary function of the textile drafting machine is to reduce the diameter of a fiber strand, to straighten curled and kinked fibers, and to lay them parallel. The strand is then twisted into a yarn of suitable size and wound on a bobbin. Casablancas describes the essential features of the operation in U. S. Letters Patent No. 2,202,755.

For purposes of exemplification we shall describe an embodiment of our invention that can be applied to the conventional Saco-Lowell Roth system drafting mechanism.

In the accompanying drawings:

Fig. 1 shows a plan-section through the drafting rolls of a Saco-Lowell Roth drafting mechanism unit with a partial cutaway to show one embodiment of the invention installed.

Fig. 2 shows a partly diagrammatic cross-section through the drawing rolls of a Saco-Lowell Roth drafting mechanism with one type of support clip installed.

Fig. 3 is a perspective view of a pair of trumpets mounted on their associated tie-bar.

Fig. 4 is a perspective view of one form of device embodying our invention.

Referring to Figs. 1 and 2, a strand 10 passes through the drafting rolls of a conventional spinning frame. The strands are led between the usual pair of back drafting rolls 11 and 12 as they come down from the creel which is not shown here. The three pairs of drafting rolls, 11—12, 13—14, 16—17 are held in bearings 18 in the roll stand and are operated at increasing surface speeds in the direction of the advancement of the strand. The bottom middle drafting roll 14 has knurled bosses which carry an endless belt or apron 21. Between the middle and front bottom rolls 14 and 17 there is the nose-bar 19, a horizontal member attached to or secured integrally with roll stand 24. The nose-bar is of triangular cross section and extends laterally across the path of the strand. The front edge of this bar is close to the front bottom drafting roll and acts as a guide around which the apron 21 passes. A small diameter, lightweight slip roll 15 runs in contact with the front end of the apron 21 above the nose-bar 19.

The fibers are gripped by the three top rolls 11, 13 and 16 as they advance through the mechanism and are supported and carried by the apron 21 between the middle and front drafting rolls. The slip roll 15 resting on the fibers close to the

2

front rolls works with the apron 21 to provide a light controlling nip.

In the course of drawing the strand many textile drafting machines use a condensing trumpet to reduce the cross section of the strand for greater compactness and at the same time to reduce fly fibers. Better cohesion between the fibers can thus be achieved giving a more satisfactory drafting. Fiber wastage and lint in the spinning room are reduced by this expedient. A condensing trumpet has a funnel-shaped central aperture preferably formed with a top slot to facilitate insertion and removal of the roving. The trumpet must allow freedom of motion of the strand in a direction parallel to the axis of rotation of the drafting rolls so that the same portion of the drafting rolls is not always exposed to wear by the roving. To achieve this end two adjacent trumpets are secured to an extendible tie-bar. The pair of trumpets and their associated tie-bar are then fitted snugly in place between the top and bottom front drafting rolls in the nips of two pairs of rolls.

In some designs of spinning frames, that are extensively used, the surfaces of the front drafting rolls at their nip are the only support for the trumpets. When in the course of operation the top front drafting roll must be taken off to clean it, the trumpets are left unsupported and fall to the floor. This, of course, makes renewal of drafting upon completion of cleaning an awkward and inefficient operation.

One object of our invention is to avoid this difficulty by providing a simple modification for textile drafting machines designed with this shortcoming. Our invention is an inexpensive lightweight device which will support the trumpet structure to the nose-bar or a member cradle. Others have proposed similar devices for supporting the condensing trumpets by their tie-bar to the nose-bar or a horizontal member of the drafting roll cradle. These devices are subject to certain difficulties in operation: (1) they tend to become plugged with lint since their closed construction permits loose fibers to gather within the structure of the clip; (2) the lower portion of the clip in contact with the bottom steel roll is subject to wear by the revolving roll; (3) the support clip must be removed from the nose-bar when the condensing trumpets are taken off for maintenance or replacement. We have overcome these difficulties with an improved condenser trumpet support clip.

Extending across the back of the nip between the top and bottom front drafting rolls 16 and

17 and supported only by their snug fit on the surfaces of these rolls at the nip are the trumpets 22, mounted in pairs on an extendible trumpet tie-bar 23. The strand 10, as it is being drafted, is delivered from between the slip roll 15 and the apron 21 through the aperture of the trumpet 22, the latter serving to compact the fibers as previously described. The strand then passes through the nip between the top front drafting roll 16 and the bottom roll 17 after which it is twisted and wound on a bobbin.

One preferred form of our invention is a clip 20, shown in relation to the drafting mechanism in Figs. 1 and 2 and in perspective in Fig. 4. The function of this clip is to support the trumpet tie-bar 23 and its associated trumpets 22 when the top front feed roll 16 is removed periodically to clear it of lint. In this embodiment of our invention the support clip 20 is a yieldingly resilient band conforming to a portion of the cross section of the nose-bar so that a stable snap-fit over the top of the nose-bar 19 can be achieved, extending from the nose-bar anchoring end of the clip in an open loop. The openness of the retaining loop of the clip structure 20 has the advantage of permitting easier insertion or removal of the trumpet tie-bar 23, and it is not necessary to disturb the snap-fit of the device 20 on the nose-bar 19 when the trumpets are removed for maintenance or replacement. The open configuration of the clip 20 also renders it free from gathering loose fibers that might clog or jam the device. Since there is no portion of the clip 20 bearing on the surface of the drafting rolls, the clip is not subjected to frictional wear. The deep furrow 25 forming the retaining loop for the trumpet tie-bar 23 closely controls the position of the trumpets preventing their falling backward and becoming unthreaded. The clip 20 affords freedom for lateral movement of the trumpet tie-bar 23 in the direction parallel to axis of rotation of the drafting rolls to prevent the roving from always running over the same portion of the roll.

With our improved clip we can more closely control the position of the trumpets so they are not likely to become unthreaded. Our trumpet support device has the further advantage of being light and compact so that it can be readily secured into position or be removed. Simplicity of design renders it inexpensive. When mounted it does not interfere with the normal operation

of any of the closely associated members of the textile drafting mechanism.

It will be understood that modifications may be necessary to conform to the particular configuration and dimensions of the trumpet tie-bar, of the nip between the front drafting rolls, and of the nose-bar or other horizontal frame member used as a support.

The invention claimed is:

1. In a mechanism for drawing textile rovings consisting of a plurality of pairs of drafting rolls, an endless belt, a nose-bar for guiding the belt, and a pair of condensing trumpets supported in normal position by one of the pairs of drafting rolls and connected together by a tie-bar, the combination therewith of a device fastened on the nose-bar and having an open retaining member engaging the tie-bar to hold the condensing trumpets in their normal positions with respect to the drafting rolls while allowing the tie-bar freedom of movement in a direction parallel to the axis of rotation of the drafting rolls.

2. A combination according to claim 1 wherein the device for holding the trumpets in normal position is a resilient clip having one portion of substantially the same configuration as the cross-section of the nose-bar and which is snap clamped about the nose-bar and thus held in position.

3. A combination according to claim 1 wherein the device for holding the trumpets in normal position is a resilient member having an open loop portion for retaining the trumpets in normal position by engagement with the tie-bar, said loop portion being yieldable to permit removal of the tie-bar from beneath said device without disturbing the position of said device on the nose-bar.

JOHN L. NEWBEGIN.
HECTOR W. GRISWOLD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,448,192	Butler	Mar. 13, 1923
1,870,095	Casablancas	Aug. 2, 1932
2,202,755	Casablancas	May 28, 1940
2,206,360	Litty	July 2, 1940