

April 19, 1932.

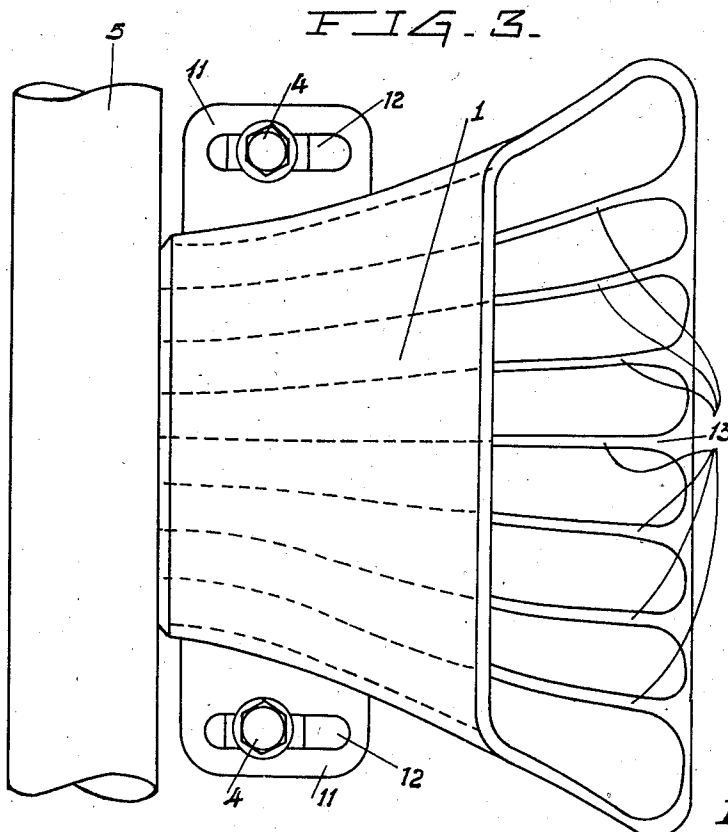
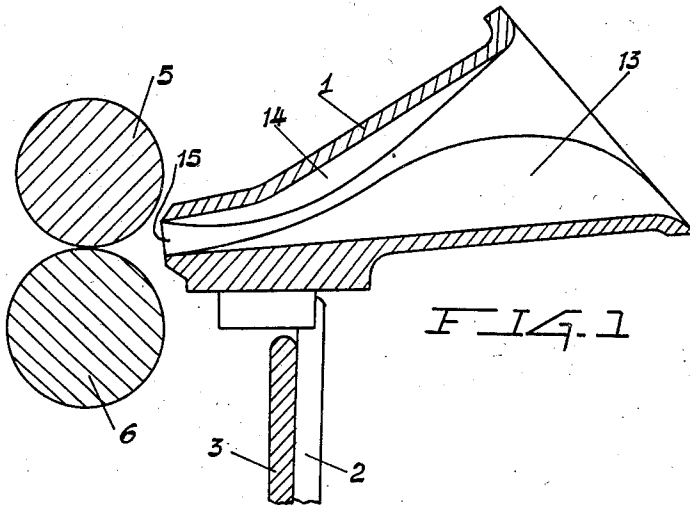
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1,854,690

MECHANISM FOR JOINING AND DRAWING TEXTILE TAPES OR SLIVERS

Filed Aug. 12, 1930

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 2.

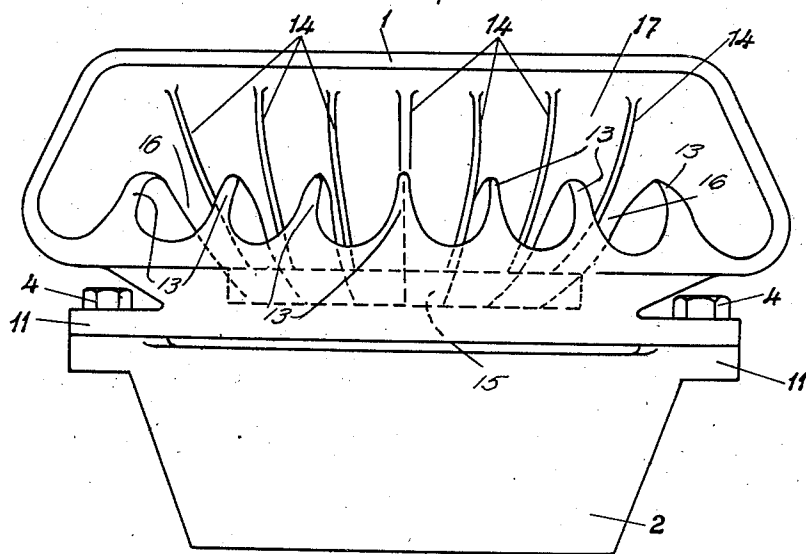


FIG. 4.

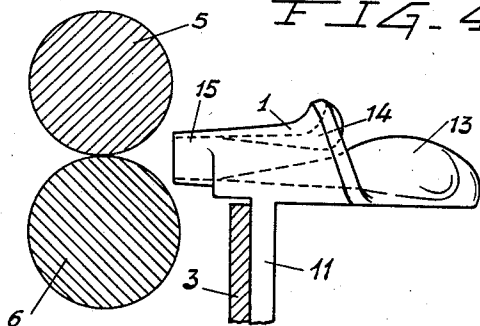


FIG. 5.

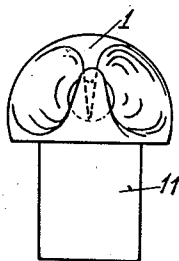
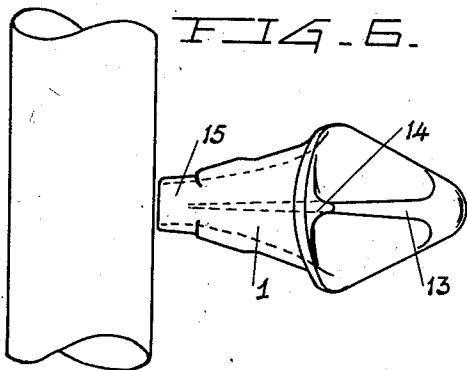


FIG. 6.



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# UNITED STATES PATENT OFFICE

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## MECHANISM FOR JOINING AND DRAWING TEXTILE TAPES OR SLIVERS

Application filed August 12, 1930, Serial No. 474,847, and in Spain August 23, 1929.

The invention consists of reducers or funnels of special form mounted in front of the first pair of retaining cylinders of the mechanisms for drawing textile fibres in those cases in which two or more slivers or tapes of fibres are united or joined to form one single whole only upon issuing from the drawing mechanism.

It is applicable, therefore, principally to drawing frames for cotton, in which 6, 7 or 8 tapes of fibres or slivers are combined to form one only, but also it can be applied with advantage to slubbing frames when they are provided with a high draft mechanism, in which case it permits of feeding the slubbing frame with two or more drawing frame slivers instead of one only as has been hitherto effected, there being obtained with this union a high degree of regularity of the sliver obtained in the slubbing frame.

Every system of drawing based upon the reunion of various tapes of fibres or slivers presents the characteristic feature that the drawing is effected in a relatively large width with relation to the horizontal plane of the drawing, that is to say, the cylinders must work having the fibrous mass interposed at a great length from its generatrix. Under these conditions it will be understood that it is of great importance for the perfection of the work that the fibres should be uniformly distributed over the whole width resembling altogether a sheet of fibres of uniform thickness.

This is not achieved with the systems of sliver-guides or introducers hitherto known because the slivers are not delivered exactly parallel and at equal distances, the result being that they take up an irregular position during the process of drawing and as the pressure of the operating cylinders is not distributed equally over its width the drawing is unequal and the rolling imperfect as can be appreciated by examining the sheet of fibres issuing from the drawing mechanism.

With the improvement forming the subject matter of this invention it is possible to introduce slivers or tapes completely parallel and at equal distances and furthermore on account of a prior slight compression of

the sheet of fibres before being seized by the first pair of cylinders there is obtained an equal distribution of the fibres over the whole width of the sheet. It must be borne in mind that more particularly in the first passage through the drawing frame this is only obtained by compressing the card slivers or tapes which are very unequal in size, so that by this compression the space through which a thinner sliver passes is filled partly with the fibres of the adjacent somewhat thicker slivers which become displaced laterally due to the effect of the pressure of the walls of the funnel or introducer.

This displacement is to be effected before the fibres are seized by the first pair of cylinders of the drawing system because when once seized by these cylinders they are not at liberty to become displaced by the effect of the pressure to which they are subjected, and the unequal distribution of the fibres can no more be corrected during the whole drawing process.

In the accompanying drawings there are given examples of funnels for joining textile slivers according to the invention.

Figure 1 represents a type of funnel for drawing frame for eight tapes or slivers seen in longitudinal vertical section.

Figure 2 shows the same funnel as in Figure 1 seen from behind and in elevation.

Figure 3 represents the same funnel as in Figures 1 and 2 in plan.

Figure 4 is an elevation of a funnel of the same system for two tapes or slivers suitable for a slubbing frame.

Figure 5 is an elevation and rear view of the same funnel as in Figure 4.

Figure 6 represents the same funnel as in Figures 4 and 5 in plan.

In the Figures 1 to 3 there may be seen the manner of mounting this funnel in the drawing mechanism of a drawing frame, 1 being the funnel, 2 a support of the same in the form of an angle or corner, 3 a bar having a reciprocating movement parallel to the cylinders which is generally used in drawing mechanisms for guiding the slivers and giving them a movement parallel to the cylinders. Finally 5 and 6 are the upper and

lower rear cylinders respectively of the drawing system. The lower face of the funnel is flat and carries lateral lugs 11 (Figures 2 and 3) which have enlarged holes 12 so as to give passage to the screws 4 which hold the funnel 1 upon the support 2. This arrangement permits of the adjustment of the distance of the funnel in relation to the cylinders 5 and 6. In its turn the support 2 is fixed to the bar 3 by means of screws which are not shown.

In its inner part this funnel has a series of ribs not only in the upper face but also in the lower face which form ducts for guiding the slivers or tapes of fibre. The lower face of the funnel has the ribs 13 of relatively great height and the upper face has the ribs 14 of lesser height and which correspond to the ribs 13. The number of these ribs is that of the slivers which have to pass through the funnel less one so that there are formed as many ducts 16, 17 as slivers or tapes have to pass through the funnel. The ribs 13, 14 do not touch each other so that there always remains between them a certain space and furthermore in the final part 15 of the funnel where the slivers or tapes of fibre are delivered to the cylinders 5, 6 of the drawing mechanism the ribs disappear completely and the section of the funnel becomes narrower considerably, the result of which is that at this point of the funnel a light lateral compression is given to the slivers or tapes of fibre for the purpose of equalizing these slivers or tapes by the lateral co-penetration of the one with the other and deliver all the fibres to the drawing mechanism thus forming a sheet or plate of fibres of uniform thickness.

The arrangement of the partitions 13, 14, which cannot touch each other, considerably facilitates the passage or threading of the slivers or tapes of fibre, when one of the slivers breaks, the end of the broken sliver is caused to pass, without interrupting the functioning of the machine, attached to one of the contiguous slivers which is not broken, and when this broken end has finally passed out through the end of the funnel the sliver is made to spring to the duct or canal which corresponds to it, whereupon it is deflected by hand to the part corresponding to the entrance of the funnel so that it may pass through the corresponding groove.

In order to obtain a better adaptation of the slivers or tapes to the grooves or ducts, the funnel can be mounted in a slightly raised manner at the entrance portion and inclined towards the cylinders of the drawing mechanism.

In Figures 4 and 6 there is shown a funnel especially arranged for working two slivers or tapes of fibres in the slubbing frame. This funnel does not differ substantially from that shown in Figures 1 and 3 and has

only one lower rib 13 and one single upper rib 14 forming between the two, two channels for the two slivers which have to pass there-through. In the same way as in the previous case the ribs 13, 14 disappear by degrees before reaching the outlet 15 of the funnel in which the compression of the slivers takes place. In the figure this outlet aperture has been shown as round but could also be made flattened, elliptic or of any other suitable shape.

The material of which these funnels are constructed may be of any kind provided the surface is of sufficient smoothness so as to facilitate the slipping along of the fibres. They may thus be constructed of porcelain, metal, hard fibre or any other suitable material.

I claim:—

1. A mechanism for doubling and drawing textile slivers, comprising a closed funnel-shaped guide for joining and condensing the slivers passing therethrough; said guide having therein upper and lower ribs disposed in register and projecting from the respective upper and lower faces of the guide and with their outer edges in spaced apart relation to provide inter-communicating cross channels allowing the slivers to touch one another throughout the whole length of the guide.

2. A mechanism for doubling and drawing textile slivers, comprising a closed funnel, ribs projecting from the inside upper and lower faces of the funnel, the upper ribs being opposite the lower ones and spaced therefrom for allowing slivers passing through the funnel to touch one another throughout the entire length of the guiding device.

3. A device for joining and condensing slivers, comprising a flat broad hollow body tapering in height and width from end to end for receiving a plurality of slivers there-through, said body having therein a plurality of registering ribs projecting from the upper and lower walls of the body to provide longitudinal channels throughout the body, said ribs being spaced apart at their free edges to provide transverse openings across the entire interior of the body to admit contact and co-mingling of the slivers with one another during their longitudinal passage and compression through the body.

4. In a mechanism for doubling and drawing textile slivers, a pair of cylinders, a support arranged adjacent to the cylinders, a flat funnel shape body for receiving slivers adapted to be fed to said cylinders, said body having an outer enlarged and an inner reduced end for drawing the slivers together and compressing the same during their passage to the cylinders, said body having therein upper and lower ribs projecting toward each other and in register and having their

adjacent edges spaced apart to provide cross  
channels between the upper and lower ribs  
and through which the slivers may extend  
for contact and co-mingling with one another  
during compression and throughout their  
5 passage through the body, said body having  
at its reduced end laterally extending lugs  
adapted to engage said support and provided  
with longitudinal slots arranged in the gen-  
10 eral direction of the axis and the body for  
receiving clamping bolts or the like to ad-  
justably support the body with respect to  
said cylinders.

In testimony whereof I have signed my  
15 name to this specification.

FERNANDO CASABLANCAS.

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