

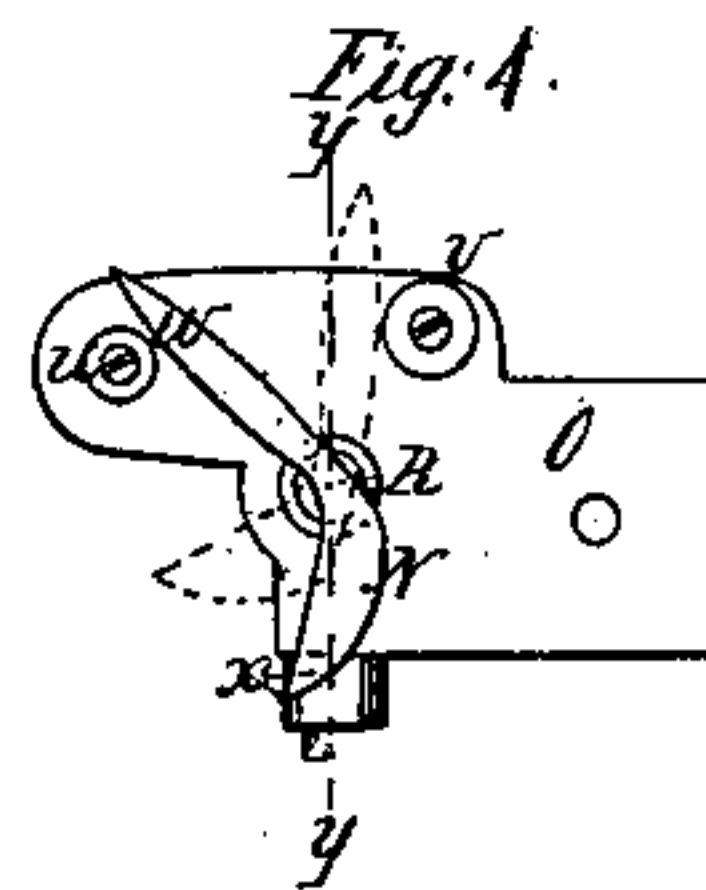
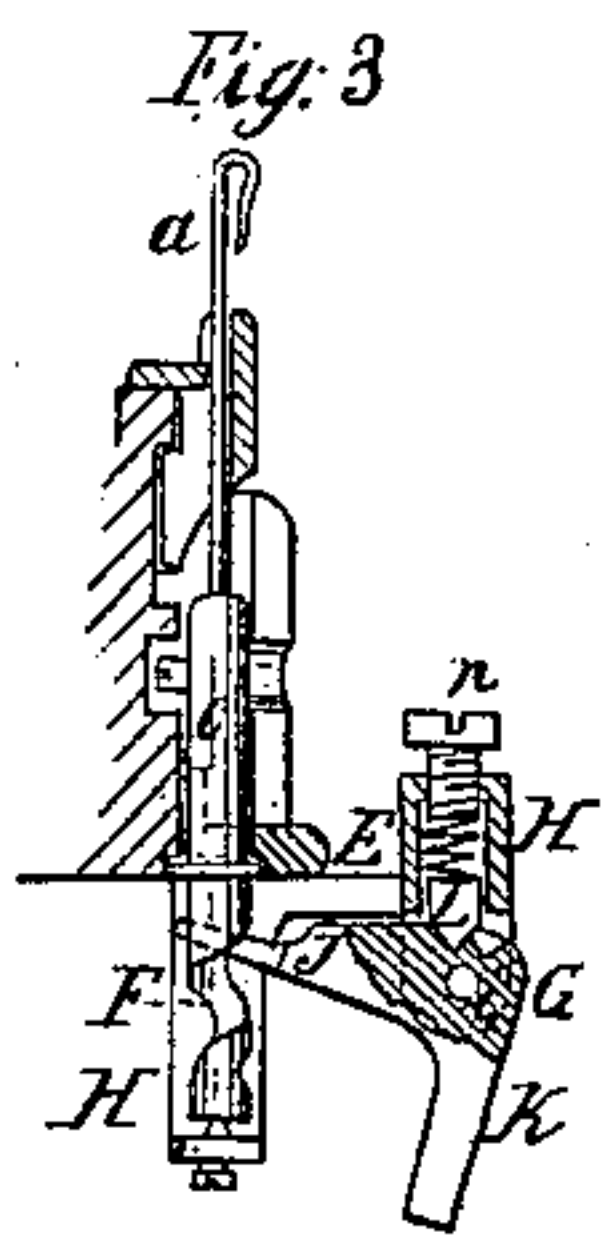
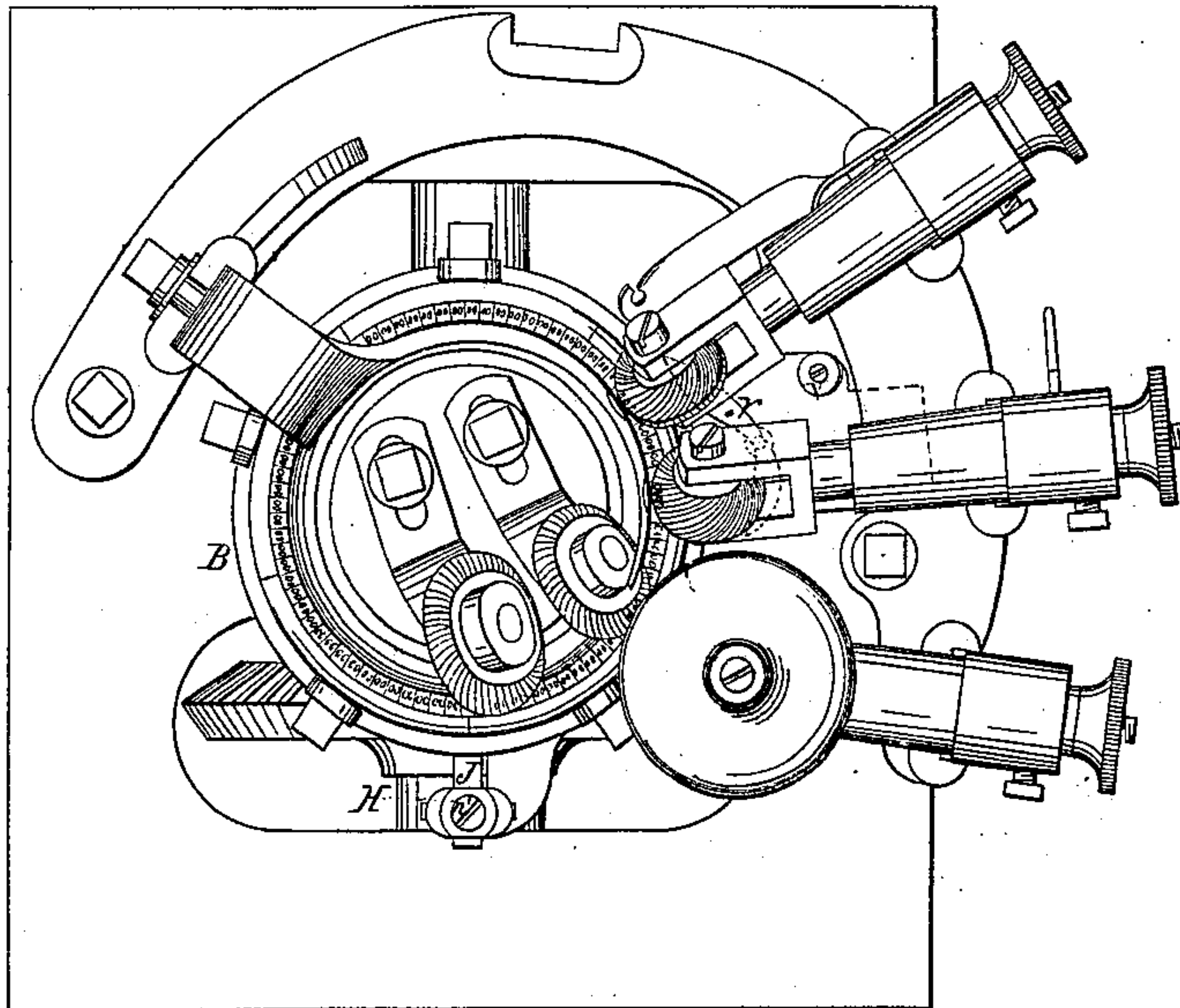
*J. Kent.*

*Circular Knitting Machine.*

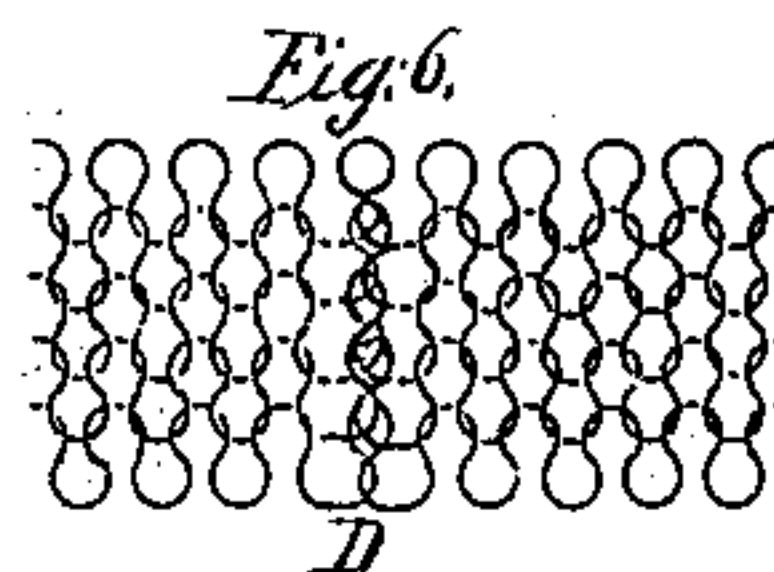
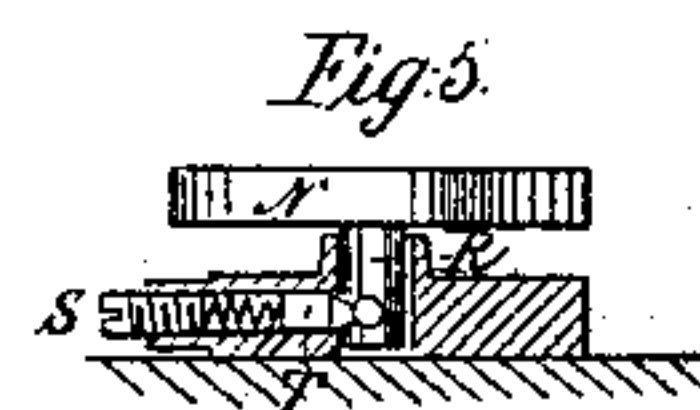
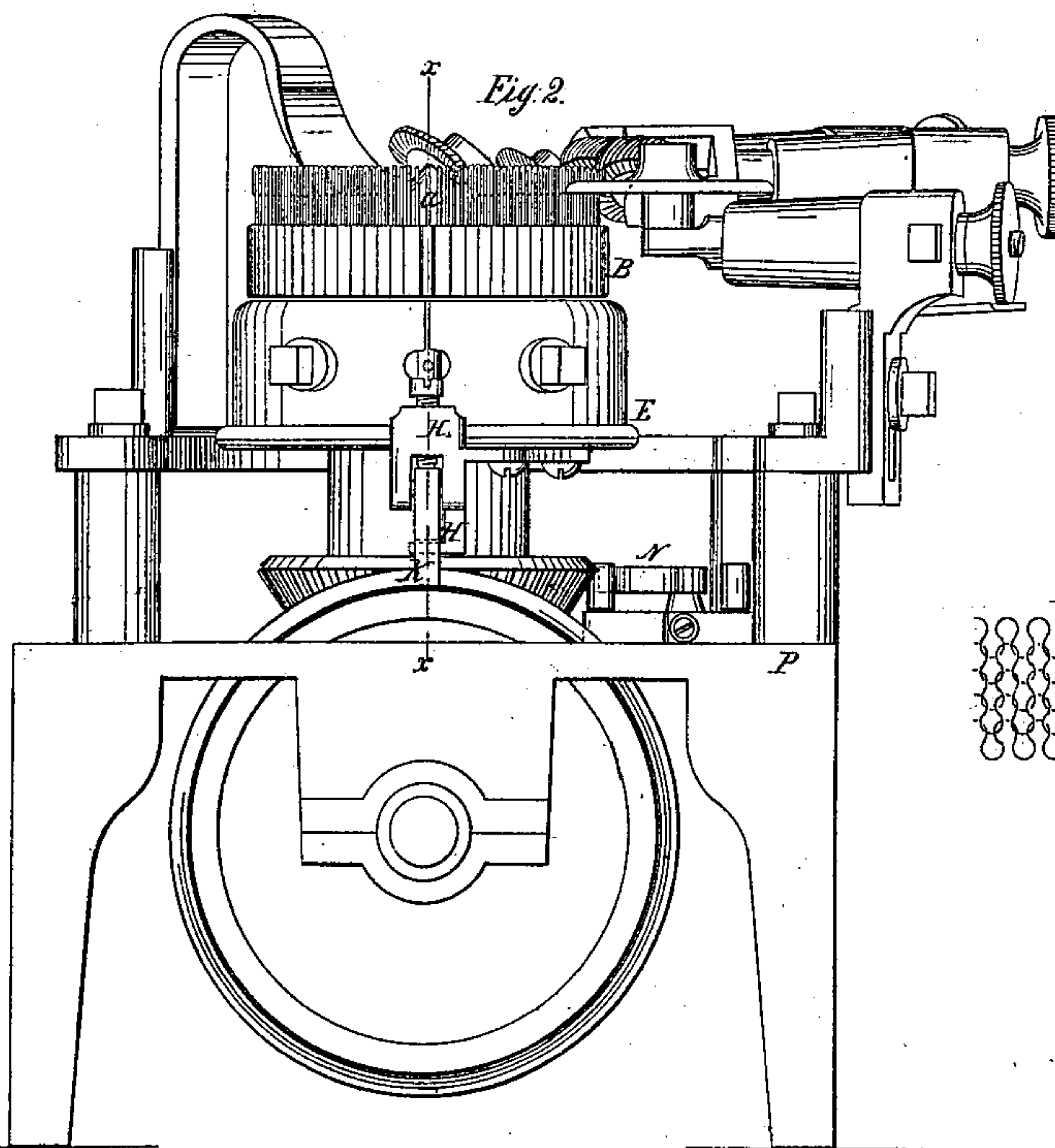
*No. 98,272.*

*Patented Dec. 28, 1869.*

*Fig. 1*



*Fig. 2*



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# UNITED STATES PATENT OFFICE.

JOHN KENT, OF NEW YORK, N. Y.

## IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. 98,272, dated December 28, 1869.

*To all whom it may concern:*

Be it known that I, JOHN KENT, of the city, county, and State of New York, have invented a new and useful Improvement in Knitting-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and useful improvement in machines for knitting cotton, linen, and woollen goods or garments; and it consists in attaching to the ordinary knitting-machine certain mechanism whereby the goods or garments manufactured on such machines are made to present the appearance of being seamed or sewed together, while, in fact, the goods are formed entire and with unbroken thread, as will be hereinafter more fully described.

In the accompanying sheets of drawings, Figure 1, Sheet 1, represents a top or plan view of the knitting-machine to which my improvement is applied; but I desire it to be understood that I do not confine myself to this particular kind of machine, as the improvement is applicable to other kinds of knitting-machines. Fig. 2, Sheet 2, represents a side elevation of the same, with a front view of a portion of the mechanism by means of which I produce the desired result. Fig. 3 is a side view of this portion of the mechanism, shown in detail, it being a vertical section of Fig. 2 through the line *x x*. Fig. 4, Sheet 1, is a detailed plan view of the other portion of the mechanism attached to the top of the stand of the machine. Fig. 5 is a horizontal section of the same through the line *y y*. Fig. 6 represents a magnified view of the knitted goods, showing the knitted seam.

Similar letters of reference indicate corresponding parts.

It is not deemed necessary in this application to minutely describe the construction and operation of this well-known knitting-machine, as the present invention is only an attachment thereto, and interferes with its general operation only in revolving a single one of the vertical needles at each revolution of the machine. It is the revolving movement of this one needle (produced as hereinafter described)

by which I am enabled to accomplish the object which I have in view.

*a*, Fig. 2, represents the needle, which is turned entirely around at each revolution of the machine. This needle, instead of being fixed in the revolving head B like the rest of the needles, is fastened to a socket-piece, C, which is allowed to turn in the head so as to give the needle a full revolution, by which movement the thread or yarn is carried out of its ordinary path and made to form a prominent line, presenting the appearance of a sewed seam, as substantially represented by D in Fig. 6.

On the lower portion of the socket-piece C, and hanging below the base E of the head, is the worm F.

G is a bell-crank, pivoted to the bracket H at the point *i*. One arm, J, of this bell-crank engages with the worm F. As this arm J is thrown up or down within the worm by the oscillation of the crank G the needle is given the revolving motion or makes an entire revolution, as before stated. The foot of the socket-piece C (bearing the worm F) is supported on a point by the bracket H, the bracket itself being attached to the base E of the head B, and, of course, revolving with it.

The arm J works between the upright portion of the bracket and the worm, and is kept in position or in contact with the worm thereby.

K is the other arm of the bell-crank. This arm receives a lateral or oscillating motion by means of the button N, (seen in Fig. 4.) By means of the set-screw *n'* and the spiral spring the point L is made to press upon the bell-crank, so as to hold the arm J steady, while the button N, with which the arm K comes in contact at each revolution, serves to oscillate the bell-crank and revolve the needle. This button N is pivoted to the plate O, which plate is screwed or fastened in any suitable manner to the stand or foundation P of the machine.

R is the pivot upon which the button turns.

S is a set-screw against another spiral spring, which presses upon the point T, which point bears upon the pivot R for the purpose of keeping the button steady. This device is the same as that applied to the bell-crank, there being two cavities in the bell-crank center, as well as in the pivot R, for the points L and T to enter, as seen in the drawings. The points are



pressed by the springs into the cavities with sufficient force to hold the bell-crank and the button in place and keep them in proper position, so that each may perform its duty unaffected by any vibratory or reactionary tendency.

U and V represent elastic rollers or pads, against which the end W of the button is thrown alternately at each revolution.

As the button is represented in Fig. 4, the arm K of the bell-crank will pass over and in contact with the convex or outer edge of the arm W of the button. The other end, *x*, of the button being outside of the circle which K will describe, the button will be thrown by the contact with K into the position seen in dotted lines, while K will, by such contact, be thrown outward, which will cause the arm J to traverse the whole length of the worm downward, which will give the needle an entire revolution, carrying the yarn around in a circle and crossing it, as seen in Fig. 6, so that the goods present the appearance of being sewed or seamed, as before stated. The button being left by the first revolution of the head in the position seen in the dotted lines, the arm K at the next revolution will pass in contact with the concaved or inner edge of the arm W of the button, which will leave it in the position seen

in the drawings, while another revolution of the needle in an opposite direction from the first has been made thereby. The elastic pads U V receive the concussion of the button and prevent noise. This operation is continued during the process of knitting or as long as may be desired.

By disconnecting the bell-crank or arm J from the worm the needle *a* may be made stationary and perform only the duty of the ordinary needle.

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

1. The combination, with a series of plain knitting-needles, of a single revolving needle, arranged and operating as described, for the purpose of producing an imitation seam.

2. The combination of the worm F, the bell-crank G, and the button N with the mechanism connected therewith for giving the needle *a* a revolving motion, when the same are combined with a knitting-machine, substantially as and for the purpose herein shown and described.

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Witnesses:

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