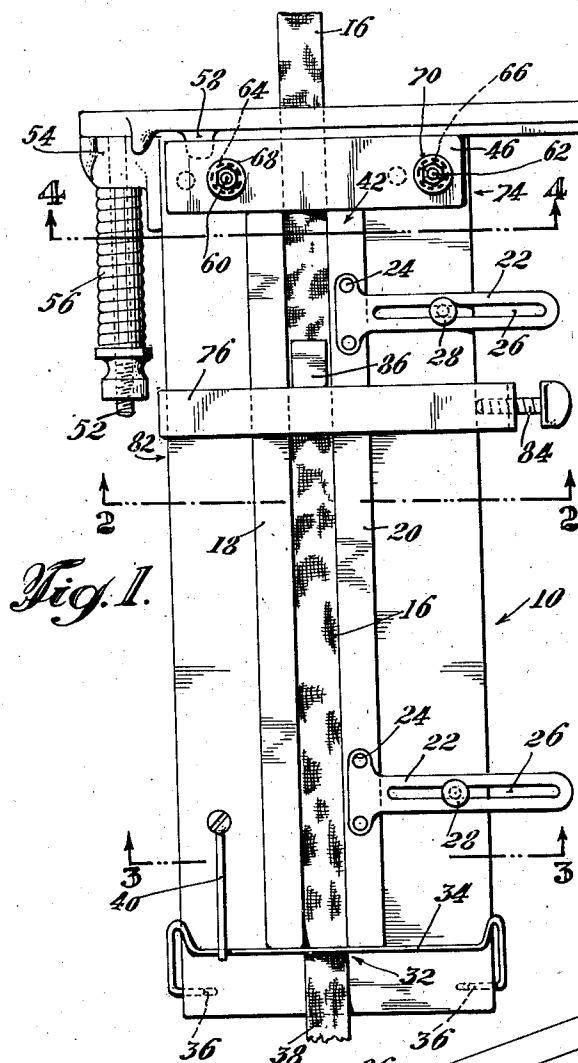
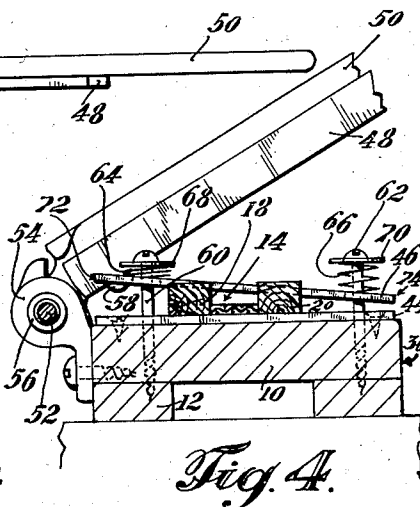
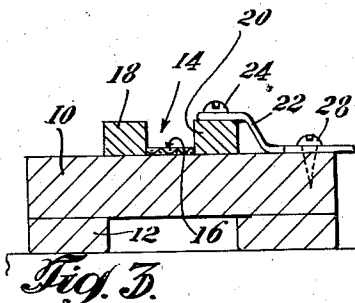
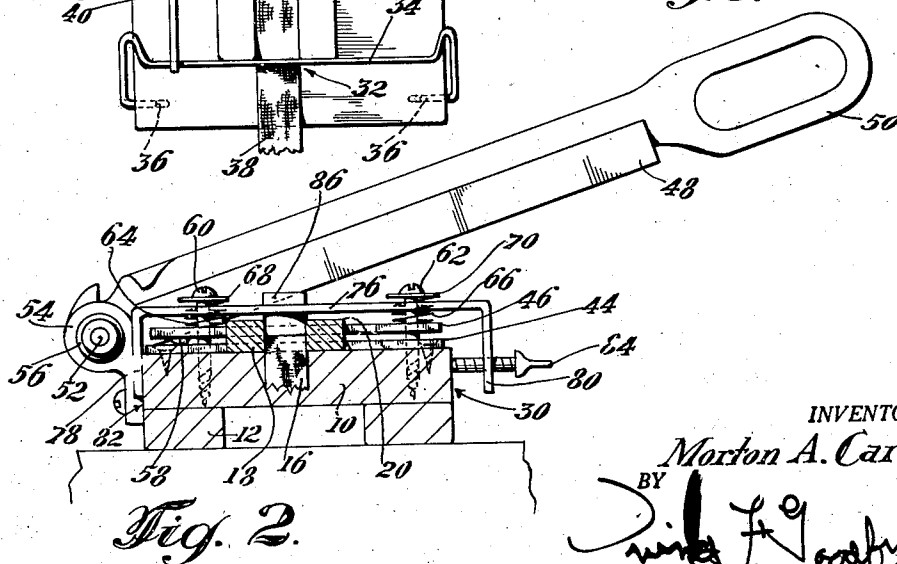


July 11, 1944.

M. A. CARLIN
RIBBON CUTTING APPARATUS

Filed Aug. 13, 1943

2,353,390



UNITED STATES PATENT OFFICE

2,353,390

RIBBON CUTTING APPARATUS

Morton A. Carlin, New York, N. Y.

Application August 13, 1943, Serial No. 498,457

11 Claims. (Cl. 164—45)

This invention relates to a cutting apparatus and more particularly one for cutting cloth, such as a ribbon-like material into a plurality of uniform lengths.

In certain industries, such as the garment trade, it is required to use a number of pieces of material in sewing together the garment, which pieces are each substantially of the same length. For example, in sewing together brassières and slips and the like garments, a plurality of pieces of ribbon-like material, both elastic and inelastic and sometimes referred to as "trimmings" which should be of equal length, are used to make the garments. Heretofore, particularly in relatively small shops, such pieces of ribbon-like material, (comparatively numerous in small shops) have been cut by hand, and the relative size thereof being dependent wholly on the judgment of the cutter, and were, therefore, not uniform in size. In addition, prior methods used were not conducive to cutting the material rapidly, easily and relatively inexpensively in the quantities required.

My invention provides a cutting apparatus by which material can be rapidly and easily cut into a comparatively large number of pieces, each piece uniform in size without necessitating any judgment on the part of the operator who, therefore, can be an "unskilled laborer."

My invention further contemplates the provision of such a cutting apparatus which can be adjusted to cut the material in strips or pieces of any selected length and to accommodate material of various widths.

These and other and further objects, features and advantages of my invention will be apparent from the following description and the drawing relating thereto in which

Fig. 1 is a plan view of a cutting apparatus embodying my invention.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 2, showing the knife in raised position.

While my cutting machine is designed primarily for hand operation and so described it is capable of adaptation for complete automatic power operation.

Referring now to the drawing, the elements of my apparatus are mounted on the table or support 10, which may be carried on the legs 12.

A channel 14, for feeding through the apparatus the ribbon of material 16 to be cut into the desired lengths, is provided between the longitudinal bars 18 and 20.

The bar 18 may be fixed to the table in any desired manner and the bar 20 adjustably held on the table so that its position relative to the bar 18 may be selectively changed to vary the size of the channel 14 to accommodate material 16 of different widths.

To accomplish this, I preferably secure the arms 22 to the bar 20, as by the rivets 24 and in the elongated adjustment slots 26 in the arms I insert locking means such as the screws 28, which hold the arms 22 and the bar 20 on the table 10 in the position to which it may have been moved, the elongated slots being of length to permit movement of the bar 20 from the bar 18 to adjacent the edge 30 of the table 10.

The ribbon, roll or stack of the material 16 to be cut is carried on the table at the entrance 32 to the channel 14. Since the means for carrying the material forms no part of my invention and may be of any suitable kind familiar to those skilled in the art, it need not be illustrated.

In order to insure that the material 16 feeds through the channel 14 in a flat strip or ribbon and so that it is suitably held for the measured feeding and cutting operation, I provide a holding means, such as the cross bar 34, which is pivotally carried on the table 10 by the pins 36, about which it is rotated and held against the rear part 38 of the material by a suitable tensioning means 40, such as a rubber or metal spring.

At the exit 42 of the channel 14, I provide means for holding the material in position so that it will be securely held there, upon moving the material the measured amount whereupon it can then be cut off by the knife mechanism, mounted on the board or table 10 at that end.

This holding means comprises the clamping bars 44 and 46, the lower one 44 of which is secured to the table, so that its upper surface is substantially flush with the surface of the channel 14 and the upper one 46 of which is superimposed on the lower one so that it can be raised and separated therefrom as and for the purposes which will be hereinafter described.

Means for cutting the material preferably comprises the single blade 48, secured on the handle 50, which is arranged on the pivot 52 mounted in the bracket 54, which bracket is attached to the table 10 at the exit end of the board or table, so that in the cutting operation the blade edge passes by the holding means close thereto. If desired, a torsion spring 56 having a tension opposed to the knife raising movement may be provided to act upon the knife as it is brought down in the cutting operation.

In order to separate the bars, upon raising the blade 48 in readiness for the cutting operation (as illustrated in Fig. 4) so that the measured quantity of material may be passed therebetween, I provide the engagement 58, which extends from the inner part of the blade adjacent the bracket 52 and preferably to the rear of the longitudinal bar 18 between the clamping bars 44 and 46.

To resiliently mount the bar 46 above the bar 44, I preferably secure the pins 60 and 62 to the bar 44 at the ends thereof. The pins 60 and 62 pass through suitable openings in the bar 46, the diameters of which are large enough so that the upper clamping bar is comparatively loosely mounted on the pins.

The upper bar is normally held in clamping position against the lower bar by means of the springs 64 and 66, carried on the pins between the washers 68 and 70 and the lower clamping bar.

Upon raising the blade for the cutting operation, the engagement raises the inner end 72 of the upper bar to separate it from the lower bar against the tension of the spring 64 to provide a space through which the measured amount of material can be passed.

By reason of the position of the engagement 58 with respect to the upper bar, the outer end 74 thereof will be raised only slightly and the upper bar will assume a position inclined to the horizontal as if hinged at 74 (see Fig. 4).

To measure the quantity of material fed to the blade, I provide an adjustable stop or guide such as the bracket-like member, the cross piece 76 of which extends across the table resting on the longitudinal channel forming bars 18 and 20 and the depending arms 78 and 80 of which respectively engage the sides 30 and 32 of the table, the screw 84, mounted on the arm 80, locking the stop to the table in any selected position thereon.

The material 16 may be fed through the apparatus by hand using the simple suggested device illustrated and which comprises the block 86, resting on the material 16 and of dimensions to fit into the channel 14 to slide therein.

In operation, the blade is raised to thereby separate the clamping bars and the material is fed into the space provided therebetween to project from the table beyond the blade. The blade is brought down, the upper clamping bar, just in advance of the downward blade movement, being forced against the lower clamping bar by the springs to immovably grasp and hold the material therebetween to fix its position in the apparatus.

By reason of the pseudo hinged connection between the bars, the strip of material is held at the side thereof next to the channel bar 20 before the blade commences to cut the material at the side thereof next to the channel bar 18. As the knife is brought down home, the material is firmly grasped and trimmed to fix the outer end of the piece of material, the position of which cannot be disturbed while the knife is down, by reason of the clamping action of the bars 44 and 46.

To feed a selected length of material to the blade, the feeding means, here the block 86, is placed against cross piece 76 of the stop or guide in the channel pressing down on the material lying therein.

The blade is raised releasing the clamping mechanism, the material being held in position

in the feeding channel 14 by the downward pressures of the block 86 and the cross bar 34, and when the upper bar 46 frees the material, the block 86 is moved or slid in the channel against the clamping mechanism to thereby carry with it and feed a selected length of material to the blade.

It will be understood that the tension means 40 will be sufficient to hold the material in flat position in the channel but not too great to interfere with proper feeding of the material to the knife by the feeding means, here the block 86.

The block 86 is held against the clamping means to thereby hold the selected length of material in position until the knife is brought down to grasp the material in the clamping means, as above described, and cut off the selected length, whereupon the block is returned to the cross piece 76 of the stop or guide to then repeat the feeding and cutting operations as often as required.

It will now be apparent that the material is rapidly fed to the knife and cut by it in uniform selected lengths, the material being so held during any operation that its relative position will always be determined.

It will be seen that my apparatus will cut up a strip of material into pieces of the same length rapidly and without reliance upon the judgment of the cutter.

While I have shown and described certain specific features of my invention and details of construction of a form illustrating it, it will be understood that I do not intend to limit myself thereto, but intend to claim my invention as broadly as may be permitted by the state of the prior art and the terms of the appended claims.

I claim:

1. In a device of the character described, a table, spaced members forming a work feeding channel on the table, one of said members secured to the table to permit it to be selectively positioned on the table relatively to the other member, a work holder resiliently held against the table at the entrance to the channel, means movable in the channel for feeding work through the channel, a cross member secured to the table for selectively positioning the cross member along the channel to limit the position of the work feeding means in the channel, work clamping means on the table at the exit to the channel including a pair of separable bars, one bar resiliently held on the other bar, work cutting means pivotally mounted on the table adjacent the clamping means; and an engagement on the work cutting means for separating the bars upon pivoting the work cutting means in one direction, said clamping means constituting a second means for limiting movement in the channel of the work feeding means.

2. In a device of the character described, a table having a channel for feeding work there-through, means for feeding work through the channel, means for limiting the work feeding means, a separable clamping means at the exit to the channel, work cutting means mounted for movement on the table adjacent the clamping means; and means on the work cutting means in engagement with the clamping means and adapted to separate the clamping means upon movement of the work cutting means to permit the work feeding means to feed work into the clamping means, said clamping means constitut-

ing a second means for limiting the work feeding means.

3. The device of claim 2, the width of the channel being adjustable.

4. The device of claim 2, the means for limiting the work feeding means being adjustable.

5. The device of claim 2, and including work holding means.

6. The device of claim 2 and including resilient work holding means.

7. In a device of the character described, means for feeding work in the device, means for limiting the work feeding means, a separable work clamping means, movable work cutting means; and means on the work cutting means adapted to separate the clamping means upon movement of the work cutting means to permit the work feeding means to feed work into the clamping means, said clamping means constituting a second means for limiting the work feeding means.

8. In a device of the character described, a work feeding table, means for feeding work along the table, a stop for the work feeding means, a work clamping means comprising a bar secured to the table, a pair of spaced pins on the bar, a second bar loosely carried on the pins, a

spring on each pin normally holding the second mentioned bar against the first mentioned bar, movable work cutting means mounted on the table adjacent the work clamping means, means on the work cutting means for separating the bars against the springs upon movement of the work cutting means; and a stop for the work feeding means spaced from the work clamping means.

9. The device of claim 8, the said stop being adjustable.

10. In a device of the character described, means for feeding work in the device; a bar secured to the device; a second bar; means for loosely carrying the second bar on the first bar; resilient means for normally holding the bars together; movable work cutting means adjacent the bars; means on the work cutting means for separating the bars upon movement of the work cutting means, said bars adapted to receive work fed by the feeding means upon separation of the bars; and a work feeding stop spaced from the bars.

11. The device of claim 10, said bars constituting a second work feeding stop.

MORTON A. CARLIN.