

(No Model.)

H. A. CHURCH.
COMBINED THREAD GUIDE AND LATCH OPENER FOR KNITTING
MACHINES.

No. 406,626.

Patented July 9, 1889.

Fig. 1.

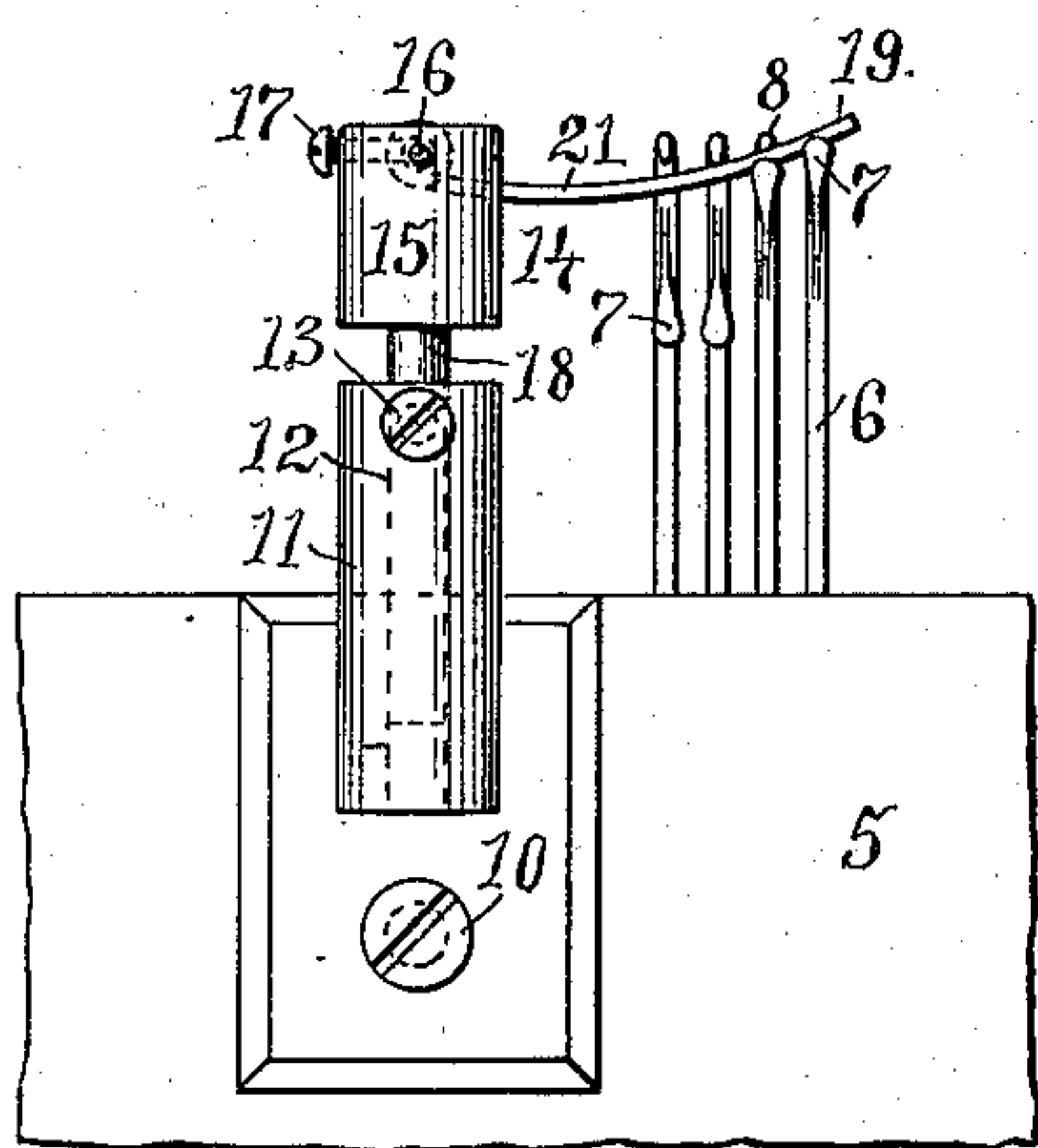


Fig. 2.

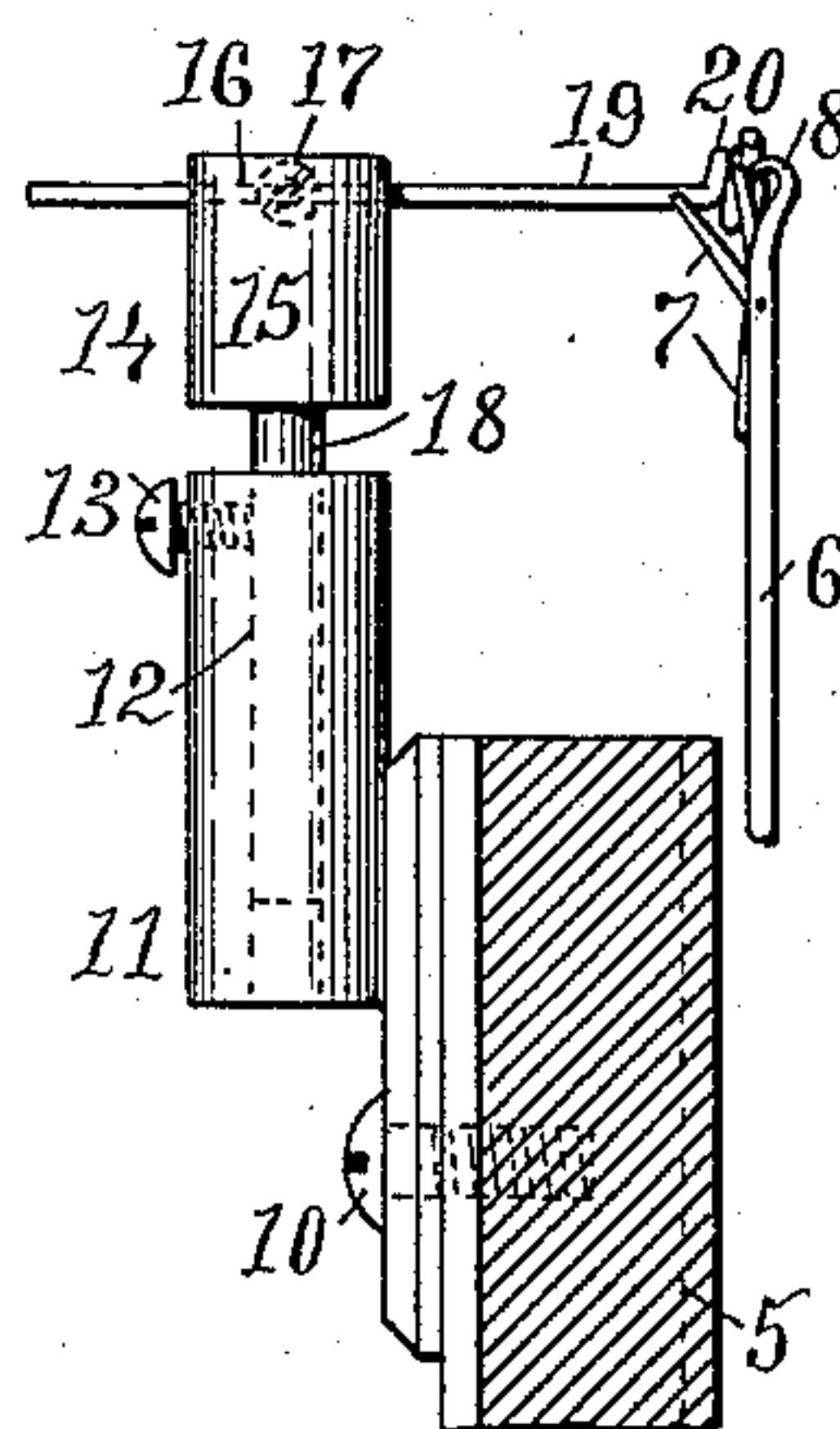


Fig. 3.

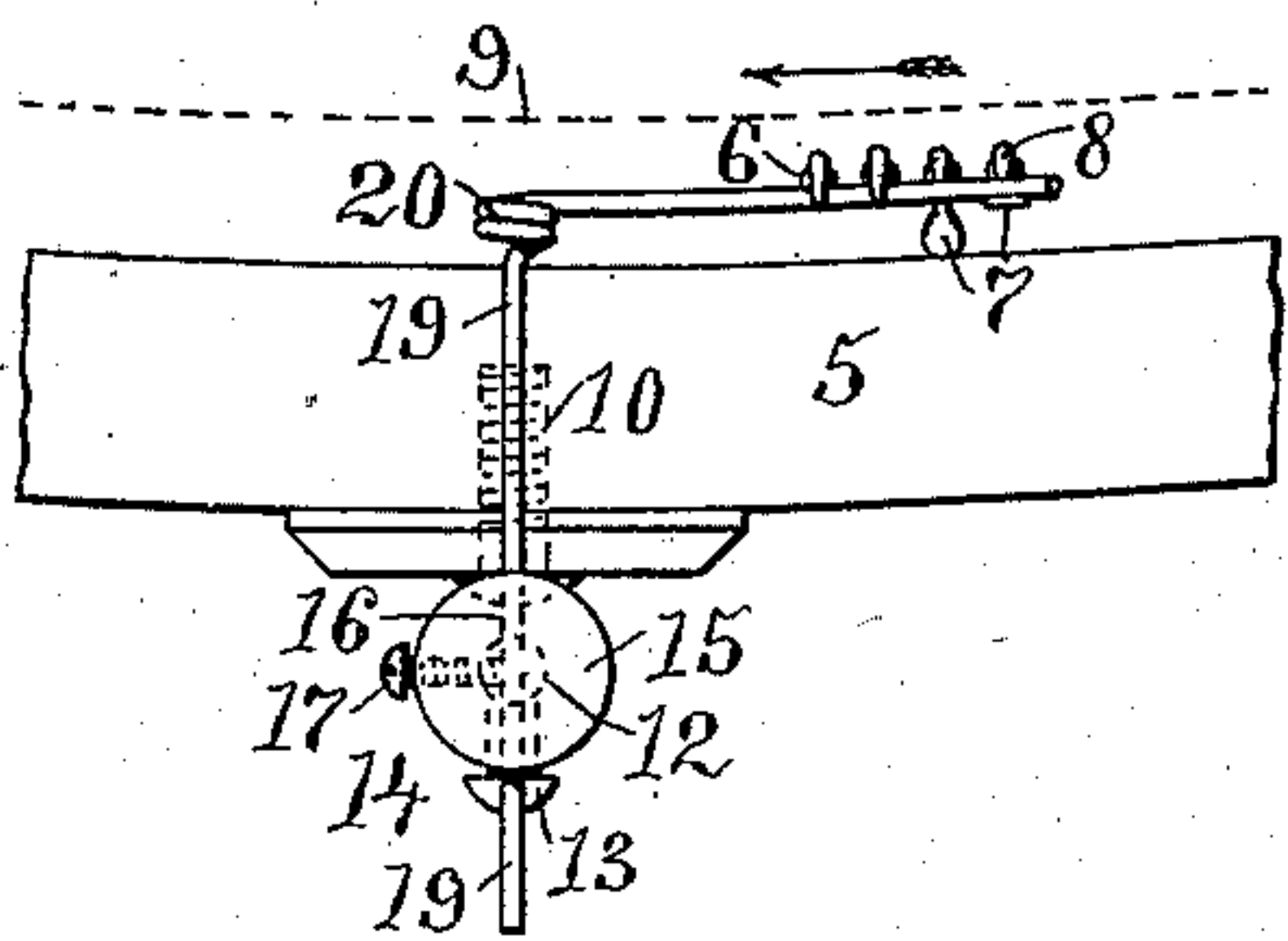
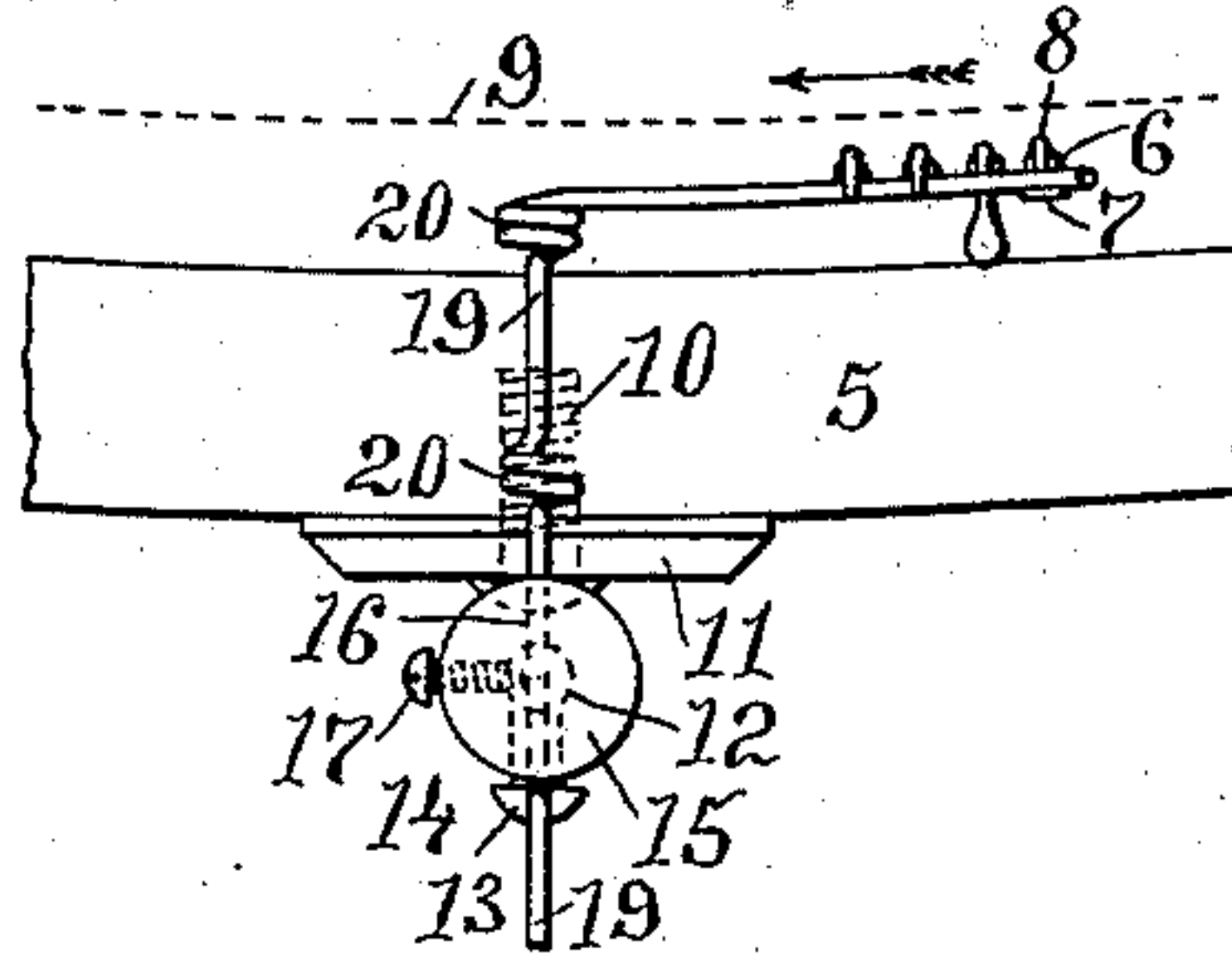


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY A. CHURCH, OF PROVIDENCE, RHODE ISLAND.

COMBINED THREAD-GUIDE AND LATCH-OPENER FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 406,626, dated July 9, 1889.

Application filed November 8, 1887. Serial No. 254,605. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. CHURCH, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Combined Thread-Guides and Latch-Openers for Knitting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a combined thread-guide and device for unlatching or opening the latches of knitting-needles; and the objects of the invention are to provide at a slight cost a simple and efficient thread-guide and latch-opener and a holder therefor of improved and simplified construction; and to these ends the invention consists in the features of construction and combinations of parts, as will be hereinafter more fully described and claimed.

In order that my invention may be fully understood, I will proceed to describe and claim the same with reference to the accompanying drawings, in which—

Figure 1 is an outside view of a portion of the cam-cylinder of an ordinary knitting-machine, upon which is mounted my improved stand and adjustable holder carrying the combined guide and latch-opener, which co-operates with the needles, a few of which are shown. Fig. 2 is a side view of the mechanism shown in Fig. 1, and Fig. 3 is a plan view of the same. Fig. 4 is a plan view of mechanism similar to that shown in the other views, with the exception of the combined guide and latch-opener, which is of another form from that illustrated in the other views.

In the said drawings like numbers of reference designate corresponding parts throughout.

Referring to the drawings, the number 5 designates the cam-cylinder and 6 the needles of an ordinary circular-knitting machine, in which the needles are rotated in a circle in the direction of the arrow and reciprocated vertically, the relative position of the needle-cylinder being indicated in the plan views by the broken lines 9 in Figs. 3 and 4. The needles 6 are formed with the downwardly-

curved or crooked barbs 8, and have the latches 7 hinged upon the body of the needles and closing over the end of the barb like a mousing-piece to form the eye of the needle.

To the outside of the cam-cylinder 5 is secured, by means of screw 10, the stand 11, having a flattened portion to take against the cylinder-face, and a cylindrical portion projecting therefrom and formed with the vertical socket 12, into the side of which is let the set-screw 13.

Upon the stand is set the holder 14, consisting in the head 15, having a horizontal perforation 16 and provided with the binding-screw 17, which lets into the perforation 16, and from the head depends the stem 18, which takes into the socket 12 of the stand and can be held at any part of its vertical adjustment therein by the set-screw 13.

The combined thread-guide and latch-opener consists in a wire 19, bent approximately L-shaped and having a guide-eye 20 formed at the junction of the arms thereof, and with one or more of the guide-eyes 20 formed in one stem or leg of the L form by twirling or bending the wire on itself. The other stem or leg of the form is slightly curved, as at 21, and constitutes the latch-opening finger for engaging the closed latches and opening the same.

The combined apparatus 19 is mounted in the holder, with the stem thereof having the guide-eyes 20 placed in the perforation 16, and is adjusted by means of the set-screw 13 of the stand and the binding-screw 17 of the holder so as to lie in proper position to project over into the path of the needles, as shown in the several views.

The end of the curved leg of the form 19 extends above the needles and comes between the free end of the closed latch and the barb of the needle, so as to force the latch into open position when the same should be accidentally closed.

The yarn or thread which is fed to the needles is passed through the guide-eyes 20, and where two threads are used one may be passed through the eye near the angle of the form and the other through both the eyes shown in Fig. 4, and the latter thread may

be passed about the portion of wire intermediate the two eyes 20 with one or two turns in order to give a tension to the thread.

Having thus described my invention, I claim
5 as new and desire to secure by Letters Patent—

1. A combined thread-guide and latch-opener for knitting-machines, consisting, essentially, of a single piece of wire bent in substantially L shape, and provided at the junction
10 of the two legs constituting the L with a guide-eye formed by bending the wire, one of the legs being adapted to engage and open the latches of the rotating knitting-needles, substantially as set forth.

15 2. A combined thread-guide and latch-opener for knitting-machines, consisting, essentially, of a single piece of wire bent in substantially L shape, and provided at the junction of the two legs constituting the L with

a guide-eye formed by bending the wire, and 20 formed also on one of its legs with one or more guide-eyes 20, substantially as set forth.

3. The combination, with the stand formed with a vertical socket and having a set-screw working into said socket, of a holder having 25 a depending stem working in the socket of the stand, said holder having a horizontal passage or opening, and an L-shaped thread-guide and latch-opener working in said opening and adjustably held by a set-screw, said 30 guide having one or more eyes and adapted to engage and open the latches of the knitting-machine, substantially as set forth.

HENRY A. CHURCH.

Witnesses:

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