

April 7, 1931.

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1,799,429

CAM SHAFT CONTROL FOR STRAIGHT BAR KNITTING MACHINES

Filed May 29, 1929

3 Sheets-Sheet 1

Fig. 1.

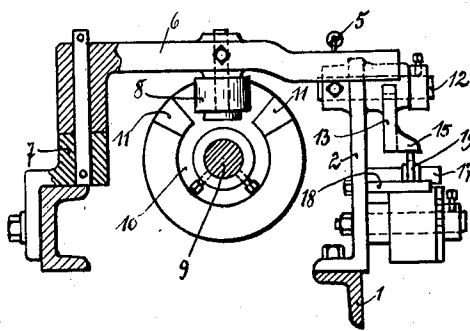


Fig. 2.

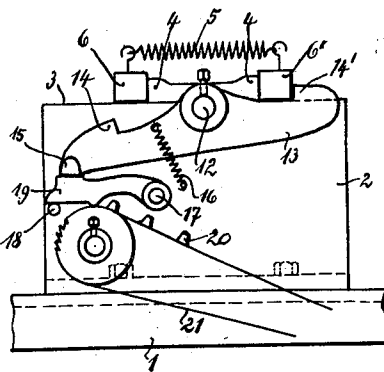
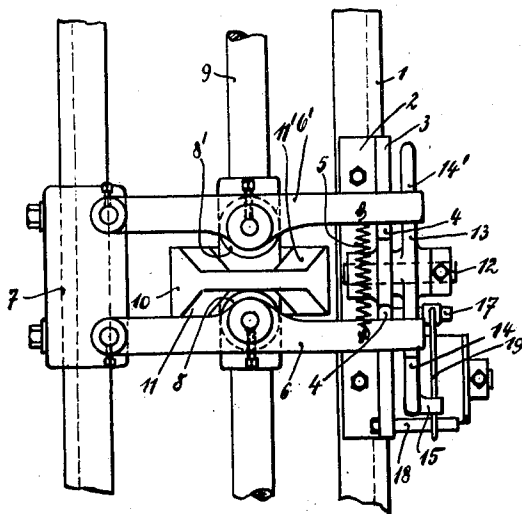


Fig. 3.



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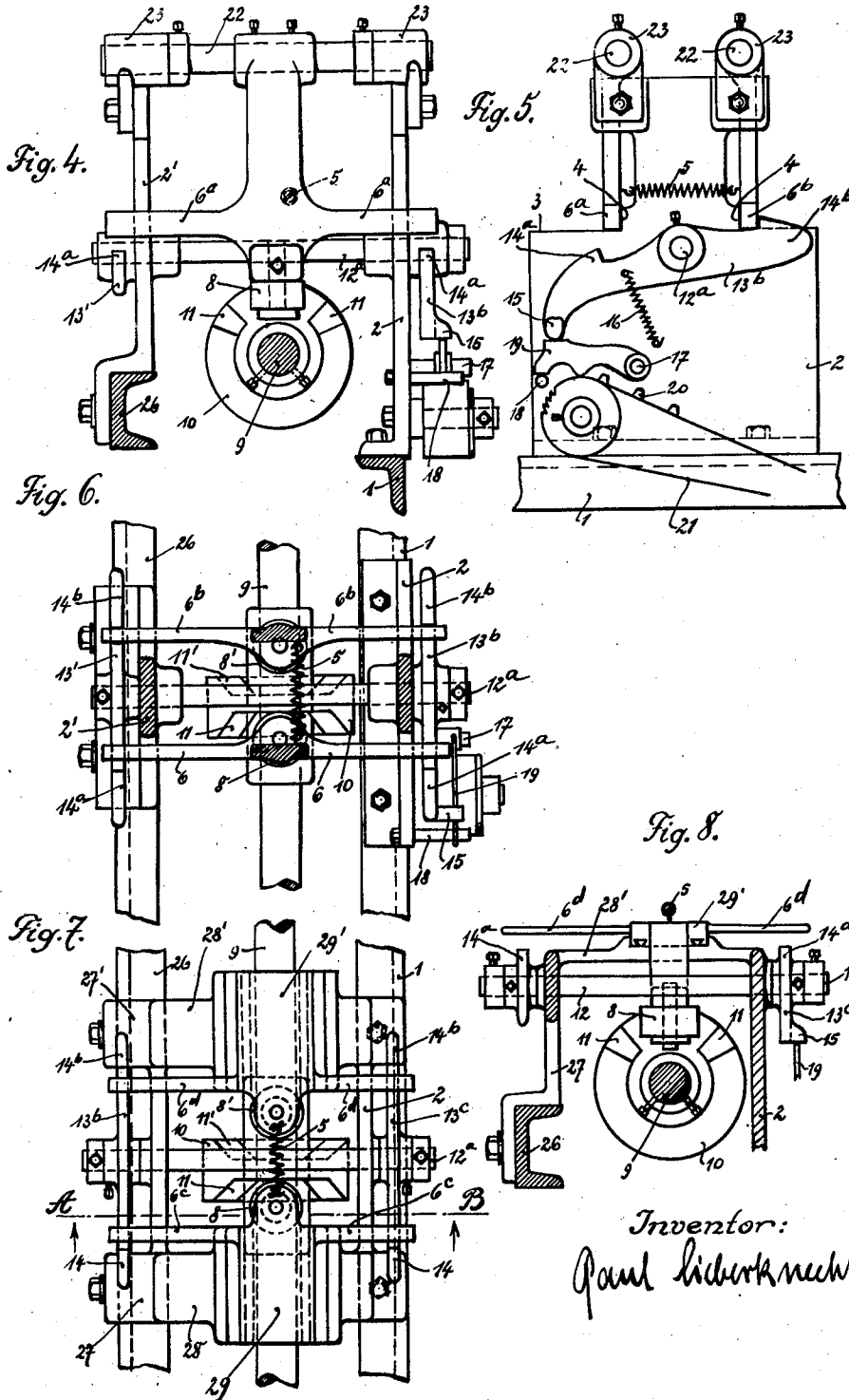
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Fig. 9.

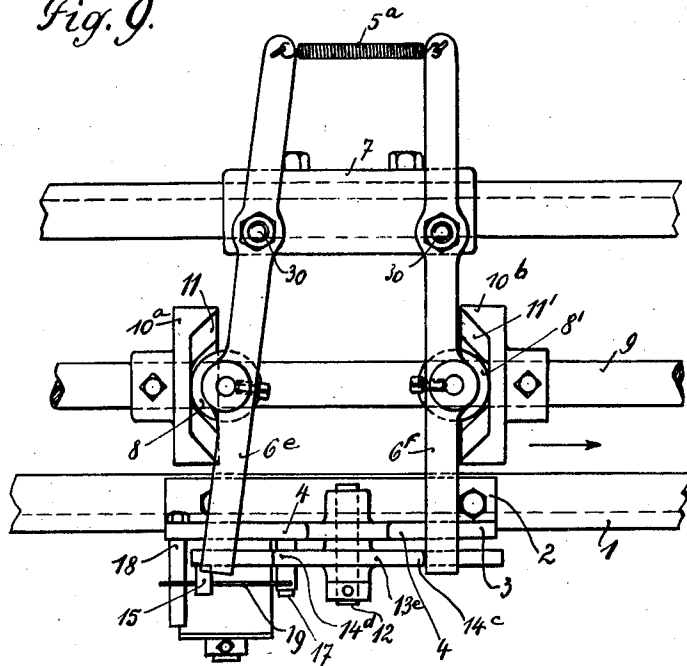
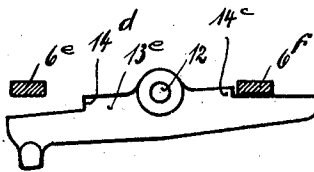


Fig. 10.



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UNITED STATES PATENT OFFICE

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CAM-SHAFT CONTROL FOR STRAIGHT-BAR KNITTING MACHINES

Application filed May 29, 1929, Serial No. 367,089, and in Germany January 30, 1929.

This invention relates to a device for shogging the cam shaft in straight-bar knitting machines for fashioning and narrowing purposes, and the invention consists in the provision of a pair of rollers adapted to co-operate with shogging cams on the shaft and mounted on movable, spring-controlled carriers which normally yield to the cams, and which are alternately arrested so as to cause the cams to displace the shaft.

This arrangement has the advantage that the correct timing of the shaft displacement will be facilitated and that the shogging elements will be saved from excessive stress.

The construction and arrangement of the carriers may take various forms several of which, suitable for a machine of the Cotton type, are illustrated in the accompanying drawings,

Fig. 1 representing a sectional side view of one arrangement,

Fig. 2, a front view of the same,

Fig. 3, a top view,

Fig. 4, a side view of a modified arrangement,

Fig. 5, a front view of the latter,

Fig. 6, a sectional top view of the same,

Fig. 7, a top view of a further modification,

Fig. 8, a section on the line A—B of Fig. 7,

Fig. 9 is a view of a still further modification, and

Fig. 10 is a sectional view of the latter modification.

As shown in said drawings the cam shaft 9 is fitted with a shogging cam 10 having two cam faces 11 and 11' adapted to co-operate with rollers 8 and 8' for displacing the shaft axially in opposite directions. The rollers are mounted on carriers 6 and 6' which in the arrangement according to Figs. 1-3 have the form of lever arms adapted to oscillate about vertical pivots connected to a bracket 7 mounted on a frame member 26. The free ends of the arms are supported on the edge of a plate 2 connected to a frame member 1 and are controlled by a spring 5 which tends to hold the arm against abutments 4 on the plate. The arrangement is such that one roller is maintained in contact with its cam face while the other roller is

just clear of and remains unaffected by the opposite cam face, as is evident from Fig. 3. Normally that arm whose roller contacts with its cam face, is oscillated by the cam without affecting the shaft. In order to displace the shaft, the oscillating lever arm must be arrested while contacting with its abutment so as to fix the roller support relative to the machine. The cam then moves over together with the shaft towards the opposite roller whose arm will now be released and oscillated until arrested for restoring the shaft to the initial position.

For the alternate fixing of the roller supports, a double-armed lever 13 is provided which is arranged to rock about a shaft 12 mounted in the plate 2. The arms 6 and 6' reach across the lever 13 which is formed with shoulders 14 and 14' adapted, on the lever being rocked, to engage the two arms alternately and prevent them from leaving their abutments. A spring 16 tends to hold the shoulder 14' in engagement with the arm 6'. A nose-piece 15 on the rocking lever bears against the end of a lever 19 which is pivoted at 17 and which is supported by a pin 18. The lever 19 can be operated for reversing the position of the arresting lever 13 when the shaft 9 is to be shogged. This is effected by means of a known type of endless travelling chain 21 fitted with lugs 20 adapted to engage and rock the lever 19.

In the arrangement according to Figs. 4-6, the carrier arms 6a, 6b are connected as cross members to levers which depend from horizontal shafts 22 arranged so as to enable the rollers to move in the longitudinal direction of the shaft 9. The arms as well as the shaft 12a are extended across the shaft 9, and two rocking levers 13a, 13b having shoulders 14a, 14b are provided, one at each side of the shaft 9 for engagement with the arms 6a, 6b.

Figs. 7 and 8 shew an arrangement wherein the rollers are carried by saddle pieces 29, 29' which are arranged to slide above the shaft 9 on dove-tail guides supported by bridge pieces 28, 28' on supports 27, 27'. The arresting arms 6c, 6d are connected to the saddle pieces and extended in opposite direc-

tions for engagement with two rocking levers 13c, 13d as in the previous construction.

The two cam faces 11, 11' may, as a further alternative, be formed on separate cam discs 10a, 10b arranged so as to accommodate the rollers 8, 8' between them, the action being otherwise the same.

Such an arrangement is shown in Figs. 9 and 10 and differs from that of Figs. 1 and 3 in that the arms 6e and 6f are double-armed and have the spring 5a arranged at the opposite side of the pivots 30 so as to tend to move the rollers away from instead of towards each other. The lever 13e is modified to correspond, the shoulders 14c and 14d being arranged so as to limit the inward movement of the arms.

I claim:

1. In a device for shogging the cam shaft in straight-bar knitting machines, the combination with shogging cams fixed to the shaft, of a pair of rollers adapted to co-operate with said cams, movable, spring-controlled carriers for said rollers, abutments for said carriers arranged so as to maintain one roller clear of its cam while the other contacts with its cam and is oscillated thereby in the longitudinal direction of the shaft, and means for arresting either roller carrier so as to prevent oscillation of its roller and cause the shaft to be axially displaced by the cam.

2. A device as claimed in claim 1 wherein the arresting means consist of a rocking lever having shoulders for engagement with the carriers, the lever being arranged so as to release one carrier and arrest the other on being rocked.

3. A device as claimed in claim 1 wherein the arresting means consist of a rocking lever having shoulders for engagement with the carriers, the lever being arranged so as to release one carrier and arrest the other on being rocked, a spring tending to hold the lever in engagement with one of the carriers, a movable abutment for the lever, and means for actuating the latter abutment so as to reverse the position of the lever.

4. A device as claimed in claim 1 wherein the roller carriers consist of pivoted arms.

5. A device as claimed in claim 1 wherein the roller carriers consist of arms depending from horizontal shafts.

6. A device as claimed in claim 1 wherein the cams are combined into a single disc which is arranged between the two rollers.

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