

July 30, 1940.

S. S. GORDON

2,209,453

STRIP SEVERING DEVICE

Filed Nov. 26, 1937

2 Sheets-Sheet 1

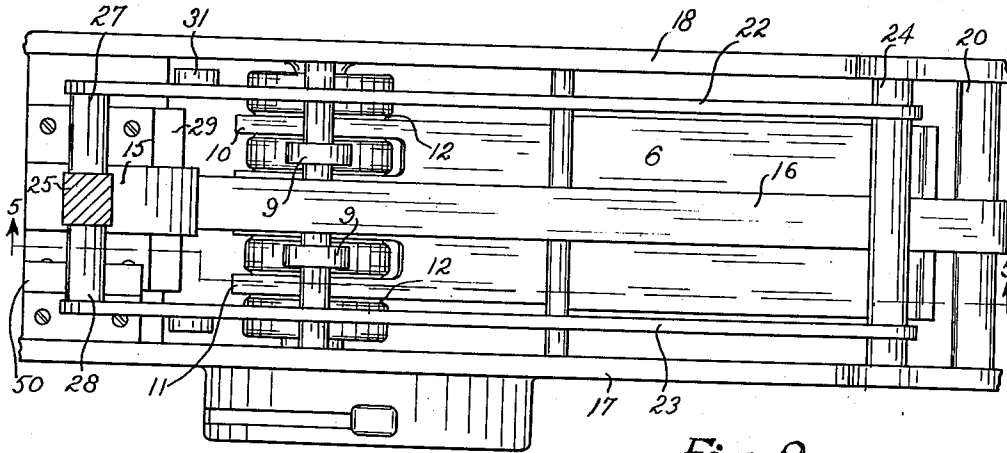


Fig. 2

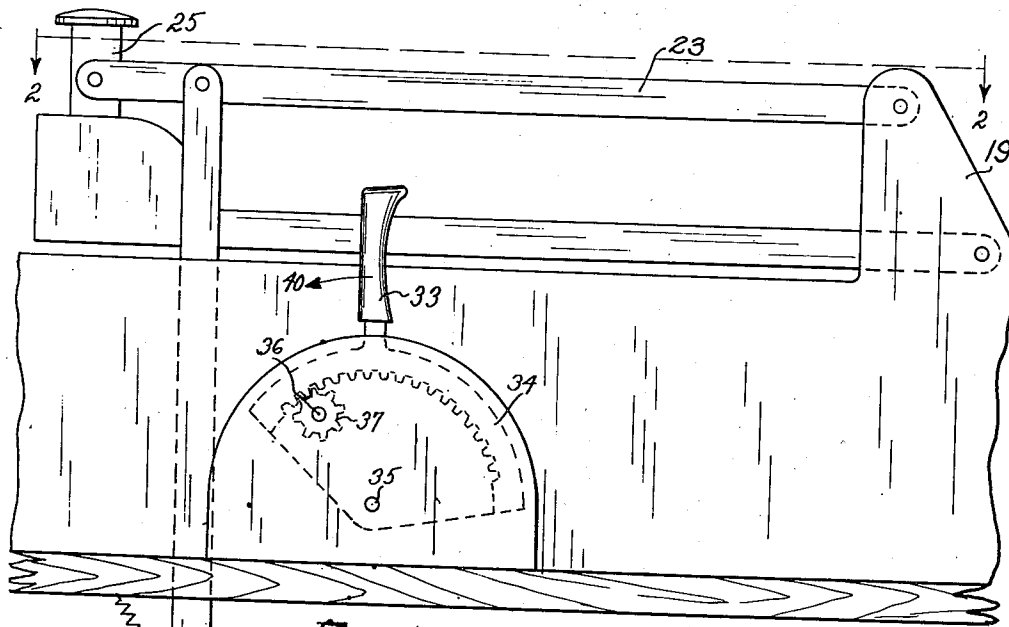


Fig. 1

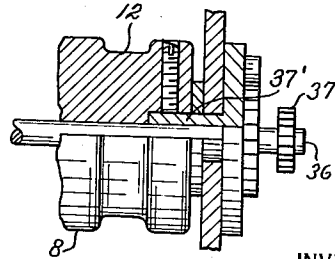


Fig. 3

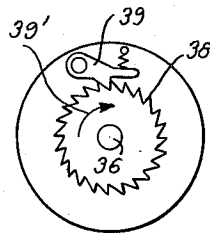


Fig. 4

INVENTOR
Sumner S. Gordon
BY *E. H. M. M.*
ATTORNEY

July 30, 1940.

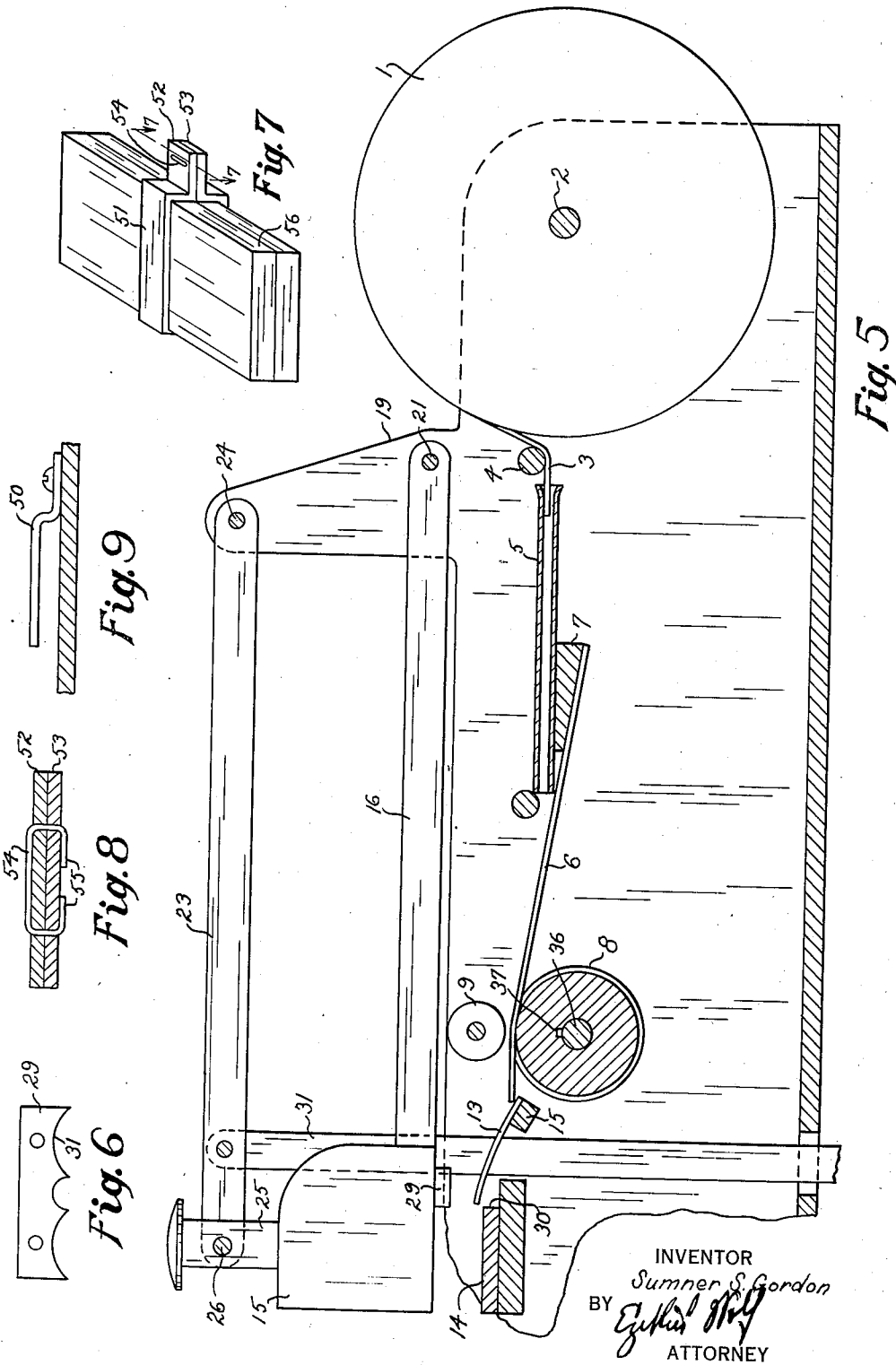
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2 Sheets-Sheet 2



INVENTOR
Sumner S. Gordon
BY *E. J. H. H. H.*
ATTORNEY

UNITED STATES PATENT OFFICE

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STRIP SEVERING DEVICE

Sumner S. Gordon, Brookline, Mass., assignor
to Bandaway Inc., Boston, Mass.

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4 Claims. (Cl. 164-49)

The present invention relates to a machine for putting a wrapper about a package.

In various manufacturing businesses it is common practice to put wrappers around a given number of articles as for instance, sheets, curtains, handkerchiefs, shirts, and other things that are sold singly or in lots. One common method is to have the strips that are used for the wrapping cut to certain definite sizes and then pin the ends of the wrapper together after they are placed around the goods to be wrapped. In other methods it is common practice to apply an adhesive to one end of the wrapper and pass this over the other end of the wrapper or to apply a separate adhesive strip uniting the ends of the wrappers together. In the present invention the wrapper to be applied is fed from a roll of the wrapping material in a continuous sheet and the free end of the band is wrapped about the package and stapled or joined to the band at the same time that the band is severed from the strip. This method of wrapping has proved to be extremely economical, not only in the saving of labor, but also in the saving of material. Where the strips are all previously cut, it has been found that a good deal more material is required and further, the wrapping takes longer and therefore imposes upon the manufacturer a higher labor cost.

In the present method of wrapping, the ends of the strip are joined together in face to face relation, preferably by means of a metallic staple as for instance the kind that may be supplied from a Hotchkiss or Bostitch machine. In the present invention the strip is continuously fed, and when the strip has been severed and the binding completed, the strip is again served, the package laid in position to be wrapped and the stapling and severing lever pressed to complete the binding of the goods.

The operation of the machine and the advantages gained in the use of the device and method of the present invention will be more fully explained in the description of the embodiment of the invention given below in connection with the drawings, in which:

Figure 1 shows a side elevation of the machine as it may be mounted on a factory bench.

Figure 2 shows a plan view looking from the top of Figure 1 taken on the section line 2-2.

Figure 3 shows a detail of the strip feeding mechanism shown in Figures 1 and 2.

Figure 4 shows a detail of the ratchet mechanism for preventing the strip from being pulled back.

Figure 5 shows a section taken on the line 5-5 of Figure 2 in section.

Figure 6 illustrates a detail of the cutting knife.

Figure 7 shows in perspective a flat package as wrapped.

Figure 8 shows a section on the line 7-7 of Figure 7, and,

Figure 9 shows a detail of the guide element used in Figures 1 and 2.

In the drawings referring particularly to Figure 5, the wrapping band is supplied in a roll 1 which may be mounted in the side supports of the device on the roller 2. The strip indicated at 3 passes under the guide roller 4 and through the guide 5 on to the plate 6 which extends from the support 7 beneath the guide 5 to a position between the lower roller 8 and the upper roller 9, the plate 6 having extending arms 10 and 11 resting in the recesses 12, 12 in the roller 8. The top roller 9 engages the strip so that when the roller 8, operated as indicated in Figures 1, 2, 3 and 4 is rotated, the paper strip, which of course may be also of any other material, is advanced over the plate 6 and the spring plate 13 to the platform or stapling and guiding plate 14. The spring strip 13 it will be noted is mounted on the support 15 and the end of the spring is given normally an upward tilt which extends slightly above the surface of the plate 14. The stapling and cutting mechanism is positioned above the plate 14. This comprises a stapling device 15 of any of the usual types with an extending barrel 16 for holding a sufficiently large number of staples. The machine is supported in a frame which is made up of two side plates 17 and 18 with upwardly extending brackets 19 to which the barrel 16 is pivoted by means of the shaft 20 with the pivots extending into the supports 19 as indicated more clearly by the pivot 21 of Figure 5. The upper portion of the stapling machine is also pivoted by means of the bars 22 and 23 in the upper portion of the bracket 19 through the shaft 24 journaled into the support or bracket 19 and the pivots 24 at both ends of the shaft. These bars 22 and 23 also support the stapling shaft 25. The pin or rod 26 passes transversely through the stapling shaft 25 and extends into the ends of the bars 22 and 23, the shaft 25 being held in position by means of the sleeves 27 and 28 positioned between the shaft 25 and the bars 22 and 23 and surrounding the rod 26. The lower end of the stapling device carries a cutting plate 29, which as it descends, comes in contact with the cutting shoe

30 thus severing the band from the rest of the roll. This cutting plate may be shaped as indicated in Figure 6 and be provided with a plate of special design as indicated by the curve 31.

5 Both the cutting and stapling is operated simultaneously through the foot lever 32 of Figure 1, which when pressed draws the bar 23 downward and presses downward the stapling shaft 25 and the cutting plate 29 towards the plate 14 and cutting shoe 30 respectively. A stapling spring mechanism 80 may be provided so that when the foot lever is released the stapling machine springs back to the normal position indicated in Figure 5. When this is done the spring plate 13 automatically raises the paper strip on it above the plate 14 so that when the next portion of the strip is served, it will pass over the plate 14 and be in a position to be stapled and severed by the succeeding operation of the foot lever 32. A strip serving mechanism is indicated in Figures 1, 3 and 5 particularly. A lever 33 which is joined to a segment 34, is included, pivoted at 35. The segment 34 has a set of internal spur gears meshing with the spur gear 37 which is carried by the end of the shaft 36 upon which the roll 8 is pinned by means of the key 37' as shown in Figure 4. Also mounted on the shaft 36 is the ratchet 38 and the pawl 39 mounted on the frame engaging in the ratchet so that the shaft 36 and the ratchet 38 will only rotate in the direction of the arrow 39' as indicated in Figure 4. In this way when the lever 33 is pulled forward in the direction of the arrow 40, the roll 8 will be rotated to advance the strip a definite amount depending upon the amount the lever 33 is allowed to move. In this way all paper will be fed the desired length over the plate 14.

A guide 50 may be provided just beyond the point to where the paper is severed so that the strip is properly guided into its final position. As indicated in Figures 8 and 9 the strip 51 has its two ends 52 and 53 in face to face relationship with the staple 54 passing through both strips 52 and 53 and turned over on the other side as indicated by the ends 55 of the staple. In the operation of the parts, the operator simply places the package over the strip with the edge 56 adjacent to the end of the strip which is to be cut and stapled. The free end of the strip is then brought over in face to face relation with the strip itself and the lever 32 is pressed bringing down both the stapling shaft 25 and the cutting knife 29.

Having now described my invention, I claim:

1. In a device of the type described in combination a strip serving machine adapted to serve a continuous strip, including a frame having a rod journaled therein supporting a roll from which said strip is drawn, a guide enclosing said strip for receiving the same as it comes from said roll, a second flat guiding plate inclined upwards from said first guide and having forked members extending at the end thereof, a roll journaled in said frame having recesses into which said forked members fit, a second roll positioned to have its surface engage the surface of said first roll to provide friction for drawing said strip forward, a cutting plate and a third spring guiding plate extending from the end of

said forked members to said cutting plate for guiding said strip to said cutting plate, said spring plate having a free end normally extending to a level higher than the cutting plate.

2. In a device of the type described, a strip serving machine adapted to serve a continuous strip, including a frame having a rod journaled therein supporting a roll from which said strip is drawn, a guiding frame for receiving said strip as it comes from said roll, a second guiding plate having one end positioned at the lower edge of said guiding frame and being inclined upwards from said frame and having forked members extending at the end thereof, a roll for receiving said strip from said second guiding plate, said roll having a plurality of recesses engaging said forked members, a second roll positioned to have its surface engage the surface of said first roll to provide friction for drawing said strip forward, means manually rotating said rolls through a given number of revolutions for advancing said strip a desired amount beyond the position of said rolls, a cutting plate and a third guiding plate for said strip extending from the ends of said forked members to said cutting plate for guiding said strip on to said plate.

3. In a device of the type described in combination, a strip serving machine adapted to serve a continuous strip, including a frame having a rod journaled therein supporting a roll from which said strip is drawn, a guiding frame for receiving said strip as it comes from said roll a second guiding plate having one end positioned at the lower edge of said guiding frame and being inclined upwards from said frame and having forked members extending at the end thereof, a roll for receiving said strip from said second guiding plate, said roll having a plurality of recesses engaging said forked members, a second roll positioned to have its surface engage the surface of said first roll to provide friction for drawing said strip forward, means manually rotating said rolls through a given number of revolutions for advancing said strip a desired amount beyond the position of said rolls, a cutting plate and a third spring guiding plate extending from the end of said forked members to said cutting plate for guiding said strip to said cutting plate, said spring plate having a free end normally extending to a level higher than the cutting plate.

4. In a device of the type described, a strip serving machine adapted to serve a continuous strip including a frame having a rod journaled therein supporting a roll from which said strip is drawn, a guiding frame for receiving the same as it comes from said roll, a second guiding plate extending from said first frame and having forked members at the end away from said frame, a roll journaled in said frame having recesses into which said forked members fit, said members extending beyond said roll, a second roll positioned to have its surface engage the surface of said first roll to provide friction for drawing said strip forward, a cutting plate and a third guiding plate extending from the end of said forked members to said cutting plate for guiding said strip to the cutting plate.

SUMNER S. GORDON.