

(No Model.)

H. A. HOUSEMAN.
NEEDLE ACTUATING CAM FOR KNITTING MACHINES.
No. 521,860. Patented June 26, 1894.

Fig. 1.

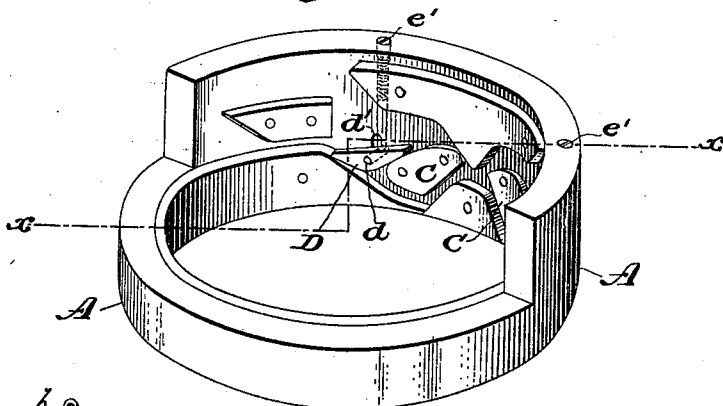


Fig. 2.

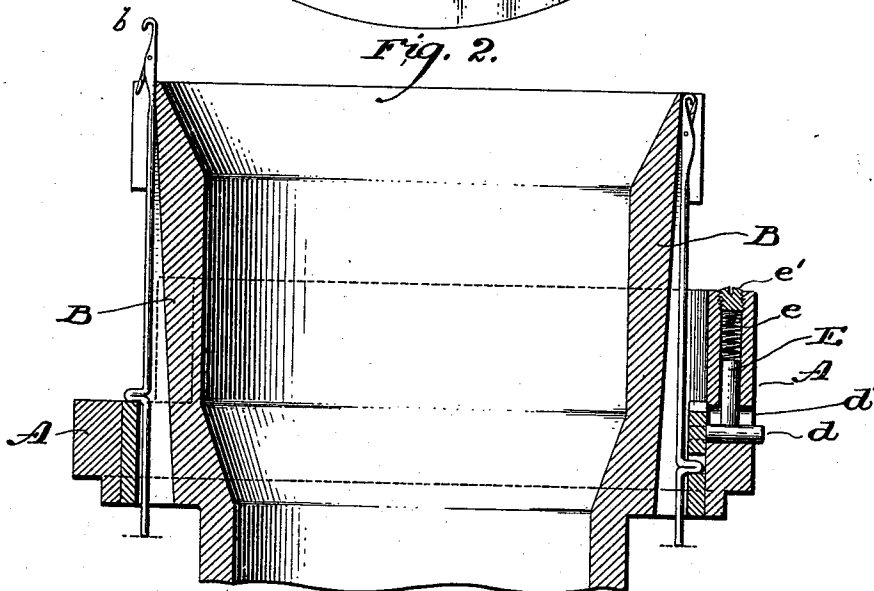
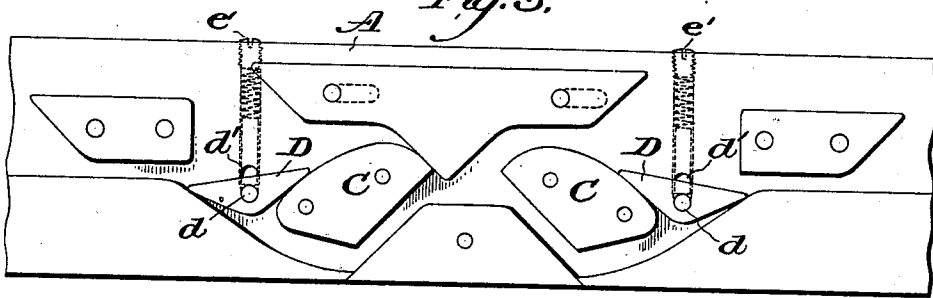


Fig. 3.



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HARRY A. HOUSEMAN, OF PHILADELPHIA, PENNSYLVANIA.

NEEDLE-ACTUATING CAM FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 521,860, dated June 26, 1894.

Application filed September 11, 1893. Serial No. 485,261. (No model.)

To all whom it may concern:

Be it known that I, HARRY A. HOUSEMAN, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Needle-Actuating Cams for Knitting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates particularly to the cam cylinder of a knitting machine, and to the construction whereby when the cylinder is reciprocating the needles are switched out of the action of the knitting cam in one movement of the cylinder, and it consists in the arrangement and connection of the switch cam whereby it operates with certainty and is subjected to less wear and is less liable to become deranged than in the ordinary construction.

I will first describe my improvement and then particularly point out the same.

In the drawings—Figure 1 is a perspective view of the cam cylinder. Fig. 2 is a section on line $x-x$, Fig. 1, but with the addition of a needle cylinder in section. Fig. 3 is a diagrammatical view of knitting cams.

A is the frame of the cam cylinder, B the needle cylinder, b the needles, and C C the knitting cams.

D, D, are the switch cams, one for each knitting cam.

d is a pin secured to each switch cam which passes through slot d' in the cam cylinder, and in which the pin d can have a vertical movement.

E is a pin with the spiral spring e , forced upon it by the screw e' , and which passes vertically into said slot, the end resting on the pin d . This spring actuated pin E holds the pin d of the switch cam D in position, and the cam normally in the position shown in Fig. 3, so that, referring to the right hand cam D, when the cylinder is moving to the right, the needle will be carried along above said switch cam D, out of action of the knitting cam C, while, with reference to the cam D to the left, the cylinder moving as before, the needle will be acted on by the other knitting cam C and, striking the end of cam D, will tilt it upon the point which rests upon

the cam C, allowing the needle to pass by. When the cylinder is moving to the left, the action upon the corresponding switch cams is reversed, and when straight or tubular work is being done, only one of the knitting cams is in action, and the switch cam corresponding to the other knitting cam carries the needle out of action of the knitting cam. By this method of supporting the switch cams, no strain is directly brought upon the bearing of said cams, they having free play and the point of swing being upon the point where said cams rest upon the knitting cams, and the tension of the spring is more easily kept constant, and the adjustment does not readily become deranged.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. The combination with the knitting cam of a knitting machine, of a switch cam, a pin secured to said cam, there being an orifice in the cam cylinder in which said pin rests, and a spring actuated pin bearing against said pin.

2. The combination with the knitting cam of a knitting machine, of a switch cam having one end resting against the knitting cam, a pin secured to said cam, there being an orifice in the cam cylinder in which said pin rests, and a spring actuated pin bearing against said pin.

3. The combination with the knitting cam of a knitting machine, of a switch cam, a pin secured to said cam, there being a slot in the cam cylinder, into which said pin passes, and a vertical spring actuated pin passing down into said slot and resting upon said pin.

4. The combination with the knitting cam of a knitting machine, of a switch cam having one end resting upon said knitting cam, a pin secured to said cam, there being a slot in the cam cylinder into which said pin passes, and a vertical spring actuated pin passing down into said slot and resting upon said pin.

In testimony of which invention I have hereunto set my hand.

HARRY A. HOUSEMAN.

Witnesses:

GEO. W. REED,
FRANK S. BUSSEY.