The invention relates to drawing frames of the type having a lower belt, and a device for guiding the roving during its travel toward the drawing rollers, which cooperates with the plane surface of the belt.

Commonly used constructions wherein the guiding means is constituted of a roller of small diameter, and a loading plate or the like, have not proven effective. In most cases, the distance between the clamping lines of the two pairs of rollers, which include the guiding means, has been made relatively great and the section of the guiding means was equally made relatively long in the direction in which the roving travels. This presents the objection of the collection of fibers beneath the guiding means, resulting in an irregular yarn formation. In other constructions, particularly where the guiding means cooperating with a lower belt is formed by an additional roller, the effective surface of the guiding means is very small, and affords ineffective guiding. In cases where the guiding means has hinge-like bearings this causes varying pressures to be exerted upon the roving.

The object of the invention, therefore, is to provide an improved drawing frame of the above type in which the requirements of the smallest possible distance between the clamping lines of the pairs of rollers and the guide means, and of the greatest possible surface of the guiding means, together with vertical movement of the latter, are fulfilled.

Another object of the invention, is to provide an improved apparatus of the above type in which that part of the surface of the guide means which cooperates with the belt, can be adjusted when the distance between the rollers of the drawing frame is varied, and when the runner projects beyond the reversing point of the belt, however without affecting the distance between the end of the passage and the clamping point of the drawing rollers.

Still further the invention aims to provide a runner, which is hollow to receive therein loading weights to adjust and thereby adapt same to different kinds of fibers.

Two embodiments of the invention are diagrammatically illustrated in the accompanying drawing, in which—

Fig. 1 shows a leather tape drawing frame with drawing guide in side elevation,

Fig. 2 shows the elements in top plan view on one side of the holder of the pressing rollers,

Fig. 3 shows in front elevation the journal point of a runner,

Fig. 4 shows a modified construction of Fig. 3,

Fig. 5 shows the cooperating elements of the drawing guide, the runner being of different cross-section.

In the drawing frame illustrated in Fig. 1 the drawing rollers are designated by I, I, the middle rollers by II, II, the feed rollers by III, III. Between the drawing rollers I, I and the middle rollers II, II a drawing guide is located. This drawing guide is formed from below by a leather tape 4 which travels from the lower middle roller II over the plane surface of a narrow heart-shaped reversing bar 5 and thence downwards over a stretching means 6. The drawing guide from above is formed by a runner 7 of drop-shaped cross-section, the tapered end 8 of the runner extending far beyond the reversing point of the leather tape 4 and close to the clamping point of the drawing rollers I, I. The pairs of rollers I, I and II, II are comparatively close together so that the runner 7 lies within the space between the adjacent arcs of the two pressure rollers 1, 2.

As shown in Fig. 3, the runner 7 has at each end an extension 9 reaching from the base line of the runner to beyond the apex of the same in an upward direction and forming a guide bar engaging in a straight guide 10 formed by a groove. The runner is thus guided, so that it can neither turn nor tilt in a longitudinal direction, but can only move up and down when it is being adjusted, its bearing face always remains in a horizontal plane. Thus a uniform pressure transmission upon the roving during the up and down movement of the runner is obtained. The extensions 9 may either be directed upwards in straight guides 10, as shown in Figs. 1 and 3, or project in lateral direction, as shown in Fig. 4, the projecting portions forming handles 11, so that the runner can be gripped on the extensions 9 and removed in an upward direction from the guide grooves 10.

The pressure rollers 1, 2 and 3 are in usual manner mounted in a holder for pressure rollers consisting of two mutually shiftable parts 12 and 13. The upper drawing roller 1 is journalled in the head 12 of the holder. For the pressure roller 2 the other part 13 of the holder has an incision 14 which is considerably wider than the diameter of the journal 15 of this roller. The bearing guides 16 for the journals of the runner 7 are also arranged in this rear part 13 of the holder. If the runner has to be removed in upward direction when the drawing frame is in the narrow position, the roller 1 is
first removed and the roller 2 shifted in its wide bearing slot 14 towards the feed roller 3. If the slot 10 is wider than the extension 9 of the runner 7, it is not necessary to remove the roller 1, as the runner can be pulled back towards roller 2, so that it can be removed in an upward direction without contacting with the roller 1.

The drawing rollers I, I have normally a certain, stationary position. If the drawing frame is opened by pulling back the middle rollers II, 2, the runner 7 is at the same time shifted to the right on the leather tape 4. When adjusting for greater staple length, the bearing face of the runner on the leather tape is therefore enlarged and the specific pressure correspondingly reduced, whereas, owing to the far projecting end 8 of the runner, the distance between the end edge of this bearing face, forming the passage point, and the clamping point of the rollers I, 1 is preserved.

The runner 18, as shown in Fig. 5, may be of triangular cross-section and fill substantially the space between the pressure rollers 1, 2 which are disposed in close relation to each other, whereby when the roller distances are very narrow, a sufficient loading and at the same time a comparatively large guide face on the lower edge of the runner. The runner is preferably hollow and detachable at least at one end of the extension 9, so that heavy loading weights may be inserted into the runner in order to influence the draft resistance. The runner is preferably made of non-rusting material or has a corresponding coating.

I claim:
1. A drawing frame for textile rovings, including pairs of upper and lower drawing rollers, middle rollers and feed rollers, a belt reversing bar disposed between the lower drawing and middle rollers, a lower belt running about the lower middle roller and said belt reversing bar, a guide runner composed of a rail having a plane lower surface, said rail being disposed above said belt reversing bar and between said drawing and middle rollers, lateral vertical extensions connected to the ends of said rail, and a holder for positioning said upper rollers having vertical guide slots to receive the lateral vertical extensions of said guide runner.

2. A drawing frame for textile rovings, including pairs of upper and lower drawing rollers, middle rollers and feed rollers, a belt reversing bar disposed between the lower drawing and middle rollers, a lower belt running about the lower middle roller and said belt reversing bar, a guide runner composed of a hollow rail having a plane lower surface, loading means exchangeably disposed within said hollow rail, said rail being disposed above said belt reversing bar and between said drawing and middle rollers, lateral vertical extensions connected to the ends of said hollow rail, and a holder for positioning said upper rollers having vertical guide slots to receive the lateral vertical extensions of said guide runner.

3. A drawing frame for textile rovings, including pairs of upper and lower drawing rollers, middle rollers and feed rollers, a belt reversing bar disposed between the lower drawing and middle rollers, a lower belt running about the lower middle roller and said belt reversing bar, a guide runner composed of a rail having a plane lower surface, said rail being disposed above said belt reversing bar and between said drawing and middle rollers, lateral vertical extensions connected to the ends of said rail, a holder for positioning said upper rollers having vertical guide slots to receive the lateral vertical extensions of said guide runner, and said lateral vertical extensions projecting beyond the guide slots of said holder and forming handles.

4. A drawing frame for textile rovings, including pairs of upper and lower drawing rollers, middle rollers and feed rollers, a stationary belt reversing bar disposed between the lower drawing and middle rollers, a belt running about the lower middle roller and said belt reversing bar, a guide runner composed of a rail having a plane lower surface, said rail being disposed above said belt reversing bar, and between said drawing and middle rollers and extending beyond said belt reversing bar and towards said drawing rollers, a holder for positioning all of the upper rollers, said holder being composed of elements which are displaceable in the direction of movement of the roving with relation to said belt reversing bar, lateral vertical guiding extensions disposed at the ends of said guide runner, there being vertical guide slots in said displaceable element of said holder, and said slots being disposed to receive the lateral guide extensions of said guide runner, and being of greater width than that of the extensions.

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