March 4, 1930. R. G. BEACH 1,748,940

GUMMED TAPE DISPENSING MACHINE

Filed July 24, 1925 2 Sheets-Sheet 1

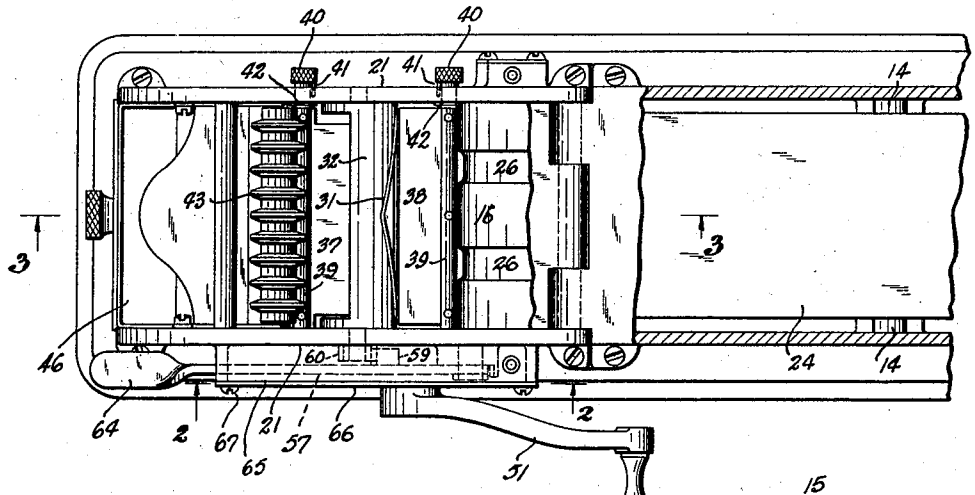

Fig. 1.

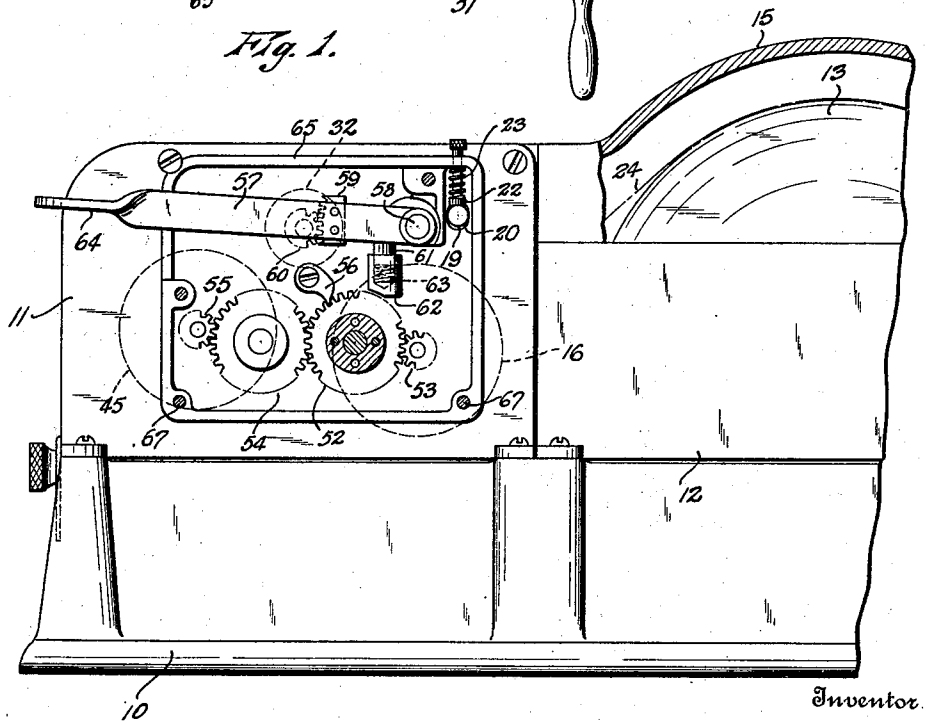

Fig. 2.

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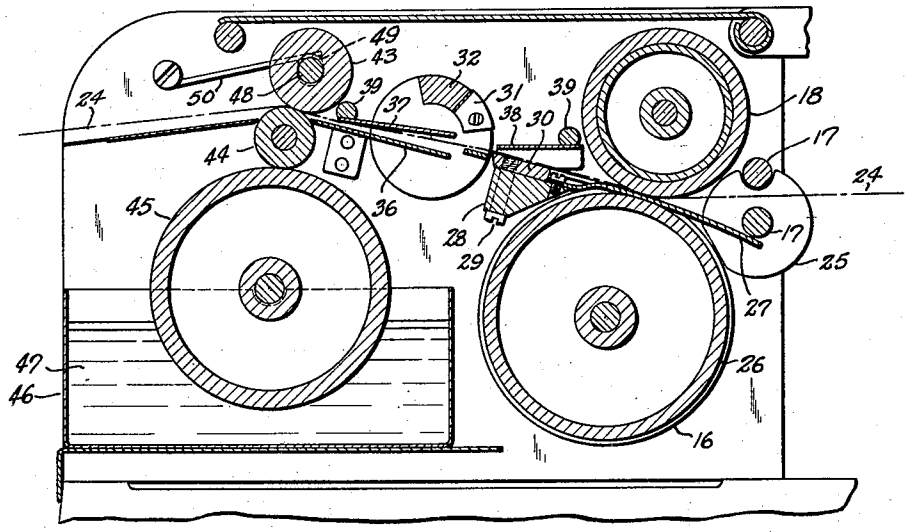

Fig. 3.

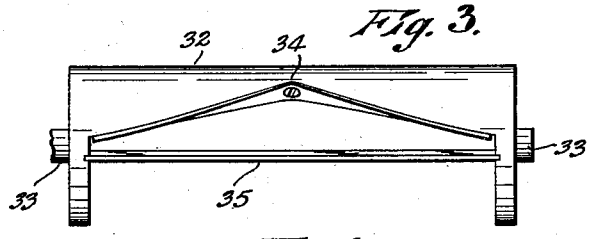

Fig. 4.

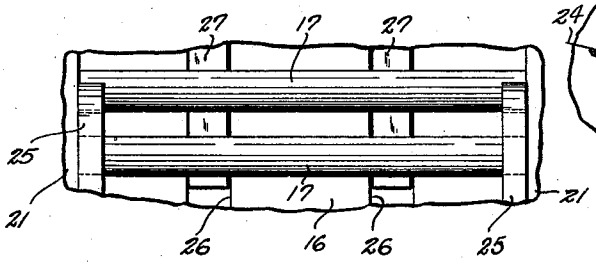

Fig. 5.

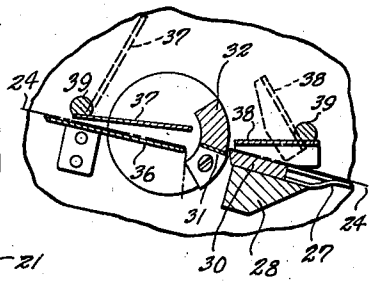

Fig. 6.

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UNITED STATES PATENT OFFICE

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GUMMED-TAPE-DISPENSING MACHINE

Application filed July 24, 1925. Serial No. 45,798.

This invention relates to a device for supplying strips of paper or the like employed for wrapping or binding packages, or for use as labels, and refers particularly to that type of device in which a roll of a strip of paper previously gummed on one side and dried is supported in a position to supply a suitable mechanism which will withdraw the strip from the roll and moisten the gummed side so that it is ready for use, and has for an object to provide an improved and simplified construction of device for holding, feeding and moistening the strip of paper.

It is also an object of the invention to provide an improved cutting mechanism for severing the individual lengths from the main strip.

With the foregoing and other objects in view I have devised the construction illustrated in the accompanying drawings forming a part of this specification, similar reference characters being employed throughout the various figures to indicate the corresponding elements. In these drawings

Fig. 1 is a top plan view of the main portion of my device with certain elements broken away to more clearly show the construction.

Fig. 2 is a side elevation thereof looking toward the bottom of Fig. 1 with the cover plate for the roller and cutter operating mechanism removed, the plane of the view being substantially on line 2—2 of Fig. 1.

Fig. 3 is a vertical longitudinal section substantially on line 3—3 of Fig. 1.

Fig. 4 is a front elevation of my improved strip severing device.

Fig. 5 is a detailed elevation of an improved guiding means, looking from the right of Fig. 3, and

Fig. 6 is a detail section through the severing means showing said means in the act of severing the strip.

The device illustrated has a suitable base 10 on which the casing, in the present case comprising two sections 11 and 12, is mounted. In the section 12 is provided space for mounting a coiled strip of gummed paper 13, this strip being mounted on any suitable support such as the pivots 14 mounted in the casing, and this coil is accessible for inspection or renewal by removing the cover 15.

Mounted in the section 11 is means for withdrawing the strip from the coil, severing and moistening the gummed side thereof. This mechanism comprises a drum or roller 16 placed to the rear of a pair of transverse guiding rods 17, and above this roller and cooperating therewith is a roller 18. This roller 18 is mounted on a pivot rod 19 extending into slots 20 in the side walls 21 of the casing, and the roller is held against the roller 16 by means of plungers 22 slidably mounted in the side walls and held against these pivots by springs 23. This arrangement will allow the roller to yield if necessary and will clamp the strip of paper 24 between the rollers to give a good grip thereon for the feeding operation. Mounted on the guide rods 17 are suitable adjustable edge guides 25. These guides are adjustably mounted on the rods to accommodate various widths of paper strips. The lower drum or roller 16 is provided with annular grooves 26 in its periphery into which extend guides 27, these guides extending between the rolls 16 and 18 and under the lower guide rod 17, as shown in Fig. 3. These guides are mounted on a transverse support 28 to the rear of the rollers between the side walls.

Also mounted on this support 28 by suitable means, such as screws 29, is a stationary knife blade 30 extending transversely of the strip, and mounted to coact with this blade for severing the strip is a movable knife blade 31. This blade is mounted on a rotatable support 32 mounted by means of the pivots 33 in the side walls 21, this knife being curved and having a substantially V-shaped cutting edge, as indicated in Fig. 4, that is, this edge tapers from the opposite ends thereof toward the center or the apex 34 which is preferably located at substantially the center of the strip and support. The knife blade 31 is mounted on the forward wall of the support 32, that is the forward wall as said support is turned from its normal position or clockwise, as viewed in Fig. 3, toward the stationary blade 30.

It will be apparent from this arrangement

that as the support 32 is turned on its axis to move the blade 31 past the blade 30 the shearing action will commence at the opposite side edges of the paper strip and move gradually toward the center thereof. As it moves simultaneously from opposite sides of the strip the two side thrusts of the blade on the strip will neutralize each other and thus this device will give a clean straight cut. The support 32 also carries a guide 35 extending transversely of the paper strip just below the stationary blade 30 so that on the next feeding operation the free edge of the strip will be guided for proper movement between the upper and lower guides 36 and 37.

Located above the stationary blade 30 is a pivoted guide 38, and it is pivoted so that it may be raised to give access to the blade for adjustment and repair. It is mounted on a rod 39 pivoted in the side walls, and at one end has a knurled head 40 by which the guide may be turned up out of position as indicated in dotted lines Fig. 6. The head carries a pin 41 adapted to enter a recess in the side wall 21 to hold the guide in proper position. The rod 39 is slidable longitudinally in the side walls to allow withdrawal of this pin from the recess, and a spring 42, such as a spring washer, is mounted on the rod between the side wall and the guide and tends to slide the guide and its rod inwardly to hold the pin in the recess. The guide 37 is mounted in the same way, and may be swung upwardly as indicated in dotted lines Fig. 6.

The guides 36 and 37 direct the paper strip 24 between the rollers 43 and 44. The roller 44 is preferably a fibre roller engaging the under or gummed side of the strip 24, and it also engages the surface of another roller 45 extending into a tank 46 containing water 47. This roller conducts water to the fibre roller which spreads it evenly on the gummed surface of the strip. The pivot rod 48 may also be mounted in slots 49 in the side walls to allow for certain lateral movement of the roller, and springs 50 are provided tending to press this roller against this strip and hold it tightly against the roller 44.

These various rollers are driven by means of a crank arm 51 which is connected to a gear 52 meshing with a pinion 53 mounted on the shaft of the feed roller 16. It also meshes with idler gear 54 which meshes with a pinion 55 on the moistening roller 45. By turning the crank these rollers are rotated and any desirable length of the strip 24 is withdrawn from the coil 13 and moistened. As the moistening roller is positively driven it is not necessary to rely on pulling the strip from the machine after it has been severed. A pawl 56 is arranged to engage the gear 52 to prevent rotation of the rollers in the opposite or reverse direction.

The movable knife 31 is operated by a lever 57 pivoted at 58 which carries a gear segment 59 meshing with a gear 60 connected to the support 32. A plunger 61 carried by the lever extends into a support 62 and presses on a spring 63 which tends to move the lever upwardly to its upper position. By pressing downwardly on the finger piece 64 at the free end of this lever the support 32 and the blade 31 are rotated to cut off the strip. These gears and the lever are enclosed by the walls 65 on one side of the casing. The open side is closed by a cover plate 66 removably secured in position by suitable screws 67.

By turning the crank arm 51 to the right or clockwise as viewed in Fig. 2, the roller 16 is rotated to withdraw any desired length of paper strip 24 from the coil 13. This strip is guided by the guides over the stationary blade 30, under removable blade 31, and between the guides 36 and 37 from which it passes between the rolls 43 and 44. Turning of the crank also rotates these rollers through the roller 45 and moistens the gummed side of the strip. After the proper length of strip has been withdrawn from the coil the operator presses downwardly on the finger piece 64 of the lever 57 which rotates the movable blade 31 and severs the strip.

Having thus set forth the nature of my invention what I claim is:

1. In a device of the character described, a support for a coiled strip, a feeding device for withdrawing a length of the strip from the coil, and means for severing the strip comprising a stationary knife blade over which the strip passes, a rotary support, a curved blade mounted on the support extending transversely of the path of movement of the support and having a free edge adapted to cooperate with the stationary blade, said free edge being farthest advanced at the ends of the blade and inclined backwardly toward the center from the ends thereof, and means for turning the support to cause the knife to sever the strip.

2. In a device of the character described, a support for a coiled strip, a feeding device for withdrawing a length of the strip from the coil, a stationary knife blade over which the strip passes, a rotary support, a curved blade mounted on the rotary support extending transversely of the path of movement of the outer surface of the support and having a cutting edge inclined in a direction longitudinally of the support, said cutting edge being adapted to cooperate with the stationary blade, and means for rotating the support to sever the strip.

3. In a device of the character described, a support for a coiled strip, a feeding device for withdrawing a length of the strip from the coil, a support having a longitudinal bar mounted to turn about an axis extending transversely of the strip, a stationary blade extending in a direction transversely of the strip, a blade carried by the forward wall of

the bar extending transversely of the direction of movement of said bar and having a free edge adapted to cooperate with the stationary blade, said free edge being substantially V-shaped, and means for turning the last-named support to sever the strip.

4. In a device of the character described, a support for a coiled strip, a feeding device for withdrawing a length of the strip from the coil comprising rollers, a roller located rearwardly of the first mentioned rollers, a severing device for the strip located between said first mentioned rollers and second roller, a hand lever for operating the severing device, a hand crank, driving connections from the crank to the first mentioned rollers, and means to prevent rotation of the rollers in the reverse direction.

5. In a device of the character described, a support for a coiled strip, a feeding device for withdrawing a length of the strip from the coil, a stationary blade, a rotary support, a blade carried by the rotary support arranged to cooperate with the stationary blade to sever the strip, a gear connected to the rotary support, a pivoted lever, a gear segment carried by the lever meshing with said gear, and a spring tending to move the lever in the reverse direction.

6. In a device of the character described, a support for a coiled strip, side walls, a strip feeding device, a strip severing device, strip guiding means located between said devices for guiding the strip from one device to another, said guiding means comprising lower guides, and upper guides pivoted in the side walls and also slidable longitudinally therein, each of said upper guides comprising a head on the pivot for the guide, cooperating projections and recesses provided on the head and one of the side walls, and a spring tending to slide the guide longitudinally to hold the projection and recess in engagement.

7. In a device of the character described, a support for a coiled strip, side walls, a strip feeding device, a strip severing device, strip guiding means located between said devices for guiding the strip from one device to another, said guiding means comprising lower guides, and upper guides pivoted in the side walls and also slidable longitudinally therein, each of said upper guides comprising a head on the pivot for the guide, an inwardly extending pin on the head, one of the side walls being provided with a recess to receive said pin, and a spring between the side wall and the guide tending to hold the pin in said recess.

8. In a tape dispensing device of the character described, a support for a coiled strip, a feeding device for withdrawing a length of the strip from the coil, a strip severing means located forwardly of the feeding device, said severing means comprising a stationary blade extending transversely of the strip, a support rotatable about an axis extending transversely of the strip, a blade carried by said support arranged to cooperate with the stationary blade, means for rotating the last-named support, a hinged guide above the stationary blade extending in one direction from the severing means, and upper and lower guides extending in the other direction from the severing means, the upper of said latter guides being hinged.

In testimony whereof I affix my signature.

RAY G. BEACH.