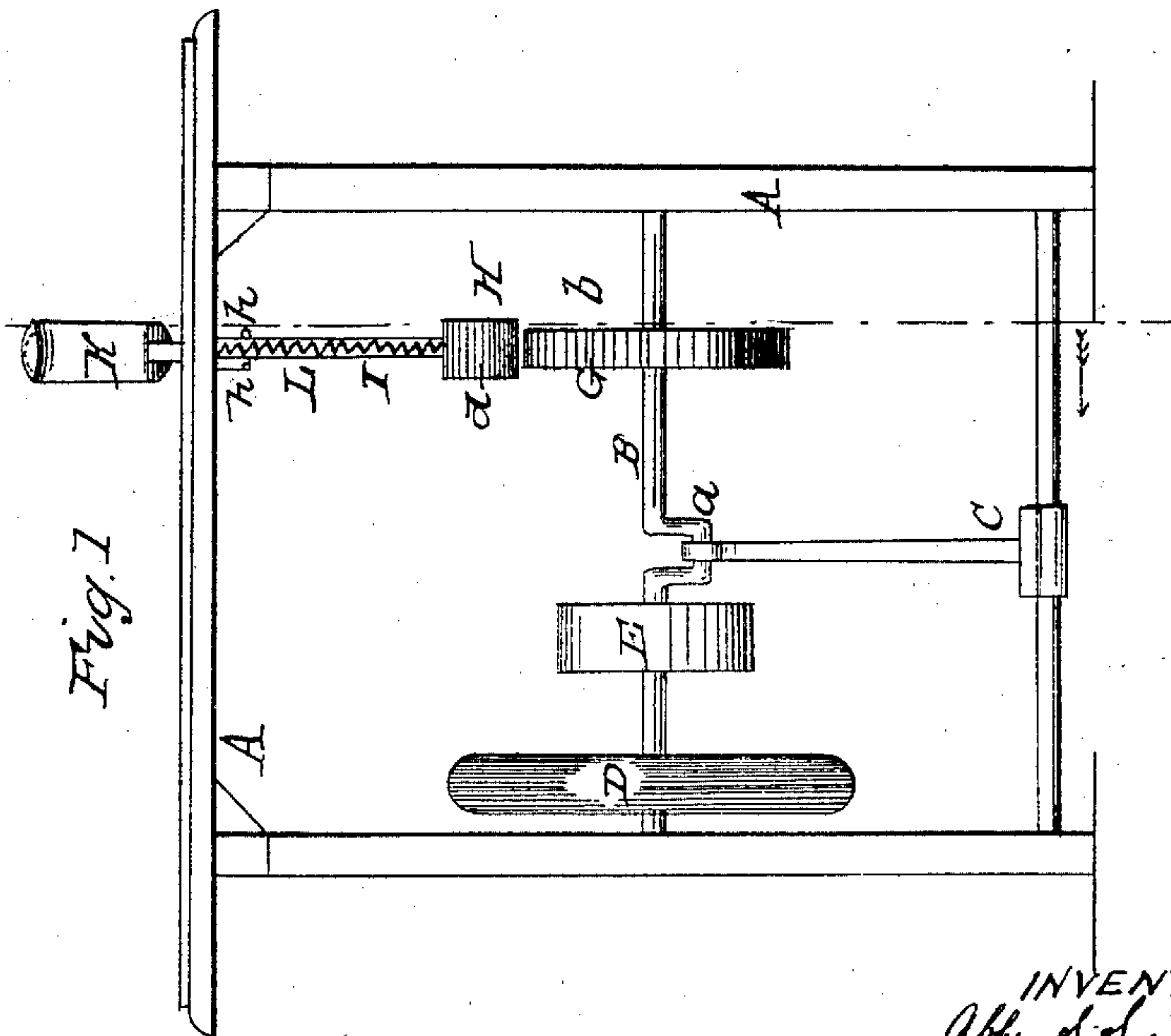
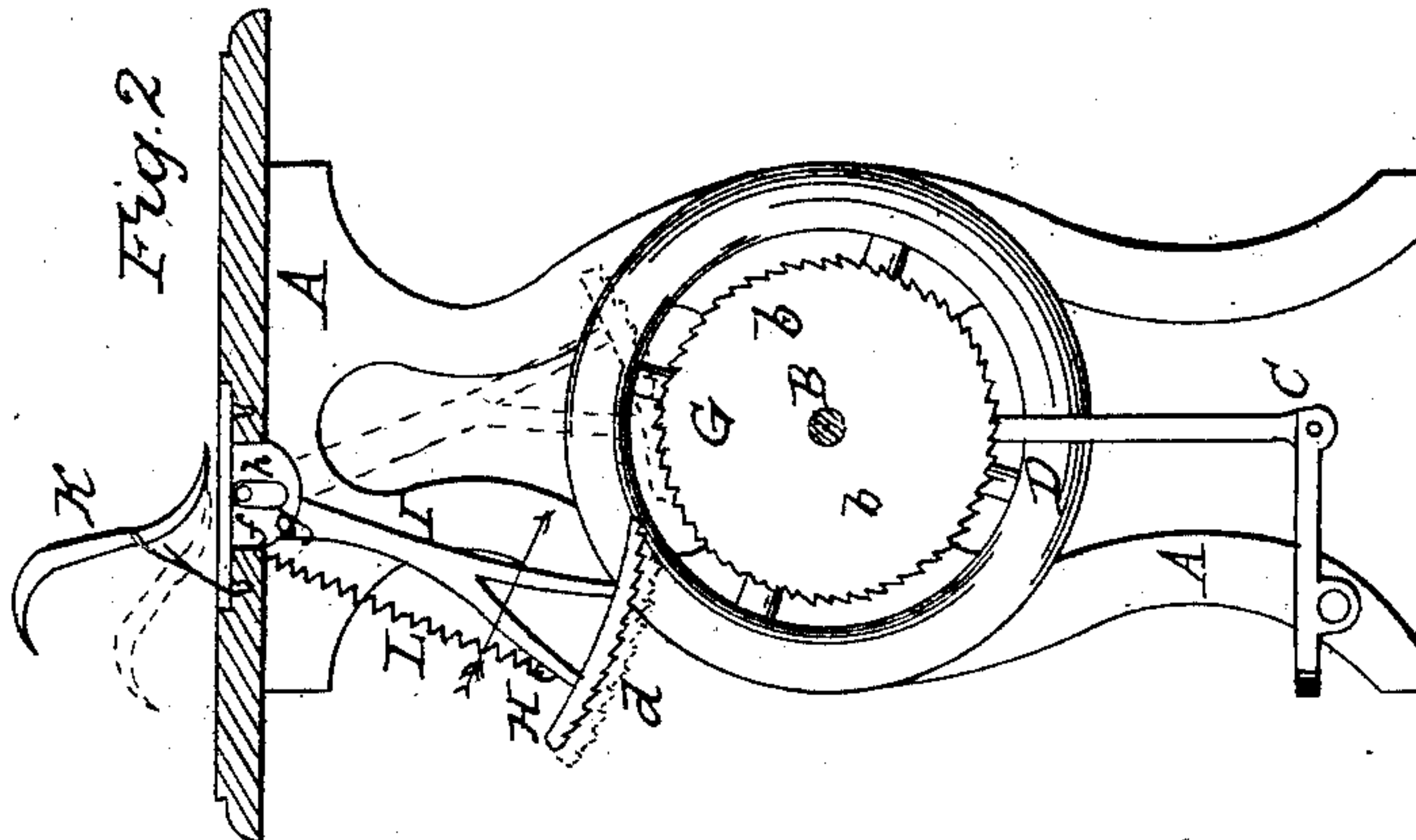


A. S. SMITH.

Mechanism for Starting Sewing Machines.

No. 37,925.

Patented March 17, 1863.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ABBEY S. SMITH, OF LOCKPORT, NEW YORK.

## IMPROVED MECHANISM FOR STARTING SEWING-MACHINES.

Specification forming part of Letters Patent No. 37,925, dated March 17, 1863.

*To all whom it may concern:*

Be it known that I, ABBEY S. SMITH, of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Apparatus for Starting Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a side elevation of a sewing-machine frame with the shaft and its connecting parts, and with my improvements applied to the same; Fig 2, a transverse vertical section of the same in the plane of the red line, Fig. 1.

Like letters of reference indicate corresponding parts in both figures.

My invention consists, first, in a vibrating adjusting-segment or its equivalent engaging with a friction-wheel on the shaft of the machine in such a manner that by operating it the wheel will be turned sufficiently to throw the crank past the dead-point; and, second, in connection therewith, in the use of an adjusting-joint securing the segment-lever to the frame, composed of a slot and pivot, or their equivalents, and a spring connecting the lower end of the segment-lever with the table above, by which the double effect of raising the segment vertically away from the wheel to disengage the parts and for bringing it back into the position to act again is produced.

The frame A and shaft B may be of any ordinary or desirable construction, the latter having the ordinary crank, *a*, with which is connected the treadle C, and being provided with the usual fly-wheel, D, and band-wheel E.

In starting ordinary sewing-machines the hand of the operator has to be placed beneath the table, on the fly-wheel, to turn it till the crank has passed the dead-point. This is an action attended with inconvenience and difficulty, as the position of the operator is such that she cannot easily reach the fly-wheel, and in the action the turn is so great that she has frequently to release and catch the wheel several times to accomplish it. I obviate this difficulty by means of the following arrangement: At a proper position on the shaft is situated a friction-wheel, G, of suitable size, and preferably, though not necessarily, provided with ratchet-teeth *b b*, pointing away from the direction of motion, as indicated most clearly in Fig. 2. On the same line with this wheel is

situated a segment, H, or its equivalent, secured to a lever, I, jointed to the table above, and substantially of the shape represented—that is, preferably curved—and of considerable length to insure such contact or engagement with the wheel when acting as will move the latter the proper distance to throw the crank past the dead-point, and preferably provided on the under side with ratchet-teeth *d d*, pointing opposite to those on the wheel, though these teeth are not absolutely required. The segment, instead of being made convex, as represented, may be made straight, or nearly so, with a similar though inferior effect in use. The segment-lever I is usually made forked at its lower end to secure a firmer bearing to the segment, and its joint in the table is produced by means of a pivot, *f*, forming a part of it, resting and adjusting in slots *g g* of side bearings *h h*, or, vice versa, what is the same in result, a slot made in the lever passing over a pin in the bearings, or any equivalent arrangement that will produce the same effect. The lever passes through the table, projecting a little distance above, and has secured to its extremity an ornamental thumb piece or rest, K, substantially as represented. To the lower end of the lever or to the segment in the rear is attached the end of a coiled spring, L, or its equivalent, which extends thence upward, and is secured in the proper position to the under side of the table or to the bearing *h*. Thus it will be seen that in its natural position, or when at rest, the segment will be raised away and held back from engagement with the wheel G by the reaction of the spring, which thus accomplishes two effects: the keeping of the parts from contact and preserving the proper position of the segment for its action on the wheel. The segment is operated by the pressure of the hand on the thumb-piece K, which action produces a compound motion—viz., the primary forcing of the segment downward into the position indicated by the dotted lines in Fig. 2, and its secondary motion forward into the position represented by the red outline in the same figure. The vertical motion is allowed by the adjustable joint and the yielding of the spring, and the two actions combined bring the forward point of the segment in engagement with the wheel, which then continually moves forward till the rear end escapes, the movement being sufficient to carry the crank



past the dead-point, when, being once started, the machine receives its motion from the treadle. When the hand is released from the thumb-piece K the reaction of the spring instantly raises the segment free from the friction-wheel and brings it back into its original position, ready to act again. A piece of rubber or other soft material may be placed under the end of the thumb-piece that comes in contact with the table to prevent the noise of concussion. It is manifest that the ratchet-teeth on both the wheel and segment may be dispensed with and the parts operated by friction alone with the same effect, especially if the wheel or segment be covered with rubber, which may be done, if desired. This arrangement is very simple and cheap and perfectly accomplishes the object for which it is intended. When not in use the segment always rests back of the wheel and out of its way. When engaging with the wheel its length is such as to give sufficient motion to the latter to start the machine without further action, and when this is accomplished the parts are instantly disengaged, so that there is no impediment to the running of the other parts, and the whole is accomplished by the mere pressure of the hand on the thumb-piece on the top of the table, avoiding the necessity of reaching under and turning the fly-wheel.

A valuable feature of the invention is that by the peculiar shape and compactness of the segment and its parts it may be placed so near the needle that the finger may start it without

disengaging the hand from the seam. On some kinds of work it is necessary that the hand should retain its hold of the cloth to keep it in place for the action of the needle.

The device is applicable to many kinds of machines, but particularly to those where the work is carried from left to right.

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

1. The self-adjusting elongated segment H, or its equivalent, whose lever is jointed to the frame, in combination with the friction-wheel G, whether said parts are provided with teeth or not, in such a manner that when at rest the segment is raised and removed from the wheel, but that when engaged sufficient motion is imparted to the wheel to throw the crank past the dead-point, arranged and operating substantially as herein set forth.

2. In combination with the segment and its lever, the adjusting-joint, composed of the pivot *f* and slots *g g*, or their equivalents, and the coiled spring L, or its equivalent, for the purpose of allowing a vertical movement to the segment and producing the proper reaction, substantially as and for the purposes herein specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ABBEE S. SMITH.

Witnesses:

J. FRASER,

R. F. OSGOOD.