March 5, 1940. S. SUSSMAN ET AL 2,192,292

CUTTING ATTACHMENT FOR SEWING MACHINES

Filed Sept. 20, 1938 2 Sheets-Sheet 1

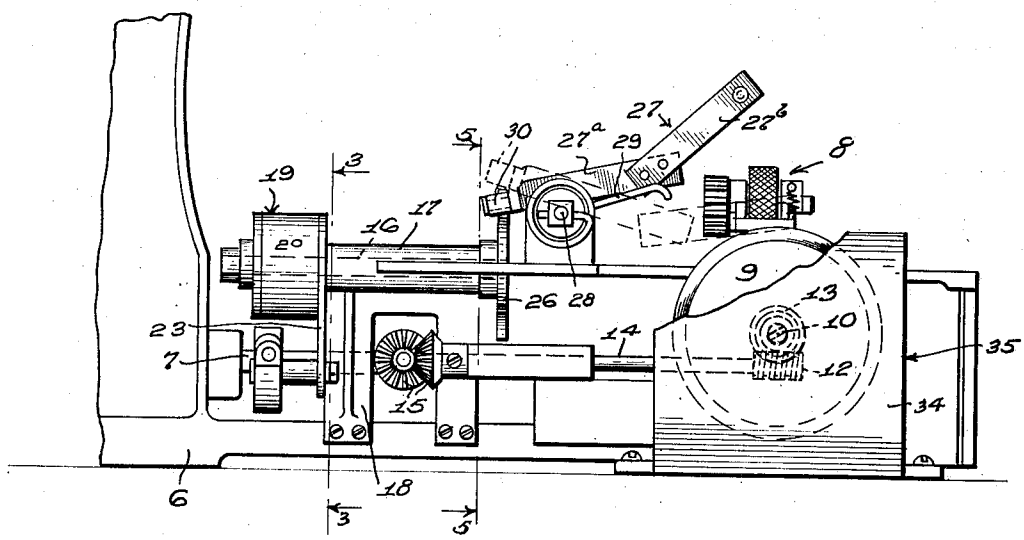


FIG. 1.

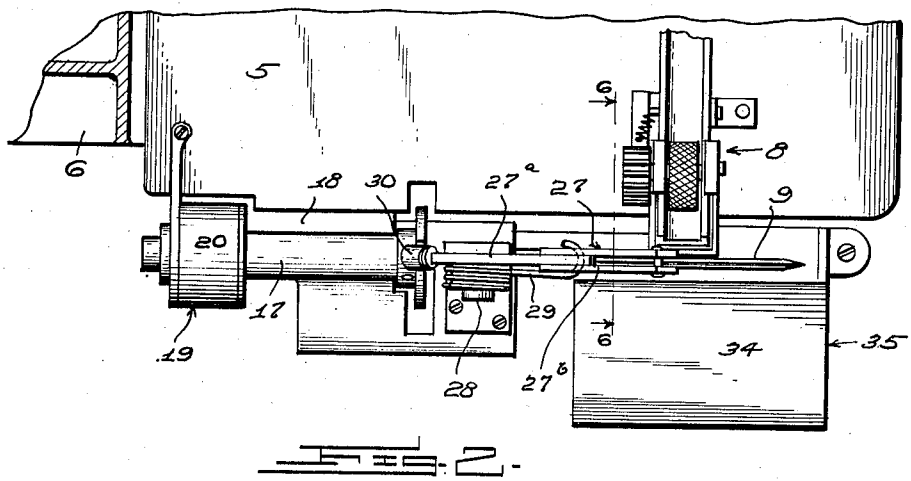


FIG. 2.

Inventors

SAMUEL SUSSMAN

GEORGE F. BOSSE,

By James H. Lyon

THEIR Attorney

March 5, 1940. S. SUSSMAN ET AL 2,192,292

CUTTING ATTACHMENT FOR SEWING MACHINES

Filed Sept. 20, 1938 2 Sheets-Sheet 2

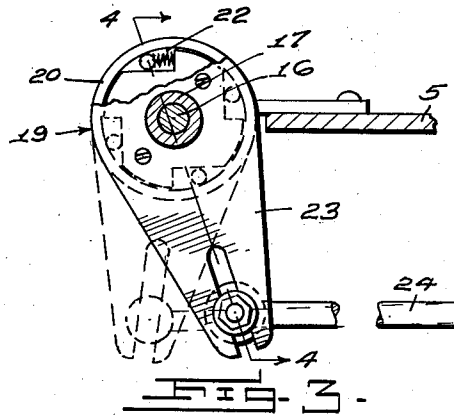
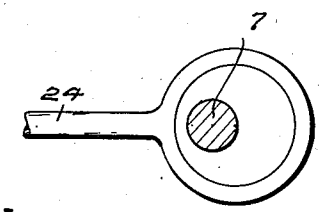


FIG. 3.



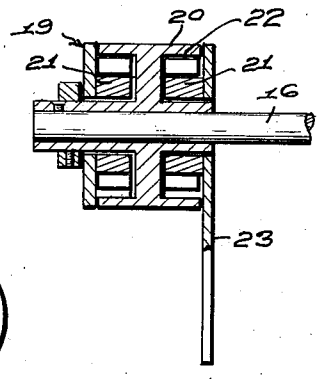


FIG. 4.

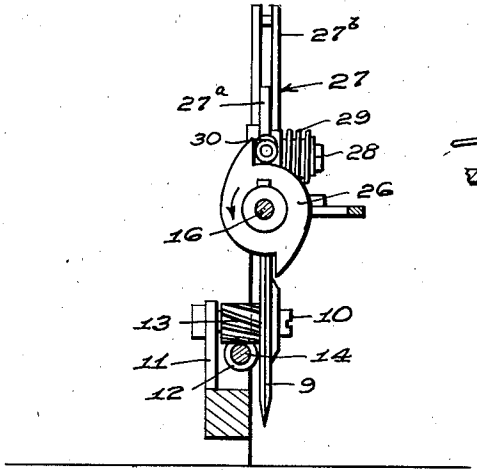


FIG. 5.

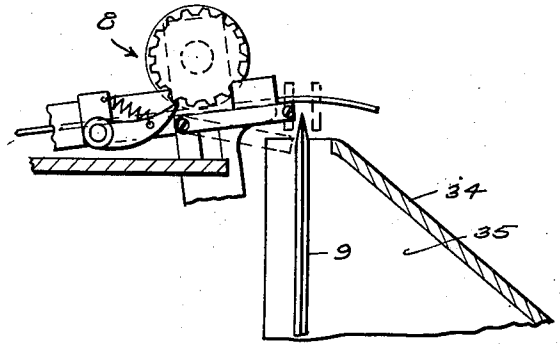


FIG. 6.

Inventors

SAMUEL SUSSMAN

GEORGE F. BOSSE,

By James W. Cyles

THEIR Attorney

Patented Mar. 5, 1940 2,192,292

UNITED STATES PATENT OFFICE

2,192,292

CUTTING ATTACHMENT FOR SEWING MACHINES

Samuel Sussman and George F. Bosse, Baltimore, Md.

Application September 20, 1938, Serial No. 230,867

4 Claims. (Cl. 112—130)

This invention relates to an improvement in a cutting mechanism adapted for use in connection with a sewing machine of the type adapted to sew or form the conventional loop for belts commonly used on men's trousers.

The present invention contemplates the cutting off into predetermined lengths, of sections of belt loop that is formed in a continuous strip sewing machine, this material being fed from the machine over a cutting mechanism associated with the machine and intermittently operated thereby.

An object of the invention is to provide a cutting mechanism constructed in such manner that it may be conveniently connected with the conventional belt loop sewing machine with a minimum of alteration of the machine, the structure being strong, durable and highly efficient in use.

Other and important objects and advantages of the invention will be apparent during the course of the following description, reference being had to the accompanying drawings, in which

Figure 1 is a fragmentary elevation of a belt loop sewing machine having the invention applied thereto,

Figure 2 is a plan view thereof,

Figure 3 is a section on line 3—3 of Figure 1,

Figure 4 is a transverse section on line 4—4 of Figure 3,

Figure 5 is a section on line 5—5 of Figure 1 and

Figure 6 is a section on line 6—6 of Figure 2.

Referring specifically to the drawings, the numeral 5 designates the work table of a conventional belt loop forming machine, mounted on the usual base 6. A main drive shaft 7 serves to operate the mechanism of the machine and incidentally operates a feed mechanism, designated as a whole by the numeral 8. The stitching mechanism for forming the belt loop (not shown) is adapted to form the loop in a continuous strip, and this continuous strip is fed outwardly of the machine by the feed mechanism 8.

Since the belt loop is fed outwardly in a continuous strip, it becomes necessary that means be provided to cut the strip into sections of predetermined lengths. To accomplish this a rotary cutting knife 9 is mounted adjacent the front edge of the table 5, with a portion thereof extending above the upper surface of the table. The knife 9 is mounted for rotation on a shaft 10 having suitable bearing in a bracket 11 carried by the base 6. The knife is driven through the medium of a worm and worm gear 12 and 13. The worm 12 is carried by and rotates with a shaft 14, in turn driven from the main drive shaft 7 through the medium of bevel gearing 15. Thus, it will be seen that so long as the sewing machine is in operation, power will be carried to the knife 9. As clearly shown in Figures 1, 2 and 6, the knife 9 is positioned directly in front of the feed mechanism 8 so that the belt loop strip will be fed directly thereover.

To properly sever the strip, it becomes necessary that means be provided to force the strip into contact with the knife, and it is essential that this means shall operate intermittently so that predetermined lengths of the material may be cut automatically. As clearly shown in Figures 1 and 2, a countershaft 16, mounted in a bearing 17 is supported upon a bracket 18 carried by the base 6. Means are provided to provide a step by step rotation of the shaft 16, comprising a ball clutch mechanism 19, embodying a cylindrical shell 20 having a hub section that is fast upon the shaft 16. A coacting clutch member 21 is rotatable within the member 20 and carries spring pressed balls movable in sockets 22. The balls are adapted to bind the members 20 and 21 together through the medium of the springs when the member 21 is rotated in a clock-wise direction. Intermittent movement is imparted to the member 21 by an arm 23 secured thereto. The arm 23 is in turn given a pendulum motion by a rod 24 having connection with an eccentric device on the main shaft 7. It will therefore be seen that an outward movement of the arm 23 will result in a partial rotation of the shaft 16. A return movement of the arm fails to move the shaft 16 in view of the fact that the clutch balls will slip. It will be obvious, that this step by step motion of the shaft 16 will be continuous during the operation of the machine.

Mounted upon the opposite end of the shaft 16 is a cam 26, having two, oppositely positioned contact faces. The cam 26 serves to operate a presser member 27 for forcing the belt loop strip into contact with the knife 9. The presser member comprises sections 27*a* and 27*b*, the two sections being rigid with respect to each other. The section 27*b* is formed by a pair of plates positioned upon opposite sides of the section 27*a*, and riveted thereto. The section 27*a* is mounted for vertical swinging movement upon a shaft 28, and is normally maintained in an inoperative or raised position by a coil spring 29. A roller

30 carried by the free end of the section 27*a* is engaged by the cam 26. As clearly shown, the presser member is mounted directly in alignment with the cutting edge of the knife 9. Action of the cam upon the roller 30 swings the opposite end of the presser 27 downward against the action of the spring 29, and the plates of the section 27*b* will pass upon opposite sides of the knife. Thus it will be seen that the belt loop material lying over the knife will be firmly pressed against the cutting edge and cleanly severed. The severed material falls upon the inclined face 34 of a guard member 35, from where it may be delivered to a suitable container or a conveyor.

It will be seen that the mechanism is both automatic and continuous during the operation of the machine. The continuous strip formed by the sewing machine and fed outwardly by the mechanism 8 will pass over the knife 9, and at a predetermined time the presser will move downwardly and press the material into contact with the rotating knife. This action is instantaneous and the presser promptly returns to its upper position to await the next cam action. The length of material to be severed may be varied by an adjustment of the rod 24 upon the arm 23, thus changing the travel of the arm 23, and incidentally varying the degree of step by step motion of the shaft 16.

It is to be understood that the invention is not limited to the precise construction shown, but that it includes within its purview whatever changes fairly come within either the terms or the spirit of the appended claims.

Having described the invention, what is claimed is:

1. A device of the character described for use with a sewing machine adapted to form belt loops in a continuous strip, and having mechanism for feeding the strip from the machine, a rotary knife carried by the machine and arranged in the path of travel of the outward fed material, means for forcing the strip into contact with the knife and means controlled by the operation of the machine for intermittently controlling the forcing means.

2. A device of the character described for use with a sewing machine adapted to form belt loop material into a continuous strip, and having feed mechanism carried by the machine for feeding the formed material strip from the machine, a rotary cutting knife carried by the machine and arranged in the path of travel of the strip, a pressing device adapted to press the material into contact with the knife at predetermined intervals, control means for the pressing device, said control means adapted to intermittently operate the pressing device for forcing the material into contact with the knife.

3. A structure of the character described for use in connection with a sewing machine adapted to form and deliver strip material, and having a rotary cutting knife, a pressing device and control means for the pressing device, said control means comprising a cam adapted to engage the presser, and means for imparting a step by step motion to said cam for intermittently operating the pressing device.

4. A structure of the character described for use in connection with a sewing machine adapted to form belt loop material in strip form, and having means for feeding the formed material from the machine, a cutting knife carried by the machine and arranged adjacent the feeding means, a presser device arranged adjacent the cutter, a cam for moving the presser toward said knife, a spring for returning the presser to normal position, and means for imparting a step by step motion to said cam whereby said presser is given an intermittent movement toward and from said knife.

SAMUEL SUSSMAN.
GEORGE F. BOSSE.