Jan. 22, 1924. 1,481,689

F. CASABLANCAS

DRAWING MECHANISM FOR TEXTILE ROVINGS

Filed May 25, 1921 5 Sheets-Sheet 1

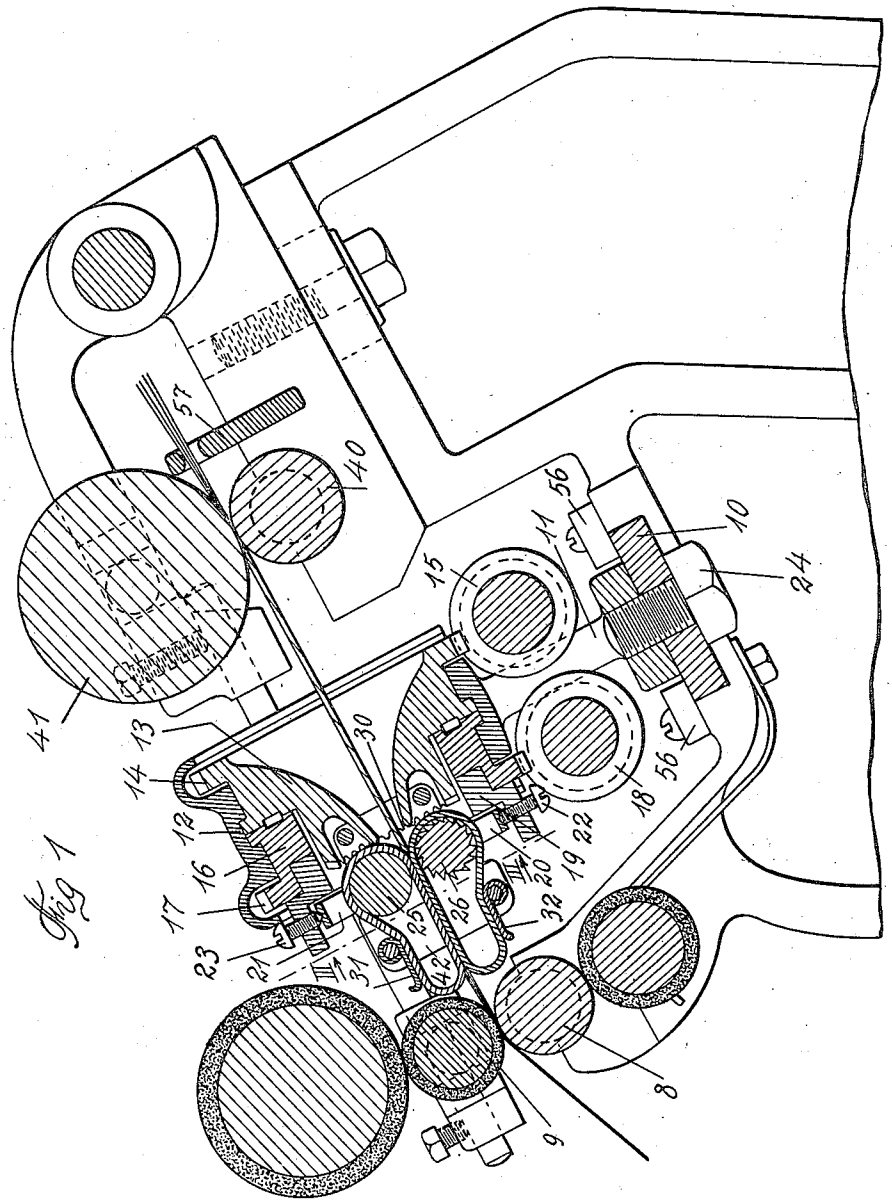


Fig 1

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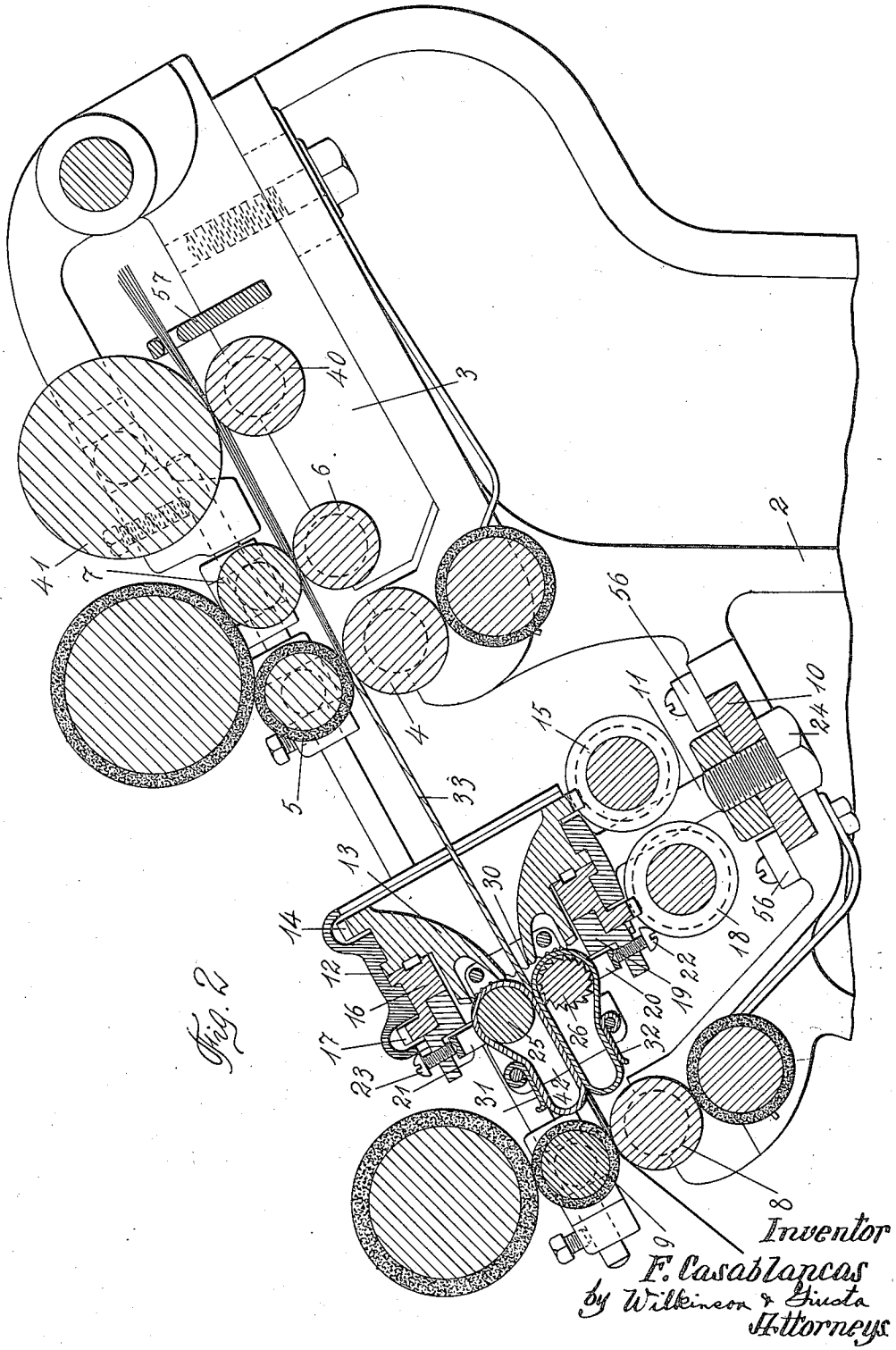


Fig. 2

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Fig. 3

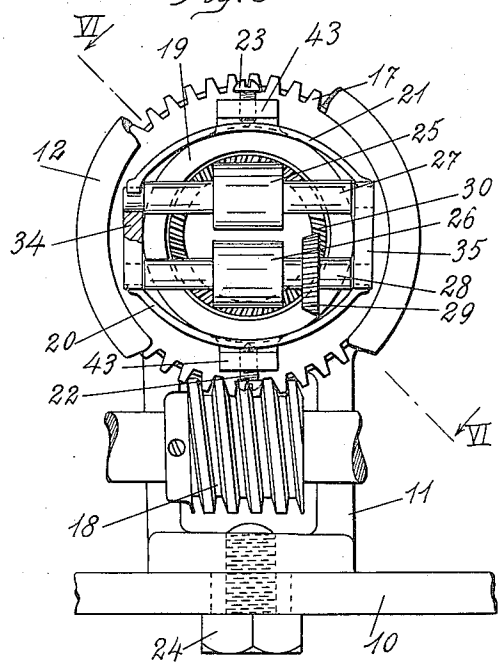


Fig. 6

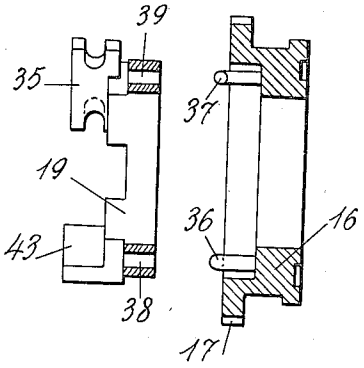


Fig. 8

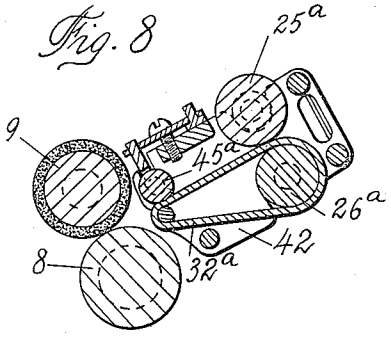


Fig. 4

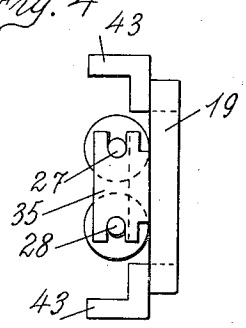
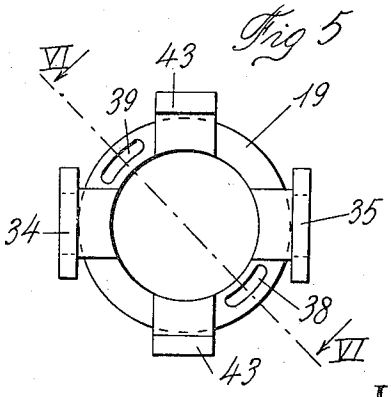


Fig 5



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DRAWING MECHANISM FOR TEXTILE ROVINGS

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Fig. 9

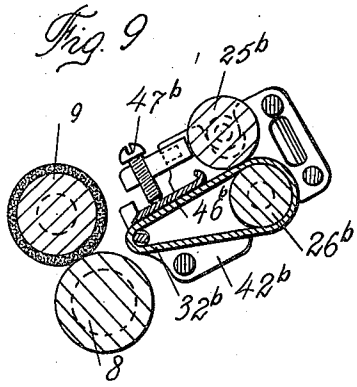


Fig. 7

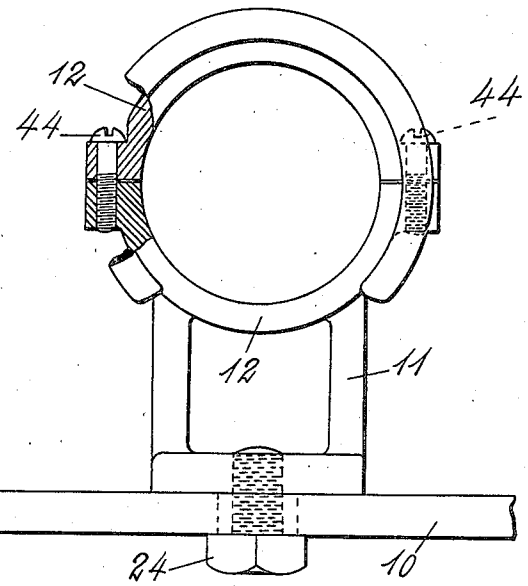


Fig. 10

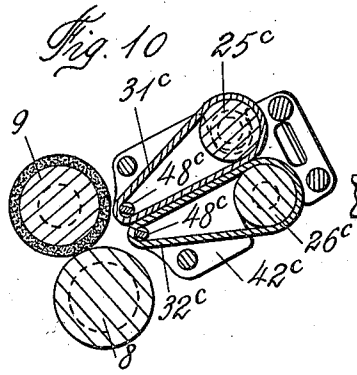


Fig 12

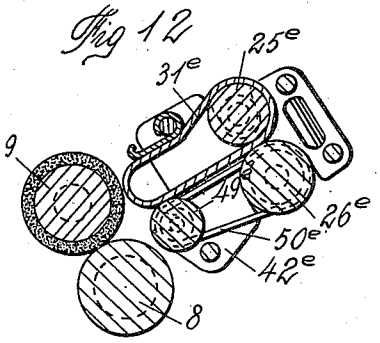


Fig 11

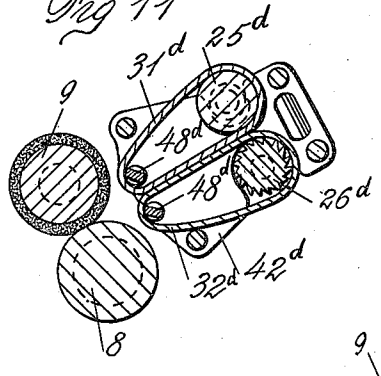
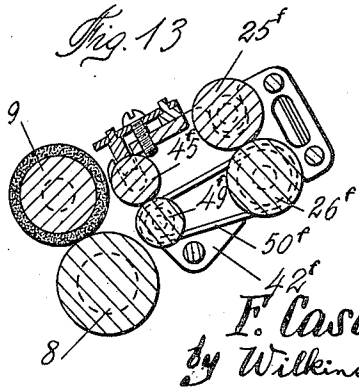


Fig. 13



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DRAWING MECHANISM FOR TEXTILE ROVINGS

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Fig. 14

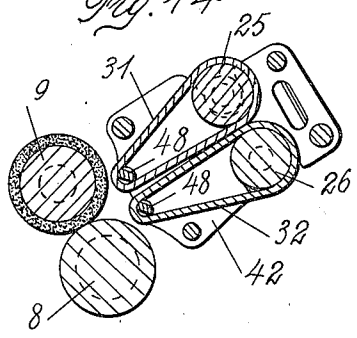


Fig. 15

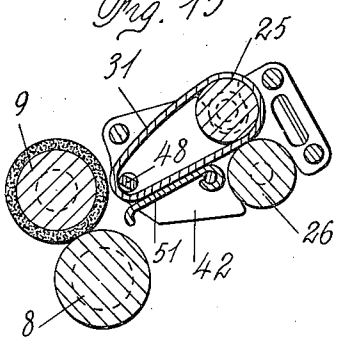


Fig. 16

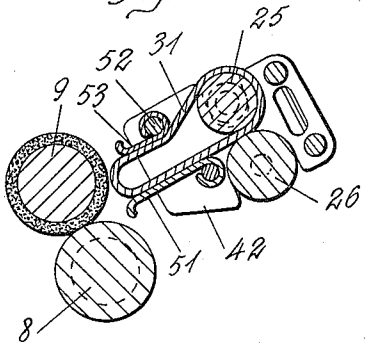
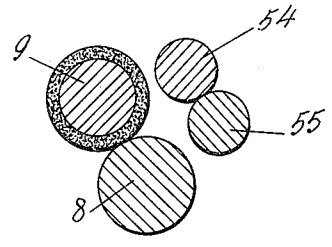


Fig. 17



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Patented Jan. 22, 1924. 1,481,689

UNITED STATES PATENT OFFICE.

FERNANDO CASABLANCAS, OF SABADELL, SPAIN.

DRAWING MECHANISM FOR TEXTILE ROVINGS.

Application filed May 25, 1921. Serial No. 472,453.

To all whom it may concern:

Be it known that I, FERNANDO CASABLANCAS, a subject of the King of Spain, residing at Sabadell, Spain, have invented certain new and useful Improvements in Drawing Mechanisms for Textile Rovings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in drawing mechanism in which the roving is subjected to a twisting action at the same time that it is being fed to the drawing rollers, and the invention consists in the constructions, combinations and arrangement of parts as hereinafter more fully described and claimed.

My invention is shown in the accompanying drawings in which:

Figure 1 is a longitudinal section of a drawing mechanism built according to this invention.

Figure 2 is a similar view showing consecutive drawing sets, in which the first is the usual drawing set and the second is a drawing set corresponding to that shown in Figure 1.

Figure 3 is a view through the line III—III of Figure 1 with the endless feeding belts and the plates removed.

Figure 4 is an edge view of a ring employed.

Figure 5 is a face view of the same.

Figure 6 is a section through the ring taken on the line VI—VI in Figure 5 and with the adjoining, annulus shown apart therefrom in section.

Figure 7 is a front view, with parts in section, of the support for the feeding mechanism.

Figures 8 to 17 represent diagrammatically, different well known constructions of feeding devices which are particularly applicable to the drawing mechanism of my invention.

In Figure 1 is shown the drawing mechanism of my invention and in Figure 2 is illustrated the same mechanism combined with a usual drawing set having three pairs of rollers so as to give to the roving, two consecutive drafts with a twist between each draft. This drawing set, which in the arrangement shown in Figure 2, imparts the first draft to the roving, is mounted upon the bearing or support 2 and is composed of a pair of drawing rollers 4 and 5, intermediate rollers 6 and 7, and feeding rollers 40 and 41. The rollers 6 and 40 are mounted in the bearing 3, which is fixed in a customary manner upon the support 2.

The drawing mechanism of my invention (Figures 1 to 7), is mounted upon the support 2 and is composed of a pair of drawing rollers 8 and 9 and a pair of feeding devices disposed to accompany the roving up to a point less distant from the contact faces of the drawing rollers, than the average length of the fibers. These feeding devices are represented in the drawing as constituted for instance, by a pair of endless belts 31 and 32 driven by the rollers 25 and 26 and guided in a well known manner by the lateral plates 42. These endless belts as well as the rollers 25 and 26 imparting movement to same and the plates 42 have a rotary movement round the roving 33, to give a twist to the part of the roving contained between the rollers 4 and 5 of the first drawing set and the feeding devices of the second drawing set.

To produce the rotary movement of the feeding devices round the rovings, I place in the support 11 and ring 12 two wheels 13 and 16 provided with teeth 14 and 17 meshing with worm gears 15 and 18. The wheel 16 carries a removable ring 19 which holds the feeding devices.

The wheel 13 has interiorly the form of a funnel at its rear end with the object of facilitating the introduction of the roving 33 while the front edge carries a toothed ring 30 which meshes with the wheel 29 fixed on the shaft 28 of the roller 26 (see Figure 3). The roller 25 which bears the belt 31 revolves by the friction of the belt 32.

The shafts 27 and 28 of the rollers 25 and 26 driving the belts are journaled by the bearings 34 and 35 carried by the ring 19 and I dispose blade springs 20 and 21 with their free end upon the shafts 27 and 28. Pressure is imparted to said springs by means of screws 22 and 23 screwed in flanges 43 of the ring 19.

As stated, the ring 19 is removably carried by the wheel 16. To this end said wheel 16 has as shown in Figure 6, a complemental form so as to receive therein the ring 19 there being two slots 38 and 39 made in the ring 19 in which fit hooks 36 and 37 projecting from the wheel 16. By imparting to the

ring 19 a slight rotary movement in respect to the annular device 16, this ring 19 can be detached from the hooks 36 and 37 and can be drawn out together with all the feeding devices mounted upon the same. It thereby becomes very easy to clean the feeding devices, to effect a change of the belts, to control the tightness of the springs, etc.

By controlling the speed of the worms 15 and 18 it is possible to control the rotary speed of the wheels 13 and 16 and to secure the proper relative speeds in order that the rotary movement of the belts round the roving 33 be sufficient to produce a suitable twist and at the same time to impart a rotary motion of the rollers 25 and 26 suitable to give the roving the necessary advance.

In Figure 8 is shown a single belt 32^a driven by a roller 26^a upon which bears the roller 25^a and a small roller 45^a disposed near the drawing rollers 8 and 9. This roller 45^a is acted on by a spring in order to control its pressure upon the end of the belt 32^a.

In Figure 9 is shown a belt 32^b driven by the roller 26^b, upon which bears the roller 25^b and a plate 46^b, the pressure of which can be controlled by means of a screw 47^b.

In Figure 10 are represented two belts 31^c and 32^c which instead of being loose as in Figure 1 are tight and guided by the small rollers or rods 48^c.

In Figure 11 are shown the belts 31^d and 32^d likewise guided by small rollers or inside rods 48^d but being loose instead of being tight as in Figure 10.

In Figure 12 is shown the belt 31^e trained about the roller 25^e and driven by the roller 26^e with which is associated the roller 49^e positively driven with peripheral speed equal to or slightly greater than that of the belt 31^e. This roller 49^e is driven by means of a small belt or cord 50^e passing through the necks of the rollers 26^e and 49^e.

In the device shown in Figure 13 the belts are omitted and only the two rollers 25^f and 26^f are used and at the part close to the drawing rollers, is arranged a roller 49^f which received movement, from a belt 50^f as stated in connection with Figure 12 upon the roller 49^f bears another roller 45^f similar to that shown in Figure 8.

In Figure 14 are represented two belts 31 and 32 driven by the rollers 25 and 26 and guided by small cylinders or rods 48 which are arranged in such a way that the belts are slightly separated from each other at their forward ends.

In Figure 15 is shown a single belt 31 trained over the roller 25 and driven by the roller 26. The belt 31 slides upon a fixed plate 51 and is guided at its front part by a roller or rod 48 of small diameter.

In Figure 16 is shown the belt 31 trained over the roller 25 and driven by the roller 26. The belt 31 slides upon a plate 51 as in Figure 15, but with the difference that same is outwardly guided by a rod 52 and a plate 53.

Lastly in Figure 17 is shown the feeding devices reduced to two rollers 54 and 55 placed very close to the drawing rollers 8 and 9. The rollers 54 and 55 are set upon the ring 19 as stated for the rollers 25 and 26 and are driven in the same manner.

The bearing 11 is fixed by means of screws 24 upon a beam 10 which runs throughout the length of the frame, the bearing being confined by the strips 56. The beam 10 along with the shafts of the screws 15 and 18 receives from one of the ends of the frame a reciprocating movement like to that of the guide 57 guiding the roving before the first drawing set. In this way the roving has a transverse reciprocating movement which avoids unequal wear in the rollers.

What is claimed is:

1. In a drawing mechanism for textile rovings, drawing rollers, feeding means placed close to said drawing rollers adapted to move in a direction toward said drawing rollers for positively feeding the roving to the drawing rollers, said feeding means also mounted to rotate around the axis of the roving for imparting a false twist to the roving, and means to rotate said feeding means and simultaneously to move said feeding means towards the drawing rollers.

2. In a drawing mechanism for textile rovings, drawing rollers, feeding belts adapted to move in the same direction with the roving for positively feeding the roving to the drawing rollers, a ring for receiving the roving and guiding the roving to said belts, means to rotate said ring about the path of movement of the roving as an axis, and means whereby said belts are carried about said axis to impart a false twist to the roving and whereby the belts are further caused to move toward the drawing rollers for positively feeding the roving.

3. In a drawing mechanism for textile rovings, drawing rollers, feeding belts close to the drawing rollers, rollers for the belts, a gear wheel in operative relation with one belt roller, the belts being in contact and adapted to move toward the drawing rolls in contact with the roving for positively feeding the roving, a second gear wheel for rotating the first gear wheel, a ring carrying said gear wheel, means to rotate said ring and the belts around the roving whereby to impart a false twist thereto and at the same time to rotate the second gear wheel for feeding the roving to the drawing rollers.

4. In a drawing mechanism for textile rovings, the combination of a pair of drawing rollers, feeding means situated very close to said drawing rollers and adapted to revolve around the axis of the roving, a

support, two independently rotating worm wheels mounted in said support, means whereby one of said worm wheels is adapted to support said feeding means and to cause the latter to revolve about the rovings, means whereby the other worm wheel is adapted to drive said feeding means to advance the roving toward the drawing rollers, worms meshing with said worm wheels, shaft carrying said worms and extending across the whole length of the machine, a beam extending also across the whole length of the machine having bearings for said shaft, and means for imparting to said beam and shafts a reciprocating movement transversely to the roving whereby to cause the roving to shift in the drawing rollers.

In testimony whereof I affix my signature.

FERNANDO CASABLANCAS.

Witnesses:

IGNAIN A. JHMENGJL,

A. M. VAULE.