

March 5, 1963

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3,079,648

TOP ROLLER HOLDER

Filed May 11, 1961

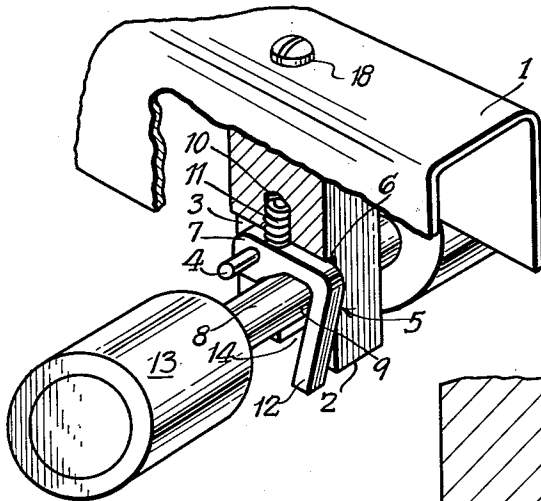


Fig. 1.

Fig. 3.

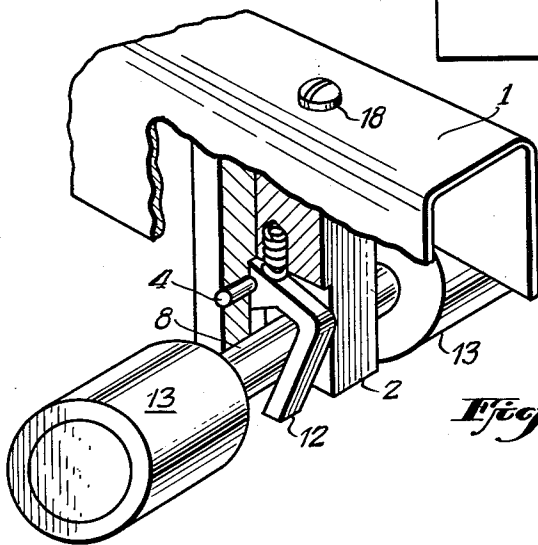
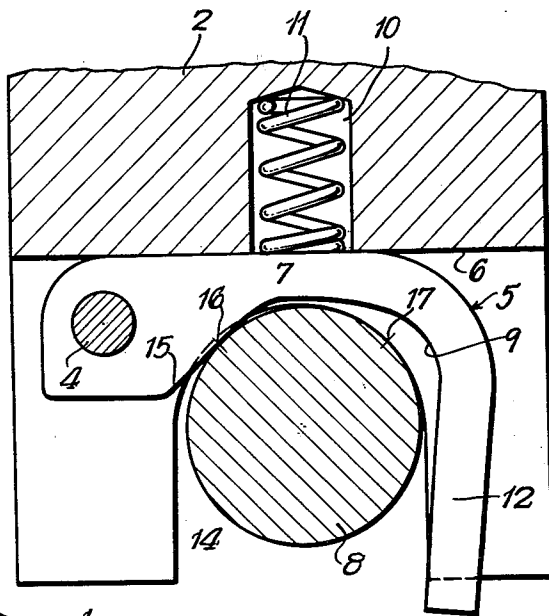


Fig. 2.

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TOP ROLLER HOLDER

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Filed May 11, 1961, Ser. No. 109,407

Claims priority, application Switzerland Aug. 26, 1957
5 Claims. (Cl. 19-295)

The present invention relates to a top roller holder for the loading arms of drafting arrangements on spinning machines.

Hitherto the top roller holders on guide and loading arms have been provided with bent flat spring inserts which partly surrounded the top roller shaft, preventing falling out of the top rollers upon lifting of the arm. The delivery top rollers of modern long staple two apron drafting arrangements are frequently long and heavy and/or long and heavy cradles are used and the support provided by the aforementioned flat springs is not sufficient. Besides this, removal of the double top rolls is difficult in machines in which the lifted guide or loading arms cannot be locked in the open position. The operator usually holds the first removed double roll in his left hand which is, therefore, not available for holding up the guide or loading arm when removing the second and third double roll.

It is an object of the present invention to provide a top roller holder which avoids the above described difficulties. The holder according to the invention includes a lever which is pivoted to a member interposed between the guide or loading arm and the roller shaft. This lever partly surrounds and is resiliently pressed against the roller shaft and prevents the latter from falling out when the arm is lifted.

A further object of the invention is the provision of a top roller holder which can be conveniently removed from and mounted on the loading arm.

Another object of the invention is the provision of a top roller holder including a saddle member removably connected to the loading arm of a drafting arrangement and straddling the top roller shaft, a spring-loaded, rigid angle lever being pivotally mounted on and accommodated within said saddle member for normally retaining the top roller in the saddle member and permitting dropping of the top roller out of the saddle member upon slightly tipping the lever against the action of the spring which can be effected by a finger of the operator.

An object of the invention resides in the provision of a top roller holder assembly which affords convenient assembly and disassembly of all individual parts thereof.

An object of the invention is the provision of a top roller holder assembly which holds the top roller in the exact desired operating position. To accomplish this the top roller is placed in a journal slot of a saddle member which slot is so shaped as to provide engagement of the top roller shaft with the saddle member along a line parallel to the rotation axis of the top roller and the latter is retained in the journal slot by means of a spring-loaded angle lever pivotally mounted to and located within the saddle member and, when the device is in operating position, contacting the top roller shaft along a line parallel to the rotation axis of the shaft and angularly displaced with respect to the line of contact of the top roller axis and the saddle member.

The novel features which are considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, and additional objects and advantages thereof will best be understood from the following description of an embodiment thereof when read in connection with the accompanying drawing wherein:

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FIG. 1 is a perspective part sectional view of the device according to the invention in normal operating position.

FIG. 2 is a perspective part sectional view of the device in position when the guide or loading arm is lifted.

FIG. 3 is a cross sectional view of the device in operating position and showing the relative position of the lines along which the top roller shaft is in contact with the saddle member and with the retaining lever.

Like parts are designated by like numerals in all figures of the drawing.

Referring more particularly to the drawing, numeral 1 designates a guide or loading arm from which a part is broken off and which rigidly supports a saddle member 2 resting on a shaft 8 supporting top rolls 13 in the conventional manner, a journal slot 14 being provided in the member 2 receiving the shaft 8. In FIG. 1 the member 2 is cut in a central vertical plane normal to the rotation axis of the shaft 8 to make visible an angular lever 5 which is swingably connected with the member 2 by a pin 4. The saddle member 2 is provided with a recess 3 accommodating the lever 5. The lever 5 has a horizontal top portion 7 extending from the fulcrum of the lever across the top of the shaft 8. When the device is in position for normal operation the horizontal top portion 7 of the lever 5 abuts against the bottom 6 of the recess 3. The lower surface of the portion 7 of the lever 5 is provided with a surface 9 generated by a line which is parallel to the roller shaft 8. A portion 15 of the lower surface 9 of the portion 7 is so shaped as to afford, at 16, a single line contact with the shaft 8. The journal slot 14 is so shaped as to afford, at 17, a single line contact with the shaft 8 which line is angularly displaced relative to the line 16 for accurately defining the position of the shaft. A compression spring 11 is placed in a bore 10 extending upwardly from the bottom of the recess 3 into the member 2. The spring 11 projects from the bore 10 and engages the horizontal part 7 of the lever 5, urging the lever to swing in clockwise direction whenever the arm 1 is unloaded or lifted. Clockwise movement of the lever 5 increases the grip of a downwardly extending portion 12 of the lever 5 on the shaft 8, preventing falling off of the top roll unit.

The saddle member 2 is removably connected by screws 18 to the arm 1 so that the entire top roller holder assembly can easily be removed for cleaning, repair or replacement.

In FIG. 2 the holder 2 is cut in a vertical plane which is normal to the rotation axis of the shaft 8 and in a vertical plane parallel to said rotation axis to show the position of the pin 4 in the member 2. For removing the shaft 8 and rollers 13 from the arm 1 and from the saddle member 2 the lever 5 is tipped counterclockwise against the action of the spring 10 by a slight pressure on the portion 12 whereupon the top roller unit is free to fall into the hand of the operator.

The present application is a continuation-in-part of my copending application, Serial No. 755,557, filed August 18, 1958, now abandoned.

I claim:

1. In a drafting arrangement of a spinning machine, a shaft supporting top rolls, a guide and loading arm adapted to be lowered and lifted, saddle means supported by said loading arm and being immovable relatively thereto, said saddle means having a journal slot for receiving said shaft from below said saddle means, the latter resting on said shaft when said arm is in the lowered position, a rigid angular lever pivotally connected to said saddle means to swing on an axis parallel to said shaft and having a substantially horizontal top portion extending from the fulcrum of said lever across the top of said shaft, said lever having a free end portion extending downwardly, a

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spring interposed between said saddle means and said lever for urging said top portion of said lever against said shaft, said spring urging said lever downward, causing said free end portion to partly surround and hold said shaft in said journal slot upon lifting of said loading arm and permitting said shaft to drop out of said journal slot upon tipping of said lever against the action of said spring.

2. In a drafting arrangement as defined in claim 1 and wherein said saddle means includes an abutment abutted by said lever when said loading arm is in normal operating position, said spring being placed inside of said saddle means and tending to press said lever away from said abutment.

3. In a drafting arrangement as defined in claim 1 a recess in said saddle means substantially entirely accommodating said lever.

4. In a drafting arrangement as defined in claim 1 a

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screw connection interconnecting said loading arm and said saddle means.

5. In a drafting arrangement as defined in claim 1 and wherein said horizontal top portion of said lever has a lower surface engaging said shaft along a line parallel to the longitudinal axis of the shaft, said journal slot having a surface engaging said shaft along a line parallel to the longitudinal axis of the shaft and angularly spaced from said first line.

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