

No. 705,240.

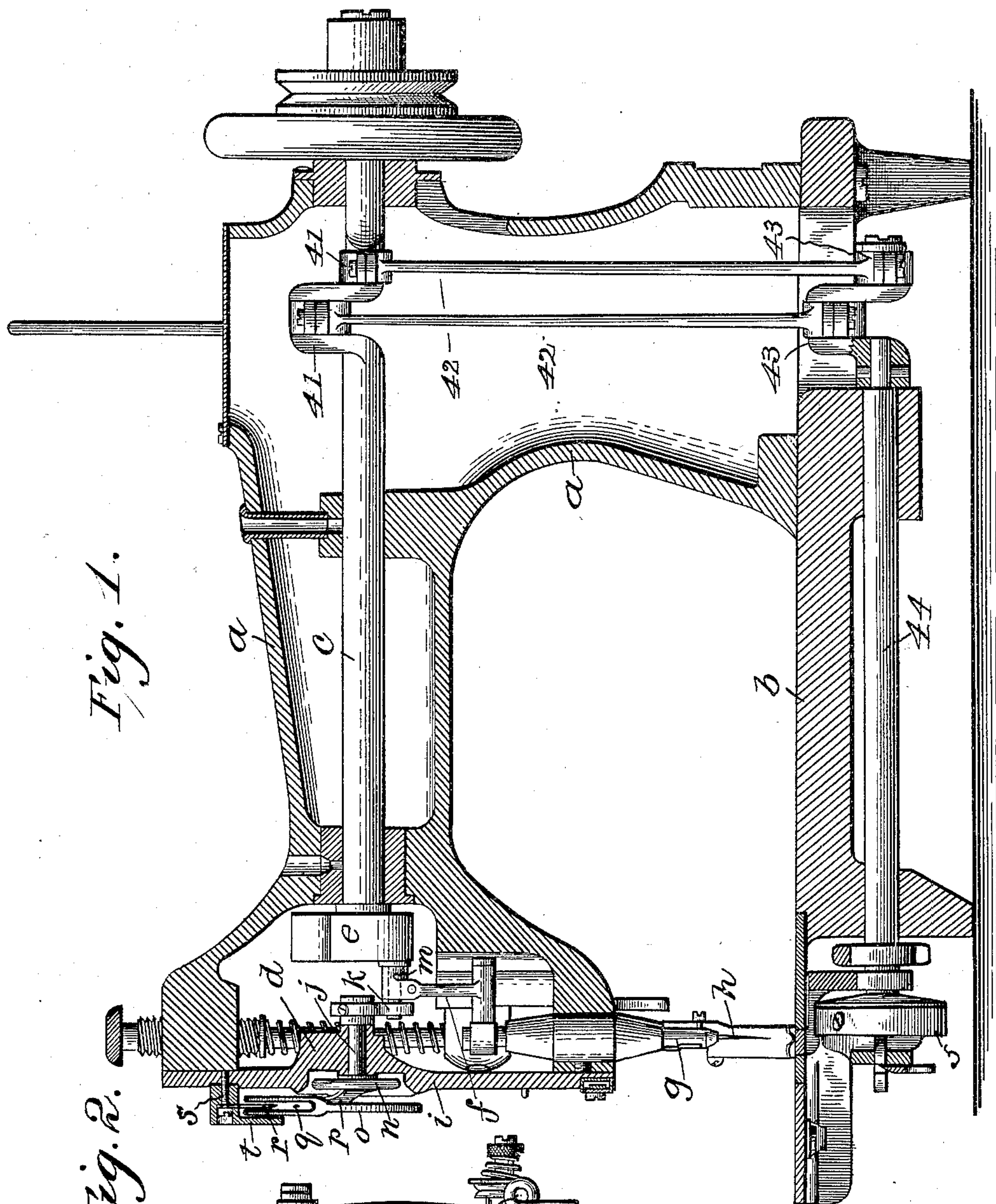
Patented July 22, 1902.

M. HENLEB.

ROTARY TAKE-UP FOR SEWING MACHINES.

(Application filed May 7, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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ROTARY TAKE-UP FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 705,240, dated July 22, 1902.

Application filed May 7, 1901. Serial No. 59,111. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HEMLEB, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Rotary Take-Ups for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the use of rotary take-ups for sewing-machines more or less difficulty has been encountered by reason of the fact that when the thread is accidentally broken at or near the needle the end of the thread gets caught by
15 the rotary take-up and becomes wound up on the take-up as the latter continues to revolve before the machine is stopped. This results in a very considerable waste of thread and also causes annoyance and loss of time in re-
20 moving the wound-up or entangled thread from the take-up.

This invention has for its object to obviate the difficulty referred to, and this object is effected by providing means for clearing
25 the needle-thread from the take-up should the thread be accidentally broken between the tension device and the work and the loose end of the broken thread then become entangled with or wound upon the take-up, such
30 means consisting, preferably, of a knife or thread-cutter so arranged that should the thread become entangled with or wound upon the two separated parts of the rotating take-up the thread will be carried against the said
35 knife or thread-cutter and severed, and thus be removed from the said take-up.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a revolving-hook sewing-machine embodying the invention, and Fig. 2 is a partial front end view of
40 the same.

Referring to the drawings, *a* denotes the arm; *b*, the work-plate; *c*, the rotating driving-shaft journaled in the upper portion of the
45 arm and provided at its forward end with a crank *e*, connected by a pitman *f* to the needle-bar *g*, carrying the needle *h*. The shaft *c* is provided near its rear end with twin cranks 41, connected by pitmen 42 with similar twin cranks 43 at the rear end of a shaft

44, journaled beneath the work-plate *b* and carrying at its forward end the revolving hook *5*.

The parts thus far described are or may be essentially the same in construction and operation as the correspondingly-designated parts of the machine shown and described in United States Patent No. 663,808, dated December 11, 1900, Philip Diehl inventor.

Journaled in a bearing portion *d* of the face-plate *i* is a shaft *j*, provided at its inner end with a slotted crank *k*, engaged by the needle-bar-operating crank-pin *m*, said shaft carrying at its outer end a hub or disk *n*, offset from which is a ring or guard *o* of irregular oval or pear-shaped form connected with
60 said disk by a tangential take-up arm *p*, which is preferably integral with both said disk and ring. One part of the offset ring or guard *o* is preferably concentric with the disk *n*, while
65 the other part of said ring projects eccentrically from said concentric part, and the entire ring is joined to said disk by the take-up arm *p*, on each side of which is a clear thread-space between said arm and the eccentric
70 part of said ring.

The eccentric part of the ring *o* and the outer portion of the arm *p* are made double and may consist either of two separated plates or of a plate of suitable thickness recessed at said eccentric portion from its periphery inward to form a deep split *q*. Attached to the face-plate *i* is a knife or thread-cutter *r*, herein shown as being secured to said face-plate by a screw *s*, which also
80 attaches to said face-plate a small bracket *t*, having a depending arm or portion which serves as a guard or housing to prevent injury to the hands of the attendant by accidental contact with said knife, the latter being
85 so located as to be in register with the slit or recess *q* as the take-up rotates, the two separated parts of the eccentric portion of the take-up ring *o* and the outer part of the arm *p* passing freely by and on the opposite
90 sides of said knife as the take-up rotates. Thus if the needle-thread should accidentally break at or near the needle so as to leave a sufficient length of thread on the needle side of the take-up to be caught by the take-up
100

arm *p* the entangled thread will take a turn around or become engaged with the outer end of said arm, and thus extend across the slit or recess *q* between the two parts of the outer end of said take-up arm, and when the latter in the rotation of the take-up passes the knife or thread-cutter *r* the thread, extending across the slit or recess *q*, will be carried against the stationary knife *r*, and thus be automatically severed. In being thus severed between the two separated parts of the take-up arm the entangled or wound-up thread will be automatically cleared or removed from the take-up while the machine is running, by reason of the fact that the thread will be cut by the stationary knife or tool against which it is carried by the rotation of the take-up, and which knife or tool not only severs the thread but clears or removes the entangled thread from the take-up.

In the usual operation of the machine with the needle-thread unbroken the take-up operation (as fully described in the application of Diehl and Hemleb, filed simultaneously herewith) is completed and the thread in the formation of each stitch has slid down the take-up arm *p* to a considerable distance below the lower end of the knife *r* before said take-up arm in its rotary traveling movement reaches said knife, so that there is no danger whatever that the knife will sever the thread excepting when the latter is broken and becomes entangled with the rotary take-up, and in such case it always begins to be wound around the outer (or upper) portion of the rotating take-up arm, being apparently carried to the said outer portion of said arm by centrifugal action.

The invention is not to be understood as being limited to the details of construction or to the particular form of rotary take-up herein shown and described, but consists, broadly, of the combination, with a rotary take-up, of means for automatically clearing the needle-thread from the rotary take-up should it accidentally be broken between the tension device and the work and then become entangled with or wound upon the said take-up, such means preferably consisting of a device for automatically severing the needle-thread between two separated parts of the said take-up.

Having thus described my invention, I

claim and desire to secure by Letters Patent—

1. In a sewing-machine, the combination with a rotary take-up and its operating mechanism, of means for automatically clearing the needle-thread from the said take-up while the machine is running should the said thread be broken between the tension device and the work and thus become entangled with or wound up on the said take-up.

2. In a sewing-machine, the combination with a rotary take-up, of a stationary knife or thread-cutter arranged to automatically sever the needle-thread between two separated parts of the take-up and thus clear the thread from said take-up while the machine is running should the thread become entangled with or wound up on the said take-up.

3. In a sewing-machine, the combination with a rotary take-up and its operating mechanism, of a knife or thread-cutter arranged to automatically sever the needle-thread adjacent to said take-up should said thread be caught on or entangled with said take-up, and a guard or housing inclosing said knife or thread-cutter.

4. In a sewing-machine, the combination with a rotary take-up having a slit or recess in its peripheral portion, of means for operating said take-up, a stationary knife or thread-cutter arranged to extend into said slit or recess during some part of the rotation of said take-up to sever the needle-thread should the latter become caught on the take-up and thus be extended across the said slit or recess.

5. In a sewing-machine, the combination with a rotary take-up and its operating mechanism, of a stationary tool for automatically clearing the needle-thread from said take-up while the machine is running should said thread accidentally be broken between the tension device and the work and then become entangled with or wound up on the said take-up.

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

MARTIN HEMLEB.

Witnesses:

H. J. MILLER,
LULU GROTE.