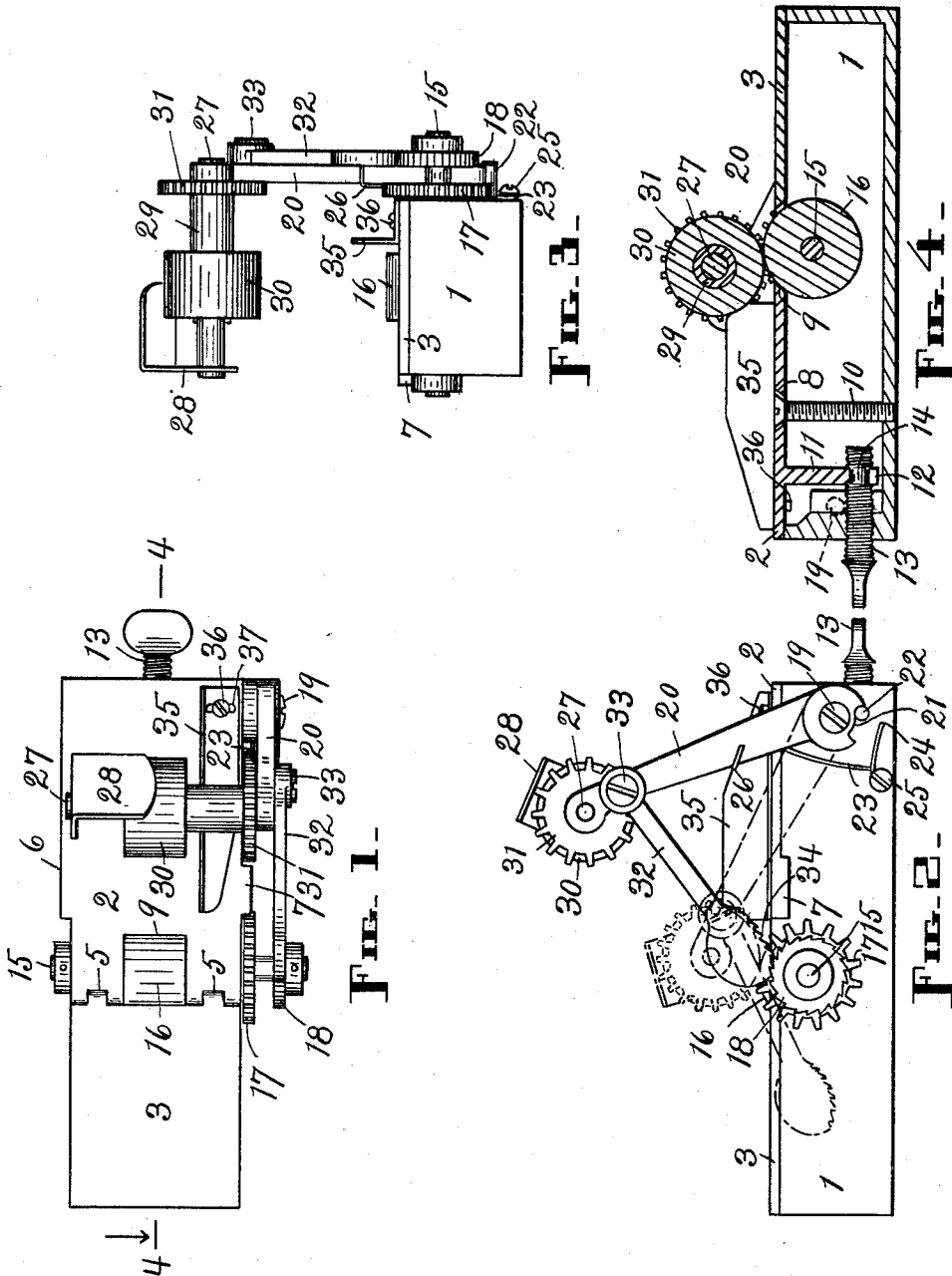


G. T. LEMELIN.
GUMMER.

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996,988.

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WITNESSES:

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GEORGE T. LEMELIN, OF SPRINGFIELD, MASSACHUSETTS.

GUMMER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE T. LEMELIN, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Gummer, of which the following is a specification.

My invention relates to improvements in devices for applying adhesive material to paper and the like, and consists of a suitable reservoir, box, or receptacle having a gum-feed member mounted therein, an exterior roller, yielding supporting means of peculiar construction for such exterior roller, means combined with such yielding supporting means to positively actuate said gum-feed member, and other parts and members, all as hereinafter set forth.

The object of my invention is to produce a comparatively simple and inexpensive but highly efficient device which is particularly designed for applying the proper amount of so-called gum evenly and uniformly to the bands used for fastening together packages or bunches of envelopes at the time the latter are made, although said device may be used for other purposes, and to provide such a device with every means necessary to insure the practical and efficient operation of the same.

Other objects will appear in the course of the following description.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a top plan of a gummer which embodies a practical form of my invention; Fig. 2, a side elevation of said gummer, the exterior or upper roller being represented in its operative position, with the supporting arm therefor and the members connected with said arm disposed accordingly, by dot-and-dash lines; Fig. 3, a front end elevation of the gummer, and, Fig. 4, a central longitudinal vertical section taken on lines 4—4, looking in the direction of the associated arrow, in Fig. 1, the two rollers being in contact.

Similar figures refer to similar parts throughout the several views.

The first requisite, in a device of this kind, is a suitable receptacle for the adhesive material or gum which is in a liquid state, and for this I employ a rectangular box 1, which has a top consisting of a plate 2 and a lid 3 hinged to said plate at 5—5. The

plate 2 rests on the upper edges of the box 1, is provided with flanges 6 and 7 which depend from the longitudinal edges of the same to embrace the sides of said box, and has a central longitudinal slot 8 therein, also a recess 9 opening through the center of the front edge of said plate. A screw 10 passes down through the slot 8 and the interior of the box 1 into threaded engagement with the bottom of said box. The screw 10 and the flanges 6 and 7 hold the plate 2 securely on the box, but provision is made for adjusting said plate longitudinally, as described below.

Depending from the underside of the plate 2 is a lug 11 situated some little distance in advance of the back end of the box 1. This lug is bifurcated at its lower terminal to provide a slot 12 for a horizontal adjusting screw 13 which is tapped into and through the back end of the box. The screw 13 has an uncut or unthreaded section at 14, which is of less diameter than the threaded portions behind and in front of said section, and it is this plain part of the screw that is received into the slot 12. Thus it will be seen that the lug 11, with the plate 2, can be actuated by turning the screw 13, either forward or backward according to the direction given said screw, but before attempting to adjust said plate in this way the screw 10 should be loosened.

A shaft 15 is journaled in the sides of the box 1, which shaft has secured thereon a gum-feed roller 16, within said box, a gear 17 and a ratchet-wheel 18, outside of said box, said gear being inside of said ratchet-wheel. The roller 16 projects through the recess 9 a little above the upper surfaces of the plate 2 and the lid 3. There should always be enough gum in the box to supply the roller 16, since it is this roller that conveys said gum to the surface or surfaces being coated therewith. The lid 3 affords a convenient means for opening the box to introduce the gum into the same. The back edge of the recess 9 serves as a scraper or "doctor" for the roller 16, and removes or holds back any excess of gum which would, in the absence of something of this kind, be carried by said roller above the plate 2 and applied to the bands. By loosening the screw 8 and turning the screw 13 in the proper direction, the plate 2 is set so as to locate the back edge of the recess 9 just right relative to the roller 16, or so that the

latter can supply only the desired amount of gum to the bands, after which said screw 8 is retightened.

A horizontal stud 19 projects from the box 1 near the back end thereof but from the same side with that terminal of the shaft 15 upon which the gear 17 and the ratchet-wheel 18 are mounted, and an oscillatory arm 20 has its base mounted on said stud. The base or hub of the arm 20 is cut away at 21, and a stop pin 22 projects from this side of the box into the space thus formed to limit the upward and rearward movement of said arm. The space or slot 21 is of sufficient length to permit the arm 20 to swing downward and forward as far as may be necessary. The arm 20 is normally retained in its elevated or approximately upright position, with the rear end of the slot 21 bearing against the pin 22, by means of a spring 23, which has one end secured by being inserted in a whole 24 in the adjacent side of the box, is wound around a post or screw 25 set in said side forward of said hole, and has the other end in supporting relation to or engagement with the front edge of said arm, as at 26.

Having one terminal fixed in the free terminal of the arm 20 and extending across above the top of the box 1 is a horizontal stud 27. Securely fastened to the free terminal of the stud 27 is an angular handle 28. A sleeve 29, carrying a presser roller 30 and a gear 31, is mounted to revolve on the stud 27 between the arm 20 and the part of said handle that is directly attached to said stud. The roller 30 is preferably made of comparatively soft material, as rubber, so that its periphery will be yielding, and should be of the same size, superficially, as the roller 16 with which it is designed to coact and coöperate, the two rollers being in the same vertical plane. The gear 31 is of the same size as the gear 17, with which latter said gear 31 meshes when the arm 20 is depressed, the two gears being in the same vertical plane. The arm 20 is of a length to bring the cushion roller 30 down on to the top of the roller 16, and the gear 31 into mesh with the gear 17, when said arm is rocked downward, as shown in Fig. 4 and by dot-and-dash lines in Fig. 2. The purpose of the gears 17 and 31 is to cause the rollers 16 and 30 to revolve at the same rate of speed when they are operatively engaged and the material being gummed is drawn between them, in the manner presently to be explained, to the end that there shall be no dragging action on the part of either roller and no improper distribution of the gum incident to such action. A pawl 32 has one end pivoted to the arm 20, at 33, and has teeth 34 at the other end, the length of said pawl and the arrangement of the parts being such that said teeth are in engagement

with the ratchet-wheel 18 when said arm is standing normally. When the arm 20 is depressed, the pawl 32 causes, through the medium of the ratchet-wheel 17 and the shaft 15, a partial revolution to be imparted to the roller 16, before the teeth 34 ride clear of said ratchet-wheel, and by thus positively rotating or partially rotating said roller keeps the exposed surface thereof supplied with fresh gum for presentation to the bands. After the teeth 34 clear the ratchet-wheel, as the arm 20 continues to move downward, the plain or unserrated part of the pawl 32 slides over said ratchet-wheel without disturbing it. A flanged guide 35 is fastened on top of the plate 2 by means of a screw 36, which latter passes through a slot 37, in the horizontal part of said guide, into the plate 2, adjustment of the guide being thus afforded.

In using this device for gumming envelop-bands, a number of such bands are first arranged with overlapping ends, in the usual manner, and then they are placed on the box in proper position over the gum-feed roller 16, with the right-hand edges of the overlapping portions of said bands against the vertical part of the guide 35, the latter having been previously adjusted by loosening the screw 36, moving said guide to the right or left, as the width of the bands may require, and retightening said screw. Now grasp the handle 28 and swing down the arm 20, against the resiliency of the spring 23, until the presser roller 30 comes to rest on top of the roller 16 with the bands between. As the arm 20 descends the pawl 32 actuates the ratchet-wheel 18 and imparts a partial rotation to the roller 16, for the reason already given. While the bands are in the grip of the rollers 16 and 30, that is to say, while the oscillatory members are still pressed down by the hand of the operator, said bands are drawn quickly forward, necessarily thereby imparting a rotary motion to said rollers, which motion is rendered uniform by the now meshing gears 17 and 31. As the bands pass over the roller 16 they receive gum on their undersides from said roller. At the instant the bands are drawn from between the rollers the operator should release the downward pressure on the handle 28 and permit the spring 23 to act to raise the arm 20 with the members carried thereby. This last action takes the roller 30 out of the way, so that a new lot of bands can be readily placed in position for a repetition of the operations just described, and carries the pawl 32 back until its teeth 34 again engage the ratchet-wheel 18.

The teeth of the gears 17 and 31 must be quite long so as to mesh when there is some considerable thickness of paper between the gum-feed and the cushion rollers, and also to permit the cushion roller to be pressed down tightly, when there is only a single thickness

of paper under it, without interfering with such action.

As hereinbefore intimated, this gummer is not restricted in its use to envelop-bands, but may be employed for applying adhesive material to other things, and in this connection it may be well to call attention to the fact that the gummer may be changed or modified to a greater or less extent to adapt it to different uses, or even for other reasons, without departing from the nature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a gummer, with a suitable receptacle, and a gum-feed member mounted in and accessible from outside of said receptacle, of an exterior roller, an axial member for such roller, a movable supporting member for such axial member at one end only of the same, such supporting member being adapted to carry said roller into operative relation with said gum-feed member, and means normally to retain said supporting member in an elevated position with said roller at a remote point relative to said gum-feed member.

2. The combination, in a gummer, with a suitable receptacle, and a gum-feed roller mounted in and accessible from outside of said receptacle, of an exterior roller, a movable supporting member for such exterior roller adapted to carry the latter into operative relation with said gum-feed member, means to cause said rollers to revolve at the same rate of speed when actuated by drawing on material in their grasp, and means normally to retain said exterior roller at a remote point relative to said gum-feed roller.

3. The combination, in a gummer, with a suitable receptacle, and a gum-feed roller mounted in and accessible from outside of said receptacle, of an exterior roller, a movable supporting member for such exterior roller adapted to carry the latter into operative relation with said gum-feed roller, means operated by such supporting member positively to impart a partial revolution to said gum-feed roller before said exterior roller is brought by such member into operative relation therewith, and means normally to retain said last-mentioned roller at a remote point relative to said first-mentioned roller.

4. The combination, in a gummer, with a suitable receptacle provided with an adjusting screw in one end and a gum-feed roller mounted in said receptacle, of a movable plate forming part of the top of said receptacle and arranged with an edge contiguous to said roller, said plate having a depending member engaged by said screw.

5. The combination, in a gummer, with a suitable receptacle provided with an ad-

justing screw in one end and a gum-feed roller mounted in said receptacle, of a movable plate forming part of the top of said receptacle and arranged with an edge contiguous to said roller, said plate having a depending member engaged by said screw, and a screw arranged at right-angles to said adjusting screw for clamping said plate after the latter has been adjusted by said first-mentioned screw, such clamping screw passing through said plate and the interior of said receptacle into threaded engagement with the bottom of the receptacle.

6. The combination, in a gummer, with a suitable receptacle, and a gum-feed roller mounted in and accessible from outside of said receptacle, of an upwardly spring-pressed arm pivotally attached to said receptacle and provided with an axial member, and a revoluble presser-roller mounted on said axial member, said arm being capable when depressed of bringing said presser roller onto said gum-feed roller.

7. The combination, in a gummer, with a suitable receptacle, and a gum-feed roller mounted in and accessible from outside of said receptacle, of an upwardly spring-pressed arm pivotally attached to said receptacle and provided with an axial member, a revoluble presser-roller mounted on said axial member, and a handle attached to said axial member, said arm being capable when depressed of bringing said presser roller onto said gum-feed roller.

8. The combination, in a gummer, with a suitable receptacle, a shaft journaled in said receptacle, a gum-feed roller secured to said shaft within said receptacle but accessible from outside of the same, and a ratchet-wheel also secured to said shaft, of an upwardly spring-pressed arm pivotally attached to said receptacle, a presser roller carried by said arm, and a pawl for said ratchet-wheel pivotally attached to said arm, the arrangement of parts being such that, when said arm is depressed, said pawl causes a partial revolution to be imparted to said gum-feed roller and said presser roller is brought into operative relation with said gum-feed roller.

9. The combination, in a gummer, with a suitable receptacle, and a gum-feed roller mounted in and accessible from outside of said receptacle, of an upwardly spring-pressed arm pivotally attached to said receptacle, a presser roller carried by said arm, the latter being capable when depressed of bringing said presser roller onto said gum-feed roller, and a member projecting from said receptacle into the path of an engaging part of the arm to stop said arm at the end of the upward movement of the same.

10. The combination, in a gummer, of a suitable receptacle, a shaft journaled there-

in, a gum-feed roller and a ratchet-wheel
secured to said shaft, an upwardly spring-
pressed arm pivotally attached to said re-
ceptacle, a presser roller carried by said
5 arm, and a pawl for said ratchet-wheel piv-
otally connected with said arm, the arrange-
ment of parts being such that, when said
arm is depressed, the pawl teeth impart a
partial revolution to the ratchet-wheel, shaft

and gum-feed roller and clear said ratchet- 10
wheel before said presser roller is brought
into operative relation with said gum-feed
roller.

GEORGE T. LEMELIN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
