

E. J. VALES & J. T. BISHOP,
 CAM ATTACHMENT FOR ROLLER BEDS OF SPINNING FRAMES.
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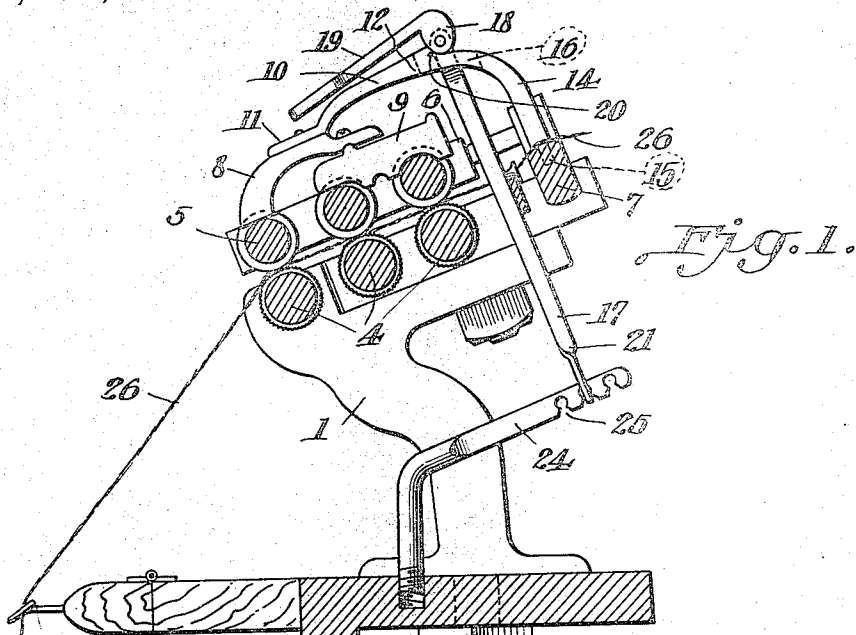


Fig. 1.

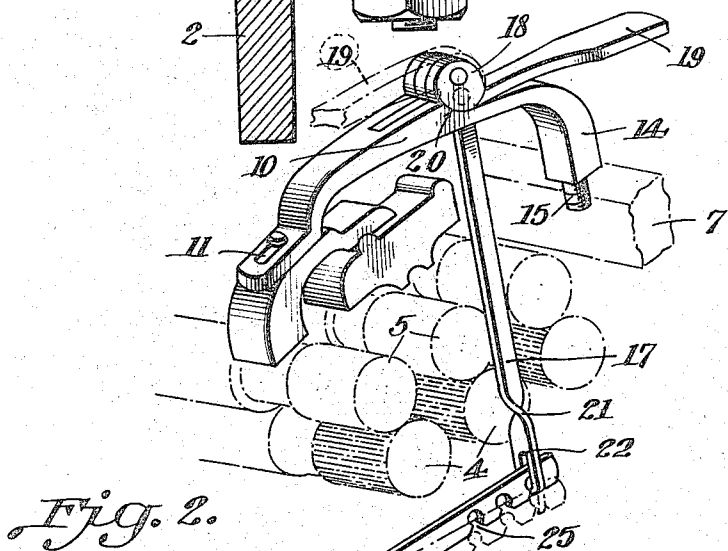


Fig. 2.

Inventors:
 Edward J. Vales
 James T. Bishop
 by Ramsey and Parmelee
 Attys.

UNITED STATES PATENT OFFICE.

EDWARD J. VALES AND JAMES T. BISHOP, OF AUGUSTA, GEORGIA.

CAM ATTACHMENT FOR ROLLER-BEDS OF SPINNING-FRAMES.

1,210,873.

Specification of Letters Patent.

Patented Jan. 2, 1917.

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To all whom it may concern:

Be it known that we, EDWARD J. VALES and JAMES T. BISHOP, citizens of the United States, residing at Augusta, in the county of Richmond, State of Georgia, have invented certain new and useful Improvements in Cam Attachments for Roller-Beds of Spinning-Frames, of which the following is a specification.

This invention relates broadly to spinning and more specifically to a simplified mechanism to replace saddle weights for the feed rolls in the roll stand.

The principal object of the present invention is to provide a simple mechanism to produce sufficient and even pressure upon the saddles of spinning frames in order to permit the spinning of threads of even size and hardness.

A further object of the present invention is to provide a simple mechanism adapted to replace the saddle weights of a spinning frame and to obviate vibrations incident to the weighted construction.

A still further object of the present invention is the provision of mechanism constructed to apply pressure to the saddles of the spinning frame feed rolls, which mechanism is capable of removal from above the rolls to permit cleaning and adjustments.

A still further object of the present invention is an improvement on the construction disclosed in the patent to Vales No. 1,130,220, granted March 2, 1915.

Other and further objects of the present invention will in part be obvious and will in part be pointed out hereinafter in the specification by reference to the accompanying drawings wherein like parts are represented by like characters throughout the several figures thereof.

Figure 1 is an elevational view illustrating the relation of the present invention to the parts of the ordinary roll frame and showing the device in position thereon. Fig. 2 is a perspective view more clearly illustrating the construction of the present device.

Heretofore in the spinning art the most common construction of roll frames has included a saddle comprising a pair of rigid bars arranged in overlapped relation and resting upon bearing points on the upper side of feed rolls. These bars were connected through a system of levers and links

to a weight suspended on a lever of a predetermined length. The weight is provided in order to maintain a predetermined pressure upon the overlapping bars comprising the saddle, in order to maintain the upper rolls securely against the lower feeding rolls to produce a mechanism intended to insure a predetermined and even feed of the roving to the spinning arm. Since the spinning arm is mounted upon the same general framework as the roll table, and since the spinning arm runs at a high velocity, a considerable amount of vibration is imparted to the whole spinning frame and the freely suspended weight transmits a considerable amount of these vibrations to the feed rolls so that under certain conditions the pressure on the feed rolls is uneven, thereby producing an uneven feed which causes uneven weight in the spun thread; furthermore, the weighted system extended beneath the roll table rendering the mechanism difficult and dangerous to adjust.

The present invention obviates the foregoing difficulties by providing a simple system of levers possessing sufficient inherent resiliency and connected together by simple actuating mechanism so that the required predetermined pressure is maintained through parts possessing but small mass and which parts are all under tension in such manner as to obviate multiplication of vibrations produced by the running of the machine. Furthermore, the present device is capable of complete adjustment from above the roll table so that adjustments may be easily and quickly made particularly with reference to providing for the cleaning of the roll table.

More specifically the present invention comprises a lever of the third class which bears upon the back rail of the roll stand and against the top of the front saddle. This lever is connected by means of a link with an L-shaped spring anchor secured in the bed of the roller table. The upper end of the link is secured within a cam lever which operates to apply or release pressure upon the lever of the third class previously mentioned. This construction it will be noted tends to pull the feed rolls toward or against the roll table and since there are a plurality of these pressure devices to a single spinning frame the combined effect is to produce tension on the entire system

which obviates vibration and tends to produce better running of the machine, and consequently better and more even weighted thread.

Referring now more specifically to the drawings, the roll stand 1 is mounted upon the usual roll stand bed 2 and carries a set of lower feed rolls 4 above which is mounted upper feed rolls 5. The upper feed rolls are retained within the usual spacing blocks 6 that are supported from the back rail 7. The front feed rolls support the saddle member 8, and the rear feed rolls support the rear saddle member 9. All the mechanism described thus far is common in the art.

The device comprising the present invention comprises an L-shaped lever 10 which is provided with a slotted toe portion 11 and an arched portion 12 which terminates in a vertical supporting portion 14. This vertical portion terminates in a stud 15 which is adapted to be seated in a small opening in the back rail 7. The arched portion 12 is slotted as at 16 to provide an opening for the flat link 17 which is connected by means of a suitable rivet with the point of an oval cam face 18 provided on the end of the cam lever 19. The arch shaped portion 12 is cut away to provide a recess, as at 20, against which said cam is adapted to operate. The flat link is twisted as at 21 and is formed with an opening 22 which passes over the L-shaped spring anchor arm 24. This spring anchor arm is provided with notched recesses 25 for varying the effective length of both the spring anchor arm and the flat link.

When the parts are in the position illustrated in Fig. 1 the opening 22 is in such relation to the notches in the spring arm that the link may be removed from the spring arm and the L-shaped upper lever 10 may be completely removed from the roll frame so that the saddles and upper feed rolls may be easily cleaned and adjusted.

When the parts are in the position indicated in full lines in Fig. 2 all of the several parts are under tension since the vertical member 14 is supported upon the back rail which is substantially rigid, and the front end or toe 10 is supported upon the front saddle, thereby placing the saddles under a predetermined pressure. The dotted lines in Fig. 2 indicate diagrammatically the position of the parts when not under tension. By this construction it will be noted that the upper feed rolls are very securely maintained over the lower feed rolls so that vibrations of the various mechanisms have little or no effect upon the pressure being exerted on the roving 26 whereby a free even feed is imparted thereto and an even thread is the result.

Since it is possible to vary the specific embodiments of our invention without departing from the scope of the invention, we

desire that it be understood that the disclosure herewith is illustrative and is not to be taken in the limiting sense.

Having thus described our invention what we claim is:—

1. In a device of the character described in combination, a roll stand, a set of lower feed rolls mounted upon said roll stand, an upper set of feed rolls mounted over said lower feed rolls, a pair of saddles upon said upper feed rolls, a back rail, an arched member seated upon said back rail and extending over the feed rolls and bearing against one of said saddles, a bed-plate carrying said roll stand, an L-shaped spring member mounted in said bed-plate and provided on its outer end with adjusting notches, a flat link connected with said spring arm, and a rotatable cam secured to said flat link and bearing upon said arched-shaped member whereby tension may be applied or released to said arched-shaped member to apply or release pressure on the saddles.

2. In a device of the class described in combination, a roll stand, lower feed rolls mounted upon said roll stand, upper feed rolls mounted upon said roll stand and above the lower feed rolls, saddle members bearing upon the upper feed rolls, a roll stand bed, a back rail, an L-shaped anchor arm secured in said bed, an arched-shaped lever having one end mounted upon said back rail and the other end resting upon said saddles, a link connecting said anchor arm with said arched-shaped lever, and a cam lever for applying tension to said link and pressure to the arched-shaped lever.

3. In a device of the class described in combination, a roll stand bed, a roll stand mounted upon said bed, feed rolls carried by said roll stand, a saddle above said feed rolls, an anchor secured to said bed, said anchor comprising a spring member secured beneath the feed rolls and extending toward the rear of the roll stand, an arched-shaped lever resting upon a portion of the frame of the roll stand and upon said saddle, means connecting said anchor and said arched-shaped lever, and devices for applying tension to said means to apply pressure to the said saddle.

4. In a device of the character described in combination, a roll stand bed, a roll stand mounted upon said bed, feed rolls in said roller stand, saddles bearing on certain of said feed rolls, a removable lever having one end resting upon a portion of the frame of the roller stand and the other end resting upon said saddles, and means comprising a cam and an L-shaped spring anchor for applying pressure to said lever to apply pressure to the said saddles.

5. In a device of the character described in combination, a bed-plate constructed to carry a roll stand, a roll stand mounted upon

said bed-plate, lower feed rolls mounted in said roll stand, removable upper feed rolls mounted over said lower feed rolls, a saddle resting upon said upper feed rolls, a back rail provided with a recess, an arched-shaped lever having one end seated in said recess in the back rail and the other end resting upon the saddle, an L-shaped anchor member secured in the bed-plate and provided on its outer end with a plurality of adjustment notches, a cam lever above the said arched-shaped lever, and a link connecting the said anchor member and the cam lever, substantially as described.

6. In a device of the class described in combination, a roll stand table, a roll stand mounted upon said table, said roll stand including a back rail, a plurality of feed rolls mounted in said roll stand, saddles above said feed rolls, a lever resting at one end upon said back rail and at the other end upon the saddles, an anchor mounted in said roll stand table, a link extending through a slot in said lever, a cam connected to said link and adapted to be operated to place tension upon said link to apply pressure to the said saddles.

7. In a device of the character described in combination, a roll stand table, a roll stand mounted upon said table, feed rolls carried by said roll stand, saddles above said

feed rolls, a rigid spring anchor secured to said roll stand table, a link connected to said anchor, and means comprising a long cam above said saddles for applying pressure upon said saddles and tension upon said link, whereby the said saddles are suitably maintained under pressure developed through parts possessing relatively small mass.

8. In a device of the character described in combination, a roll stand, a plurality of feed rolls carried by said roll stand, an L-shaped anchor member secured beneath said rolls, an arched-shaped lever member above said rolls and having one end comprising a device to apply pressure to said rolls when a pressure is applied to the said lever, and cam means connecting said anchor and said lever in such manner as to apply or release pressure to said lever as desired.

9. In a device of the character described in combination, a roll stand, a plurality of feed rolls mounted in said roll stand, means for applying pressure to certain of said feed rolls, said means comprising a removable bar above said feed rolls, a rigid spring bar anchor and cam devices connected to said spring anchor, for applying pressure to said removable bar.

EDWARD J. VALES.
JAMES T. BISHOP.