

(No Model.)

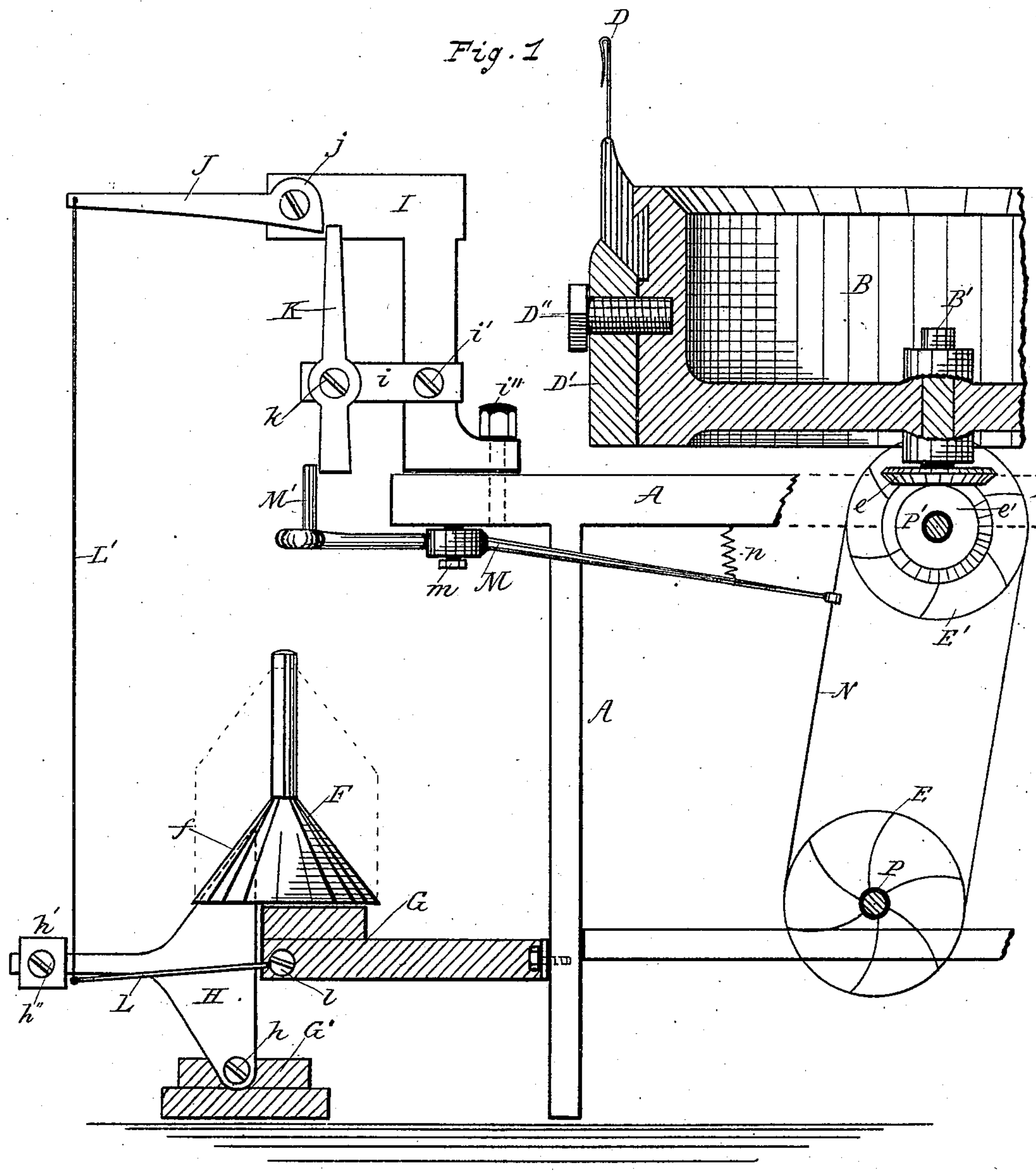
4 Sheets—Sheet 1.

M. J. WALSH.

STOP MOTION FOR KNITTING MACHINES.

No. 291,965.

Patented Jan. 15, 1884.



Witnesses:
Peter J. Lewis
A. T. Van Hensen

Inventor
Michael J. Walsh
By W. Davidson Jones
Attorney

(No Model.)

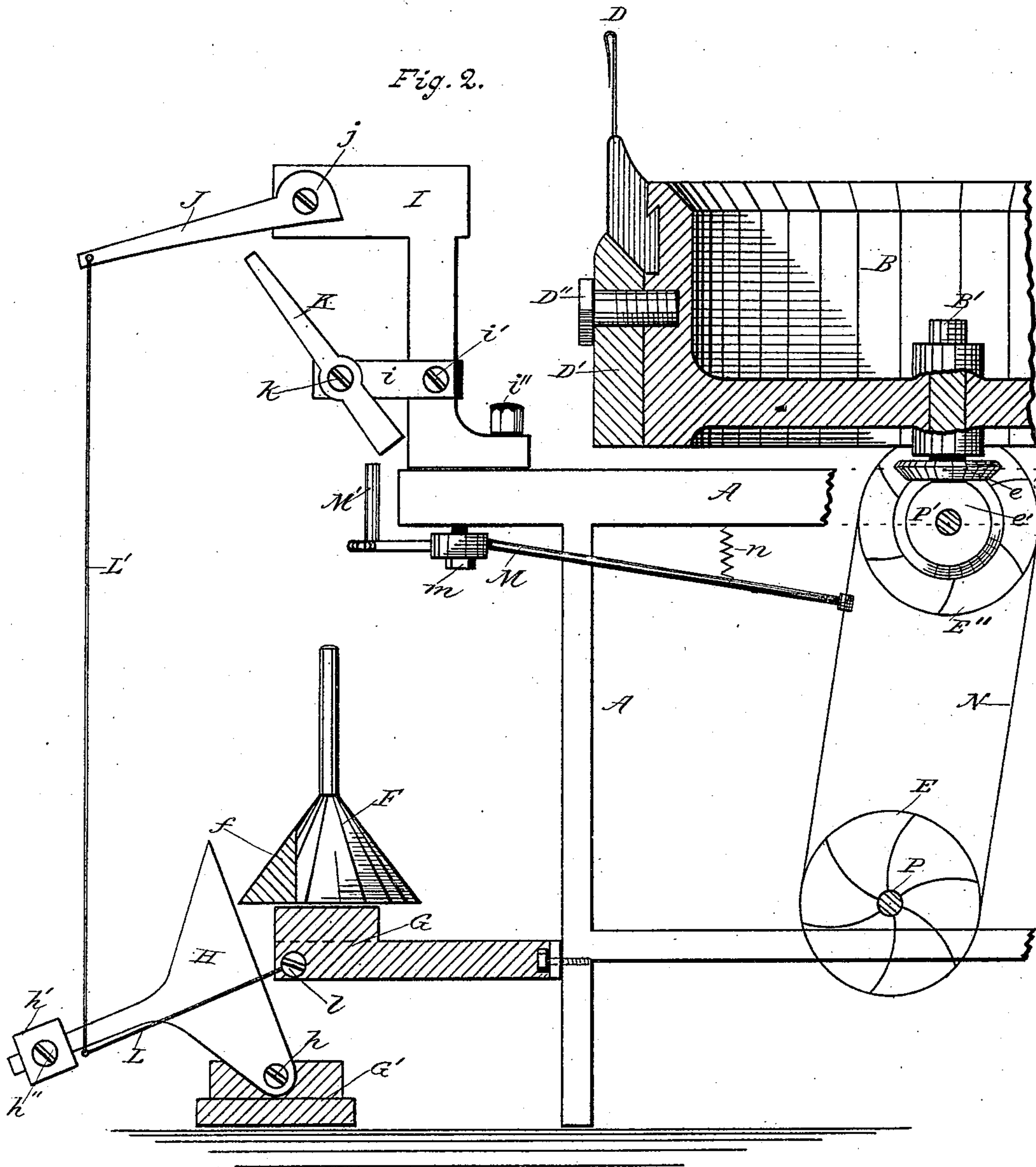
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A. J. Van Housen.

Inventor

Michael J. Walsh
By W. Davidson Jones
Attorney

(No Model.)

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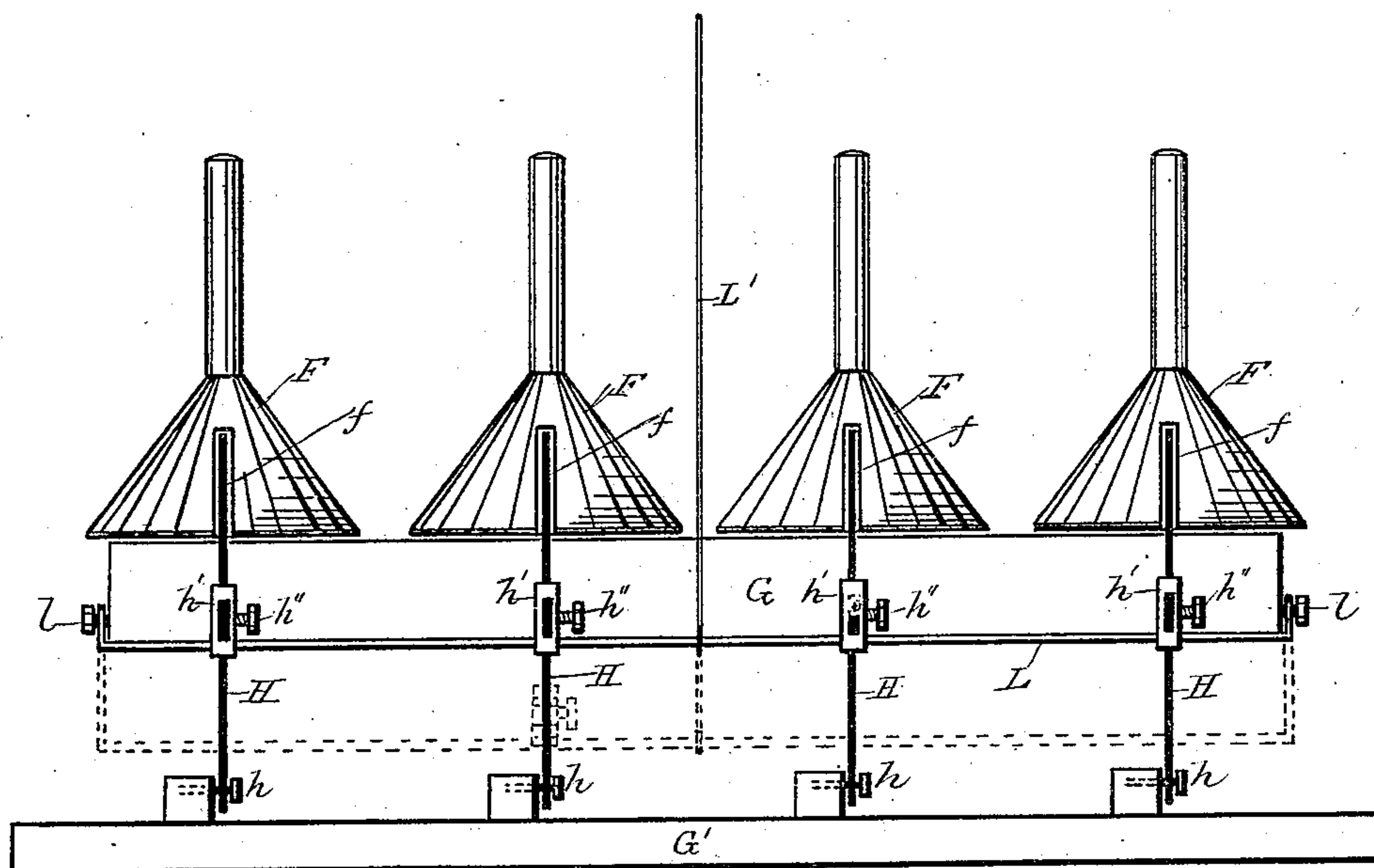
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Fig. 3.



Witnesses:

Peter J. Lewis
A. T. Van Housen

Inventor

Michael J. Walsh
By W. Davidson Jones
attorney

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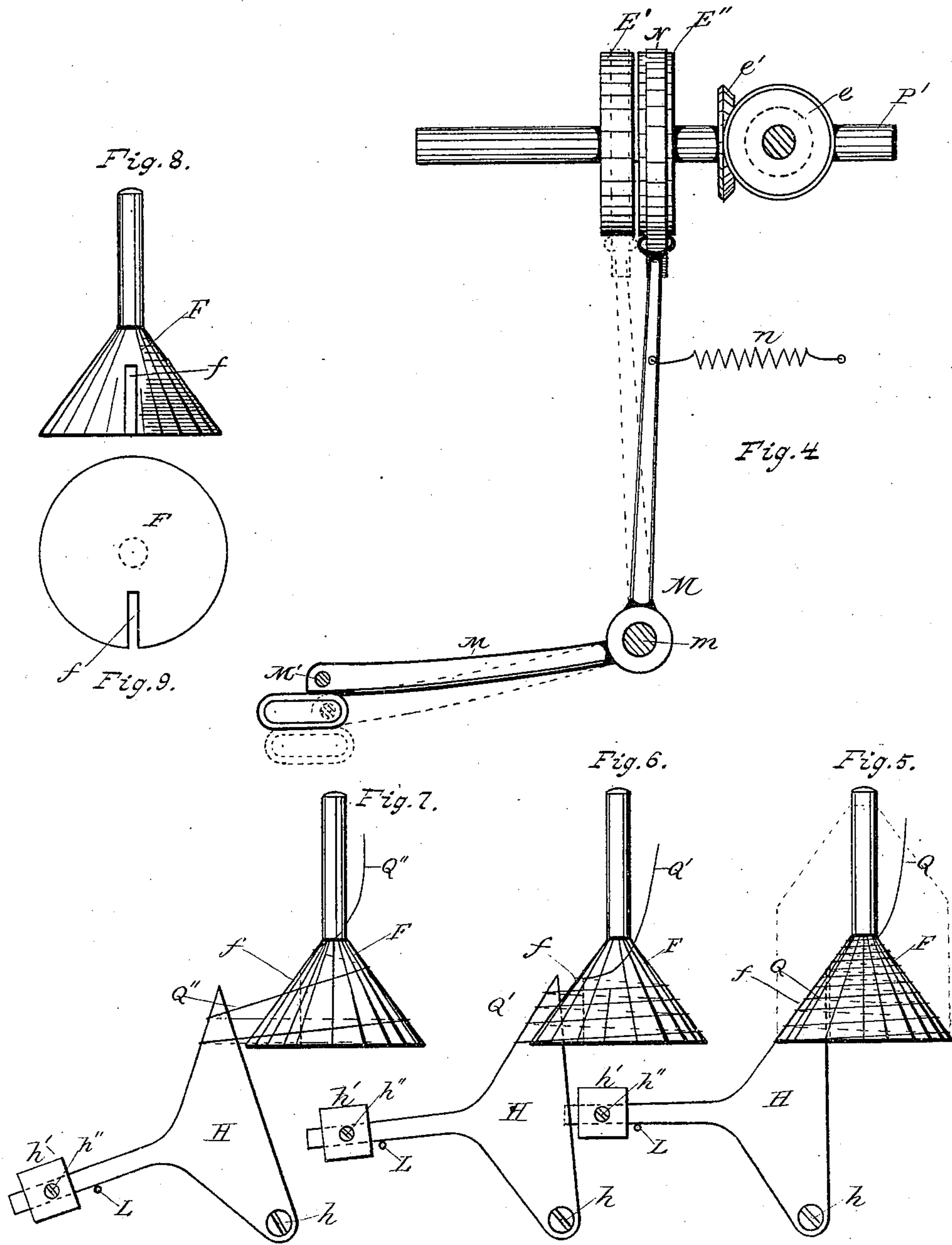
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Michael J. Walsh
By W. Davidson Jones
Attorney

UNITED STATES PATENT OFFICE.

MICHAEL J. WALSH, OF AMSTERDAM, NEW YORK, ASSIGNOR OF ONE-HALF
TO FRANCIS MORRIS, OF SAME PLACE.

STOP-MOTION FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 291,965, dated January 15, 1884.

Application filed May 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL J. WALSH, a citizen of the United States, residing at Amsterdam village, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Stop-Motions for Knitting-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The object of my invention is to prevent the web or quarter from running off the needles of a circular or other knitting-frame when the yarn is exhausted from the bobbin, thereby preventing waste of time and affording
15 relief to the attendant. This is accomplished by providing means whereby the knitting-machine is automatically stopped when the yarn is nearly exhausted from a bobbin from which the yarn is fed to the sinker-burr.

20 Referring to the several drawings, making a part of this specification, Figure 1 is an elevation of my invention, showing its several parts in their normal position in connection with a section of a cylinder. Fig. 2 is an elevation showing the position of the several
25 parts referred to in Fig. 1 after they have completed the operation of stopping the knitting-frame. Fig. 3 is a front elevation of a portion of my invention, and Figs. 4, 5, 6, 7, 8, and 9
30 are detached views.

Similar letters of reference indicate similar parts in the several drawings.

Upon the stand A of an ordinary upright circular-knitting machine I secure with the
35 set-screw *i* the standard I. (See Figs. 1 and 2.) Upon this standard I, I firmly secure with the set-screw *i* the bracket *i*, and upon this bracket *i* (see Figs. 1 and 2) I secure with the set-screw *k* the lever K, so that it will vi-
40 brate freely upon said set-screw *k*.

Upon the belt-shipper M, I firmly attach the stump M', all substantially as shown in the several figures.

45 Upon the upper outer portion of the stand and I, I secure the lever J with the set-screw *j*, so that it will vibrate freely thereon.

Upon the frame A of the machine I secure with bolts the bobbin-shelving or bobbin-holder G. This bobbin-holder G may be sup-
50 ported upon legs or brackets direct from the

floor. However, I prefer to attach it to the frame, substantially as shown. Partly underneath the bobbin-holder, and substantially in the relative position to the several parts, as shown in the several drawings, I secure to the
55 floor the rest or support G'. (See Figs. 1, 2, and 3.) Upon this support G' (see Figs. 1, 2, and 3) I secure with the screws *h* the yarn-hooks H, so they will have a free movement thereon. These "yarn-hooks" I construct of
60 the form substantially as shown, by having a portion extend outward from the body of each, so as to receive a movable adjustable weight, *h'*, susceptible of being secured at any given or
65 desired point by the set-screws *h''*.

Upon the bobbin-holder G, I secure with the screws *l* (see Figs. 1, 2, 3, 5, 6, and 7) the bail L. This bail L has a free movement up and down, and to the central portion, or at
70 any desired point of the said bail, I attach the connection L', substantially as shown in the several figures, and more particularly in Fig. 3. The upper end of this connection L', I
75 attach to the lever J, heretofore referred to. This bail L is placed underneath the weighted lever-portion of the yarn-hook L.

Upon one side of the ordinary bobbin, which is in common and general use to hold, and from which yarn is fed to a knitting-machine, I place a slot, *f*. (See Figs. 1, 2, 3, 5, 6, 7, 8,
80 and 9.) This slot I make quite narrow, so as not to interfere with winding the yarn on the bobbin, and only of sufficient width to accommodate the blade portion of the yarn-hook H that enters therein. The proportionate size
85 and locality of this slot *f* is fully shown in the several drawings.

I place a bobbin provided with the slot *f*, filled with yarn upon the bobbin-holder G, with the upper point or portion of the "yarn-hook"
90 H, inserted in the slot *f*, under the yarn, substantially as shown in Fig. 5 and also in Fig. 1. The bobbin of course is set upon a stump, which enters a central hole in the lower portion of the bobbin, in the ordinary and usual way,
95 which is in general practice. The yarn upon the bobbin holds up the yarn-hook H in the position as shown in Figs. 1, 3, and 5 until it is nearly exhausted, when the weight *h'* gradually settles down by the remaining threads
100

drawing out, as shown in Figs. 6 and 7, thereby depressing the bail L, and, through the connection L', levers J and K release the belt-shipper, as shown in Fig. 2, which, by the power of the spring *n*, causes the belt N to be thrown on the loose pulley E'', thereby stopping the machine. By moving the weight *h'* farther out on the lever portion of the yarn-hook H, causes the knitting-machine to be stopped sooner than it would if the weight were set farther in, for the reason it would require a number of threads encircling the base of the bobbin in proportion to the power of the weight *h'*.

When it is desired to use this invention, when applied to an ordinary upright circular-knitting frame, it is presumed of course that the frame is provided with all the necessary sinkers, pressers, cast-off wheels, &c., and that power is communicated from any prime motor through shaft P, pulleys E E', belt N, and gears *e e'* to the cylinder.

To illustrate the operation of my invention more clearly, I will assume a filled bobbin is placed in proper position, as shown, and that the yarn from the bobbin is passed up through the proper thread-guide and introduced to the action of the sinker, and thereby fed in under the barbs of the needles. The machine now being at rest, the attendant draws back the handle of the belt-shipper M, thereby passing the belt N from the loose pulley E'' to the tight pulley E', thereby giving motion to the several parts. As the belt-shipper is drawn back, the attendant throws up the lever K and raises lever J, with connection L' and bail L, to the position shown in Fig. 1. The upper end of lever K engages the point of lever J, and the lower end engages the stump M' and holds the shipper in place. The reverse action of the shipper M, caused by the spring *n*, holds, through the stump M and lever K, the lever J, connection L' and bail L in their normal position, all substantially as shown in Figs. 1, 3, and 5. As the arm *q* is gradually exhausted upon the bobbin, as shown at Fig. 5, the lever-weighted yarn-hook is held in its normal position until the quantity is substantially reduced to about the quantity as shown in Fig. 6, when the weighted end of the yarn-hook H gradually settles, as indicated in Fig. 6, by reason of the remaining encircling threads drawing out, as shown, thereby carrying downward the bail L, connection L', and lever J. As the yarn becomes exhausted, the yarn-

hook and yarn on the bobbin assume the position shown in Fig. 7, which, by reason of the bail L, connection L', and lever J being carried down, releases the upper end of the lever K from lever J and by the force of the spring *n* the shipper is thrown backward, as indicated by the dotted lines in Fig. 4, thereby causing the belt N to pass to the loose pulley E'', and thereby stopping the machine.

I have described the operation of my invention as applied to but one bobbin. However, I do not confine myself to one bobbin, as a plurality of bobbins may be used, substantially as shown in Fig. 3; and as any one of these bobbins becomes exhausted of yarn, the same operation will be repeated.

Although I have shown my invention attached to a circular frame, the same results may be produced when attached to an ordinary flat or other frame, the essential feature of my invention is to stop the knitting-frame when the yarn upon any bobbin that is being knitted from becomes nearly exhausted, all substantially as shown in the several views of the drawings and described in this specification.

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

1. The combination of the frame A, projecting standard I, carrying bracket *i*, lever K, loosely pivoted to said bracket, lever J, connecting-rod L', and bail L, with the bracket G, slotted bobbin F, the yarn-hook H, provided with an adjustable weight, *h'*, the belt-shipper M, having stump M', and the coiled spring N, substantially as shown and described.

2. In combination with the cylinder provided with barbed needles, the standard I, having attached thereto the bracket *i*, and levers J and K, of the belt-shipper M, provided with the stump M', of the yarn-hook H, having an adjustable weight attached thereto, of a movable bail, L, and connection L', and of a bobbin, F, provided with a slot, *f*, constructed to receive the upper portion of the yarn-hook, as set forth, and operating as described.

In testimony whereof I affix my signature in presence of two witnesses.

MICHAEL J. WALSH.

Witnesses:

W. DAVIDSON JONES,
P. J. LEWIS.