J. H. HOFFMAN.

GUMMING DEVICE FOR RIBBON CUTTING MACHINES.

APPLICATION FILED JULY 26, 1918.

1,415,562.

Patented May 9, 1922.

4 SHEETS—SHEET 1.

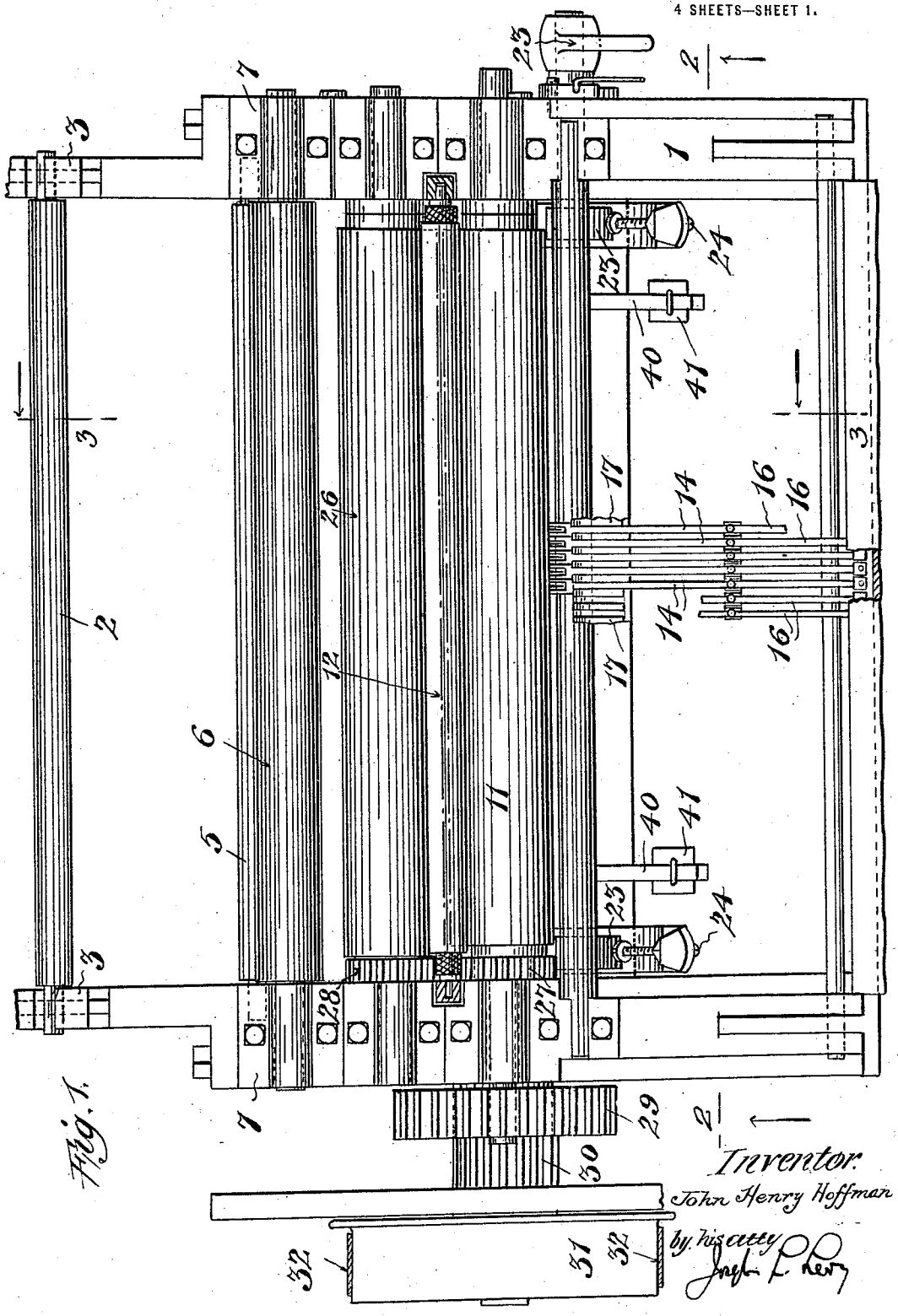


Fig. 1.

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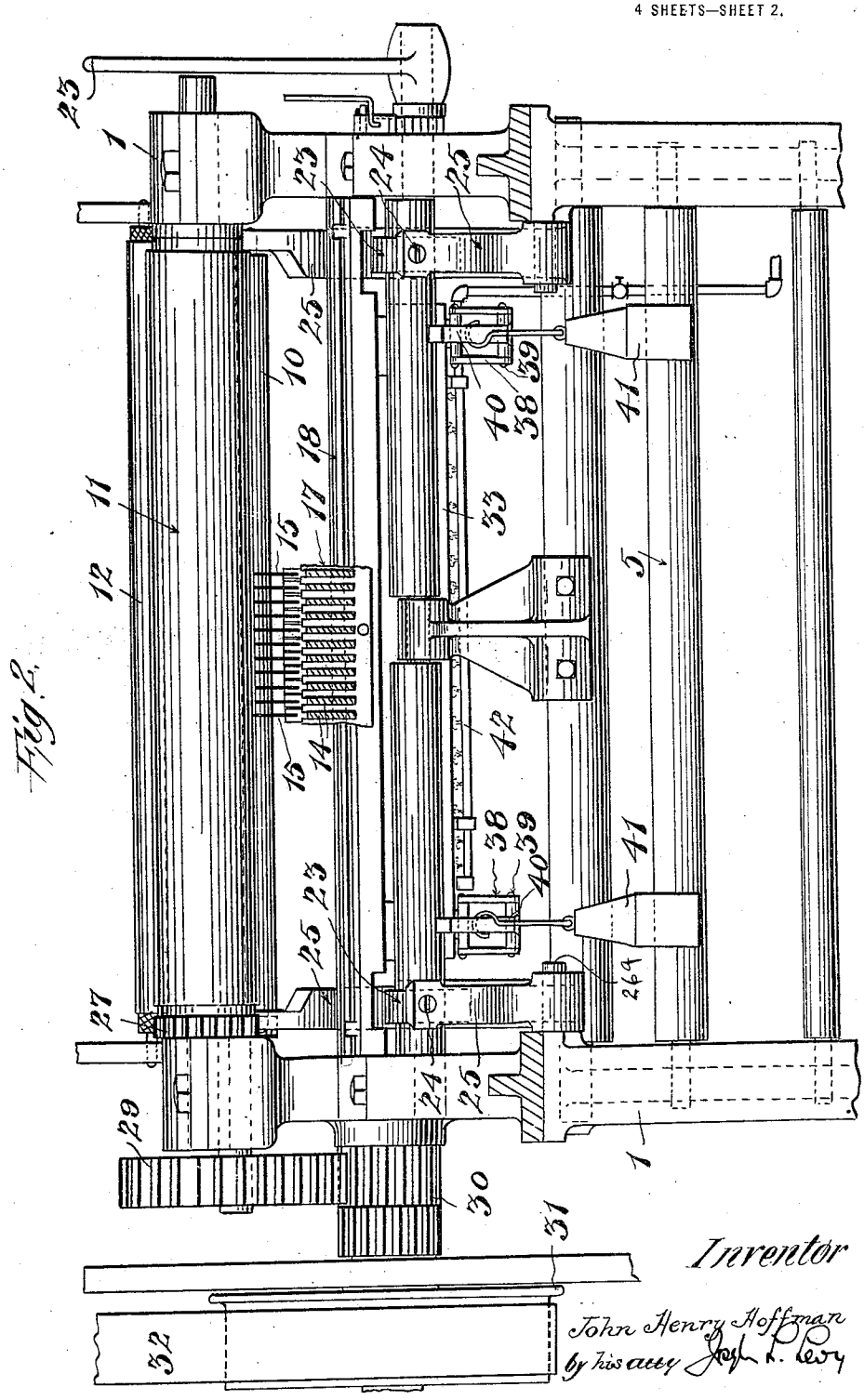


Fig. 2.

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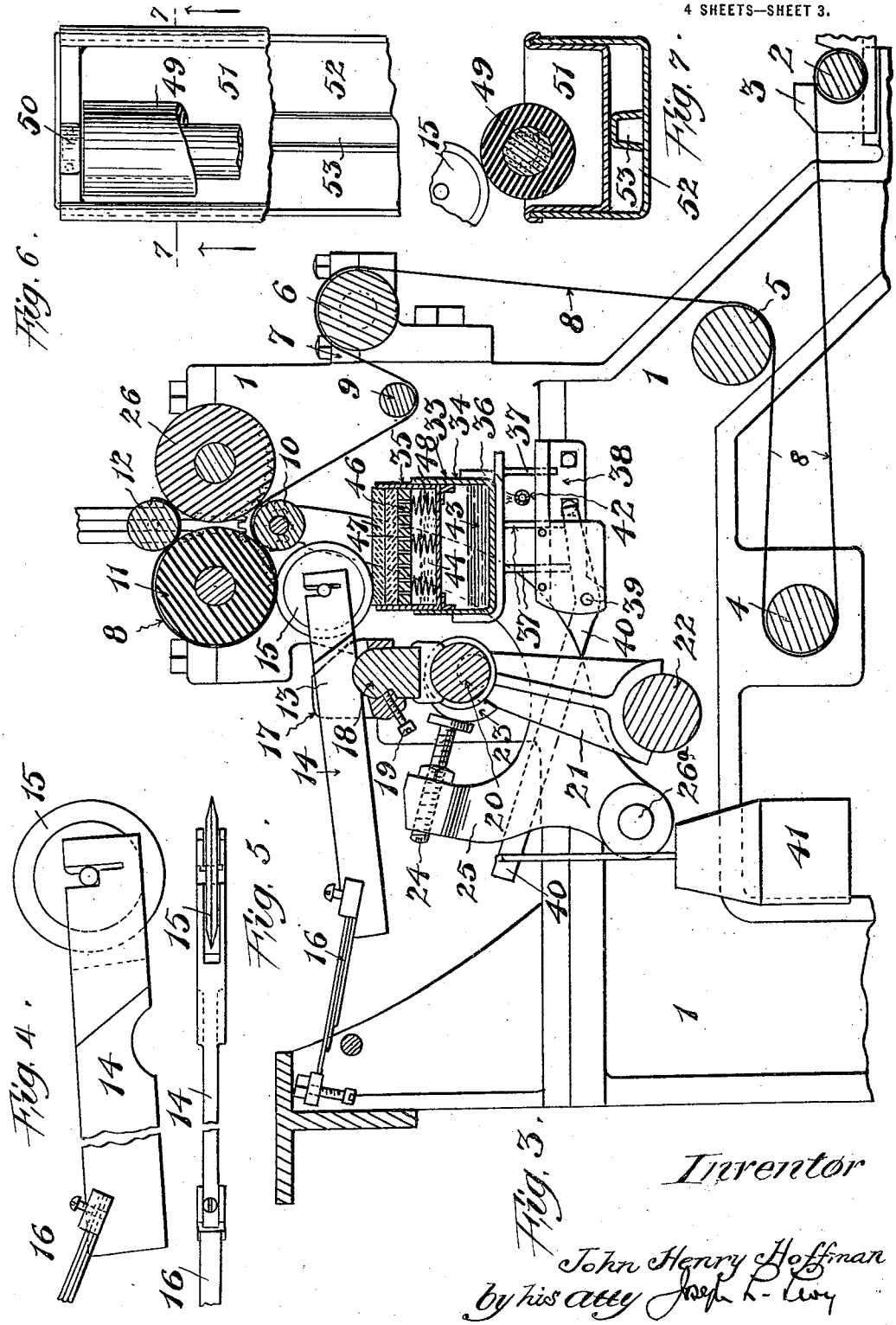
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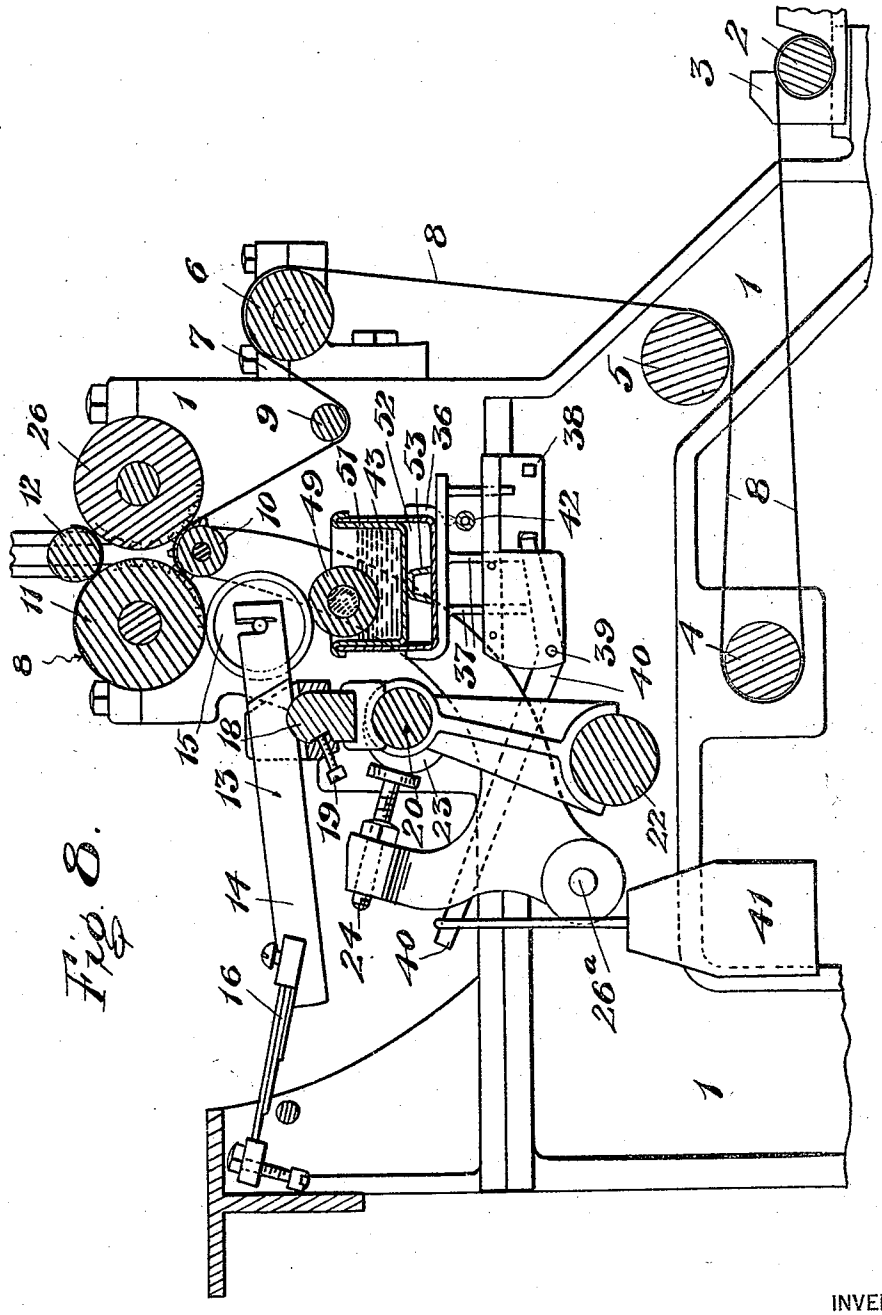


Fig. 8.

INVENTOR

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BY His ATTORNEY

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UNITED STATES PATENT OFFICE.

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GUMMING DEVICE FOR RIBBON-CUTTING MACHINES.

1,415,562. Specification of Letters Patent. Patented May 9, 1922.

Application filed July 26, 1918. Serial No. 246,859.

To all whom it may concern:

Be it known that I, JOHN HENRY HOFFMAN, a citizen of the United States, and a resident of the city of New York, county of Kings, and State of New York, have invented a certain new and useful Improvement in a Gumming Device for Ribbon-Cutting Machines, of which the following is a specification.

This invention relates generally to a gumming attachment adapted to be used in conjunction with machines which cut ribbons from piece goods. Generally machines of this character produce a rough edge upon the cut ribbons which may easily cause the ribbon to become frayed or fringed. To prevent this, I produce by means of the gumming attachment hereinafter described a layer of an adhesive substance on the edge of the newly cut ribbon during the cutting process whereby the possibilities of the edge of the ribbon becoming frayed or fringed is avoided. I carry out the above mentioned object by the use of a gumming apparatus which applies an adhesive substance to the cutter whereby the adhesive is applied to the edge of the ribbon while the operation of cutting the ribbon is performed.

With this and other objects which may hereinafter appear in view, I have devised the particular arrangement of parts hereinafter set forth, and as more particularly pointed out in the claims appended hereto.

Reference is to be had to the accompanying drawings forming a part hereof in which—

Figure 1 is a plan view of a portion of a ribbon cutting machine to which my improved gumming mechanism is applied;

Figure 2 is a sectional view on the line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a sectional view on the line 3—3 of Figure 1, looking in the direction of the arrows;

Figure 4 is a side elevation of one of the cutting knives;

Figure 5 is a plan view of the same;

Figure 6 is a plan view of a portion of a modified form of gumming mechanism;

Figure 7 is a sectional view on the line 7—7 of Figure 6, looking in the direction of the arrows and Figure 8 is a sectional view of a ribbon-cutting machine to which my improved gumming mechanism disclosed in Figures 6 and 7 has been applied.

Throughout the various views of the drawing, similar reference characters designate similar parts.

In the preferred embodiment of my invention as illustrated in the accompanying drawngs, 1 indicates the frame of the machine to which my invention is applied. The machine which I have shown herein is a well known form of ribbon cutting machine, and it is not essential that this particular form of machine be used, as my improved gumming apparatus may be readily and expediently applied to any of the known forms of ribbon cutting machine in use at the present time.

Mounted on the frame of the machine is a roller 2 which is journaled in suitable bearings 3. This roller 2 is utilized to hold the piece goods or fabric 8 which is adapted to be cut into ribbons, and the fabric is unrolled from this roller over rods 4 and 5 which are mounted in the frame and from thence over a roller 6 mounted in bearings 7 on the frame. From the roller 6 the material 8 passes beneath a rod 9, over a roller 10, around a roller or cylinder 11, and thence to a split roller 12 which holds the end of the fabric and upon this split roller 12 the ribbons are wound after they have been cut by the rotary cutters or knives 15. The knives 15 are shown in detail in Figures 4 and 5, and are of the well known form used for cutting ribbons which comprises a plate 14, in one end of which is rotatably mounted, the revolving cutter 15 and from the other end of which extends a leaf spring 16 which projects beneath and presses upwardly against a portion of the frame of the machine to produce the proper pressure of the rotary cutter 15 against the roller 11 about which the fabric passes.

Each of these knives is held in a bracket 17 adjustably fixed on a cross member 18 by set screws 19 and this cross member is held on a shaft 20 on the end of an arm 21 affixed on a shaft 22. On the end of the shaft 20 is a lever 23 and a movement of this lever causes the knives to ascend so

that they bear against the roller 11. The shaft 20 is also provided with a cam surface 23 so that a rotation of the shaft 20 causes this cam surface to move a pin 24 on a yoke 25, which causes the roller 10 heretofore mentioned, which is on the end of one of the arms of this yoke, to ascend and bear against the roller 11 and also against another roller 26 to hold the fabric to be cut, taut, while the machine is in operation and the cutting of the fabric is taking place. The yokes are each mounted on a stud 26ª which projects from each side of the frame. The rollers 11 and 26 are provided with gears 27 and 28 which mesh and the roller 11 is provided with an outside gear 29 which meshes with another gear 30 on the main shaft of the machine. The main shaft is provided with a drum 31 which is driven by a belt 32 extending from any suitable source of power.

In the modification of my invention as shown in Figures 1, 2 and 3, the gumming device comprises a trough 33 which consists of a bottom container 34 within which fits the upper gum container 35. At each end of the machine the lower trough is supported in a bracket 36 which is provided with downwardly depending projections 37 which move in brackets 38. Pivoted in each one of these brackets 38 on a pin 39 is a lever 40. Several of the projections 37 on the trough supporting bracket 36 rest upon the lever 40 adjacent one of its ends. A weight 41 depends from the opposite end of the lever 40 and causes the trough to be held with its gumming pad, hereinafter to be referred to, held in contact with the knives so that they receive the gum therefrom.

The lower trough 34 contains water 43, and beneath the trough is a suitable burner 42 which heats the water 43 therein. The upper trough contains the gum, and this gum is by reason of the heated water in the lower trough kept in its proper consistency. The gum 44 in the upper trough 35 passes through a screen 46 to the pad 47 upon which the rotary cutters 15 rest. The pad 47 is made of a yielding absorbent material such as a strip of heavy felt or the like.

From the foregoing the operation of my improved machine will be readily understood. The fabric to be cut into ribbons extends about the rods and rollers heretofore mentioned. When this material reaches and winds about the roller 11 the cutters 15 press against that roller 11 and the fabric or material which is interposed between the rotary cutters 15 and the roller is cut into the ribbons. These cutters are adjustable as heretofore mentioned upon the cross member 18 so that the ribbons can be cut in any desired widths. While the rotary cutters 15 are rotating they are bearing against the gumming pads 47, these pads being pressed upwardly against the cutters by the springs 48 in the upper trough and the pads having absorbed an amount of the gum in this upper trough, they supply a uniform amount of gum to the edges of the rotary cutters 15 so that while these cutters are performing the operation of cutting the material into ribbons, they are likewise applying a line of gum at the edges thereof so that loose strands of the fabric produced by the cutting operation are prevented from becoming frayed or fringed.

In the modification of my invention as shown in Figures 6 and 7 in the place of the gumming pads 47, I have utilized a roller 49 preferably made of soft rubber. This roller extends substantially the length of the trough and has its ends mounted in bearings 50 in the ends of the upper trough 51. The lower trough 52 is in all respects similar to the lower trough 34 heretofore referred to except that I have provided it with a strengthening rib 53 extending longitudinally of the trough as shown in Figures 6 and 7, upon which the upper trough 51 rests.

From the foregoing it is obvious that my invention is not to be restricted to the exact embodiment shown, but is broad enough to cover all structures coming within the scope of the annexed claims.

Having described my invention, what I claim is:

1. In a ribbon cutting apparatus or the like, the combination with a plurality of rotary cutters, rotary means for applying gum thereto, a trough from which said rotary gum applying means receives gum, and means for raising said trough.

2. In a ribbon cutting apparatus or the like, the combination with a circular rotary cutter, means for applying gum to the edge of said cutter comprising a roller beneath the cutter, a gum-containing trough into which said roller dips and means for elevating said trough to the cutter.

3. In a ribbon cutting apparatus or the like, the combination with a cutter, means for applying gum to said cutter, a gum-containing trough from which the gum is received by the gum-applying means, brackets for holding said trough and means for raising said brackets and the trough carried thereby.

4. In a ribbon cutting apparatus or the like, the combination with a rotary cutter, means for applying gum to said cutter, a trough from which gum is received by the gum-applying means, brackets in which said trough is mounted and levers for elevating said brackets.

5. In a ribbon cutting apparatus or the like, a rotary cutter, means for supplying gum to the edge of said cutter, brackets in

which said gum-supplying means is mounted, levers for elevating said brackets and means for engaging said levers to cause the same to hold the gum-supplying means in an elevated position.

6. In a ribbon cutting apparatus or the like, a rotary cutter, means for supplying gum to the same, brackets in which said gum-supplying means is mounted, levers for elevating said brackets and weights for engaging said levers to cause the same to hold the gum-supplying means in an elevated position.

7. In a ribbon cutting apparatus or the like, a rotary cutter, means for supplying gum to the same, brackets in which said gum-supplying means is mounted, projections on said brackets, pivoted levers engaging said projection and means for causing said levers to hold the gum-supplying means in position to supply gum to the cutter.

8. In a ribbon cutting apparatus or the like the combination with a plurality of rotary cutters, a gum-containing trough, a roller mounted in said trough, a support for said trough, and means including levers for elevating said trough to cause the roller to be held in yielding contact with the cutters.

9. In a ribbon cutting apparatus or the like, the combination with a cutter, a gum-containing trough, rotatable means mounted in said trough, brackets for supporting the trough and means for elevating the brackets and trough.

Signed at the city, county and State of New York, this 23d day of July, 1918.

JOHN HENRY HOFFMAN.