

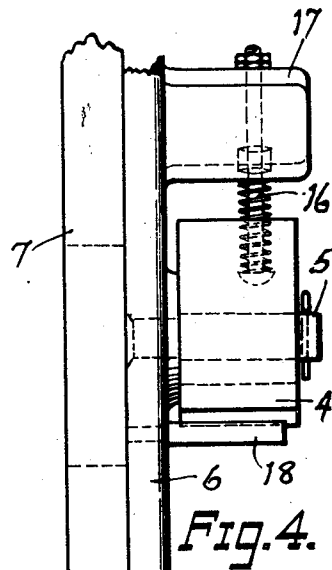
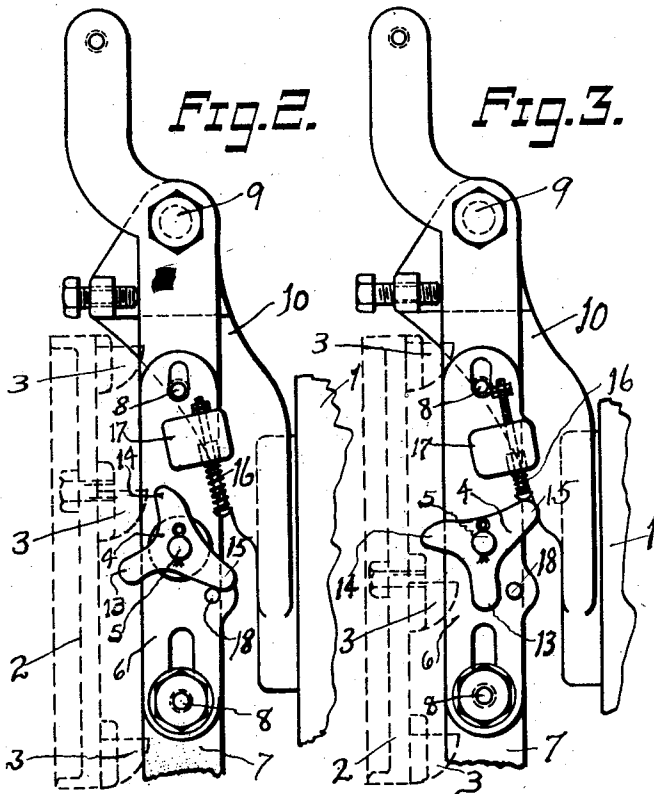
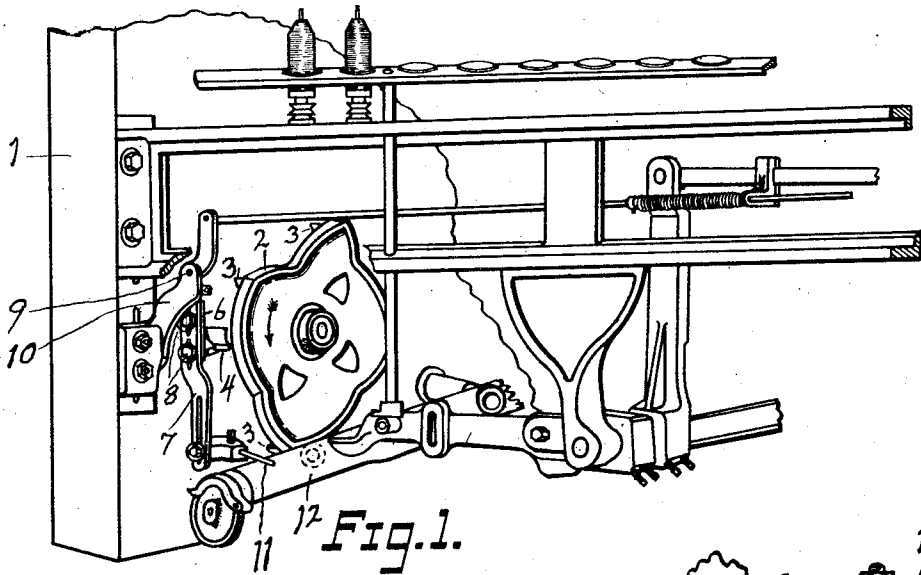
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1,544,643

J. JEFFERS

BUNCH BUILDER MECHANISM

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INVENTOR:
Jesse Jeffers
BY
Oscar L. Owen
ATTORNEY

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UNITED STATES PATENT OFFICE.

JESSE JEFFERS, OF UXBRIDGE, MASSACHUSETTS, ASSIGNOR TO WHITIN MACHINE WORKS, OF WHITINSVILLE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BUNCH-BUILDER MECHANISM.

Application filed February 26, 1925. Serial No. 11,668.

To all whom it may concern:

Be it known that I, JESSE JEFFERS, a citizen of the United States, and a resident of Uxbridge, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Bunch-BUILDER Mechanisms, of which the following is a specification.

This invention relates to spinning and winding machines and particularly to machines which are provided with bunch builder mechanisms of the type shown in United States Patent to McVey No. 1,491,808, dated Apr. 29, 1924. The bunch builder mechanism shown in this patent comprises one or more lug cams mounted on the rotating builder cam, a locking latch swingable on a stationary part of the machine, a knock-off roll cooperating with the lug cams, an abutment member adjustably mounted on the lower end of the latch and abutting the top of the builder lever thus holding the traverse of the ring rail stationary for a short period of time during which the "bunch" is wound. The rotation of the builder cam brings one of the lug cams into contact with the knock-roll thus releasing the latch from its abutting relation with the builder lever and the main wind of the yarn follows. It has been found in practice that this construction is objectionable in that it cannot always be depended upon to form a "bunch" sufficiently large to perform the proper functions in the shuttles of weft replenishing looms. This is due to the fact that when the machine stops for doffing the rotation of the builder cam does not cease so as to leave the lug cams in any predetermined position, consequently when the machine starts on a new doff with the bunch building mechanism in operative position the lug cam may be so close to the knock-off roll that the time taken from the starting of the machine to the knock-off action will be insufficient to form the yarn delivered into a proper sized bunch.

The object of the present invention is to obviate the objectionable feature above noted and to generally improve the form and arrangement of the knock-off means, and to such end the present invention consists of the devices and combination of devices as hereinafter described and claimed.

The present invention is illustrated in the accompanying drawings, wherein Figure 1

shows a perspective view of a sufficient portion of a spinning machine embodying the invention to make clear its construction and manner of operation.

Figure 2 is a rear elevation of the knock-off roll in its initial position on the locking latch when the latter is in abutting relation with the builder lever.

Figure 3 shows the knock-off roll in its final position ready to release the locking latch from its abutting relation with the builder lever through pressure exerted by the motion of the lug cam, the path of rotation of the latter being shown in dotted lines.

Figure 4 is an enlarged side elevation of the knock-off roll and a portion of the roll slide and locking latch.

Similar numerals of reference designate corresponding parts in the several figures.

The invention is herein illustrated as applied to a ring spinning machine, wherein the driving end 1 contains the usual gearing (not shown) that transmits rotary motion to the builder cam 2 of usual construction to which are fixed one or more lug cams 3 which act in conjunction with a knock-off roll 4 rotatable on stud 5 fixed to slide 6 adjustably mounted on locking latch 7 and firmly held in position thereon by the clamping bolts 8.

The locking latch 7 is swingable on stud 9 fixed in bracket 10 bolted to the end frame 1. At the lower end of the locking latch 7 a finger 11 is adjustably mounted which serves as an abutment to arrest the motion of the builder lever 12 while the bunch building mechanism is in operative position.

The knock-off roll 4 is formed with three lobes 13, 14 and 15 arranged approximately 120 degrees apart. Normally when the locking latch 7 is in an operative position the position of the knock-off roll is as shown in Figure 2 with lobe 13 projecting into the path of rotation of lug cam 3. The rotation of the builder cam 2 brings one of the lug cams 3 into contact with the lobe 13 thus causing the roll 4 to swing to the position shown in Figure 3 with lobe 14 projecting into the path of rotation of the second lug cam which exerts a pressure thereon causing the lobe 15 to abut against the spring plunger 16 supported in the bearing 17 integral with the slide 6. Further pressure on the lobe 14 carries the lobe 13 against the stop pin 18 fixedly connected to the slide 6 with

the result that the locking latch 7 is forced from its abutting position on the top of the builder lever 12, and the builder then resumes its usual movements in operating the 5 traversing of the ring rail for forming the main wind of the yarn on the bobbins. When the lobe 14 is free from contact with the lug cam the roll 4 is turned on its stud 5 to its initial operative position ready for 10 the next doff by the pressure exerted on the lobe 15 by the spring plunger 16.

It is understood that my invention is adapted for use with but one lug cam in conjunction with the builder cam, in which case 15 there would be a full revolution of the builder cam between the first and second movements of the knock-off roll.

Changes in form, proportion, size, and minor details of construction within the 20 scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of my invention.

I claim:

25 1. Bunch builder mechanism for spinning machines comprising a builder lever, a rotary cam actuating said lever, one or more lug cams mounted upon and rotating in unison with the rotary cam, a locking 30 latch to arrest the motion of the builder lever during the winding of the bunch, and "step by step" means cooperating with the latch whereby the latter is released from a locking relation with the builder lever after 35 the bunch is wound.

2. Bunch builder mechanism for spinning

machines comprising a builder lever, a rotary cam actuating said lever, a plurality of lug cams mounted upon and rotating in unison with the rotary cam, a locking latch to 40 arrest the motion of the builder lever during the winding of the bunch, a knock-off roll rotatable on a stud fixed to the latch, three lobes on said roll two of which are adapted to intersect the path of rotation of the lug 45 cams, an abutment member in a fixed relation with the locking latch and adapted to act in conjunction with the knock-off roll to release the latch from its locking position with the builder lever and means to return 50 the knock-off roll to its initial operative position.

3. Bunch builder mechanism for spinning machines comprising a builder lever, a rotary cam actuating said lever, a plural- 55 ity of lug cams mounted upon and rotating in unison with the rotary cam, a locking latch to arrest the motion of the builder lever during the winding of the bunch, an adjustably mounted slide on the latch, a 60 knock-off roll rotatable on a stud in a fixed relation to the slide, three lobes on said roll, two of which are adapted to intersect the path of rotation of the lug cams and the other as an abutment cooperating with a pin 65 in fixed relation with the latch and a spring actuated plunger abutting against a lobe of the knock-off roll effecting the return of the roll to its initial operative position.

In testimony whereof, I have signed this 70 specification.

JESSE JEFFERS.