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THREAD CUTTING MECHANISM FOR SEWING MACHINES

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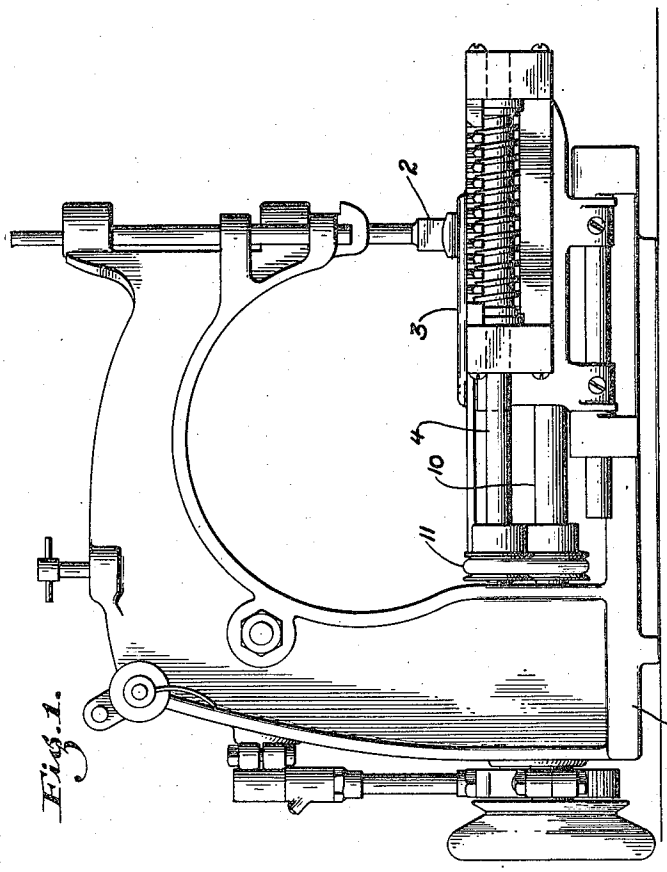


Fig. 1.

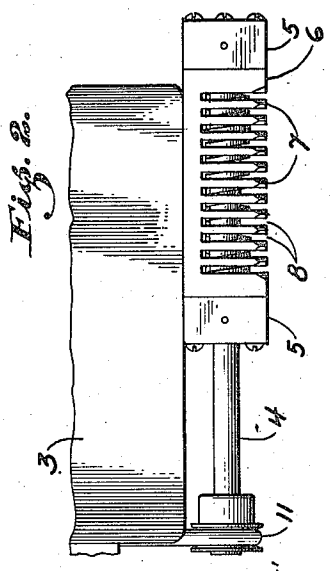


Fig. 2.

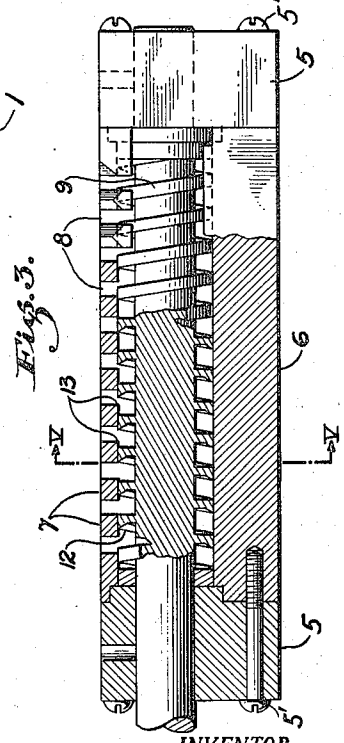


Fig. 3.

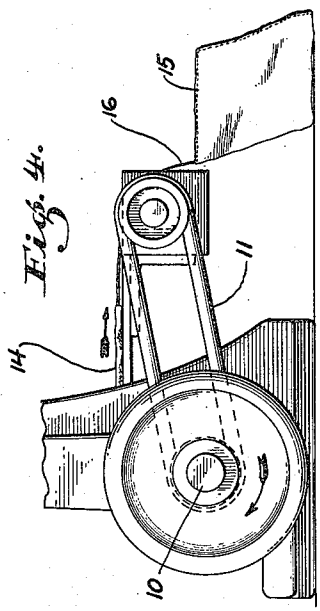


Fig. 4.

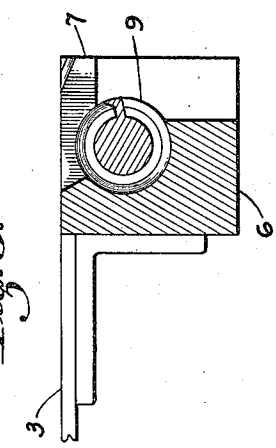


Fig. 5.

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UNITED STATES PATENT OFFICE.

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THREAD-CUTTING MECHANISM FOR SEWING MACHINES.

Application filed September 10, 1925. Serial No. 55,436.

This invention relates to thread cutting mechanism and particularly to a thread cutting attachment adapted to automatically sever the thread connected to a sewed article as the article passes from the machine.

The present invention is particularly useful in connection with continuously operating bag sewing machines wherein the bags are passed through the machine in succession and are all connected by the sewing thread.

We are aware that some devices for performing this function have been heretofore known and it is therefore the primary object of our invention to provide an improved device for this purpose which will operate to automatically sever the portion of sewing thread connected to a sewed article as the article passes from the machine.

In accordance with our invention, we provide a toothed guard and a rotary spiral cutting member therein and mount this guard on the rear face of the sewing machine beneath the top sewing surface thereof. One edge of the rotary spiral member is sharpened in a manner cooperating with sharp cutting edges of the guard. Upwardly extending openings are provided between the adjacent teeth of the guard whereby when a sewed article passes over the guard and drops down by gravity the thread connected thereto will automatically drop into one of such openings and be severed by the sharp edges as the member is rotated. It is an object of our invention to provide an improved thread cutting mechanism of this type.

In the accompanying drawing we have shown one specific embodiment of our invention, but it will be understood that the invention can be otherwise embodied and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

Referring to the figures of the drawing,

Fig. 1 is a rear elevation of a sewing machine having our thread cutting attachment mounted thereon.

Fig. 2 is a fragmentary plan view thereof showing our invention.

Fig. 3 is an enlarged sectional view through the severing mechanism.

Fig. 4 is a fragmentary end view of the machine.

Fig. 5 is a cross sectional view taken on line V—V of Fig. 3.

Referring more specifically to the drawing by reference characters, 1 indicates a sewing machine having a sewing portion 2 over a top sewing surface 3. The article sewed moves in the direction of the arrow shown in Fig. 4.

Our invention as illustrated is in the form of an attachment adapted to be secured to the rear edge of the machine. The device comprises a member 4 rotatably mounted in end blocks 5 secured to an intermediate block 6 by screws 5'. The intermediate block is milled to form a plurality of teeth 7 with openings 8 therebetween. The opening in the block 6 wherein the member 4 is mounted is such that the peripheral portion of the spiral element 9 fits accurately thereagainst as illustrated in Figs. 3 and 5. As will be noted, the outer edge face of the spiral member 9 is relatively wide and cylindrical in shape in a manner cooperating with the wall of the opening in the block 6 to form a bearing for the member 4 and element 9. The member 4 is therefore assured of true rotation along its entire length and the quick and accurate cutting of the threads is likewise assured.

The member 4 can be driven from the main shaft 10 of the machine through a belt 11 or by any means desired. As the member 4 is rotated in the direction of the arrow, the edges 12 which are preferably under-cut to make a sharp cutting edge, cooperate with the edges 13 of the teeth 7 as will be understood. By locating the cutting teeth 7 at the upper portion of the block 6, a suitable length of string is left on the article severed as will be seen by referring to Figs. 4 and 5.

It is believed that the operation of the mechanism will be clearly understood from the above description. The sewing bags 14 and 15 are connected by the sewing thread 16. As the sewing continues, the end bag 15 drops over the edge of the guard 7 and the thread 16 thereof into one of the openings 8. The member 4 being continuously rotated, the sharp edge 12 thereof cooperates with the sharp edge 13 and severs the thread.

It will be noted that the intermediate block 6 and end bearing blocks 5 are rigidly secured together by screws which form these parts into a unit attachment adapted to be secured to the rear edge of the sewing machine. In the operative position, as illustrated in Fig. 2, the recesses 8 extend in-

wardly of the block 6 from the rear edge thereof, in a manner forming the rearwardly extending teeth 7. These teeth are located at the top of the block, whereby they not only serve to support the sewed article until it drops off the rear edge, but also serve to sever the thread as soon as it enters a recess, even though the article does not drop down to a fully vertical position (see Fig. 4).

Having thus described our invention, what we claim and desire to secure by Letters Patent is—

1. In combination with a sewing machine, a thread cutting mechanism comprising a block secured to the machine rearwardly of the sewing mechanism, a plurality of teeth at the top of the block having their free ends extending in a direction away from the sewing machine, a shaft rotatably mounted in the block and carrying a continuous spiral cutting tooth cooperating with the said teeth, one edge of the said tooth being sharp and cooperating with the said teeth to sever a thread falling downward between two adjacent teeth, and means on one end of the shaft for rotating the same.

2. In combination with a sewing machine, a thread cutting mechanism comprising a block secured to the machine rearwardly of the sewing mechanism, the block being provided with an opening longitudinally therethrough and the top face of the block being provided with a plurality of recesses extending thereinto from the rear edge thereof, the said recesses forming a plurality of rearwardly extending teeth the top surfaces of which form a portion of the top of the block, a shaft rotatably mounted in the block and carrying a continuous spiral cutting tooth cooperating with the said teeth, one edge of the said tooth being sharp and cooperating with the said teeth to sever a thread falling downward into a recess between two adjacent teeth, and means on one end of the shaft for rotating the same.

3. A thread cutter for sewing machines, comprising the combination of a block having a cylindrical opening longitudinally therethrough, a plurality of laterally extending teeth forming a portion of the wall of such opening, and a rotary shaft mounted in the opening and having a continuous spiral rib thereon having one edge sharp in a manner to co-operate with the teeth to sever a thread therebetween when the shaft is rotated, the outer edge face of the rib being relatively wide and cylindrical-shaped to cooperate with the wall of the opening in a manner to form a bearing for the shaft.

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