

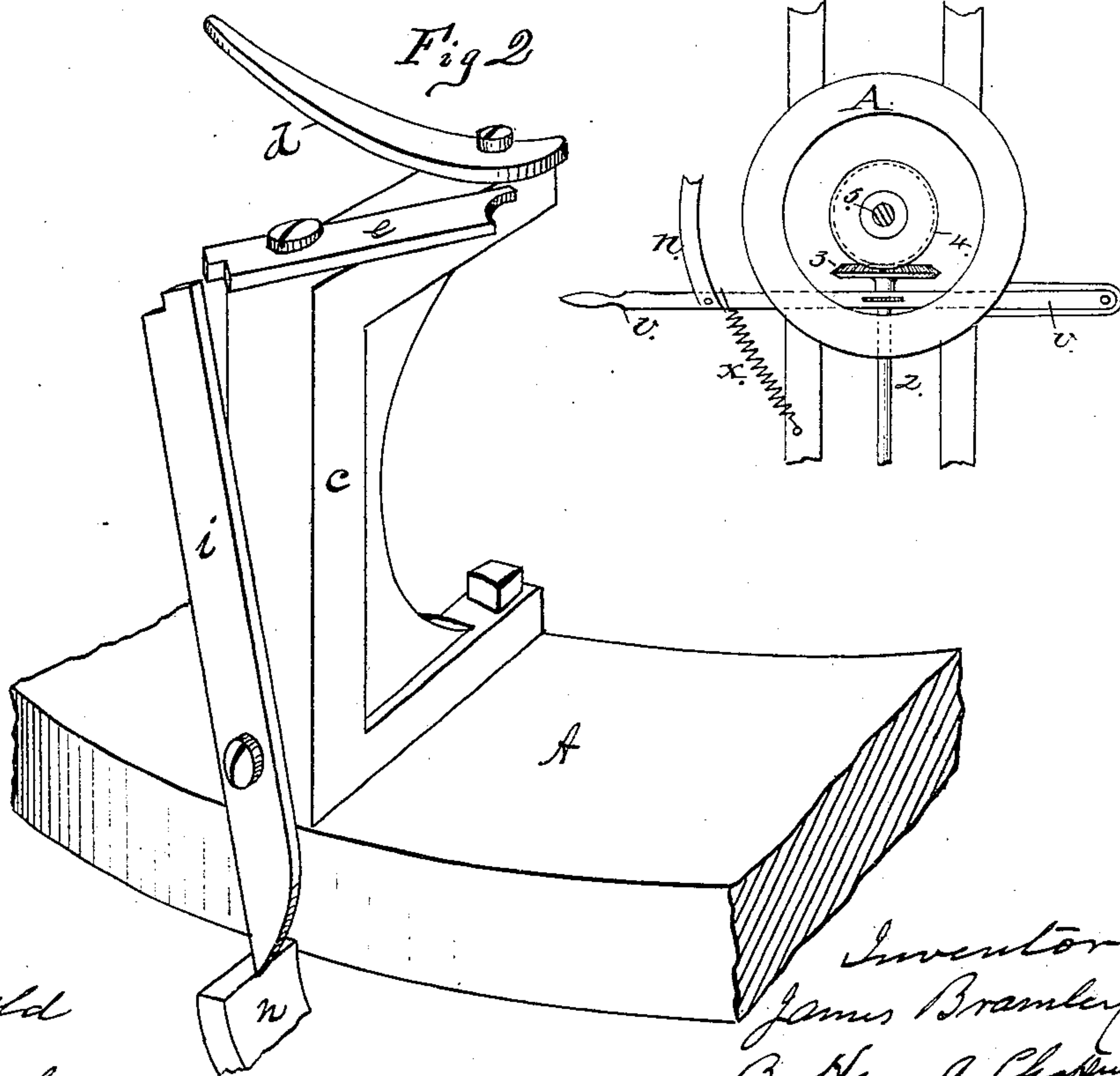
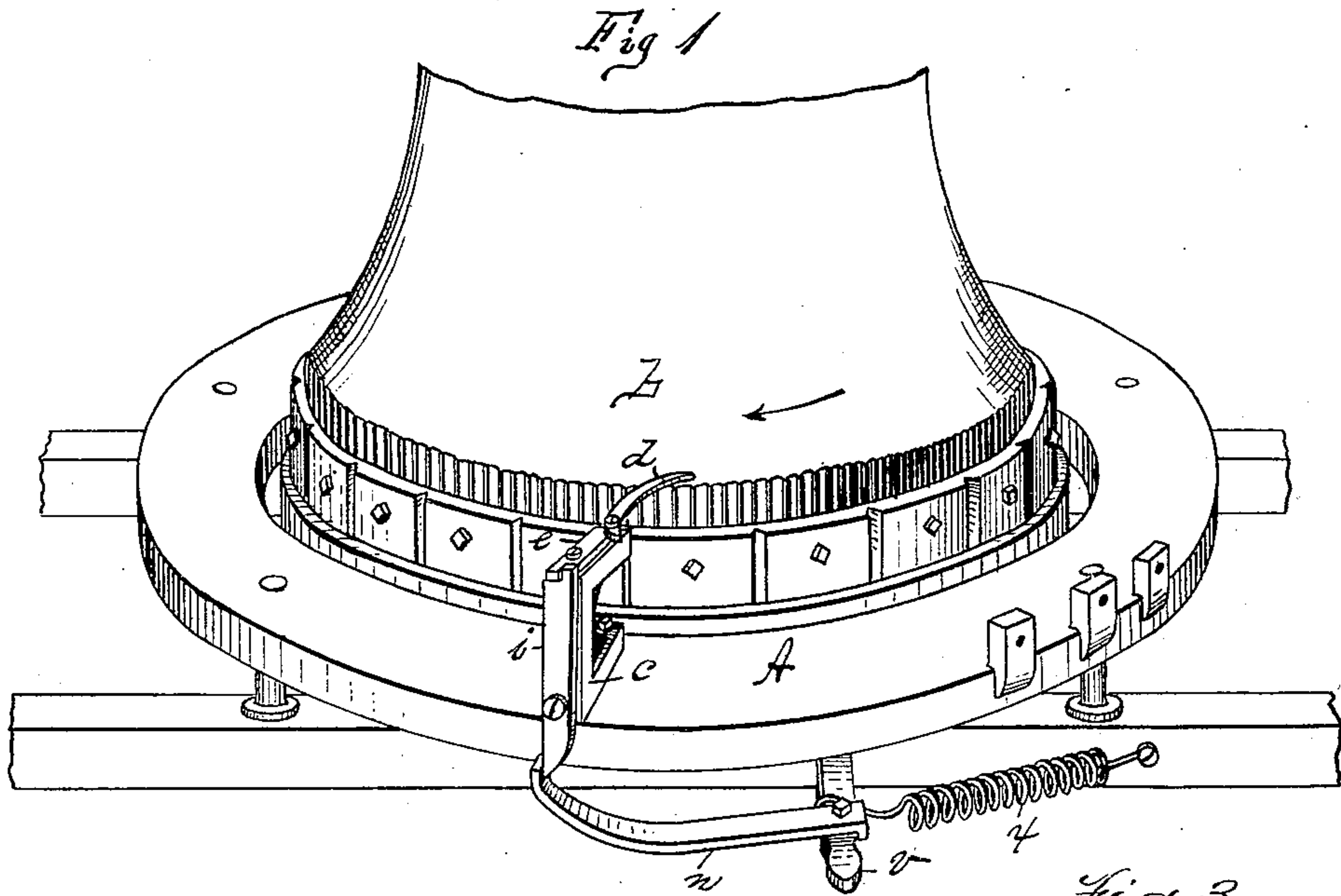
(No Model.)

J. BRAMLEY.

STOP MOTION DEVICE FOR KNITTING MACHINES.

No. 262,202.

Patented Aug. 8, 1882.



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# UNITED STATES PATENT OFFICE.

JAMES BRAMLEY, OF SPRINGFIELD, MASSACHUSETTS.

## STOP-MOTION DEVICE FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 262,202, dated August 8, 1882.

Application filed February 16, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES BRAMLEY, a citizen of Great Britain, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Stop-Motion Devices for Knitting-Machines, of which the following is a specification.

This invention relates to circular-knitting machines; and it consists in the construction of mechanism to be applied to said machines and others of analogous character for stopping the machine when it is operating imperfectly, the object being to prevent the knitted fabric from being rolled up or passing from beyond the needles to any considerable length when from any cause holes are formed or occur in the fabric, or when certain surface imperfections exist thereon.

In the drawings forming part of this specification, Figure 1 is a view of the bed portion of a circular-knitting machine supporting the needle-cylinder, to which are applied stop-motion devices constructed according to my invention. Fig. 2 is an enlarged view of said stop-motion mechanism and a section of the bed of the machine. Fig. 3 is a plan view of the bed of the machine with the needle-carrying mechanism removed, and showing the shipping devices beneath.

In the drawings, A represents the bed of the machine, supporting the needle-cylinder, which is provided with the usual series of vertical needles and operating mechanism, and *v* is the shipper-lever thereof.

*x* is a retracting-spring attached to said shipper-lever and to any convenient fixed part of the machine.

*n* is a hooked arm secured to the shipper-lever *v*.

*c* is a lever-stand secured to the face of bed A.

*d*, *e*, and *i* are levers pivoted to the stand *c*, and *b* represents that portion of the knitted fabric in direct connection with the needles of the machine.

5 is a vertical shaft, which carries the needle mechanism of the machine.

4 is a bevel-gear on shaft 5.

2 is a horizontal driving-shaft running under the machine.

3 is a bevel-gear adapted to slide on shaft 2 and splined to the latter.

To persons skilled in the art of running circular-knitting machines it is well known that while the machine is operating the fabric *b* is revolved with the needles in the direction indicated by the arrow in Fig. 1, and that said fabric is drawn upward from the needles as fast as it is formed and rolled upon some conveniently-arranged roller; also, that quite frequently holes are made in said fabric by the failure of one or more of the needles to properly operate, and that if said holes are not detected and repaired at once they are likely to be found in the parts of knit garments made therefrom and to cause serious imperfections therein.

The stop-motion mechanism herein described and shown is operated by the presence of holes in said fabric near the needles, and unfailingly stops the machine when such imperfections occur, so that due repairs of said fabric may be made.

The lever-stand *c* is secured in a vertical position on the base A of the machine, and has a vertical and horizontal face upon which the levers *d*, *e*, and *i* are pivoted. Said lever *d* is of a curved form, and the end of its longest arm is adapted to bear against the surface of the fabric just above the needles, while its short arm swings against the end of the long arm of the lever *e*, and the short arm of the latter engages with the long arm of the vertical lever *i*, while the short arm of the latter engages with the hooked end of the arm *n*, which is secured to the shipper-lever *v*. Said lever *v* is pivoted to the rear part of the machine, and is made to engage in any well-known manner with the hub of gear 3, whereby the latter may be moved longitudinally on shaft 2 to be engaged with and disengaged from gear 4, which is fixed on shaft 5, which latter carries the needle devices of the machine.

The above-described positions and relations of said levers when the machine is running are shown in Fig. 1, lever *d* bearing against the fabric, and through levers *e* and *i* holding the shipper-lever *v* in a position which keeps the machine running and against the retracting-power of spring *x*, through the engagement of the arm *n* with the short arm of said lever *i*. Lever *i* may be made to engage directly with the shipper-lever *v* by locating the lever-stand *c* so that it will be over said lever *v* and length-



ening lever *i* so that it may reach down by the edge of said shipper-lever. When, however, holes occur in the fabric, as aforesaid, and that part thereof in which said hole is is drawn under the end of lever *d*, which lays against it, the end of the latter is caught in said hole and the lever is swung around by the motion of the fabric to the position shown in Fig. 2, whereby the short arm of lever *d* is disengaged from the end of lever *e*, leaving the latter and lever *i* free to swing on their pivots by the action of spring *x*, which draws the shipper-arm *v* back, pulling arm *n* away from the end of lever *i* and stopping the machine, and leaving levers *e* and

*i* about in the position shown in said last-named figure. Thus the engagement of the end of lever *d* with a hole in the fabric will cause the machine to be automatically stopped.

What I claim as my invention is—

In a circular-knitting machine, the combination, with the shaft 2 and gear 3, of the shipper-lever *v*, having arm *n* thereon, the lever *d*, the spring *x*, and the levers *e* and *i*, substantially as set forth.

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Witnesses:

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