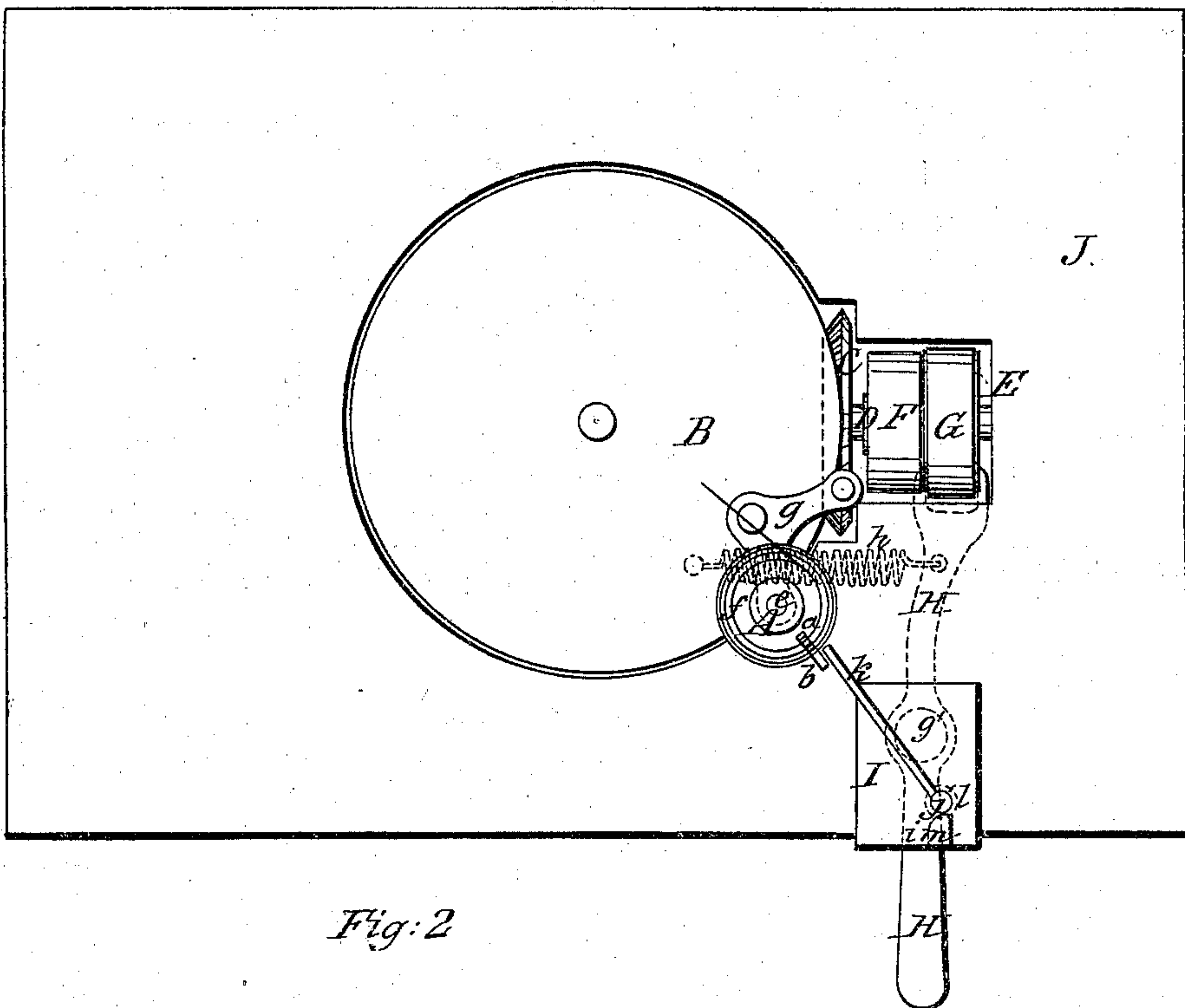


*J. Dalton.*  
*Stop for Knitting Mach.*

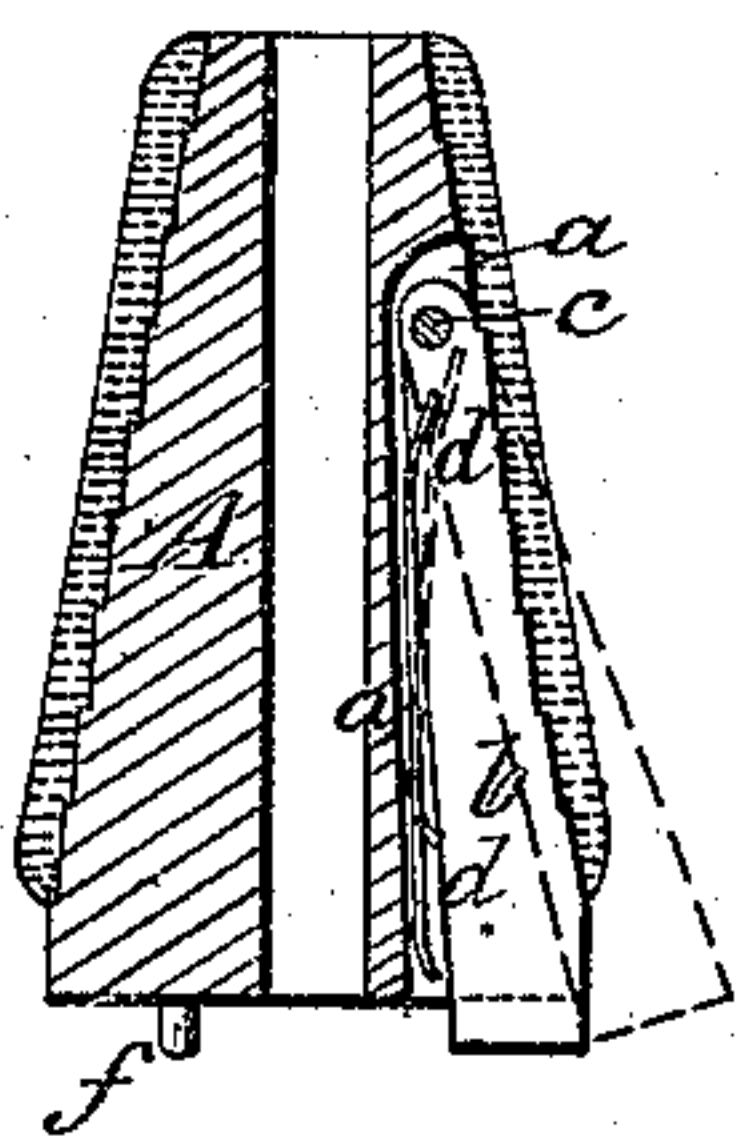
*N<sup>o</sup> 43,294.*

*Patented Jun. 28, 1864.*

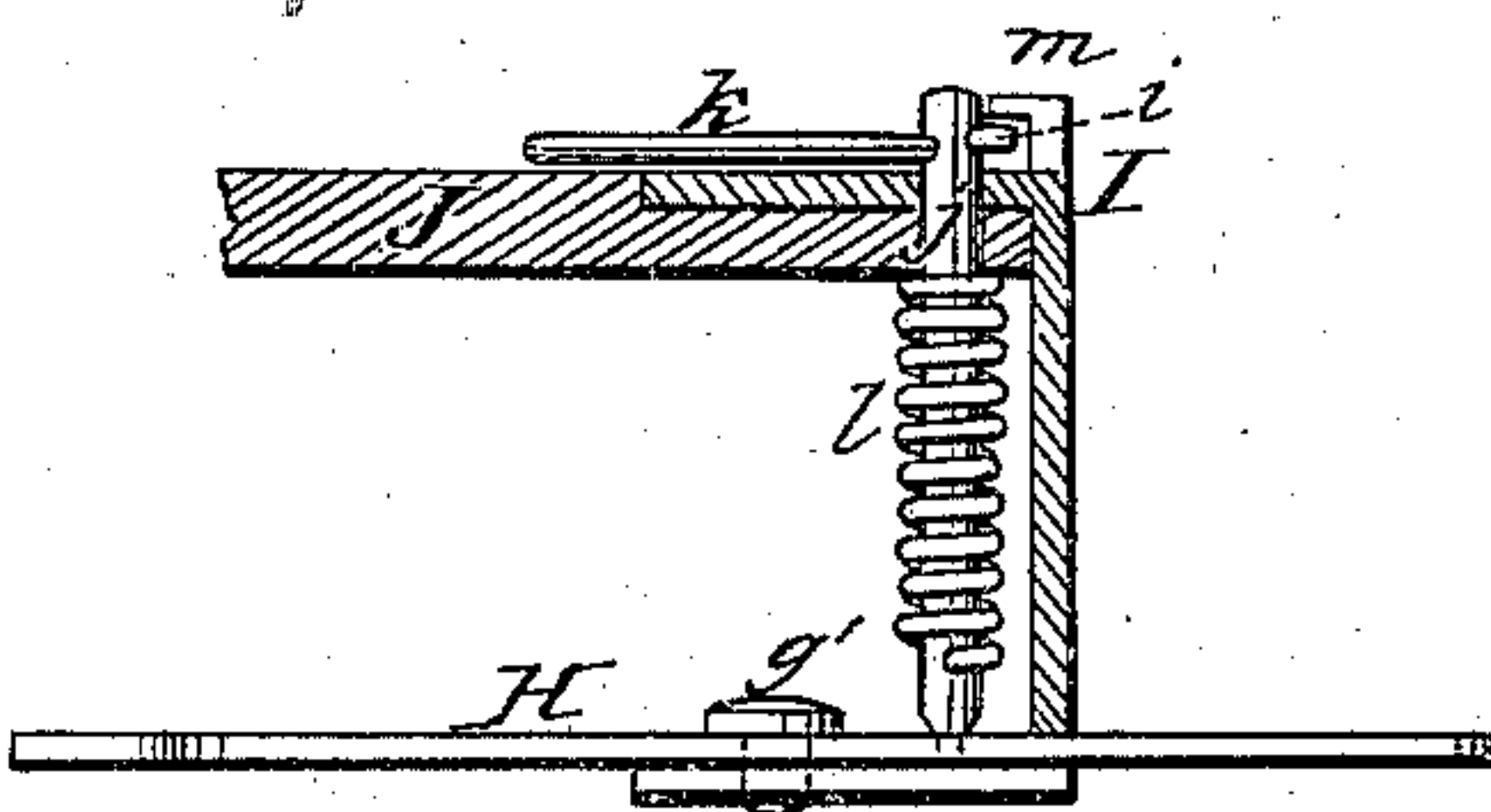
*Fig: 1.*



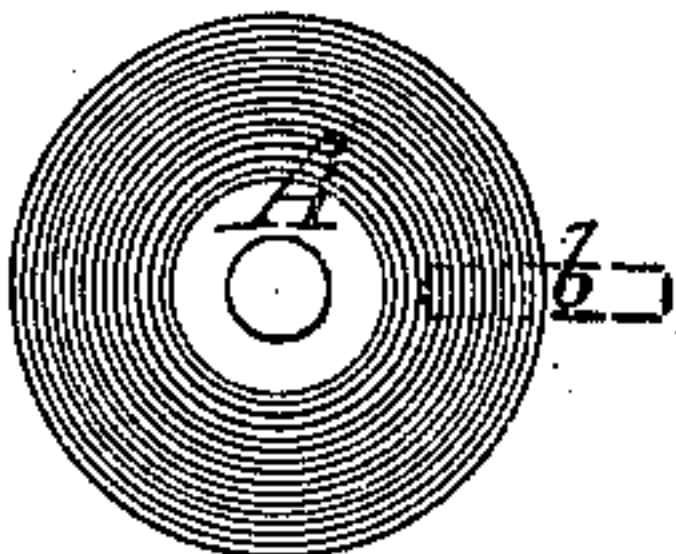
*Fig: 2*



*Fig: 4.*



*Fig: 3.*



*Witnesses*

*J. M. Coombs*  
*Henry Morris*

*Inventor:*

*J. Dalton*  
*per Munn & Co*  
*Attorneys.*



# UNITED STATES PATENT OFFICE.

JOSEPH DALTON, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN STOP-MOTIONS FOR KNITTING-MACHINES.

Specification forming part of Letters Patent No. 43,294, dated June 28, 1864.

*To all whom it may concern:*

Be it known that I, JOSEPH DALTON, of the eastern district of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in the Stop-Motion for Knitting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of part of a circular-knitting machine, illustrating the application of my invention. Fig. 2 is a central vertical section of the bobbin from which the yarn is supplied, showing my invention. Fig. 3 is a plan of the same. Fig. 4 is an elevation of the lock of the belt-shipper.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in furnishing the bobbin of a knitting-machine with a movable piece of steel or other metal or material, so applied within a recess in one side that while there is more than a very few coils of yarn upon the bobbin the said piece is thereby confined in such a position that it will not interfere with the lock of the stop-motion, but that when the yarn has nearly given out the said piece will be projected so far from the bobbin by a spring or other means as to be caused by the operation of the machine to come in contact with the lock and unlock it, thereby leaving the automatic belt-shipper or its equivalent free to throw off the belt from the driving-pulley, or otherwise put the machine "out of gear" and produce its stoppage.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, Figs. 1, 2, 3, is the bobbin, made of the usual form, but having a narrow longitudinal groove, *a*, Fig. 2, cut in one side for the reception of the flat piece of steel or other metal, or sufficiently strong material, *b*, which is inserted edgewise thereinto. This piece of steel is secured, near its upper end, in the groove *a* by a pin, *c*, inserted through it and the groove, and it has applied behind it within the groove a spring, *d*, which tends to press its lower part outward beyond the periphery of the bobbin, as shown in red outline in Figs. 2 and 3, but which permits it to be pressed back

into the groove with its outer edge flush with the periphery of the bobbin, as shown in black outline in Figs. 2 and 3. The lower end of the piece *b* is represented as projecting below the base of the bobbin; but this is not absolutely necessary.

The provision of the piece *b* in the bobbin is what constitutes my invention. The bobbin so provided is applicable to various kinds of knitting-machines; but a description of its application to one kind of circular knitting-machine, with a few subsequent remarks, will enable mechanics familiar with knitting-machines to apply it to other kinds of knitting-machines.

The machine (partly represented in Fig. 1) has a stationary needle-ring, (not represented,) and the bobbin A is placed on a vertical spindle, *e*, which is carried by a horizontal rotating plate, B, which is toothed on its under side to be driven by a bevel-gear, C, on the shaft D of the machine, which is furnished with a fast pulley, E, and loose pulley F, the movement being obtained from a belt, G, from a suitable driving-shaft. The bobbin has secured in its lower end a projecting pin, *f*, which bears against the base piece *g*, by which the spindle *e* is secured to the rotating plate B, and so prevents the bobbin from turning on the said spindle, and keeps the piece C always on the side of the bobbin at the greatest distance from the center of the rotary plate B.

H is the belt-shipper, consisting of a fork lever working on a fixed fulcrum, *g*. This lever has applied to it a spring, *h*, which tends to pull it in a direction to bring the belt on the loose pulley F.

*i j k* is the principal portion of the lock of the belt-shipper, consisting of a pin, *j*, which is fitted to turn freely in a bearing in a plate, *i*, which is secured to the table J of the machine and which has secured to it an arm, *k*, and a short projection, *i*. The pin *j* has applied to it below the plate I a spring, *l*, which tends to press it upward so that its lower end is kept clear of the shipper H.

When the machine is in operation, the pin *j* is kept depressed to such a position by its projection *i* being under a lug, *m*, on the plate I, as shown in Fig. 4, that its lower end serves as a stop to act against one edge of the belt-shipper and keep the said shipper in a



position to hold the belt on the fast-pulley E, as shown in Fig. 1.

The operation is as follows: When the bobbin is full, and until all has been used but the last few (two, three, or more) coils of yarn, the yarn keeps the piece *b* in the slot *a*, with its outer edge flush with the periphery of the bobbin, and while the piece *a* is in this position it passes clear of the arm *k* of the lock of the belt-shipper as the bobbin, carried by the rotating plate B, revolves around the needle-ring; but when so little yarn remains upon the bobbin that it will not confine the piece *b*, the said piece is forced so far outward from the groove *a* of the bobbin by the spring *d* that its lower part will strike the arm *k* and so move it to such a position as to bring the projection *i* of the lock from under the lug *m*, and the spring *l* then lifts the pin *j* to such a position as to bring its lower end above the shipper-lever H, and so liberate the said lever, which is then pulled by the spring *h* to a position to put the belt G on the loose pulley F, and the machine stops. The bobbin is then removed from the spindle *e* and a full one substituted for it, and when the yarn on the new bobbin has been joined with the end of the old yarn the shipper-lever is moved by hand to a position to put the belt on the fast pul-

ley, and the machine is thereby again started. The pin *j* is then pushed down by hand to a position to stop the shipper-lever in the last-mentioned position and turned to a position to bring the projection *i* of the pin *j* under the lug *m*, and so lock the shipper.

When the bobbin has a revolving motion, as in the machine represented, it may be practicable to dispense with the spring *d*, to force out the piece *b*, and let the said piece be forced out from the bobbin by centrifugal force, but I prefer to apply the spring, as the action of the said piece will thereby be rendered certain.

In a knitting-machine in which two or more bobbins are used, each one should be furnished with the movable piece *b*.

What I claim as my invention, and desire to secure by Letters Patent, is—

Furnishing the bobbin of a knitting-machine with a movable piece, *b*, applied to operate, substantially as herein described, for the purpose of unlocking the stop-motion when the yarn gives out.

J. DALTON.

Witnesses:

HENRY T. BROWN,  
M. M. LIVINGSTON.