Nov. 11, 1941. J. D. MERRIFIELD 2,262,294

THREAD CUTTING DEVICE FOR BAG STITCHING MACHINES

Filed July 1, 1940 2 Sheets-Sheet 1

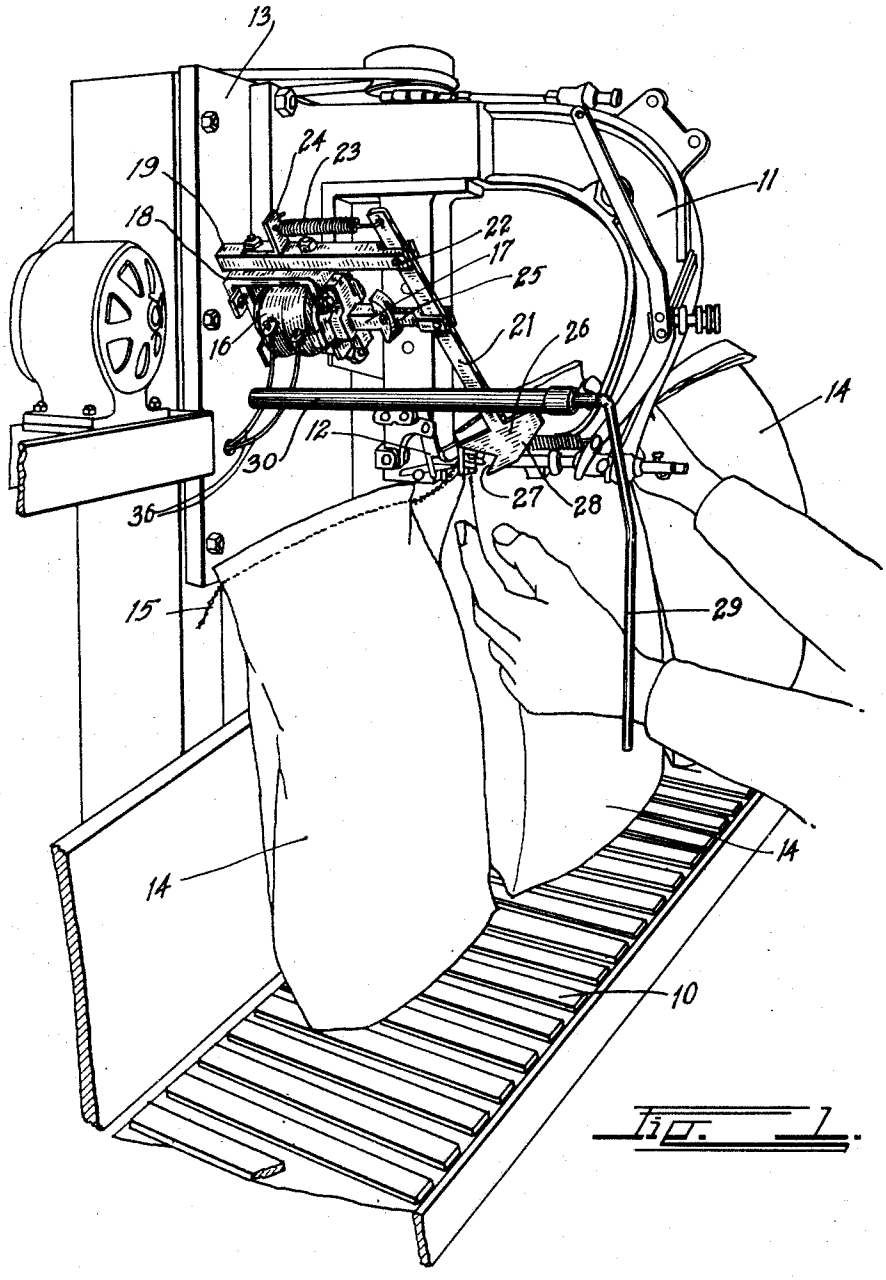


Fig. 1.

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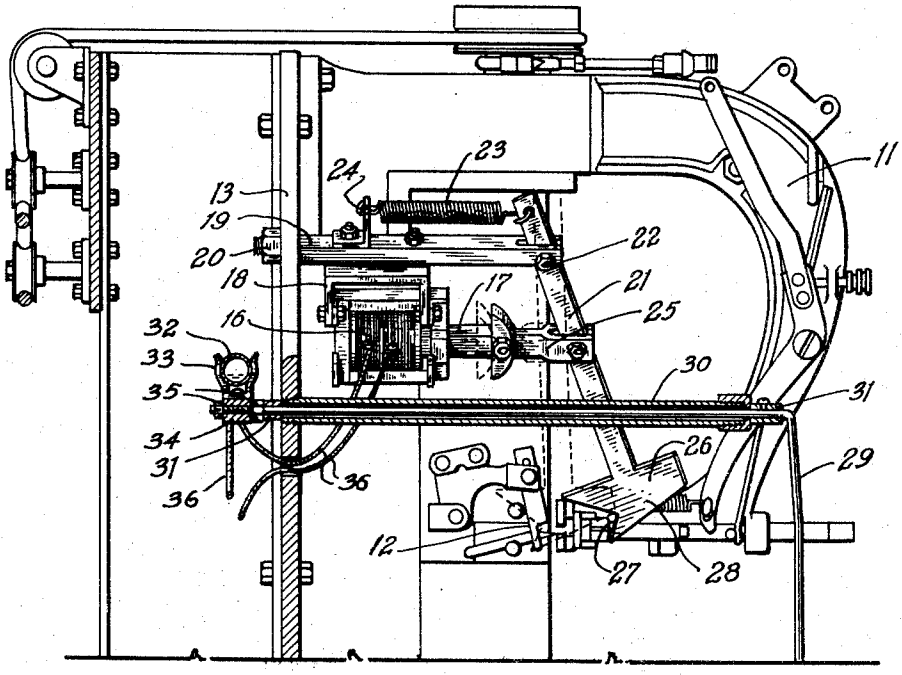


Fig. 2.

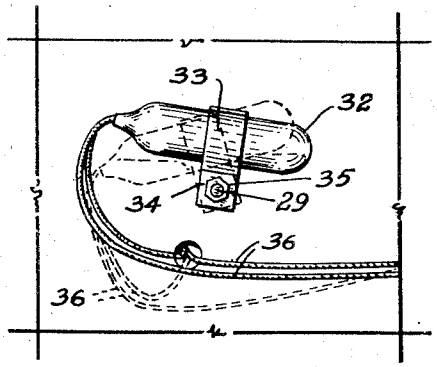


Fig. 3.

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THREAD CUTTING DEVICE FOR BAG STITCHING MACHINES

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Application July 1, 1940, Serial No. 343,378

4 Claims. (Cl. 112—252)

This invention relates to a thread cutting attachment for bag stitching machines. In factories, such as sugar factories and the like, the products are placed in cloth bags which are closed by a line of chain stitching across the top. These bags travel beneath the sewing machine in a continuous, spaced apart series and the operator straightens and guides the top of each bag through the sewing machine. The machine forms a continuous chain stitch across the bag and across the spaces between the bags. The machines are provided with stitch thread cutters but it is exceedingly difficult for the operator to place the line of stitching on the out-going bag and at the same time straighten and guide the incoming bag into the sewing machine.

The principal object of this invention is to provide an efficient device which will automatically position the stitching in the stitch cutting mechanism at the proper time to cut the stitching substantially half way between each pair of bags without requiring any attention on the part of the machine operator.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawings which form a part hereof. Like numerals refer to like parts in all views of the drawings and throughout the description.

In the drawings:

Fig. 1 is a perspective view illustrating the invention applied to a typical bag stitching machine.

Fig. 2 is a vertical section through the control rod portion of the device.

Fig. 3 is a detail view of the control switch.

In the drawings, typical parts of a bag stitching mechanism are designated by numeral as follows: bag conveyor 10; stitching machine head 11; stitch cutting blade 12; machine mounting board 13; bags 14; and lock seam stitch 15.

The invention is mounted on the machine mounting board 13 alongside of the stitching head 11 and employs an electric solenoid 16 of a type to actuate a magnetic plunger 17. The solenoid is mounted in a supporting frame 18 carried from a post 19; the post is fixedly attached to the mounting board 13 in any desired manner such as by means of a clamp nut 20.

A lever arm 21 is hingedly mounted on a suitable hinge pin 22, at the free extremity of the post 19. The lever arm extends upwardly beyond the post to receive a tension spring 23 which is stretched between the lever extremity and a spring bracket 24 on the post. The spring 23 constantly urges the lower extremity of the lever arm 21 outwardly. The arm may be moved inwardly by the action of the plunger 17, which is connected through the medium of a connecting link 25, with the lever arm below the post 19.

The lower extremity of the lever arm is provided with a head member 26. The rear face of the head member contains a stitch engaging notch 27 which, when the lever moves inwardly, engages the stitch of thread 15 and forces it beneath the stitch cutting blade 12. The forward extremity of the head 26 has an inclined lower edge 28 which enables it to ride over the chain stitch on its forward movement. Thus, at each actuation of the solenoid 16 the chain stitch of thread is forced rearwardly beneath the cutting blade 12 and is severed at that point.

The cutting blade is furnished as part of the stitching machine and forms, per se, no part of the present invention. This blade constantly reciprocates during the operation of the machine so that whenever the stitch is forced beneath the blade, the thread will be severed and this invention accomplishes the function of forcing the chain stitch beneath the blade at the proper time.

The time interval is controlled by means of a switch rod 29 which extends through an enclosing tube 30 to the rear of the machine mounting board 13. The tube 30 is threaded into or otherwise permanently secured to the mounting board. The switch rod is prevented from endwise movement in the tube 30 by means of suitable set collars 31. The forward extremity of the switch rod is turned downwardly sufficiently for to be engaged by the wrist of the operator as he passes the bags through the stitching machine.

A tilting mercury switch 32 is secured in a suitable switch clamp 33 which in turn is mounted on a switch block 34. The current to the solenoid 16 is controlled by the switch 32 through suitable conductors 36. The switch block 34 is adjustably clamped on the extremity of the switch rod between suitable clamping nuts 35 so that its position may be varied to suit the requirements of the particular installation. The relation of the switch to the downwardly turned extremity of the switch rod is preferably such that when the operator brings the next successive bag to the stitching head, the switch will close a cir-

cuit to cut the stitching between that bag and the preceding bag.

It can be readily seen that the operation of the device requires no attention on the part of the operator. The operator's wrists are naturally in the operating position while he is attending to the guiding of the bags through the stitching machine.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. Means for placing the stitched thread into a thread cutter on a bag stitching machine comprising: a lever arm hingedly mounted adjacent said thread cutting device and positioned to swing into engagement with the thread to force the latter to said thread cutting device; a solenoid; a plunger actuated by said solenoid; means for connecting said plunger with said lever to actuate the latter; and means for energizing said solenoid at desired times.

2. Means for placing the stitched thread into a thread cutter on a bag stitching machine comprising: a supporting post member fixedly positioned adjacent said thread cutter; a lever arm hingedly mounted on said post and extending to a position to engage the thread; a solenoid for moving said lever arm in one direction; a spring for moving said lever arm in the other direction; and means for energizing said solenoid at desired times.

3. Means for placing the stitched thread into a thread cutter on a bag stitching machine comprising: a supporting post member fixedly positioned adjacent said thread cutter; a lever arm hingedly mounted on said post and extending to a position to engage the thread; a solenoid for moving said lever arm in one direction; a switch rod positioned to be contacted by an operator; and a switch actuated by the movements of said switch rod to close a circuit to said solenoid.

4. Means for placing the stitched thread into a thread cutter on a bag stitching machine comprising: a supporting post member fixedly positioned adjacent said thread cutter; a lever arm hingedly mounted on said post and extending to a position to engage the thread; a solenoid for moving said lever arm in one direction; a switch rod positioned to be contacted by an operator; and a tilting mercury switch supported by said switch rod to close a circuit to said solenoid when said switch rod is contacted by the operator.

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