(No Model.)

W. H. DRAPER.

CIRCLE GUIDE OR INDICATOR FOR KNITTING MACHINES.

No. 421,167. Patented Feb. 11, 1890.

Fig. 1.

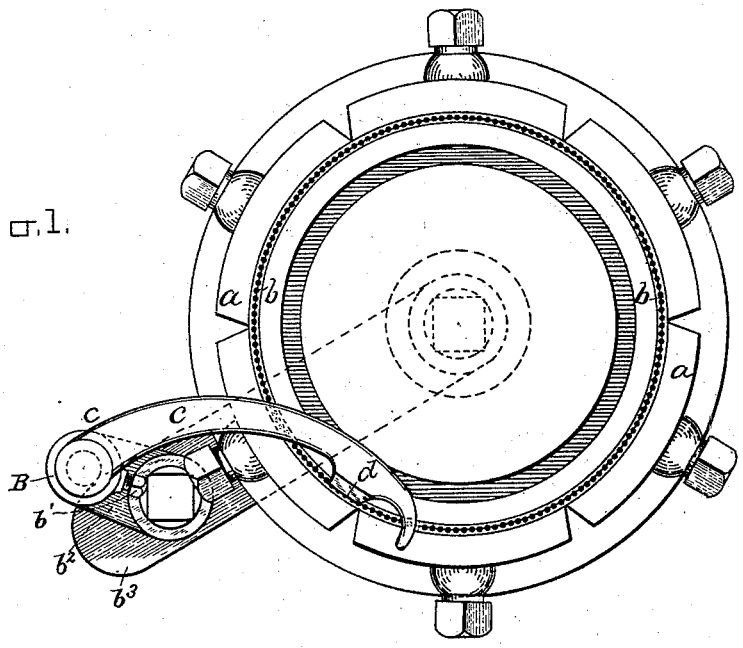


Fig. 2.

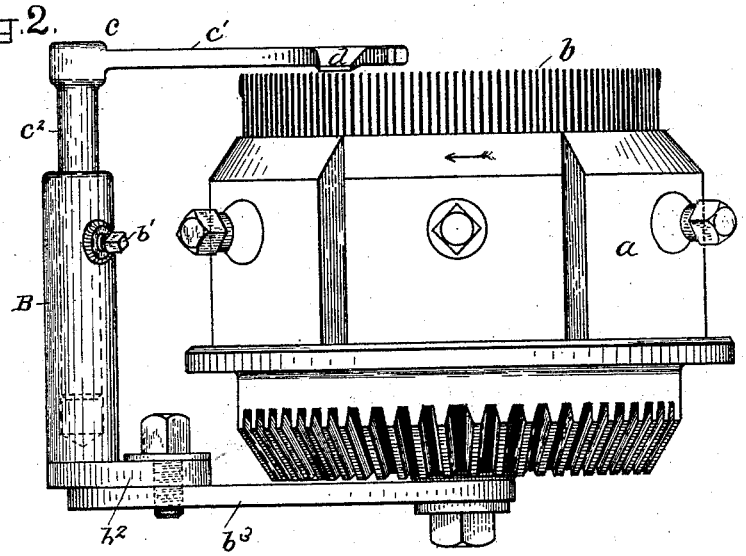
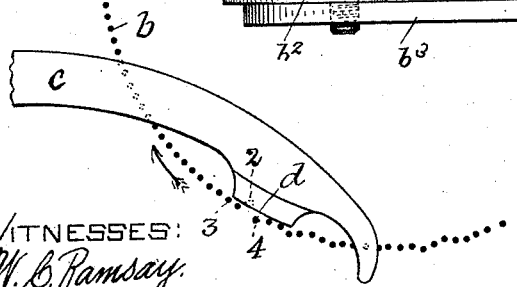


Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM H. DRAPER, OF CANTON, MASSACHUSETTS.

CIRCLE GUIDE OR INDICATOR FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 421,167, dated February 11, 1890.

Application filed November 19, 1888. Serial No. 291,231. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DRAPER, of Canton, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Circle Guides or Indicators for Knitting-Machines, of which the following is a specification.

My invention has relation particularly to circular spring-beard-needle knitting-machines—that is, to machines employing spring-beard needles fixed around the periphery of a rotating cylinder, and with which needles several contrivances—such as a push-back, a stitch-wheel, a sinker-wheel, a presser-wheel, and landing and knocking-over wheels—co-operate in the formation of loops or stitches to make a fabric.

In order to produce perfect work it is necessary that the needles should be arranged with uniformity and exactness in respect to each other and to the co-operating devices. When any of the needles are bent out of the line of a true circle, as often occurs by the action of the wheels aforesaid and through other means and causes, it becomes necessary to "set" or bend the needles back to position, and this is generally accomplished by the use of pliers, the operator grasping the shank of the needle with the tool mentioned and bending said needle into proper position. A difficulty met with, however, has been that, having no mechanical guide, the operator was compelled to rely upon his or her judgment and sense of sight as to whether the needle or needles stood in proper positions and on the line of a true circle.

It is the object of my invention to overcome the difficulty before mentioned and to provide means whereby even an unskilled artisan can set the needles in the circle with the utmost "truth" and exactness, said invention consisting of a guide connected with the machine and extending over the tops of the needles and provided with an indicating point or edge extending to or in close proximity to the circular line to which it is desired that the needles should be set or adjusted, so that by bending them up to the line of said guide or indicator or to uniform position with respect to the position of said guide or indicator they will be adjusted in proper position and on an exact circle.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a plan view of a needle-cylinder and needles, showing the manner of applying and using my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a diagram, on an enlarged scale, showing the manner of using the invention.

The same letters of reference designate the same parts and features in all of the views.

The yarn-guide, push-back, and wheels for producing the stitches have not been shown, for the reason that they have nothing to do with my invention, and their portrayal would tend only to obscure the nature and design of the invention.

In the drawings, *a* designates the needle cylinder or head, and *b* the needles.

c designates a guide adjustably connected with the machine and extending over the tops of the needles, said guide being provided with an indicating point or edge *d* to indicate the point to which the needles should be set or adjusted. The guide *c* consists of two right-angular arms, the upper one *c'* of which is curved and projected over the needles, while the vertical arm c^2 is passed down into a socket or tube B, wherein it is adjustably held by a bolt *b'* working therein. By this means the guide can be adjusted and held at any desired point. It can also be swung out of the way when not in use. The socket B has a lower right-angular portion b^2, which is firmly secured to an arm b^3, connected to the machine.

The utility of my invention is clearly illustrated in Fig. 3, where it may be supposed that such needles *b* as in the revolution of the cylinder in the direction of the arrow have passed beyond the indicating point or edge *d* have been set in the line of a true circle, while some of the needles opposite the indicating point or edge and approaching it are out of proper line, as is clearly shown. The operator may now be supposed to grasp the shank of the needle 2 with pliers or other suitable tools and bend it out into the same position relatively to the indicating point or edge *d* as is occupied by the needles 3, and the needle 4 is bent back into the same relative position, and so on until the entire circle is set or adjusted. Thus it will be ob-

served that with my invention no skill is required to ascertain as to when the needles are set in the line of a true circle, and their adjustment when they are out of alignment may be speedily accomplished.

By making the guide adjustable the same is applicable to different size machines, and when not in use it can be swung to one side and lowered out of the way.

It is manifest that the form and arrangement of my invention may be varied without departing from the nature or spirit of the invention.

Having thus described the nature and purpose of my invention, I declare that what I claim is—

1. The combination, with a needle-cylinder and its needles, of an adjustable guide designed to project over said needles and provided with an indicating point or edge and means for rendering said guide adjustable, substantially as set forth.

2. The combination, with a needle-cylinder and its needles, of a guide consisting of right-angular arms, the upper one of which has a point or edge and is extended over said needles, the socket in which the vertical arm of said guide is located, and the bolt for holding said arm, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of November, A. D. 1888.

WILLIAM H. DRAPER.

Witnesses:
ARTHUR W. CROSSLEY,
A. D. HARRISON.