Nov. 21, 1939. F. CASABLANCAS 2,180,792

FLYER FRAME FOR TEXTILE ROVINGS

Filed March 20, 1939 3 Sheets-Sheet 1

Fig. 1.

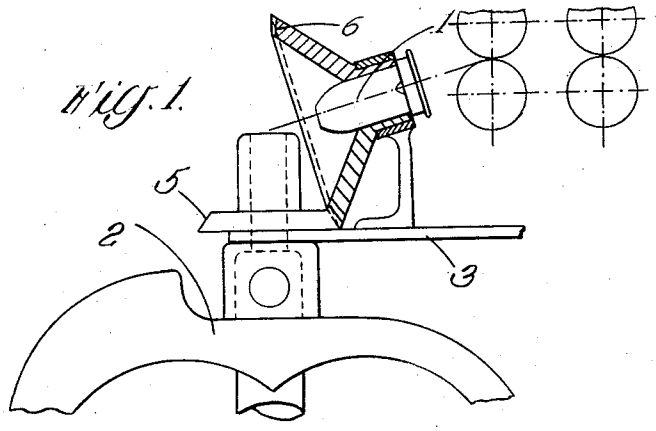


Fig. 2.

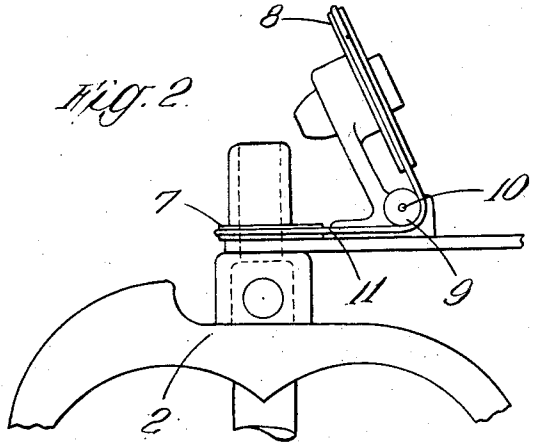
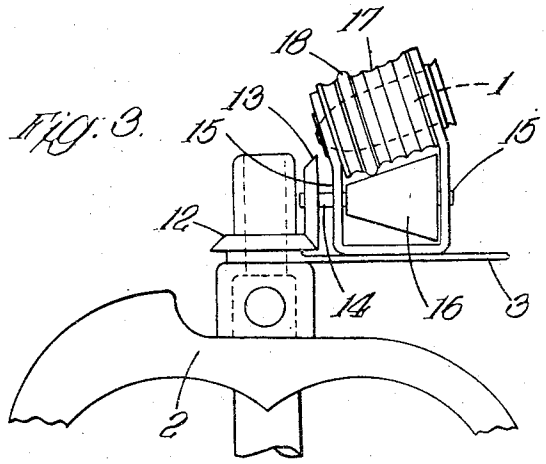


Fig. 3.



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Filed March 20, 1939 3 Sheets-Sheet 2

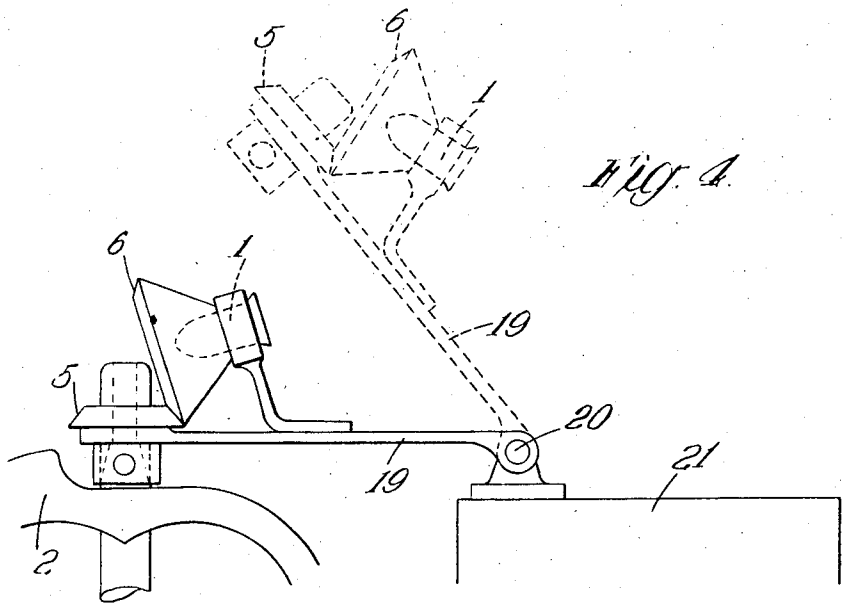


Fig. 4.

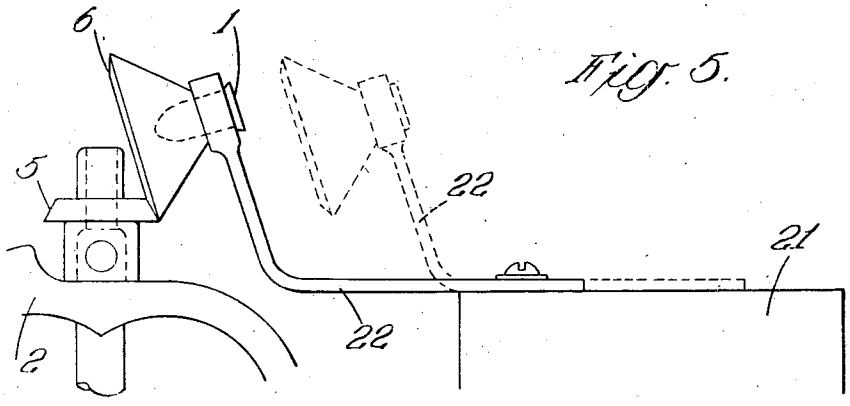


Fig. 5.

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Filed March 20, 1939 3 Sheets-Sheet 3

Fig. 6.

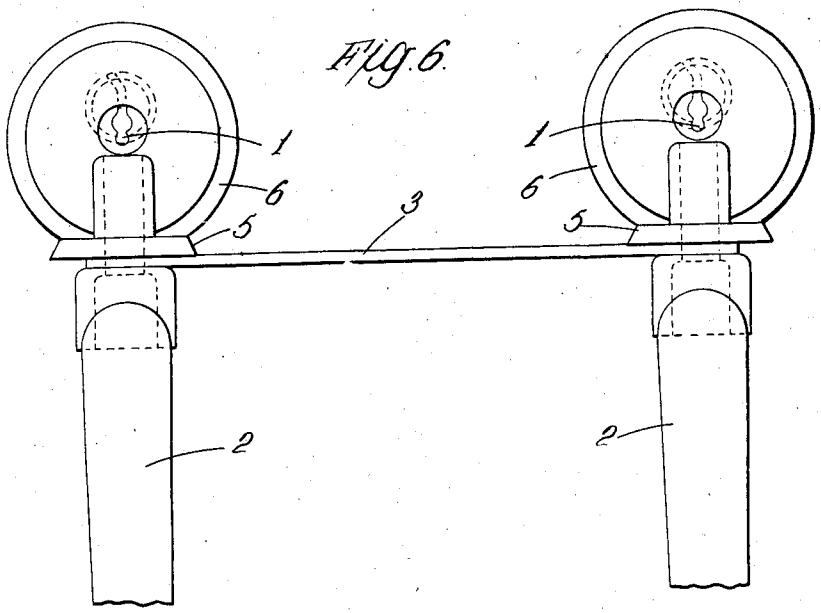
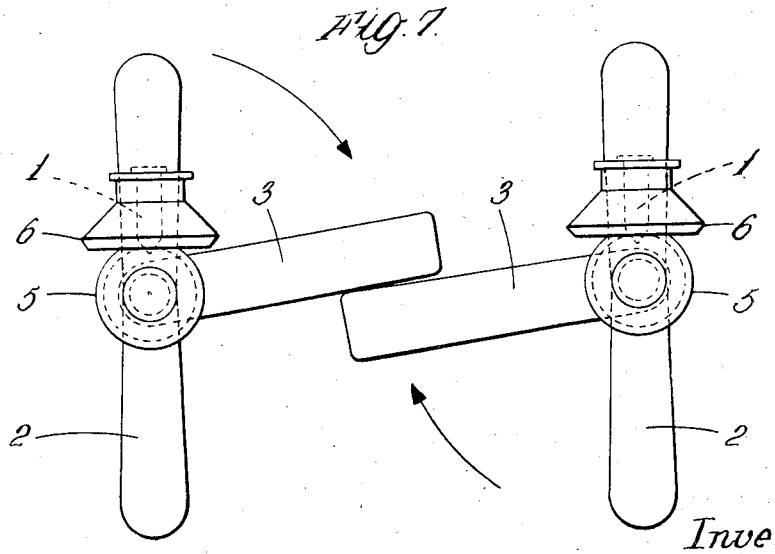


Fig. 7.



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Patented Nov. 21, 1939 2,180,792

UNITED STATES PATENT OFFICE

2,180,792

FLYER FRAME FOR TEXTILE ROVINGS

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Application March 20, 1939, Serial No. 263,012
In Great Britain March 31, 1938

8 Claims. (Cl. 57—51)

This invention relates to flyer frames for textile rovings and more particularly to flyer frames in which a false twist device is provided between the front drafting rollers and the flyer.

The invention has for its chief object the provision of such a flyer frame in which the false twist devices are mounted and driven in a manner which is an improvement on the methods known and used heretofore.

According to the invention the false twist mechanism is mounted at or near the top of a flyer and is adapted to be driven thereby.

The false twist mechanism may be supported on the top of the flyer itself or it may be mounted on a member attached to a fixed part of the frame. In the former case it is preferably carried by a horizontal arm mounted on the upper end of the flyer to permit rotation of the flyer or on a member secured thereto. With this arrangement, when it is desired to remove or replace a bobbin, the false twist mechanism and the flyer can be removed as a single unit.

In order to prevent the twist mechanism on its arm from being rotated with the flyer, it is preferably formed with a member such as a horizontal arm which is adapted to engage either against a suitable fixed part of the frame or against a similar member or other part of the mechanism of another flyer. According to another embodiment, two false twist mechanisms corresponding to two separate flyers are mounted at opposite ends of a single arm. In this case the twist mechanisms may be arranged to be readily removable from the tops of the flyers or the arrangement can be such that the twist mechanisms with the two flyers can be removed as a single unit from the bobbins.

When it is desired to support the twist mechanisms from a fixed part of the frame such as, for example, a fixed horizontal frame member, it is necessary that the mechanisms should be fixed on movable bars in order that they may be moved out of the way when it is desired to remove the flyers and bobbins.

In order that the said invention may be clearly understood and readily carried into effect the same will now be more fully described by way of example with reference to the accompanying drawings wherein like references denote like parts and wherein:

Figure 1 is a diagrammatic side elevation, partly in section and partly broken away, of one form of the invention.

Figures 2 to 5 are diagrammatic side elevations, partly broken away, of various modified forms of the invention.

Figure 6 is a diagrammatic front elevation, partly broken away, and showing two flyers mounted at opposite ends of a single arm, and

Figure 7 is a diagrammatic plan showing one method of preventing rotation of the arms carrying the false twist devices.

Referring now to the drawings and in particular to Figure 1 thereof, the false twist device 1 is supported on the top of the flyer 2 by means of a horizontal arm 3, which arm is mounted on the upper end of the flyer 2 to permit rotation of the flyer. The false twist device is driven from the flyer 2 by means of bevel gears 5, 6 or friction wheels mounted, one on the upper end of the flyer and the other on the false twist device 1. With this arrangement, when it is desired to remove or replace a bobbin, the false twist mechanism and the flyer 2 can be removed as a single unit.

In order to prevent the arm 3 carrying in the false twist device 1 from being rotated with the flyer 2, the arm 3 is preferably formed with an extension which is adapted to engage either against a suitable fixed part of the frame or against a similar extension or other part of the mechanism of another flyer as shown in Figure 7.

According to Figure 6, two false twist mechanisms 1 corresponding to two separate flyers 2 are mounted at opposite ends of a single arm 3. In this case the twist mechanisms 1 may be arranged to be readily removable from the tops of the flyers 2 or the arrangement can be such that the twist mechanisms with the two flyers can be removed as a single unit from the bobbins.

Referring now to Figure 2, the false twist device is mounted as in Figure 1 and is driven by means of a belt and pulley system which comprises a pulley 7 mounted on the upper end of the flyer 2, a second pulley 8 driving the twist device 1 and surrounding the same, and a pair of small guide pulleys 9 freely mounted on a shaft 10 which is at right angles to the axes of both the aforesaid pulleys. An endless belt or cord 11 passes from the pulley 7 on the flyer under one of the guide pulleys 9, over the pulley 8 on the twist device, down and under the other guide pulley 9 and back to the flyer pulley 7.

In accordance with Figure 3 the device is again mounted in a manner similar to that described in connection with Figure 1 but the driving connection from the flyer 2 comprises a bevel gear or friction wheel 12 mounted on the upper part of the flyer 2 and cooperating with a corresponding wheel 13 secured to a horizontal shaft 14 rotatable in bearings 15 on the horizontal arm 3 which supports the twist mechanism. A cone roller 16 is fixed on this shaft and cooperates with a cylindrical roller 17 formed with circumferential grooves. This roller 17 surrounds and drives the false twist tube 1 or other false twist device and its axis is so inclined to the axis of the roller 16 that there is a substantially uniform gap between the circumferences of the two roll-

ers. A rubber or other suitable resilient ring 18 surrounds the cylindrical roller 17 in one of the grooves thereof and is frictionally engaged by the conical roller 16. The twist device 1 is thus driven from the flyer 2 at a speed depending on which groove in the roller 17 the rubber ring 18 is placed. If it is in a groove adjacent the smaller end of the roller 16 the twist device 1 will be driven at a low speed, while if it is in a groove adjacent the larger end of the roller 16 then the twist device 1 will be driven at a relatively high speed.

In the construction embodiment according to Figure 4 the twist mechanisms are each mounted at the end of a bar 19 pivotally mounted at 20 on a fixed part 21 of the frame. In this case the flyer 2 drives the bevel wheel 5 which is fixed thereon by means of a key or peg or alternatively the hole in the bevel wheel 5 and the male end of the flyer may be square. The foregoing methods of drive allow the twist mechanisms to be raised out of the way if desired, as shown in dotted lines.

Figure 5 illustrates a modification of Figure 4 wherein the bar 22 supporting the twist device 1 is slidably mounted so that the twist mechanism can be slid back away from the flyer 2 as shown in dotted lines. The driving connection may be similar to that described in connection with Figure 1 and comprise a bevelled gear or bevelled friction wheel 5 mounted on top of the flyer 2 and a similar wheel 6 mounted on the false twist device 1, these wheels being adapted to cooperate when the twist mechanism is moved to its operative position, but being readily separable when it is desired to slide back the mechanism out of the way of the flyer 2.

What I claim and desire to secure by Letters Patent of the United States is:

1. In a flyer frame for use in the preparation of textile rovings, the combination of a set of drafting rollers, a flyer, means for rotating said rollers and said flyer, a false twist device for said roving mounted between said rollers and said flyer and adjacent said flyer, and means for transmitting the drive for said false twist device from said flyer.

2. In a flyer frame for use in the preparation of textile rovings, the combination of a set of drafting rollers, a flyer, means for rotating said rollers and said flyer, a false twist device for said roving mounted between said rollers and said flyer and adjacent said flyer, and means for transmitting the drive for said false twist device from said flyer said means comprising a cone-shaped roller mounted on a shaft adjacent said false twist device and driven from said flyer, a cylindrically-shaped roller surrounding said false twist device and so inclined with respect to said cone-shaped roller as to leave a uniform gap therebetween, and adjustable means cooperating with said rollers to transmit by friction the drive from said cone-shaped roller to said cylindrically-shaped roller.

3. In a flyer frame for use in the preparation of textile rovings, the combination of a set of drafting rollers; a flyer, means for rotating said rollers and said flyer, a false twist device for said roving mounted between said rollers and said flyer and adjacent said flyer, and means for transmitting the drive for said false twist device from said flyer said means comprising a pair of cooperating wheels, one mounted directly on the flyer and rotating therewith and the other mounted on a shaft, a cone-shaped roller also mounted on said shaft and adjacent said false twist device, a cylindrically-shaped roller surrounding said false twist device and so inclined with respect to said cone-shaped roller as to leave a uniform gap therebetween, and adjustable means cooperating with said rollers to transmit by friction the drive from said cone-shaped roller to said cylindrically-shaped roller.

4. In a flyer frame for use in the preparation of textile rovings, the combination of a set of drafting rollers, a flyer, means for rotating said rollers and said flyer, a false twist device for said roving mounted between said rollers and said flyer and adjacent said flyer, drive transmitting means mounted on said flyer and rotating therewith and cooperating with further drive transmitting means mounted on a shaft adjacent said false twist device, a tapered roller also mounted on said shaft, a cylindrically shaped roller surrounding said false twist device and formed with circumferential grooves, the said latter roller being so inclined with respect to the said tapered roller as to leave a uniform gap between said rollers, and a resilient ring member surrounding said cylindrically-shaped roller in one of the grooves formed thereon and frictionally engaging said tapered roller, the said resilient ring member permitting of the adjustment of the speed of rotation of the said false twist device with respect to the said flyer, said adjustment being effected by altering the grove in which said ring is located.

5. In a flyer frame for use in the preparation of textile rovings, the combination of a set of drafting rollers, a flyer, means for rotating said rollers and said flyer, a false twist device mounted on an arm which in turn is mounted on the upper end of said flyer to permit rotation of said flyer, said device engaging the roving between said rollers and said flyer and adjacent said flyer, and means for transmitting the drive for said device from said flyer.

6. In a flyer frame for use in the preparation of textile rovings, the combination of a set of drafting rollers, a flyer, means for rotating said rollers and said flyer, a false twist device mounted on an arm which in turn is mounted on the upper end of said flyer to permit rotation of said flyer, said device engaging the roving between said rollers and said flyer and adjacent said flyer, at last one extension formed on said arm and adapted to abut stationary parts of the frame to prevent said device revolving bodily with said flyer, and means for transmitting the drive for said device from said flyer.

7. In a flyer frame for use in the preparation of textile rovings, the combination of drafting rollers, flyers, means for rotating said rollers and said flyers, false twist devices for the rovings mounted individually on each flyer and held by the latter and means for transmitting the drive for each false twist device from its individual flyer.

8. In a flyer frame for use in the preparation of textile rovings, the combination of drafting rollers, flyers, means for rotating said rollers and said flyers, false twist devices mounted between said rollers and said flyers and adjacent said flyers, each pair of said devices corresponding to two consecutive rollers being coupled together, and means for transmitting the drive for said false twist devices from said flyers.

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