No. 669,370. Patented Mar. 5, 1901.

J. E. PHILLIPS.

FEED ROLLER ATTACHMENT FOR SPINNING MACHINES.

(Application filed Oct. 5, 1900.)

(No Model.)

Fig. 1.

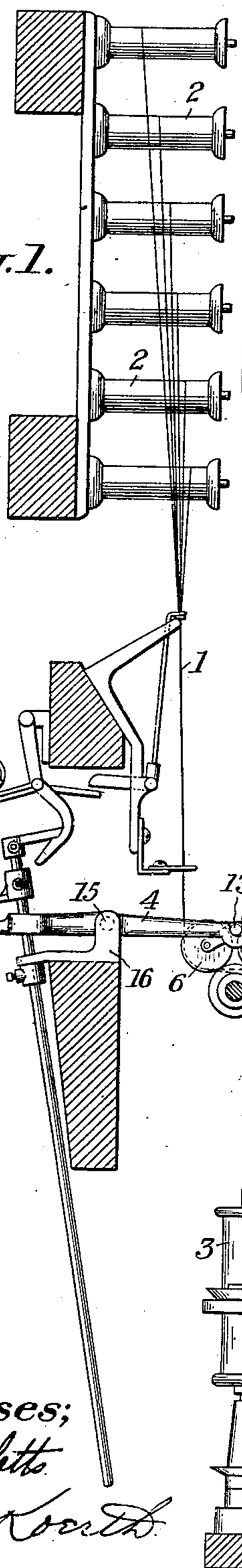


Fig. 5.

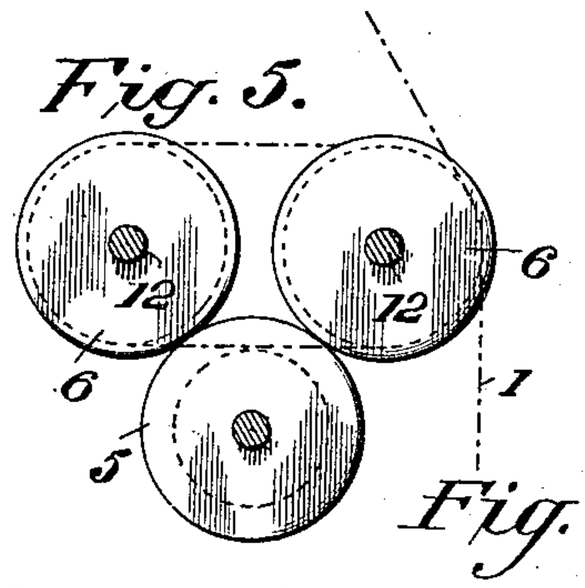


Fig. 6.

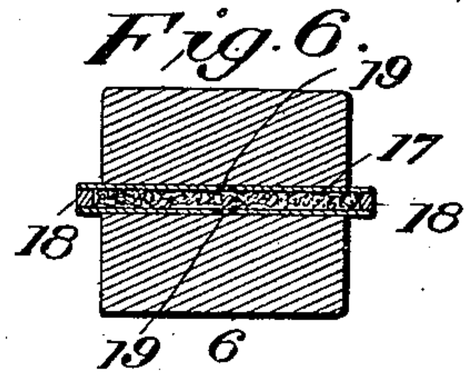


Fig. 2.

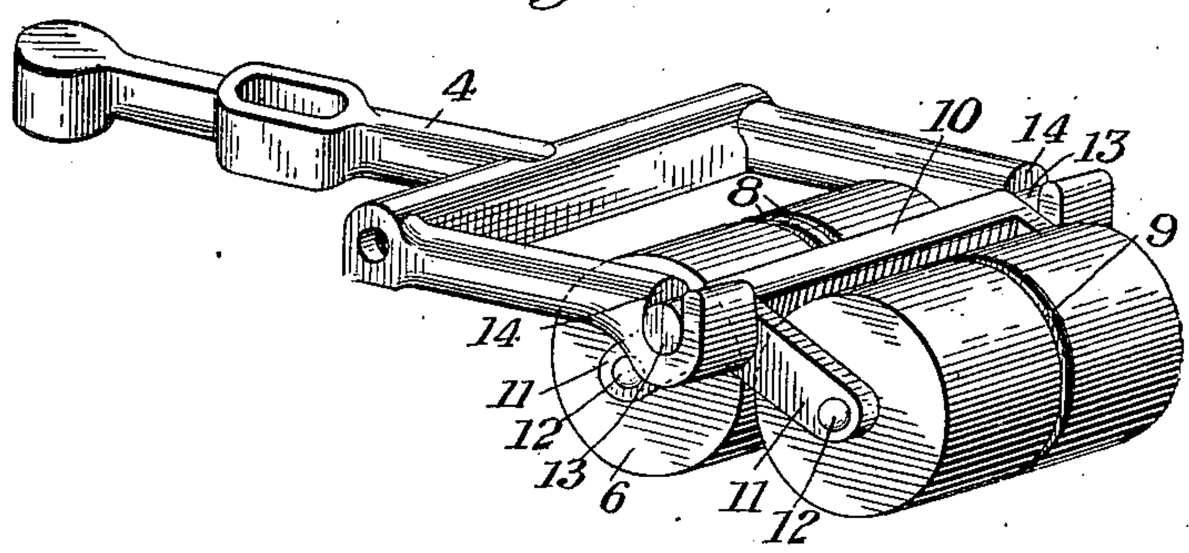


Fig. 3.

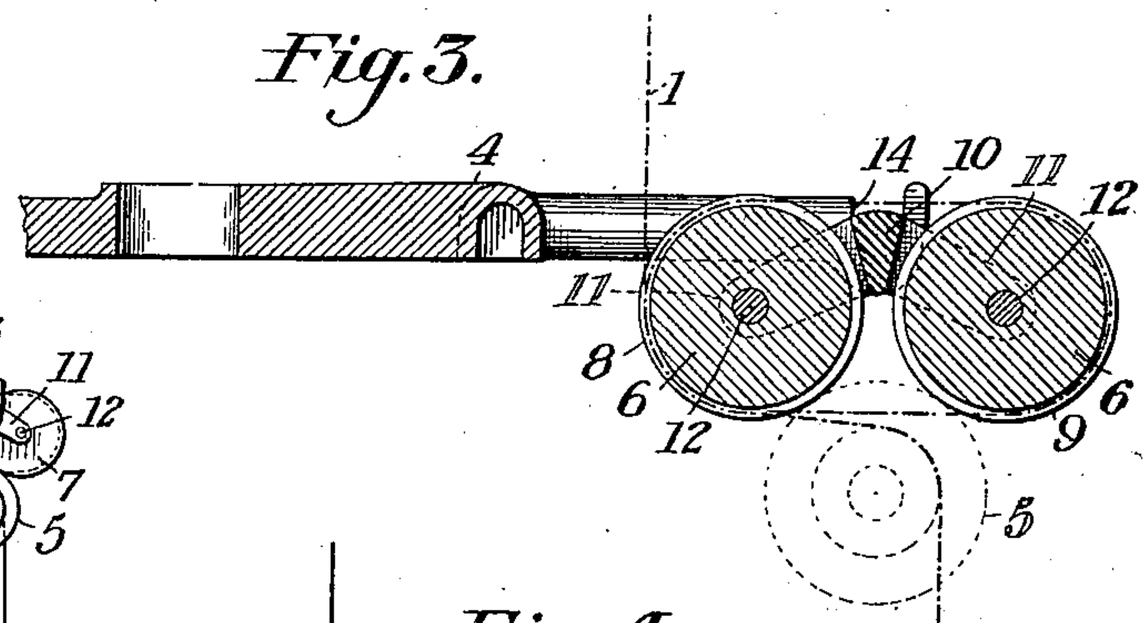
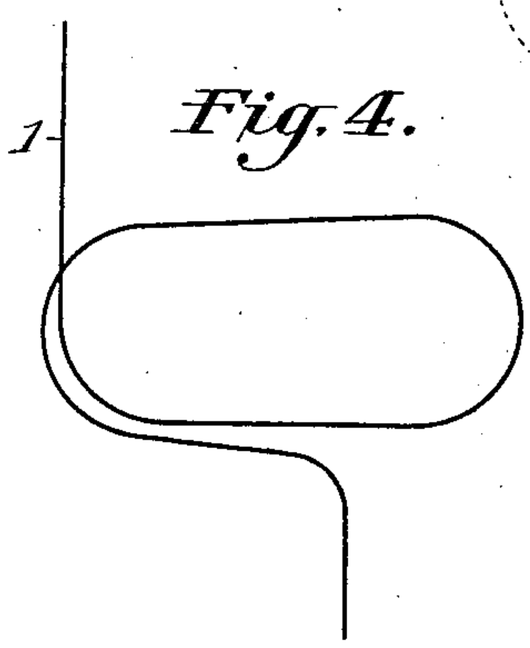


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH E. PHILLIPS, OF CARLISLE, PENNSYLVANIA.

FEED-ROLLER ATTACHMENT FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 669,370, dated March 5, 1901.

Application filed October 5, 1900. Serial No. 32,134. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. PHILLIPS, a citizen of the United States, residing at Carlisle, in the county of Cumberland and State of Pennsylvania, have invented a certain new and useful Feed-Roller Attachment for Spinning-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to feed-roller attachments for spinning-machines, one of the principal objects of the invention being to provide a feed-roller device which may be substituted in a moment's time for the ordinary feed-roller at present in use.

A further object of the invention is to reduce to a minimum the liability of the breakage of the cords or threads adjacent to the feed and driving rollers, also to secure greater uniformity in the twist of the thread.

A further and very important object of the invention is to facilitate the threading or reeving of the thread around the feed and driving rollers, thereby enabling an attendant in case the thread breaks to quickly detach the feed-rollers, wrap the thread around such rollers, and replace the rollers in the machine.

The detailed objects and advantages of the invention will appear more fully in the course of the ensuing description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a diagrammatic section through a sufficient portion of the frame of a spinning-machine to illustrate the application of the present improvements thereto and showing also the ordinary stop mechanism. Fig. 2 is an enlarged detail perspective view of the improved feed-rollers and yoke or hanger therefor, together with the lever by which the feed-rollers are detachably supported. Fig. 3 is a vertical section taken longitudinally of Fig. 2. Fig. 4 is a diagrammatic view showing the manner of reeving the thread around the feed and driving rollers. Fig. 5 is an end elevation of the driving and feed rollers, showing a different manner of reeving the thread around the same. Fig. 6 is a detail section taken longitudinally of one of the feed-rollers, showing the manner of lubricating the same.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

While the drawings illustrate a considerable portion of a spinning-machine, this invention appertains particularly to the feeding-rollers, and it will not therefore be necessary to go into a detailed description of the spinning-machine itself, said machine being of well-known construction, the thread 1 being taken from a series of spools 2 and carried around the feed and driving rollers to the usual cop, (indicated at 3.)

4 designates a lever having one end forked and the arms of the fork provided with open sockets to receive the supporting-trunnions of the yoke or hanger, hereinafter described.

In carrying out the present invention I employ a pair of feed-rollers 6 and 7, 6 designating the inner roller, which is provided with a plurality of circumferential grooves 8, and 7 designating the outer roller, which is provided with a single groove 9. The number of grooves 8 and 9 in the rollers 6 and 7 may be increased or diminished at will without departing from this invention.

The feed-rollers 6 and 7 are journaled in a a yoke or hanger which comprises a body portion or web 10, lying wholly between the rollers and having its upper surface transversely rounded to permit the thread to slide freely thereover, said web being provided with oppositely-projecting pairs of arms 11, which carry the spindles or journals 12, upon which the feed-rollers turn. If preferred, the rollers may be provided with trunnions journaled in the extremities of the arms 11. The arms 11 project from the body or web 10 in opposite directions and preferably incline slightly downward, as illustrated in the drawings, and all of the arms are preferably made integral with the body 10 and rigid with relation to each other and to the body or web. The yoke or hanger is further provided with oppositely-projecting trunnions 13, forming extensions of the body 10, said trunnions being detachably received in open sockets 14 in the forked end of the lever 4, as clearly illustrated in Figs. 1, 2, and 3. The lever 4 is fulcrumed

at 15 in a bracket 16, mounted on the frame of the spinning-machine, and is associated with the usual stop device. The feed-rollers 6 and 7 rest against the driving-roller 5 and are actuated thereby until the thread breaks, whereupon the lever 4 is vibrated, throwing the feed-rollers out of contact with the driving-roller in the manner and for the purpose well understood by those familiar with the art to which this invention appertains.

From the foregoing description it will be seen that the improved attachment, consisting of the yoke or hanger and feed-rollers carried thereby, may be substituted quickly for the single feed-roller at present in use, the trunnions 13 resting in the sockets 14 of the lever 4 and being held therein by the weight of the yoke or hanger and the feed-rollers. In the event of the thread breaking the attendant simply lifts the attachment, disengaging it from the lever, and then drawing downward the thread 1 wraps said thread partially around the inner roller 6, thence outward partially around the roller 7, thence back partially around the inner roller, and thence downward partially around the driving-roller 5, after which the yoke or hanger is replaced in its correct position in the lever, whereupon the machine is ready to be again thrown into operation. By providing the grooves 8 and 9 in the feed-rollers the thread is prevented from coming in contact and chafing where it crosses, thus reducing to a minimum the liability of such thread to break.

Instead of reeving the thread around the feed-rollers, as hereinabove described and illustrated in Fig. 3, the thread may pass first partially around the outside of the outer feed-roller, as shown in Fig. 5, thence under both feed-rollers, partially around the inner feed-roller, thence over both feed-rollers, partially around the outer feed-roller, and thence straight downward to the cop. To properly accomplish this, the feed-rollers should be set farther inward, so as to enable the thread 1 after leaving the outer feed-roller to pass straight downward to the cop 3. Under the arrangement last described the outer feed-roller will have the two grooves and the inner feed-roller the single groove, or the reverse of the arrangement shown in Fig. 2.

The spindle or journal 12 of each feed-roller is preferably made of brass or other metallic tubing 17, as shown in Fig. 6, the ends of the tubular spindle being plugged, as shown at 18, and the tube being partially or wholly filled with wicking or other absorbent material which will hold and gradually give out a supply of oil or other lubricant, the lubricating material escaping through ports or perforations in the tubular spindles, as clearly shown in Fig. 6, and supplying the necessary lubricant to the journal of the roller. Oil is supplied to the spindle by removing one of the plugs 18. The rollers are thus kept constantly lubricated without attention. Parts of the machine not hereinabove particularly described may be constructed and arranged in any ordinary or preferred manner.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A yoke or hanger comprising a central web, rigid arms projecting laterally and in opposite directions from each end thereof, journaling trunnions projecting from both ends of the web, and rollers arranged on opposite sides of the web and each having both of its ends supported by said arms, in combination with a support for the yoke or hanger, said support having sockets with closed bottoms adapted to detachably receive the trunnions of the yoke or hanger.

2. The combination with a lever having oppositely-arranged sockets, of a yoke or hanger comprising a central web, rigid arms projecting laterally and in opposite directions from each end thereof, supporting-trunnions projecting from both ends of the web and removably fitted in said sockets in the lever, and grooved rollers arranged on opposite sides of the web and each having both of its ends supported by said arms, substantially as described.

3. The combination with a lever having a forked end, the arms of which are provided with open sockets, of a plurality of feed-rollers, and a pivotal yoke or hanger in which the feed-rollers are journaled, said yoke or hanger being detachably supported and journaled at both ends in the sockets of the lever, substantially as described.

4. The combination with the driving-roll of a spinning-machine, of a lever having a forked end the arms of which are provided with open sockets located over the driving-roll, of a plurality of feed-rollers, and a pivotal yoke or hanger supported at both ends by the lever and having the feed-rollers journaled therein, said yoke or hanger being provided with trunnions journaled and detachably fitted in the sockets of the lever, substantially as specified.

5. A plurality of feed-rollers in combination with a pivotal yoke or hanger provided with oppositely-projecting pairs of rigid arms in which the feed-rollers are journaled and supported at both ends, and an intervening web or body portion lying wholly between the feed-rollers and having its upper surface transversely rounded, said web being provided with trunnions at both extremities for the support of the yoke or hanger, substantially as described.

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

JOSEPH E. PHILLIPS.

Witnesses:
WM. T. GATES,
CHAS. MCLAUGHLIN.