H. H. CUMMINGS.

STRIP SERVING APPARATUS.

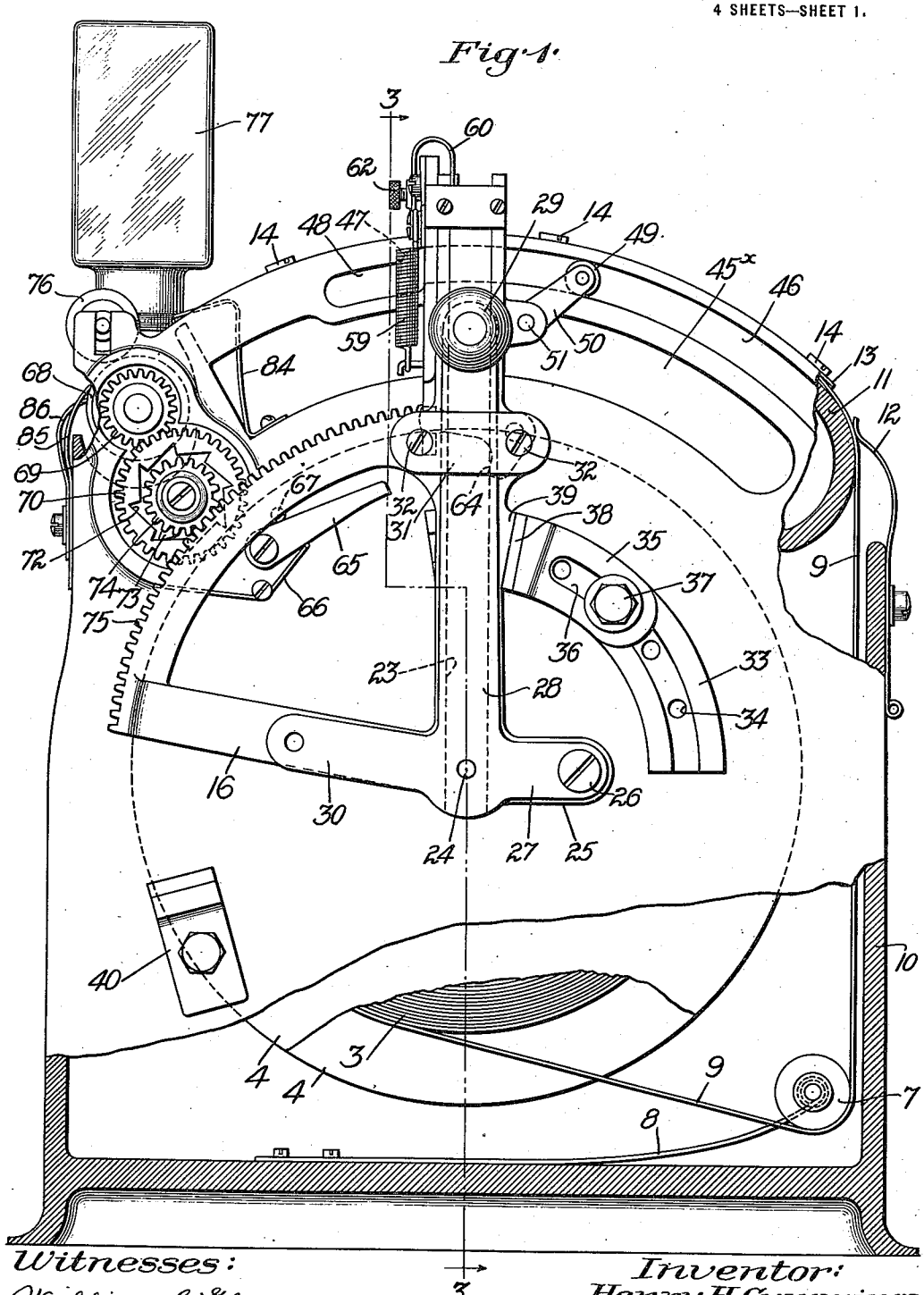
APPLICATION FILED FEB. 13, 1909.

1,171,097.

Patented Feb. 8, 1916.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

William C. Glass

Horace A. Grossman

Inventor:

Henry H. Cummings

by Emery and Booth Attys

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4 SHEETS—SHEET 2.

Fig. 2

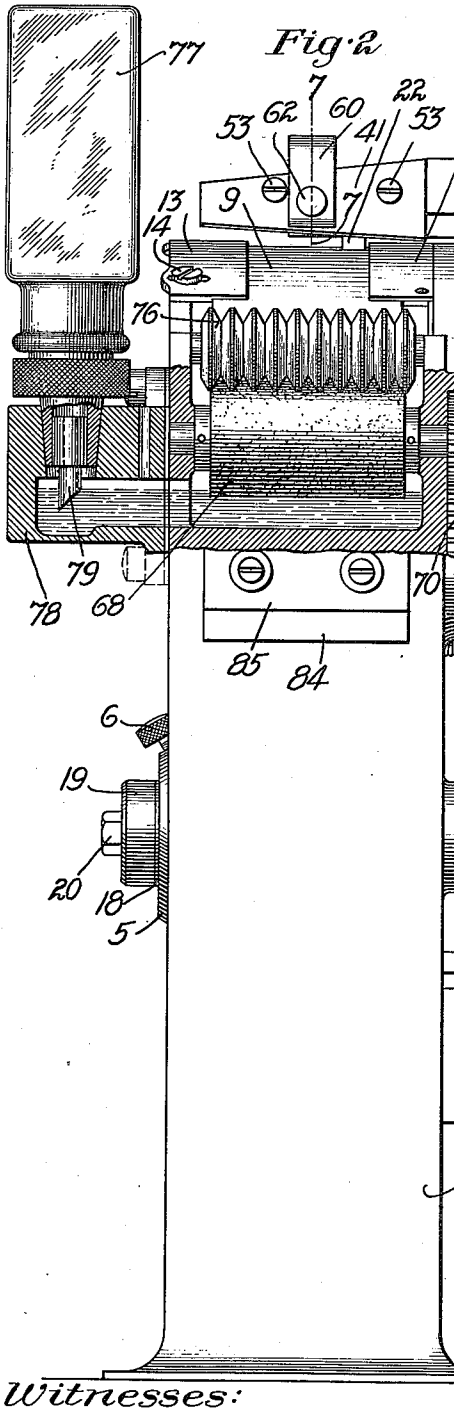
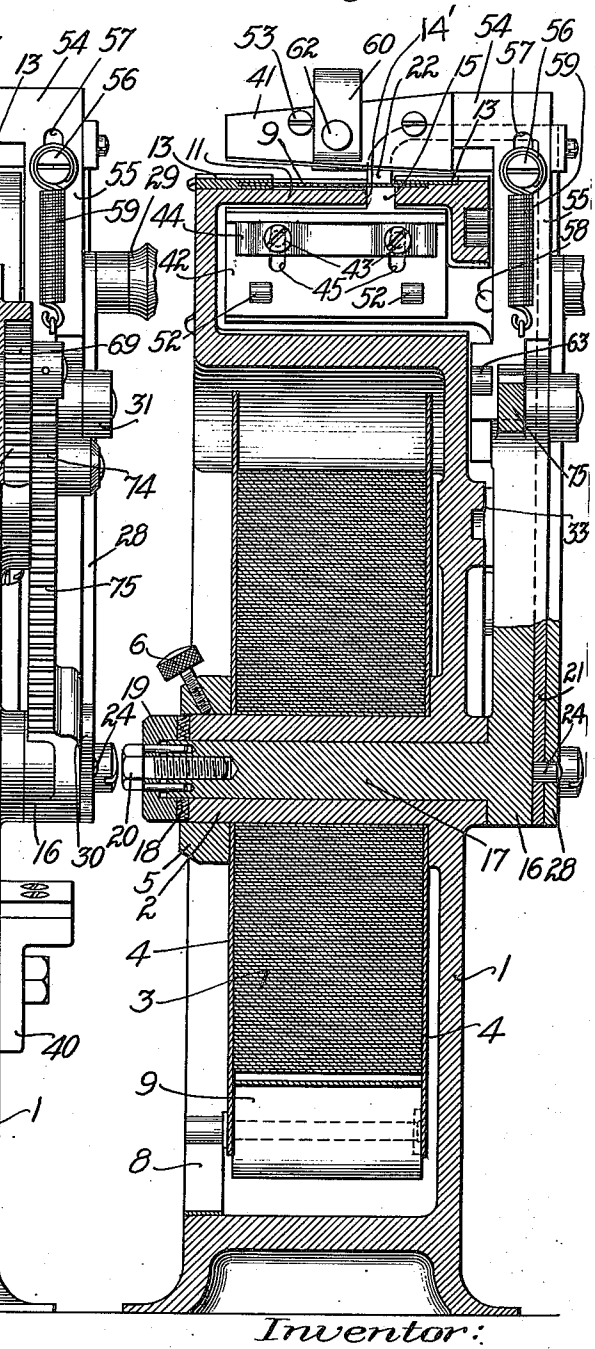


Fig. 3.



Witnesses:

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4 SHEETS—SHEET 3.

Fig. 4.

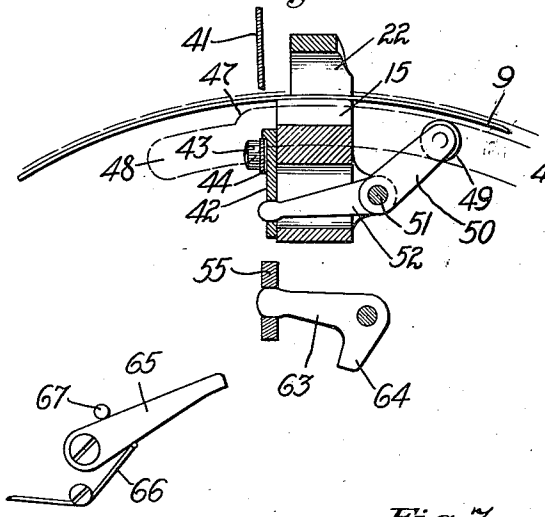


Fig. 5.

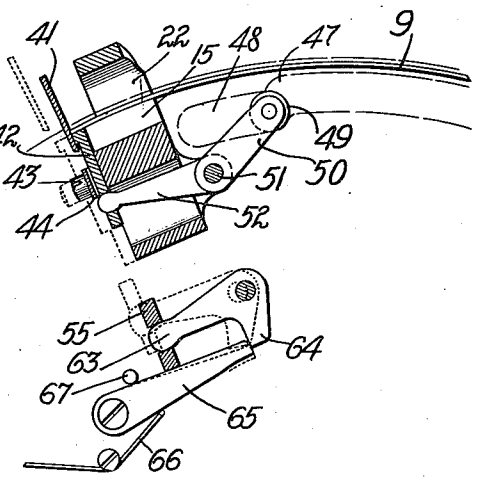


Fig. 6.

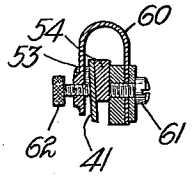


Fig. 7.

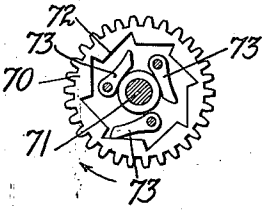


Fig. 8.

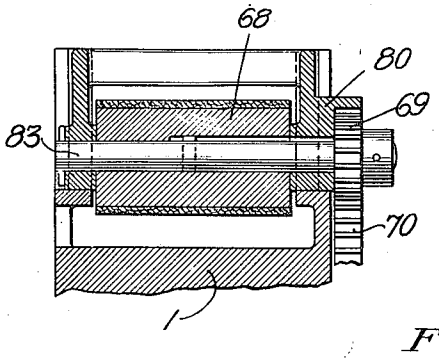


Fig. 9.

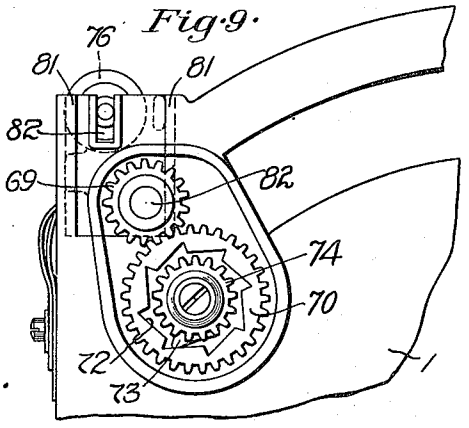
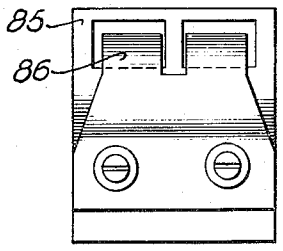


Fig. 10.



Witnesses:

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STRIP SERVING APPARATUS.

APPLICATION FILED FEB. 13, 1909.

1,171,097.

Patented Feb. 8, 1916.

4 SHEETS—SHEET 4.

Fig. 11.

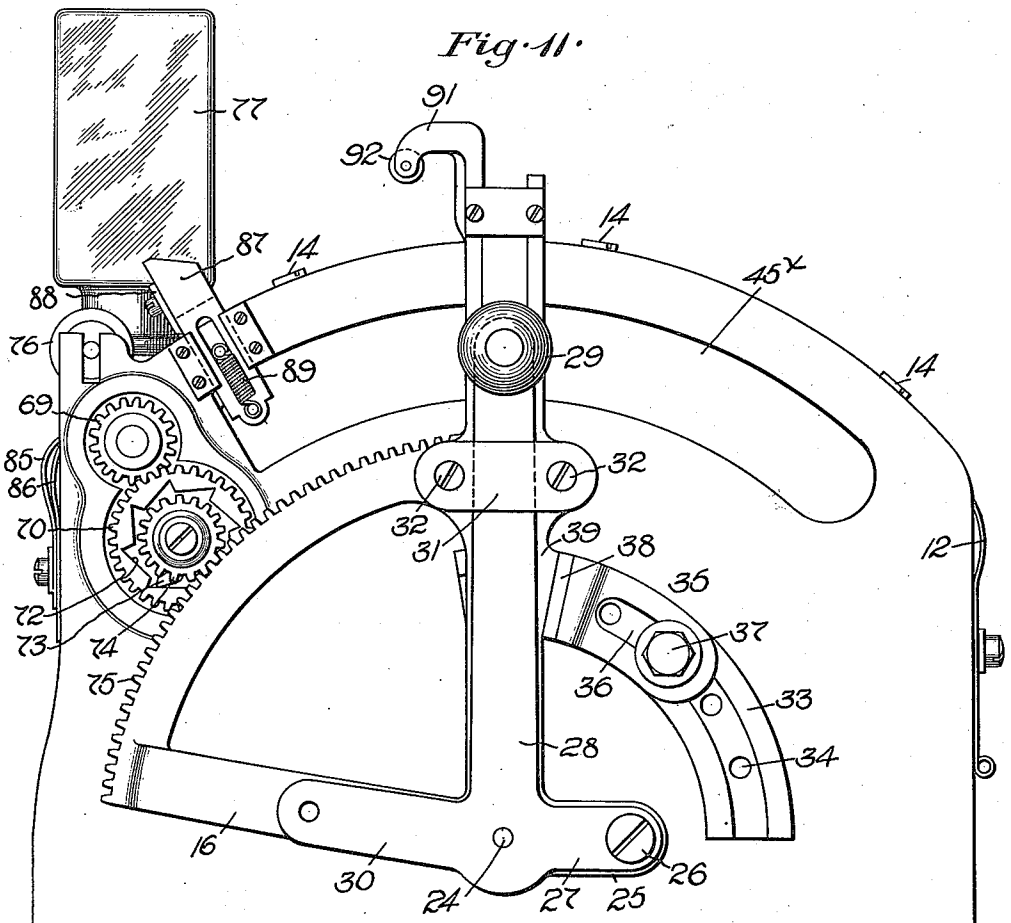
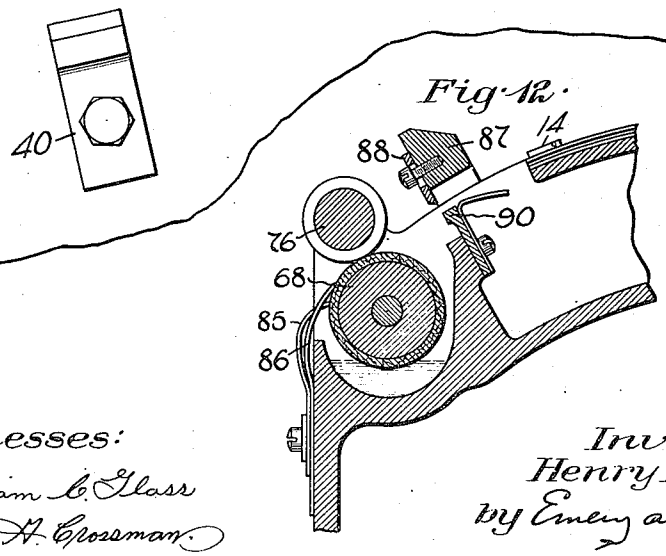


Fig. 12.



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Att'ys

UNITED STATES PATENT OFFICE.

HENRY H. CUMMINGS, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO NATIONAL BINDING MACHINE CO., OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

STRIP-SERVING APPARATUS.

1,171,097. Specification of Letters Patent. Patented Feb. 8, 1916.

Application filed February 13, 1909. Serial No. 477,646.

To all whom it may concern:

Be it known that I, HENRY H. CUMMINGS, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Strip-Serving Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to apparatus for supplying strips of paper, cloth or other suitable material for use in various relations, as, for example, labels preferably previously gummed on one side and having means for moistening the gummed side of the strip as it is drawn from the supply. An ungummed strip may be applied, in which case a moistening device is provided to apply an adhesive.

In order that the principles of the invention may be readily understood, I have disclosed a single type or embodiment thereof in the accompanying drawing, wherein—

Figure 1 is a side elevation with parts broken away of a strip serving apparatus embodying my invention; Fig. 2 is a front elevation thereof, partly in vertical section; Fig. 3 is a central, vertical section upon the line 3—3, Fig. 1; Figs. 4 and 5 represent in vertical section different positions of the strip feeding and severing device; Fig. 6 is a detail in vertical section of a part of the severing device; Fig. 7 represents in side elevation one of the gears for imparting motion to the moistening device; Figs. 8 and 9 represent in cross section and side elevation a modified construction of the moistener device; Fig. 10 is a detail in front elevation of the severed strip directing mechanism; Fig. 11 is a side elevation of a modified form of my invention; and Fig. 12 is a detail in vertical section of a portion of the mechanism shown in Fig. 11.

There is at the present time a constantly increasing demand for mechanism to present or deliver to the user unapplied strips or labels of an exact predetermined length and having an adhesive applied to one and in certain cases to both faces thereof. It is important that such mechanism be capable of producing a series of strips which shall not differ in length to an appreciable extent; that it be capable of rapidly presenting or delivering such strips and that it be capable of such adjustment as to permit strips of any length between defined limits to be produced. Preferably also the apparatus should be such as to permit variations in width of the strip, as by substituting rolls or other packages of paper, cloth or the like of other widths.

My invention embodies in compact, convenient and inexpensive form these and other characteristics.

Referring to the drawings, the casing containing the strip roll and supporting the operating parts is represented at 1, it being preferably of cast or sheet metal and having inwardly extending from one face a hub 2 to receive and support a roll or rolls 3 of paper, cloth or any other suitable material. If desired, disks 4 of sheet metal or the like may be mounted upon the hub at opposite sides of the roll to position and direct the strip. The strip roll may be held in place and tension imparted thereto in any suitable manner, as, for example, by a collar 5 mounted upon the hub and provided with a set screw 6 to secure it in position. The free end of the strip may be fed or delivered by any suitable path past the strip severing and strip moistening devices. Preferably I direct the strip to the upper, outer face of the casing. For this purpose, I have represented in Fig. 1 a guide roll or rod 7, herein shown as supported by a spring 8. The strip 9 passes under the roll 7 and thence between the rear upright wall 10 and the preferably arched top 11 of the casing. When the free end of the strip is drawn upon, the roll 7 yields, permitting the feeding of a considerable amount before the roll 3 is turned. This prevents sudden jerking upon the roll, which would tend to affect the accuracy of the feed. If desired, a spring 12 or other tensioning means may be employed to bear upon the strip. The roll or guide 7 also prevents any rearward pull or back lash upon the free end of the strip by the roll 3, which would otherwise displace the free end of the strip after the severing action. This is owing to the fact that the roll 7 will yield toward the roll 3 and itself give up a portion of the strip material passing about it and thereby prevent draft upon the entire strip including its free end.

Preferably the moistening device is positioned at the front of the casing and the strip is fed thereto in the present embodi-

ment of the invention through a throat, the bottom of which consists of the arch shaped top 11 of the casing and the side walls of which consist in the present instance of guiding plates 13 secured to the casing and preferably overlapping the edges of the strip. One or both of the guiding plates 13 may be adjustable to suit different widths of strip in any suitable manner, as by slots and screws 14 (see Fig. 2).

While any suitable strip feeding or delivering means may be employed, preferably I provide gripping mechanism adapted to engage the strip at a suitable distance to the rear of the extreme free end thereof and to travel with the strip, and thus present it to the moistening mechanism. In this embodiment of the invention I have represented the top 11 of the casing as slotted longitudinally of the throat, as represented at 14′ in Fig. 3. Within the casing and contacting with the under face of the strip through the slot 14′ is the lower member or jaw 15 of the strip gripping mechanism of any suitable character. This member is herein represented as forming a part of the carrier 16 having a to and fro movement to engage the strip and present it to the moistener. In this embodiment of the invention the carrier 16 is provided with an axle 17 mounted in the hub 2 and preferably provided with means to tension the carrier so that it may be operated with greater or less ease as conditions may require. Herein for the purpose I have represented the hub 2 as provided with a leather or other washer 18 with which engages a cap 19 upon the axle 17. An adjusting screw 20 passing through the cap and tapped into the axle imparts any suitable degree of friction to the former.

The carrier 16 is preferably concentrically pivoted with respect to the top 11 forming the base of the strip feeding throat. Thus, the gripper member 15 is in contact with the lower face of the strip during the to and fro movement of the carrier. The upper strip gripping member or jaw is herein formed as an upright arm 21 having an overhanging and inwardly projecting part 22 and is mounted for movement to and from the upper surface of the paper in suitable vertical guide ways 23 provided in the outer face of the carrier 16 and is connected at its lower end, as by means of a pin 24 with any suitable operating mechanism.

In the present embodiment of the invention, the gripping members of the feeding mechanism have imparted thereto a movement with relation to each other and relative to the strip feeding movement of the carrier, so as to permit the carrier to be moved backwardly while free from the strip and then to engage the strip and upon their return movement feed it forward. While these results may be variously accomplished, I have herein provided the carrier 16 adjacent the axle 17 with a rearwardly extending arm 25 to which is fixedly secured, as by means of a screw 26, the lower rearwardly extending end 27 of an upright operating arm 28 having a handle 29 for imparting the to and fro movement to the carrier. The pin 24 of the arm 21 is received in a hole in the arm 28 or its extension 27. The arm 28 may be operated in any suitable manner, as, for example, by a treadle or by power. For that purpose, I have represented it as having a forwardly extended part 30 to which may be connected a treadle (not shown) adapted to be depressed by the foot of the user and to be returned by suitable spring mechanism, or if desired a connecting rod to which is imparted an up and down motion by an eccentric or other suitable mechanism.

The carrier 16 is oscillated to and fro upon the axle 17 as a center and hence moves the lower gripper member 15 in a path concentric with and preferably contacting with the lower face of the strip. The eccentric relation of the point of connection of the arm 28 to the carrier 16 results in a relative swinging movement of the arm 28 with respect to the carrier, and hence in a lifting movement of the upper gripper member 22 and its consequent positive separation from the strip, prior to or at the commencement of the rearward movement of the carrier. The arm 28 may be guided in this relative swinging movement by the plate 31 overlying the arm and secured to the carrier, as by screws 32.

Preferably I provide means to limit the rearward or strip engaging movement of the carrier, and in the present embodiment of the invention such limiting means is adjustable so that the strip may readily be engaged at any desired point to the rear of its front edge. Herein for the purpose I have represented in Fig. 1 a guide way 33 concentric with the axle 17 and having a suitable number of holes 34. Received upon the guide way 33 is a stop lug 35 slotted, as represented at 36, to receive an adjusting bolt or set screw 37 and having if desired a leather or other facing 38, against which the preferably similarly inclined face 39 of the carrier contacts.

By means of the slot 36 in the stop lug 35 and the several holes 34, it is apparent that the stop lug may be positioned at any point within the limits of adjustment. That is to say, by securing the stop lug 35 in the rear hole 34, the stop lug may then be adjusted at any desired point within the limits of the length of the slot 36. This slot is of such length as to permit any adjustment of the stop lug between adjacent holes 34. Thus, adjustments to a very minute portion of an inch may be effected.

Preferably I employ suitable means to

limit the forward or feeding movement of the carrier. For that purpose, I have in Fig. 1 shown a stop lug 40 which, if desired, may be rendered adjustable.

It is apparent that the rearward movement of the carrier brings the latter against the stop lug 35. During this movement, the arm 28 and the carrier move in unison after the arm has moved as far as possible in the guide 31 toward the rear of the machine. Upon reversing the movement of the carrier, the arm 28 is first moved forward and relatively to the carrier until such relative movement is terminated by the guiding plate 31. This relative movement brings the upper gripper member into gripping relation with the strip, and the forward movement of the carrier feeds the gripped strip forward to the moistener.

It is apparent that any suitable strip severing means may be employed, as, for example, a strip severing blade mounted upon the casing and having an up and down movement with respect to the service path of the strip. Preferably, however, I employ severing blades traveling with the carrier and supported thereby and acting automatically to sever the strip upon the termination of the feeding movement of the carrier and closely adjacent, and herein in the rear of the moistener. This result may be variously accomplished. In the preferred embodiment of the invention, I have represented, as shown most clearly in Figs. 1, 4 and 5, two co-acting severing blades 41 and 42, both movable toward the strip. These blades may be operated in any suitable manner. Herein the lower blade 42 is represented as mounted for sliding movement upon the front face of the inwardly extending part of the carrier 16 to which it is secured by means of screws 43 passing through a facing strip 44 and vertical guide slots 45 in the blade 42. The blade is preferably operated in the following manner. The casing 1 is provided upon one face with a concentric slot 45^{x} to receive the operating parts of the severing mechanism and also with a cam groove 46, which for the greater portion of its extent, as illustrated in Fig. 1, is concentric with the axle 17. At the proper point, it is provided with an eccentric part 47 succeeded by the concentric part 48. Traveling in the cam slot is a roll 49 mounted upon the arm 50 of a bell crank lever frame, pivoted upon the carrier. Preferably the lever frame is pivoted as represented at 51 at the outer face of the carrier and is also extended inwardly within the slotted portion 45^{x} and supported at its inner end. The lever frame is provided with arms 52 (see Figs. 3, 4 and 5) extending through holes in the blade 42.

The upper severing blade 41 is secured by screws 53 to the overhanging arm 54 of a sliding bar 55 mounted upon the front face of the carrier and secured in position by means of a screw 56 passing through a vertically elongated slot 57 in the slide bar 55. Additional guiding means, as, for example, a lug 58 upon the supporting arm of the lower cutter blade may be provided. A coiled spring 59 connected to the screw 56 and a lug upon the slide bar 59 normally holds the blade 41 elevated. The blade 41 is preferably held in operation with a yielding variable pressure flatwise against the blade 42. For that purpose, I have in Figs. 1 and 6 represented a spring 60 secured to the inwardly extending arm of the carrier 16, as by means of a screw 61 and having a set screw 62 adapted to engage with variable pressure the outer face of the blade 41. I have found in practice that strips of different material, such, for example, as paper and cloth or different grades of the same material, require varying degrees of pressure of the blades flatwise toward each other, in order to effect the proper severing of the strip.

Any suitable means may be provided to operate the blade 41. Herein for the purpose I have represented (see Figs. 4 and 5 and dotted lines Fig. 1) a bell crank lever pivoted upon the carrier, the arm 63 whereof is suitably connected to the slide bar 55. The opposite arm 64 of this lever is adapted in its forward movement to engage a pawl 65 pivoted upon the casing and spring pressed upwardly by spring 66 against a pin 67. In the forward or feeding movement of the carrier the arm 64 of the bell crank lever engages the pawl 65 and thereupon moves the same from the dotted line position indicated in Fig. 5 to the full line position shown in said figure, and is itself moved to the dotted line position, thus moving the blade 41 downwardly into severing relation with the blade 42, the spring 66 normally pressing the bolt 65 upward. The completion of this movement brings the lower end of the sliding bar 55 against the upper face of the pawl 65, which thereupon is moved downwardly so as to be freed from the arm 64 of the bell crank lever, thus permitting the blade 41 to be returned to elevated position by the coil spring 59. Such return movement preferably occurs simultaneously with the engagement of the roll 49 with the concentric part 48 of the operating cam groove for the lower cutter blade.

Any suitable strip moistening means may be provided. Preferably, however, I provide a moistener roll having a strip wiping action. This action is in the present embodiment of the invention accomplished by imparting a differential movement to the strip and to the moistener. Referring to the form of the invention represented in Figs. 1, 2

and 3, the forward part of the casing 1 is formed as a liquid receiving receptacle, as indicated in Fig. 1, within which is mounted for rotation in the side walls of the casing a suitable moistener roll 68 (see Fig. 1) having thereon a pinion 69 meshing with which is a gear 70 loose upon a suitable stud 71. As shown in Fig. 7, the said gear 70 has formed therewith an internal ratchet 72, with which operatively engage upon movement of the stud in the direction of the arrow shown in Fig. 7, pawls 73 pivoted upon the inner face of a pinion 74 fast upon the stud 71. Meshing with the pinion 74 is a segmental rack 75 formed upon or secured to the carrier 16. Upon movement of the carrier toward the rear of the apparatus or away from the moistener the pawls 73 move idly upon the inner face of the ratchet 72 but upon the reverse or feeding movement of the carrier the moistener roll 68 is forwardly rotated and preferably at a speed in excess of that at which the strip is presented thereto by the carrier. By imparting a relative movement to the moistener roll and the strip, the water is more thoroughly applied to and worked into the gum or other adhesive with which the strip is coated.

The moistener roll 68 may be of any suitable material, such as metal, and is preferably coated with a suitable felt. If desired and preferably I provide a roll 76 bearing upon the upper surface of the strip. Such roll is herein shown as circumferentially ridged to engage the strip only along separated lines. The roll is preferably of sufficient weight to be maintained in engagement with the upper surface of the strip and to rotate with the moistener roll 68. If desired, said roll 76 may be spring pressed into engagement with the strip.

Any suitable means may be provided to supply the moistening liquid, preferably water, to the receptacle. Preferably, however, I provide means for regulating the depth of water, and in this manner regulating the degree to which the moistener roll 68 is submerged therein. In this manner, I control the degree of saturation of the felt or other surface of the moistener roll 68.

In Figs. 1 and 2, I have represented an inverted bottle or receptacle 77 removably supported in a cup like member 78 secured to the face of the casing 1 and communicating with the interior of the liquid receptacle formed therein. The bottle 77 is preferably provided with a stopper having therein a tube 79 having an inclined end and longitudinally adjustable in the stopper. By varying the extent of projection of the tube 79, the level of the water in the receptacle is regulated. As the bottle 77 is readily removable, it is possible to regulate readily the level of the water in the reservoir.

The moistening roll 68 is rendered removable from the reservoir in any suitable manner. In Figs. 8 and 9, I have represented a modified construction rendering the rolls 68 and 76 readily removable from the casing. In said figures, a frame 80 is supported in vertical guide ways 81 in the walls of the casing, so that it may be readily withdrawn therefrom. The roll 76 is removably mounted in slots in the side walls of said frame, as represented at 82. The roll 68 is keyed upon the shaft 83 mounted for rotation in the side walls of the frame and carrying the pinion 69. Upon withdrawing the frame 80 from the casing, the shaft 83 with its pinion 69 may be withdrawn from the roll 68 to afford ready manipulation of the roll 68 for any purpose, or the substitution of a new roll therefor.

If desired, I may interpose a guide between the strip feeding throat and the moistener. In Fig. 1, I have represented for this purpose a spring 84 adapted when the strip is fed forward to be moved by the carrier into close proximity to the moistener, and thus to direct the free edge of the strip thereto. Said spring also retains the fed portion of the strip in position until severed, because it binds the free end of the strip against the roll 76 in its advanced position.

If desired, I may provide suitable means in advance of the moistener to direct the severed strip. For this purpose, I have in Figs. 1 and 10 represented a two part strip director consisting of a skeleton strip 85 secured to the front of the casing and bearing upon the moistener roll 68. The strip 85 is cut away as represented beneath its transverse moistener contracting portion to prevent the water received thereby from discharging outside the reservoir. By the construction shown the water or other liquid is permitted to return to the reservoir in front of the roll. To further direct the severed strip, I provide a second directing spring 86 which may engage, as represented, with the surface of the roll between the members of the strip 85.

In that form of the invention shown in Figs. 1 to 10, the strip severing mechanism or device is represented as mounted upon and moving with the carrier by which the strip is served. Within the scope of my invention I may disassociate the severing mechanism from the carrier and mount it, for example, upon the casing, making it either fixed or movable with respect to the service path of the strip, and either in the rear of or in advance of the moistener. Preferably, however, the severing device, when disassociated from the carrier, is mounted upon the casing in the rear of the moistener and so as to have an up and down severing movement, imparted thereto in any desired manner. In Figs. 11 and 12 I have represented one embodiment of such form of my invention. Therein I have represent-

ed a vertically sliding frame 87 having secured thereto a blade 88, the frame being maintained normally elevated by the coiled spring 89. The blade 88 co-acts when depressed with the blade 90 fast upon the casing beneath the service path of the strip. The frame 87 may be depressed in any suitable manner. I have herein represented it as depressed by the carrier 16 when terminating its feeding stroke. For this purpose, I have represented the carrier as provided at its upper end with a lug 91 carrying a roll 92 adapted to ride upon the beveled rear face of the frame 87 and thereby depress the same and the blade 88 just prior to or substantially coincident with the termination of the strip feeding movement.

It will be apparent from the foregoing description that I have provided a strip, label or sheet serving or delivering apparatus, by which a strip or label of any desired length and width may be presented to the user for application in any suitable manner. By means of the described feeding mechanism, any desired length of strip may be delivered to the moistener. If this strip has a previously gummed surface, it is thereby moistened, or if desired an adhesive may be applied to a bare s. ip or label. By varying the amount of rearward movement of the carrier the length of the strip or label that is severed may be regulated, and such regulation may be effected with substantially no delay. The carrier may be operated at a high rate of speed, either manually or by power, and the forward or severed edge of the strip is maintained, during such periods as the strip is not being fed, in an unvarying position, so that upon rearward movement of the carrier to engage and feed the desired length of strip, the strip is engaged at such point as to result in the feeding and severing of precisely the desired length. In this embodiment of my invention, the strip is automatically severed upon the termination of the feeding movement of the strip and immediately in the rear of the moistener, which thereupon delivers or presents the severed moistened strip to the user. By imparting the described differential movement to the moistener, the adhesive is thoroughly wetted.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims.

1. A strip serving apparatus comprising in combination a strip support, a strip moistener, and strip feeding means comprising a movable carrier having a plurality of strip gripping means, and strip severing means mounted upon the carrier and operated by the movement thereof.

2. A strip serving apparatus comprising in combination a strip support, strip moistening means, strip gripping means comprising a plurality of members having relative movement toward and from each other to engage and release the strip, means to feed the strip to the moistening means, and strip severing means traveling along substantially the service path of the strip.

3. A strip serving apparatus comprising in combination a strip support, a moistener, and a strip severing device comprising blades upon opposite faces of the strip, means to move said blades longitudinally of the strip, and means to move said blades toward each other to sever the strip.

4. A strip serving apparatus comprising in combination a strip support, a moistener, a movable severing blade and yielding means to hold the blade substantially flatwise against its support and strip feeding means movable with said severing blades.

5. A strip serving apparatus comprising in combination a strip support, a moistener, a severing blade, a support therefor, means to hold said blade against its support with varying pressure and strip feeding means carrying said severing blade.

6. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping means to feed the strip to the moistener and strip severing means and means to move the latter with the strip gripping means in the direction of the service of the strip toward the moistener.

7. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping members at opposite faces of the strip and movable relatively to each other to engage the strip, means to move said strip gripping members toward the moistener, and means carried by the gripping means to sever the strip in the rear of the moistener.

8. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping members at opposite faces of the strip and movable relatively to each other to engage the strip, a movable support for said gripping members, and a severing device carried by said movable support.

9. A strip serving apparatus comprising in combination a strip roll support, a moistener, feeding means adapted to engage and release the strip, and means engaging the strip delivered from its support to prevent displacement of the free end of the strip by backlash of said strip roll.

10. A strip serving apparatus comprising in combination a strip roll support, a moistener, feeding means to feed the strip to the moistener and adapted to engage and release the strip, and means engaging the strip de-

livered from its support to prevent displacement of the free end of said strip when released.

11. A strip serving apparatus comprising in combination a strip roll support, a moistener, guiding means intermediate the strip roll support and moistener, strip severing means, and means engaging the strip delivered from the support to prevent reverse pull by the strip roll upon the free end of the strip.

12. A strip serving apparatus comprising in combination a strip support, a rotary moistener, strip gripping means, a movable carrier therefor, means to sever the strip in the rear of the moistener, and means operated by the carrier to rotate the moistener at a differential speed with respect to the travel of the strip.

13. A strip serving apparatus comprising in combination a strip support, a moistener, a strip receiving and guiding throat, feeding means engaging opposite faces of the strip, and movable with said strip through said throat to deliver the strip to the moistener and strip severing means operated by said feeding means.

14. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping means movable into and out of engagement with the strip and adapted to travel therewith to feed the strip to the moistener, means to limit the feeding path of travel of the strip gripping means, strip severing means traveling with the strip gripping means, and means to present a severed, unapplied strip to the moistener.

15. A strip serving apparatus comprising in combination a strip support, a moistener, oscillatory strip engaging and feeding means and strip severing means movable with the feeding means.

16. A strip serving apparatus comprising in combination a strip support, a moistener, strip feeding variable means having a to and fro movement, strip severing means movable with the strip and means to limit the non-feeding movement of said feeding means.

17. A strip serving apparatus comprising in combination a strip support, a moistener, a strip receiving throat through which the strip travels toward the moistener, and a strip severing device movable along said throat.

18. A strip serving apparatus comprising in combination a strip support, a moistener, a strip receiving throat through which the strip travels toward the moistener, strip feeding means movable along said throat and strip severing means positioned in the rear of and in proximity to the moistener and operated by said strip feeding means.

19. A strip serving apparatus comprising in combination a strip support, a moistener, and strip feeding and strip severing means having a to and fro path of movement along the strip service path, said strip feeding means primarily engaging the strip adjacent the point at which it is to be severed.

20. A strip serving apparatus comprising in combination a strip support, a moistener, strip feeding means having a to and fro path of movement and means to vary the tension of said strip feeding means to afford greater or less ease of operation of said feeding means.

21. A strip serving apparatus comprising in combination a strip support, a moistener, strip feeding means having a to and fro path of movement to present the strip to the moistener, strip severing means movable with the feeding means, and means engaging and tensioning the strip prior to its engagement by the strip feeding means.

22. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping, feeding means having a to and fro path of movement, strip severing means movable with the feeding means, and means to preserve a grip upon the fed portion of the strip until severed.

23. A strip serving apparatus comprising in combination a strip support, strip feeding means having a to and fro path of movement along the service path of the strip, and strip severing means movable with and dependent in operation upon the operation of the strip feeding means.

24. A strip serving apparatus comprising in combination a strip support, strip moistening means, strip feeding means having a to and fro path of movement along the service path of the strip, and a strip severing device movable with the strip feeding means, means to operate the same upon the termination of the feeding movement of the strip to sever the strip in the rear of the moistener.

25. A strip serving apparatus comprising in combination a strip support, strip feeding means and strip severing means having a to and fro movement in unison, and means dependent upon such movement to operate the strip severing means.

26. A strip serving apparatus comprising in combination a strip support, a moistener, a primary, yielding strip directing means adjacent to and in advance of said moistener and a secondary, yielding, strip directing means overlapping the former.

27. A strip serving apparatus comprising in combination a strip support, a moistener, a strip feeding device having a to and fro path of movement, strip severing means movable with the strip feeding device, and means for imparting differential motion to said feeding device and moistener.

28. A strip serving apparatus comprising in combination a strip support, a moistener, strip feeding means and strip severing means having a to and fro path of movement with the strip feeding device, and means for imparting a wiping action to said moistener.

29. A strip serving apparatus comprising in combination a strip support, a moistener, reciprocatory strip gripping, feeding means, strip severing means movable with the feeding means and means to impart a wiping motion to the moistener.

30. A strip serving apparatus comprising in combination a casing having a strip support, a strip feed supporting carrier pivoted upon the casing and strip gripping means ecentrically mounted upon the carrier.

31. A strip serving apparatus comprising in combination a strip support, a moistener, a strip feed supporting carrier having a to and fro movement, strip feeding means mounted thereon, and means to tension said carrier.

32. A strip serving apparatus comprising in combination a strip roll support, a moistener and oscillatory gripping means having an oscillating movement with and to feed the strip and means movable with the feeding means to sever the strip.

33. A strip serving apparatus comprising in combination a strip roll support, a moistener and oscillatory strip feeding means having an oscillating movement with and to feed the strip and means movable with the feeding means to sever the strip.

34. Strip serving apparatus comprising in combination a strip support, a moistener, a strip severing device comprising blades upon opposite faces of the strip and in the rear of the moistener, means to move said blades toward each other to sever the strip, and means compelling said blades to travel with the strip.

35. A strip serving apparatus comprising in combination a strip roll support, a moistener, a strip severing device comprising blades upon opposite faces of the strip and positioned above said strip roll support, and means to move said blades along the service path of the strip, and toward each other to sever the strip.

36. A strip serving apparatus comprising in combination a rotatable moistener, a strip severing device comprising blades upon opposite faces of the strip, and means to move said blades toward each other to sever the strip and to rotate the moistener, and means to move the blades longitudinally of the strip.

37. A strip serving apparatus comprising in combination, a strip support, a moistener, a movable severing blade, a support therefor, yielding means to press said blade flatwise to its support, and strip feeding means carrying said blade and support to move the same longitudinally of the strip.

38. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping means to feed the strip to the moistener, strip severing means adapted to move with the strip gripping means along and substantially parallel with the service path of the strip, and means to actuate the severing means to sever the strip in the rear of the moistener.

39. A strip serving apparatus comprising in combination a strip support, a strip moistener, strip gripping jaws to present the strip to the moistener, and strip severing means carried by the strip gripping jaws, and having severing movement with respect thereto.

40. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping means, means to feed the strip to the moistener, strip severing means adapted to move with the strip gripping means, and means to operate the strip severing means to sever the strip in the rear of the moistener.

41. A strip serving apparatus comprising in combination a strip support, a moistener a strip receiving and guiding throat, feeding means movable with said strip through said throat to deliver the strip to the moistener, and means to vary the length of strip fed by said feeding means.

42. A strip serving apparatus comprising in combination, a strip support, a moistener, a strip receiving and guiding throat, feeding means movable with the strip through said throat to deliver the strip to the moistener, and means for severing the strip in the rear of the moistener.

43. A strip serving apparatus comprising in combination a strip support, a moistener, strip gripping, feeding means having a to and fro path of movement, strip severing means traveling with the strip, and a common means to operate the feeding and the severing means.

44. A strip serving apparatus comprising in combination a strip support, a moistener, strip feeding means comprising a movable carrier having a plurality of relatively movable strip gripping means, strip severing means mounted upon the carrier in the rear of the moistener, and means for operating the severing means in the rear of and in proximity to the moistener.

45. A strip serving apparatus comprising in combination a strip support, strip gripping means, comprising a plurality of members having relative movement toward and from each other to engage and to release the strip, and a strip severing blade traveling with the strip.

46. A strip serving apparatus comprising in combination a strip support, a moistener, a yielding strip guide in the rear of the moistener, means to feed the strip and severing means movable with the feeding means.

47. A strip serving apparatus comprising in combination a strip support, a moistener at the discharge end of the apparatus and from which the strip is immediately presented, unapplied, to the user, strip gripping members at opposite faces of the strip, and movable relatively to each other to engage the strip, means to move said strip gripping members in an arc toward and from the moistener and a pair of blades carried by the strip gripping means to sever the strip in the rear of the moistener.

48. A strip serving apparatus comprising in combination a strip support, a moistener at the discharge end of the apparatus and from which the strip is immediately presented, unapplied, to the user, strip gripping jaws at opposite faces of the strip and movable relatively to each other to engage the same, a pivoted arm supporting said strip gripping jaws to move the same to and fro in an arc, a strip severing blade carried by said jaws and means to actuate said blade to sever the strip at a point adjacent the moistener.

49. A strip serving apparatus comprising in combination means to support a strip roll, a moistener, means to rotate the moistener at a greater surface speed than that of the strip, strip gripping members at opposite faces of the strip and movable relatively to each other to engage the strip, means to move said strip gripping members to and fro along the service path of the strip and a severing blade carried by the gripping members to sever the strip in the rear of the moistener.

50. A strip serving apparatus comprising a casing having a support for a strip roll, said casing having a strip guide-way along its upper face and a rotatable strip moistener at the terminus of said face and strip gripping means movable in an arcuate path along said guide-way and carrying strip severing means.

51. A strip serving apparatus having a strip support, a pair of strip gripping jaws mounted to move in an arcuate path, a severing blade movable with said jaws, and lever means for actuating said severing blade.

52. A strip serving apparatus comprising in combination a casing having means to support a strip roll, a spring supported guide roll 7 about which the strip passes, a strip guiding path at the top of the apparatus, a pair of gripping jaws movable along said path, a moistener, and a curved rack movable with said gripping jaws to rotate said moistener.

53. A strip serving apparatus comprising in combination a strip support, a rotatable moistener, a presser mounted thereabove, intermeshing gears carried by said presser and moistener, a rack to rotate said gears, strip gripping jaws carried by said rack and movable along the service path of the strip and means to sever the strip.

54. A strip serving apparatus comprising in combination a strip support, a rotary moistener, strip gripping means, a movable carrier therefor, strip severing means upon the carrier and means operated by the carrier to rotate the moistener at a differential speed with respect to the travel of the strip.

55. A strip serving apparatus comprising in combination a strip support, a rotary moistener, a strip gripping means, a movable carrier therefor, strip severing means upon the carrier, and means to operate the severing means to sever the strip in the rear of the moistener.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

HENRY H. CUMMINGS.

Witnesses:
IRVING U. TOWNSEND,
HORACE A. CROSSMAN.