(No Model.)

A. R. YOUNG & V. T. BARBER.

SADDLE FOR THE TOP ROLLS OF SPINNING FRAMES.

No. 347,910. Patented Aug. 24, 1886.

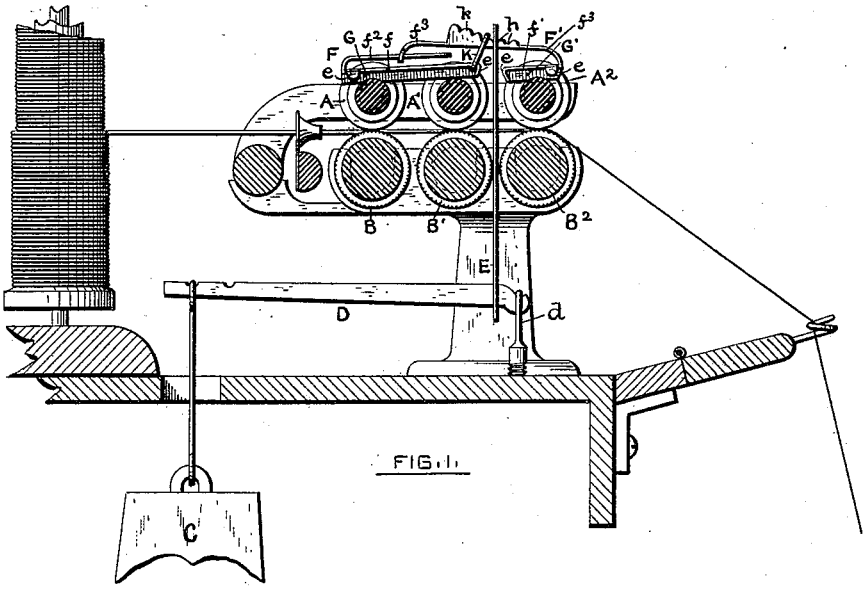

FIG. 1.

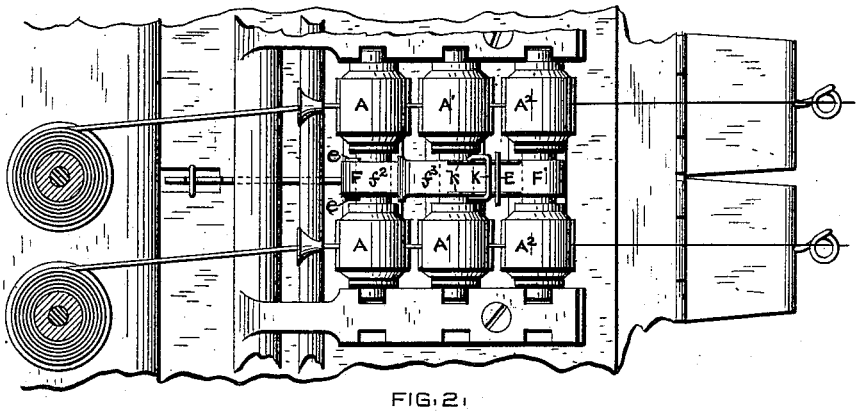

FIG. 2.

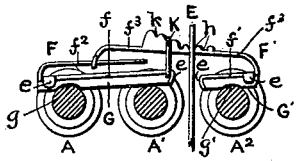

FIG. 3.

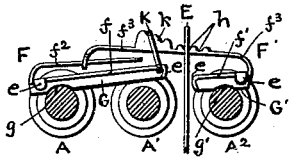

FIG. 4.

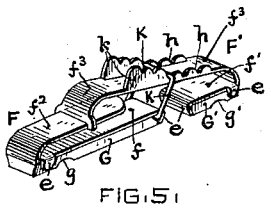

FIG. 5.

WITNESSES.

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SADDLE FOR THE TOP ROLLS OF SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 347,910, dated August 24, 1886.

Application filed June 16, 1883. Serial No. 98,314. (No model.)

To all whom it may concern:

Be it known that we, ADELBERT R. YOUNG, of Jewett city, in the county of New London and State of Connecticut, and VARNUM T. BARBER, of New Bedford, in the county of Bristol and State of Massachusetts, have jointly invented a new and useful Improvement in Saddles for the Top Rolls of Spinning-Frames; and we do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

It is well known to persons familiar with the art of spinning that yarns are spun from what is technically known as "roving," which usually passes through three sets of drawing-rolls running at unequal speeds, so as gradually to reduce the size of the roving by drawing out its filaments and determine the number or size of the yarn to be spun by the spindles. In the art heretofore saddles have been used for the purpose of applying the pressure of a weight to two or more top rolls in a set, and thereby cause the rolls to take hold firmly upon the roving and prevent it from winding about the rolls, as well as to insure a proper performance of the drawing operation. When the roving is composed of long staple cotton, it is desirable that pressure should be applied to the two outer sets of rolls only, which is accomplished by using a saddle bearing upon the two outer top rolls and elevated above the middle roll, and when short staple cotton is used the pressure needs to be applied to all three rolls, which is effected by substituting another saddle, adapted to bear upon the three rolls. Heretofore such saddles have been made of wood and of iron, and their bearing-faces have required to be lubricated in order to reduce friction. The lubrication of the saddle often causes a fouling of the sliver and the rolls, and therefore is objectionable. The saddles used heretofore, as far as I am aware, have been dead-pressure saddles—that is, they have not been constructed or arranged so as to yield under the pressure of the weight; hence any eccentricity in the rolls will cause them to grind into the sliver and weaken the fiber of the yarn.

This invention consists in a saddle made in two parts, which are adjustable lengthwise relatively to each other, and which is also capable of being adjusted so that pressure can be applied to all three rolls or to the outermost rolls only, and so that the pressure upon the middle roll can be varied.

The invention further consists in a saddle having yielding members, whereby any injury to the sliver due to an eccentricity of the rolls will be prevented by the elasticity of the saddle.

Referring to the drawings, Figure 1 represents in vertical transverse section a portion of a spinning-frame to which the improved saddle is applied. Fig. 2 shows a top view of the same. Fig. 3 is a side view of our improved saddle mounted in place upon the three top rolls, and showing the saddle adjusted so as to bear lightly upon the middle roll, the three top rolls being shown in section. Fig. 4 is also a side view of our improved saddle mounted upon the three top rolls, and showing the saddle arranged to bear only upon the two outermost rolls, the three top rolls being represented in section. Fig. 5 shows the saddle in perspective.

A A' A^2 are three top rolls of a set, and B B' B^2 are the under fluted rolls working therewith. Pressure is applied to these rolls by a weight, C, Fig. 1, which is hung upon the lever D, having a fulcrum in an eye, *d*, and connected to the saddle in the usual manner by a link, E.

The saddle is composed of two adjustable parts, F F′, having detachable facings G G′, respectively. Preferably, these facings are of rawhide, which possesses the necessary compactness for forming a hard bearing, and requires no lubrication. As hereinbefore stated, this latter feature is of great advantage, since all fouling of the sliver and rolls is prevented. The facings G G′ are secured to the base members f f' of the two parts of the saddle by means of ears e projecting from said members and clasping the sides and ends of the facings, as shown in Figs. 1, 3, 4, and 5, although any other suitable means for the purpose may be employed.

The part F of the saddle is provided with a spring-arm, f^2, and the part F′ with an arm, f^3, which is preferably a spring also. The arm

f^3 occupies a generally higher plane than the spring-arm f^2 and partially overlies the latter, and its end is made to bear upon the said spring-arm f^2, as shown at Fig. 5, and is capable of being moved longitudinally thereon in adjusting the saddle. The arm f^3 is furnished with two ears, *k*, which are provided with a series of notches arranged upon the upper edges of the said ears *k* in progressively ascending planes or steps. The office of these notches is to hold and support the loop or link K, which is jointed to the base member *f*, and by means of such loop and the notched ears the face of the portion G of the saddle relatively to the shaft of the middle roll, A′, can be raised or lowered at pleasure, so as to exert a greater or less pressure upon such middle roll. The loop K is in the general form of an open rectangle, and the arm f^3 passes through it, as clearly indicated at Fig. 5.

As shown in Figs. 3, 4, and 5, the facing G′ has a portion, *g′*, of its face concaved to engage the shaft of the roll A^2. The facing G has a portion, *g*, of its face concaved to engage the shaft of the roll A, and this facing is of sufficient length to bear upon the shaft of the middle roll, A′.

The saddle is mounted on the rolls, as shown in Figs. 1, 2, 3, and 4. When short staple cotton is used and it is desirable to have pressure applied to the roll A′, the loop K is swung into the position shown in Figs. 1 and 5, in which position it does not support that end of the part F of the saddle to which it is attached, thereby allowing the pressure of the weight C to be applied to the roll A′. When the length of the staple of the cotton is such that only a light pressure on the roll A′ is desired, the loop K is placed upon the lower notches in the ears *k*, as shown in Fig. 3, thereby relieving the roll A′ of some of the pressure of the weight, and when no pressure upon the roll A′ is desired, as when long staple cotton is being used, the loop is moved into the highest notches in the ears *k*, as shown in Fig. 4, thereby raising the facing G from the shaft of the roll A′.

From the foregoing it will be readily understood that the saddle, being made in two parts, F F′, can be used upon top rolls whose distances from centers may be varied within certain limits; that by the employment of the means described pressure upon the middle rolls of the set can be varied and entirely removed as circumstances require; that by the use of the rawhide facings G G′ no artificial lubrication of the bearings of the saddle is necessary, and that by giving to one or both of the arms f^2 f^3 a spring function the saddle is made elastic, so as to yield to any eccentricity of the rolls and prevent them from injuring the sliver. As a fact incidental to this elasticity of the saddle, it has been found that the coverings of the top rolls do not become indented by the flutes of the lower rolls, as is the case when the dead-pressure saddles of wood or iron, heretofore used, are employed.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. An improved saddle for top rolls, composed of two members adjustable lengthwise relatively to each other, and provided with suitable means, as described, for adjusting the saddle so that it may exert pressure upon all the rolls or only upon the outermost ones of the s ries, substantially as described.

2. An improved saddle for top rolls, composed of two spring-formed members, and constructed, as described, to exert a yielding pressure upon the rolls under the influence of a weight applied to the saddle, substantially as described.

3. In a saddle for top rolls, the combination of a metallic frame composed of two members adjustable lengthwise relatively to each other, facings of rawhide secured to such frame, and devices, substantially as described, for causing the saddle to exert pressure upon all the rolls or only upon the outermost ones of the series, as specified.

4. The combination, substantially as hereinbefore set forth, of the member F, having a spring-arm, f^2, and stirrup K, and the member F′, having an arm, f^3, provided with the notched ears or steps *k*.

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