L. G. EGGER.

TOY KNITTING MACHINE.

APPLICATION FILED APR. 30, 1920.

1,414,869.

Patented May 2, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

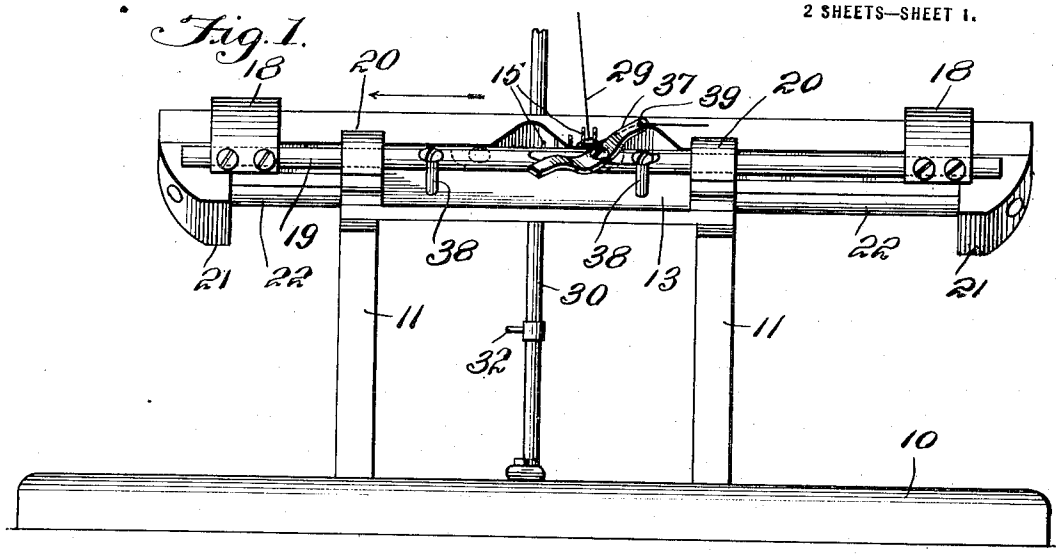


Fig. 2.

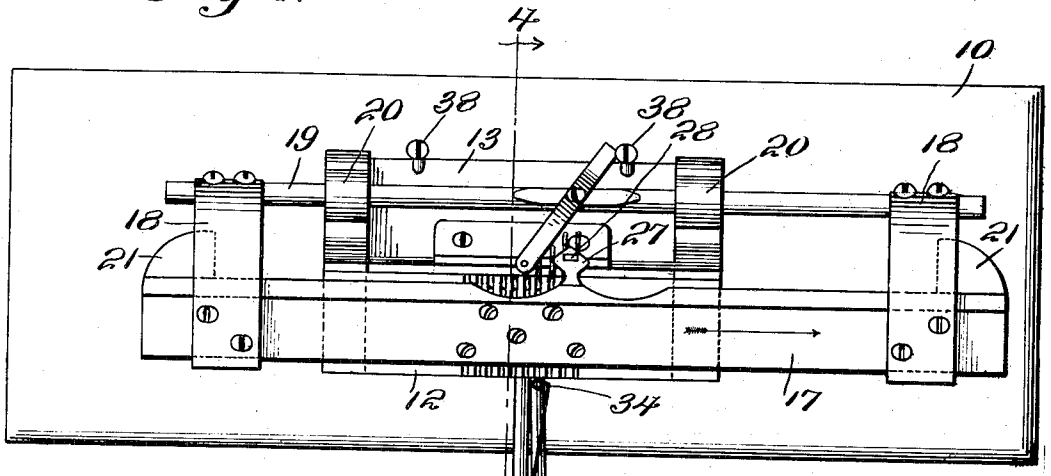
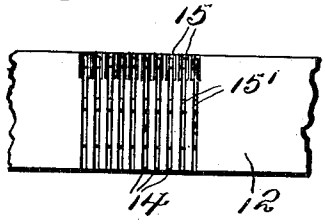


Fig. 5.



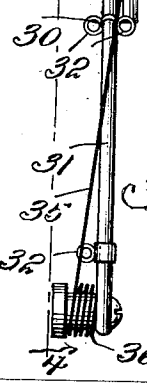
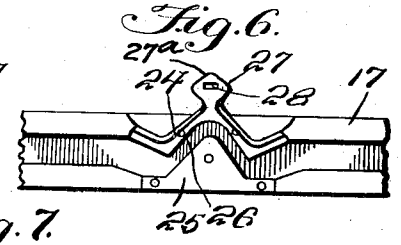


Fig. 7.



Fig. 6.



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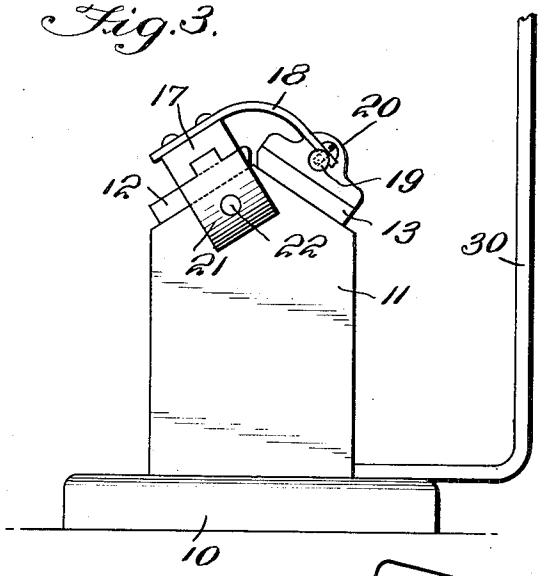
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2 SHEETS—SHEET 2.

Fig. 3.



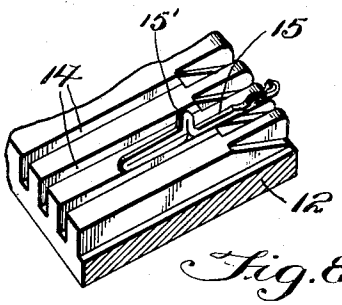
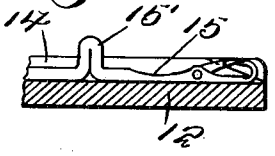


Fig. 8.

Fig. 10.



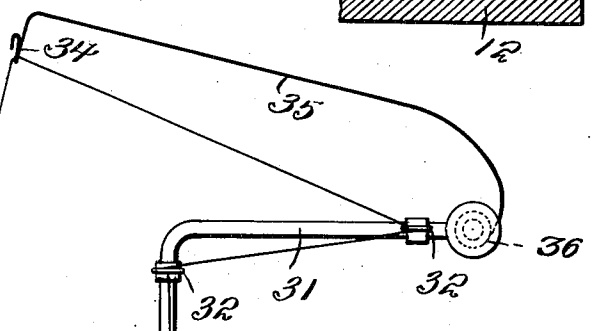


Fig. 4.

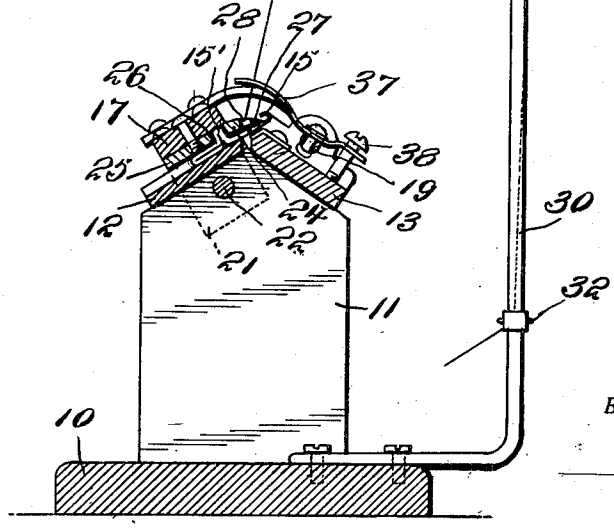
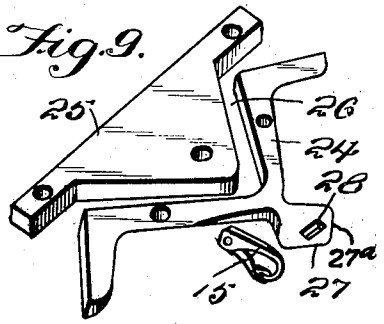


Fig. 9.



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UNITED STATES PATENT OFFICE.

LUIS GEORGE EGGER, OF NEW YORK, N. Y.

TOY KNITTING MACHINE.

1,414,869. Specification of Letters Patent. Patented May 2, 1922.

Application filed April 30, 1920. Serial No. 377,877.

To all whom it may concern:

Be it known that I, LUIS G. EGGER, a citizen of Mexico, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Toy Knitting Machines, of which the following is a specification.

This invention contemplates a toy knitting machine, the object being to provide a machine of this character embodying comparatively few parts, one of which serves as a yarn carrier, a needle latch opener and a needle cam, the construction being extremely simple, and permitting a consequent reduction in size.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawing, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:—

Figure 1 is a rear elevation of the machine constructed in accordance with my invention.

Figure 2 is a top plan view.

Figure 3 is an end elevation.

Figure 4 is a sectional view taken on line 4—4 of Figure 2.

Figure 5 is a fragmentary view of the needle bed showing needles placed thereon.

Figure 6 is a fragmentary bottom plan view of the sliding cam bar.

Figure 7 is a transverse sectional view taken therethrough.

Figure 8 is an enlarged perspective view of a portion of the needle bed.

Figure 9 is an enlarged perspective view of the cam.

Fig. 10 is a sectional view showing the needle in the bed.

The machine forming the subject matter of my invention comprises a base 10 upon which is mounted the spaced parallel standards 11, each of which has its upper edge tapered in a reverse direction to support the members 12 and 13 respectively at the proper inclination. The member 12 constitutes the needle bed, and is provided with a plurality of spaced parallel grooves 14 in each of which is arranged a knitting needle 15 of usual wellknown construction. These needles are of course mounted for sliding movement within their respective grooves, the needles being actuated by a cam of the construction illustrated in Figure 9, and which cam is carried by a sliding cam bar 17. Terminally secured to the bar 17 adjacent the ends thereof, are curved strips 18, the opposite corresponding extremities of which are secured to a rod 19, the latter being slidably supported by the apertured lugs 20 carried by the member 13 of the machine. The curvature of the strips 18 obviously positions the cam bar 17 immediately above the needle bed. The terminals of the bar 17 are offset as at 21, and these terminals receive the ends of a rod 22 which is also passed through alined openings in the standards 11, the bar 22 serving to maintain the bar 17 properly positioned upon the needle bed.

The cam above referred to and illustrated in Figure 9 embodies two substantially V-shaped elements 24 and 25 respectively which are secured to the underside of the bar 17 and disposed relatively to provide what is known as a cam or V-groove indicated at 26. Each of the knitting needles 15 is provided with a projection 15′ at an appropriate point in its length, and these projections are received within the cam groove 26, so that when rectilinear movement is imparted to the bar 17 the needles 15 are operated within their respective grooves. As above pointed out, it is the purpose of this invention to provide a machine of the class in question, embodying a minimum number of parts, and to this end I provide the element 25 of the cam with a projection 27, designed to act as a yarn carrier, a needle latch opener, while at the same time it forms part of the needle cam. The projection 27 is substantially of diamond formation in plan and is provided with an eye 28 through which the yarn 29 is threaded. The projection is tapered to provide sharp edges 27ª so that it may readily and easily be passed beneath the latch 15 square of the needle to open the latch as the bar 17 is moved across the needle bed. Terminally secured to the base 10 at a point approximately midway of its length, is a substantially Z-shaped rod 30 clearly shown in Figure 4. This rod constitutes a yarn holder or support, and has its intermediate portion disposed vertically, while its free end 31 projects horizontally in a direction away from the machine. The yarn is threaded through the guide eyes 32 mounted upon the rod at spaced intervals, and

from this rod the yarn is passed through the hook like terminals 34 of a tensioning element 35, the latter forming part of a coiled spring 36 associated with the free end of the said yarn holder.

A lever 37 is pivoted at a point between its ends upon the rod 19, and one end of this lever projects into the space between a pair of spaced stops 38 carried by the member 13 of the machine. The extremity of the lever 37 is adapted to be brought into alternate engagement with the stop 38 so as to shift the lever upon its pivot with a view of changing the position of the forward end thereof. The forward end of this lever has an opening 39 through which the yarn is threaded, the lever having for this purpose the positioning of the yarn with respect to the needles so that the yarn can be readily and easily placed into the needles by the projection 27 above described. In other words, the forward extremity of the lever 37 is always maintained in a position to follow the projection 27 irrespective of which direction the cam bar 17 is moved.

Briefly stated, the operation of the machine is as follows. The bar 17 is moved back and forth across the needle bed, and the projections 15′ of the needles operating in the cam groove 26, causes the needles to move in and out of their respective grooves in the needle bed. The yarn is threaded through the lever 37 and also through the eye in the projection 27 and as the projection moves with the bar 17 across the needle bed, it passes beneath the latch 15 square of each needle in successive order, opening the latch, and placing the yarn in the needle. The lever 37 as above stated, operates to maintain the yarn in a position where it can be readily and easily placed in the needle by the projection 27.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to the details herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim is:

A knitting machine comprising a base, standards rising therefrom and formed with openings, a needle bed supported on the standards and having transverse parallel grooves, needles sliding in the grooves and each including a pivoted latch, a cam bar slidable across said bed and formed with a cam projection engageable with the needles whereby to open the latches thereof in successive order, a rod terminally connected with said bar and slidable through the openings in said standards, a member connecting the standards and formed with spaced apertured lugs, a second rod connected with said bar and slidable through said lugs, and a thread holder mounted on said base.

In testimony whereof I affix my signature.

LUIS GEORGE EGGER.