

March 7, 1950

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 DRIVE FOR THE AXIAL MOTION OF THE CAM SHAFT
 ON ORDINARY STRAIGHT-BAR KNITTING MACHINES
 Filed Dec. 13, 1947

2,499,679

FIG. 2.

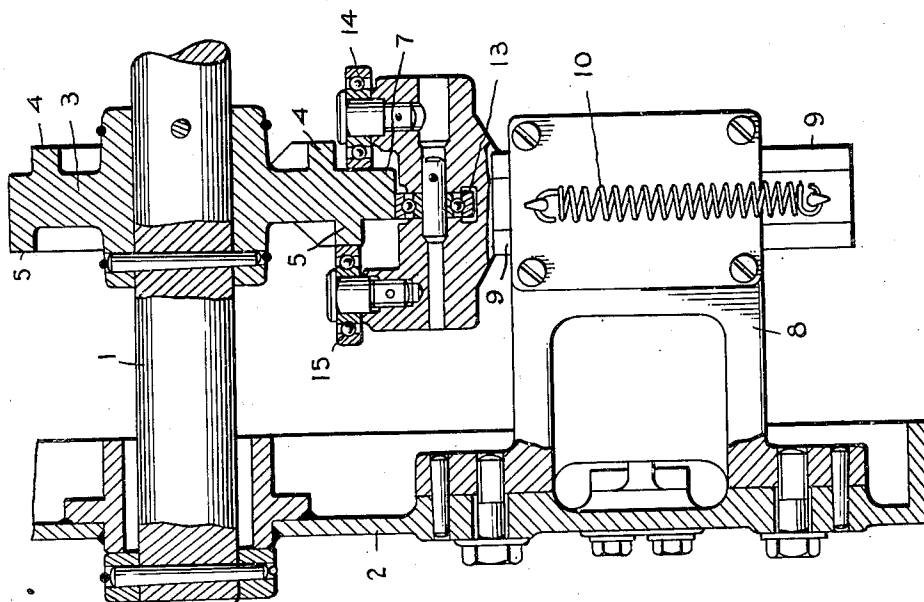
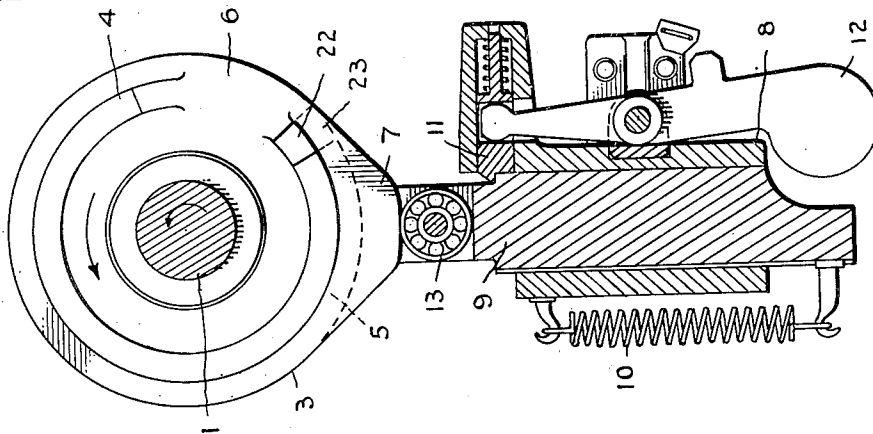


FIG. 1.



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2,499,679

DRIVE FOR THE AXIAL MOTION OF THE
CAMSHAFT ON ORDINARY STRAIGHT-
BAR KNITTING MACHINESUbaldo Pianta, Milan, Italy, assignor to firm So-
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Meccaniche, Milan, ItalyApplication December 13, 1947, Serial No. 791,527
In Italy December 13, 1946

3 Claims. (Cl. 66—82)

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The cam shaft on ordinary straight-bar knitting machines of the "Cotton" type is usually driving by a roller located so as to have its axis of rotation perpendicular to the cam shafts, and which can be radially displaced with respect to said cam shaft, so as to co-operate with two cams keyed on said shaft; or also two parallel rollers similarly located are employed, cooperating by axial displacement with a cam, showing the driving surfaces, and fitted between same rollers.

The first named system has the advantage of a simpler design; however, it also has the disadvantage that the roller is working in both directions, in consequence of which plays are easily produced, which interfere with the correct operation of the mechanism; said drawback is not encountered on the second named mechanism, but this is attained at the expenses of a far more complicated design.

The device according to this invention has the advantages of both above described systems, i. e., a higher resistance to wear together with the simplest conceivable design, preventing at the same time all above-stated drawbacks. Other advantages of the invention will be apparent from the following description.

The peculiar feature of the device according to this invention consists in that a pair of rollers are supported by a member which is radially movable with respect to the cam shaft, on which shaft is keyed a disc, provided on its side-surfaces with axial projections, which engage respectively the one or the other roller, according to the position of said radially movable member, in such a manner as to oblige said cam shaft to axially displace according to the position of said member.

In the accompanying drawing is shown one of the possible manners of carrying the invention into effect, in order to more clearly explain what has been stated above.

Fig. 1 is a cross section, normal to the centre line of the cam shaft.

Fig. 2 is a section along said axis.

In the drawing, the cam shaft 1 is supported by the frame member 2, in axially displaceable manner. On said shaft 1 is firmly secured the cam disc 3, which shows on its two sides respectively, two cam surfaces 4 and 5, which are cut down in correspondence at the sector 6, and show a circular profile, with the exception of a radial projection 7.

On the frame member 2 is firmly secured the guide 8, along which travels, in a radial direction with respect to the shaft 1, the slide 9, which is urged upwards by the spring 10 and is kept locked

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downwards by the stop 11, when this latter is in the position shown by Fig. 1. The stop 11 is operated by the lever 12, which is controlled in the already known manner. Upon the slide 9 are fitted the three rollers 13, 14 and 15.

The operation of the device can easily be understood from the drawing and the above description.

When the various members are in the position shown by the figures, the slide 9 is kept down, the roller 15 is engaged with the arcuate cam profile 5 and consequently the shaft 1 is displaced to the right, when looking at Fig. 2.

Now, if the lever 12 is actuated so as to unlock the stop 11 of the slide 9, this latter is driven upwards by the spring 10, so that, while the shaft 1 is revolving, the roller 13 follows the profile of the projection 7, coming nearer to the axis of the shaft 1, and allowing the slide 9 to be driven upwards. This takes place in correspondence with the position of the sector 6, on account of which the roller 14 also can be lifted, being no more kept locked down by the cam profile 4.

Then, during the further revolving motion of the cam disc 3, the cam profile 4 comes in front of the roller 14, and by reacting on same roller causes the whole shaft 1 to displace to the left.

Now, if the lever 12 is brought back to the position shown on Fig. 1, when the projection 7 causes the roller 13 and the slide 9 to be brought down again, and slide 9 is locked in its down position by stop 11, which again becomes operative, so that when the cam profile 5 acts again on the roller 15, this latter causes the shaft 1 to displace to the right.

As it will be noticed, on the position of the lever 12 depends the position which is at once taken and kept by the shaft 1.

I claim:

1. Means to effect axial movement of the cam shaft of a straight bar knitting machine, said means including a cam disc fixed on the cam shaft, camming ribs extending from opposite sides of said disc and extending concentric to the cam shaft, a member mounted for movement toward and from said cam shaft radially thereof, said member being aligned opposite said cam disc, and a pair of rollers mounted on said members, on opposite sides of said cam disc, and selectively engagable with said camming ribs.

2. Means to effect axial movement of the cam shaft of a straight bar knitting machine, said means including a cam disc fixed on the cam shaft, camming ribs extending from opposite sides of said disc and extending concentric to the cam

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shaft, a member mounted for movement toward and from said cam shaft radially thereof, said member being alined opposite said cam disc, a pair of rollers mounted on said member on opposite sides of said cam disc, and selectively engagable with said camming ribs, a spring urging said member towards the cam shaft, and a third roller mounted on said member opposite the edge of said disc, said disc having a projection intermittently engaging the third roller and moving said member against the action of said spring. 10

3. Means to effect axial movement of the cam shaft of a straight bar knitting machine, said means including a cam disc fixed on the cam shaft, camming ribs extending from opposite sides of said disc and extending concentric to the cam shaft, a member mounted for movement toward and from said cam shaft radially thereof, said member being alined opposite said cam disc, a pair of rollers mounted on said member, on opposite sides of said cam disc, and selectively engageable with said camming ribs, a spring urging said member towards the cam shaft, a third roller

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mounted on said member opposite the edge of said disc, said disc having a projection intermittently engaging the third roller and moving said member against the action of said spring, and a releasable stop in the path of said member and restraining said member against movement by said spring.

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