

No. 628,522.

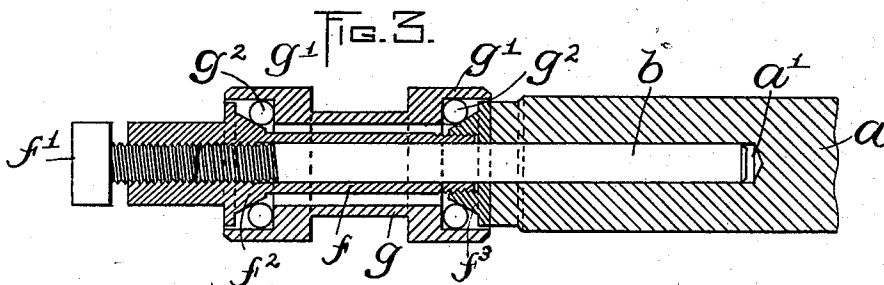
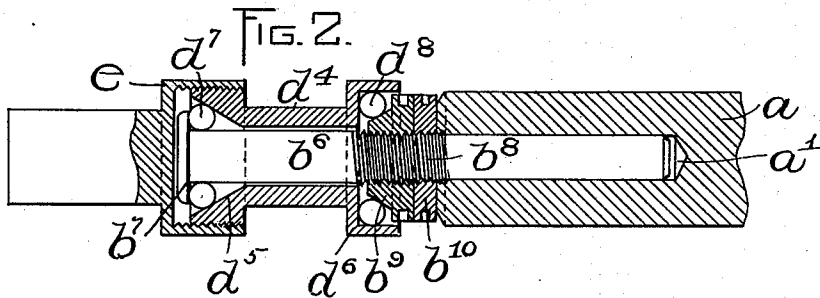
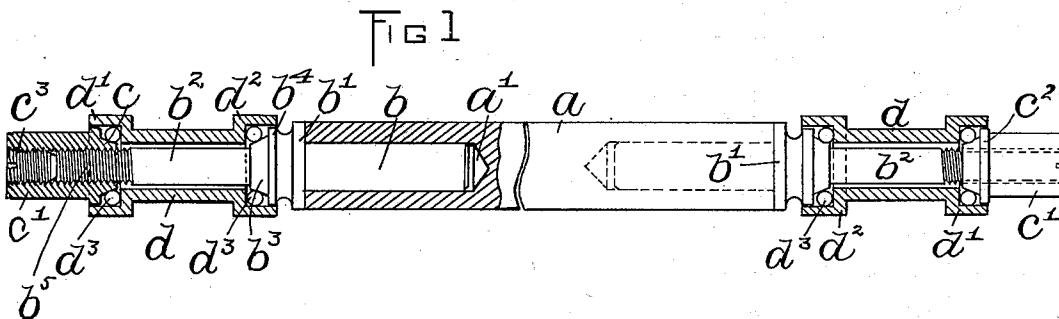
Patented July 11, 1899.

L. W. CAMPBELL.

TOP ROLL.

(Application filed Oct. 29, 1898.)

(No Model.)



WITNESSES.

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TOP ROLL.

SPECIFICATION forming part of Letters Patent No. 628,522, dated July 11, 1899.

Application filed October 29, 1898. Serial No. 694,950. (No model.)

To all whom it may concern:

Be it known that I, LEON W. CAMPBELL, of Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Top Rolls, of which the following is a specification.

This invention has relation to top rolls for spinning - machines, fly - frames, drawing-frames, and the like, and has for its object to provide certain improvements therein whereby they may revolve with greater rapidity and with less friction than heretofore and whereby they will not require the employment of oil or other lubricant, which, as is well known, is liable to injure the leather coverings of the rolls and spoil the yarn, and will consequently last longer and cheapen the cost of production of the yarn or thread.

To these ends the invention consists of a top roll embodying certain features of construction and relative arrangement of parts, all as fully illustrated upon the accompanying drawings, now to be described in detail, and finally pointed out in the claims hereto appended.

Reference is to be had to the accompanying drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 represents one embodiment of my invention in which the saddles are hung at the ends of the roll instead of at the middle portion thereof. Fig. 2 represents another embodiment of the invention. Fig. 3 represents a third form of the invention.

Referring to the drawings, *a* indicates a top roll or rotary member which is cylindrical, as shown, and which may receive a suitable covering of leather or other material. It is bored at its ends to form a socket *a'* for the reception of a spindle *b*, which is thrust therein and held against displacement by frictional engagement of its surface with the walls of the socket. This spindle *b* is provided with a flange *b'*, which abuts against the end of the roll, and with a reduced portion *b²*, separated from the flange *b'* by a bearing-cone *b³* and a dust-guard or flange *b⁴*.

The extremity of the reduced portion *b²* of the spindle is threaded, as at *b⁵*, to receive a bearing-cone *c*, formed on a nut *c'*, which has a dust-guard or flange *c²*, said cone *c* being locked after adjustment by a screw *c³*, abutting against the end of the spindle. The bearing-cones *b³* and *c* extend in opposite directions inwardly. A sleeve or stationary member *d* is placed around the end of the spindle and is formed with cups *d'* *d²* on its ends for the antifriction-balls *d³*, which are placed between them and the bearing-cones *c* *b³*.

The saddles, which are not shown, but with which those skilled in the art to which this invention relates are familiar, are hung from the sleeves or stationary members *d* *d* at the ends of the roll. When it is desired to remove a roll for the insertion of a new one or to allow of its being recovered or reshod with leather, the saddles are removed and the spindles *b* are withdrawn from the sockets *a'* without dislocating or displacing the antifriction devices.

The roll shown in Fig. 2 is quite similar in numerous respects to that which I have just described; but it differs therefrom in details of construction, as will be readily seen by examining the two figures.

The roll or rotary member *a* is provided with the socket *a'*, as previously described, and there is a spindle *b* which is inserted in the socket and which is held therein by its frictional engagement with the walls of said socket. The outer end *b⁶* of the spindle *b* is somewhat enlarged and on its extremity is a flange *b⁷* to form, as it were, a cup for antifriction-balls, as will be presently explained. Between the inner and outer portions of the spindle there is a screw-threaded portion *b⁸*, on which are adjustably secured a bearing-cone *b⁹* and a lock-nut *b¹⁰*. A sleeve or stationary member *d⁴* is arranged on the outer end of the spindle, being provided with a tapering socket *d⁵* opposite the flange *b⁷* and a ball-cup *d⁶* opposite the bearing-cone *b⁹*. Antifriction-balls *d⁷* *d⁸* are inserted, respectively, between the flange *b⁷* and the tapering wall of the socket *d⁵* and the cup *d⁶* and the bearing-cone *b⁹*. Consequently it will be seen that the main difference between the devices

illustrated in Figs. 1 and 2 is that in Fig. 1 the bearing-cone at the inner portion of the spindle is adjustable and that in Fig. 2 the spindle is provided with a ball-cup at its outer end instead of forming the ball-cup on the sleeve.

For the purpose of closing the sleeve (in Fig. 2) against the entrance of dust the outer end of said sleeve is exteriorly threaded to receive an externally-threaded cap *e*.

Next referring to Fig. 3, it will be seen that the device illustrated thereby bears a still closer resemblance to the one portrayed in Fig. 1. On the spindle *b*, which is inserted in the socket on the end of the roll *a*, is placed a sleeve *f*, which has external threads at its outer end, whereby it can be screwed on the threaded outer end of the said spindle. A screw *f'* is inserted in the outer end of the sleeve and abuts against the end of the spindle *b*, so as to lock the sleeve thereon after being adjusted. The sleeve is provided with a stationary bearing-cone *f*² and a detachable bearing-cone *f*³, the sleeve or stationary member *g*, surrounding the sleeve *f*, being formed with cups *g'* *g'* for the balls *g*².

In all of the three figures which I have described the top roll or rotary member *a* is supported or journaled at its ends, being provided with a socket to receive inwardly-extending spindles, upon which are journaled sleeves or stationary members from which the saddles depend, and in all of them the bearing-cones are detachable, being locked after adjustment by suitable devices.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A top roll comprising a rotary member, two stationary members, one detachably connected to each end of said rotary member,

said stationary members being adapted to receive and support saddles independently of each other, and antifriction devices inserted between said stationary members, and said rotary member.

2. A top roll comprising a rotary member, an independent stationary member detachably connected to each end of the rotary member, said stationary members being adapted to support saddles independently of each other, and antifriction devices inserted between the stationary members and the rotary member, said devices being constructed and arranged whereby they remain in place when the rotary member is detached from the stationary members.

3. A top roll comprising a rotary member having a socket in each end, a spindle inserted in each socket, stationary members into which the spindles extend, and which are adapted to receive saddles, and antifriction devices inserted between said spindles and said stationary members.

4. A top roll comprising a rotary member having a socket in each end, a spindle detachably inserted in each socket and frictionally held therein, stationary members into which the spindles extend and antifriction devices inserted between said spindles and said stationary members.

5. A top roll comprising a rotary member, spindles connected to the ends of said member, a stationary member or sleeve on each spindle and adapted to receive and support a saddle, said spindles and sleeves being provided with bearing-cones and cups, and antifriction-balls between said cones and cups.

In testimony whereof I have affixed my signature in presence of two witnesses.

LEON W. CAMPBELL.

Witnesses:

MARCUS B. MAY,
E. BATCHELDER.