H. S. TORRANCE.

STRIP SERVING DEVICE.

APPLICATION FILED MAY 13, 1918.

1,287,140.

Patented Dec. 10, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

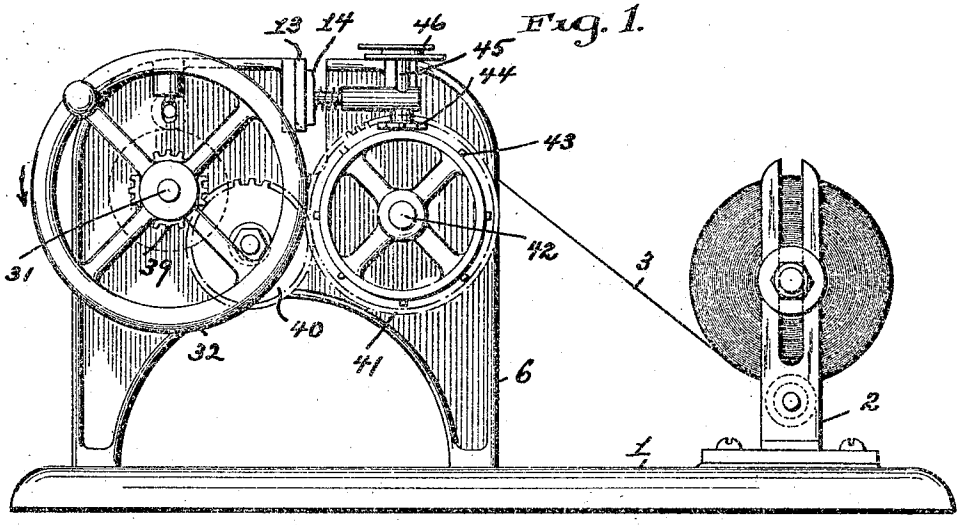
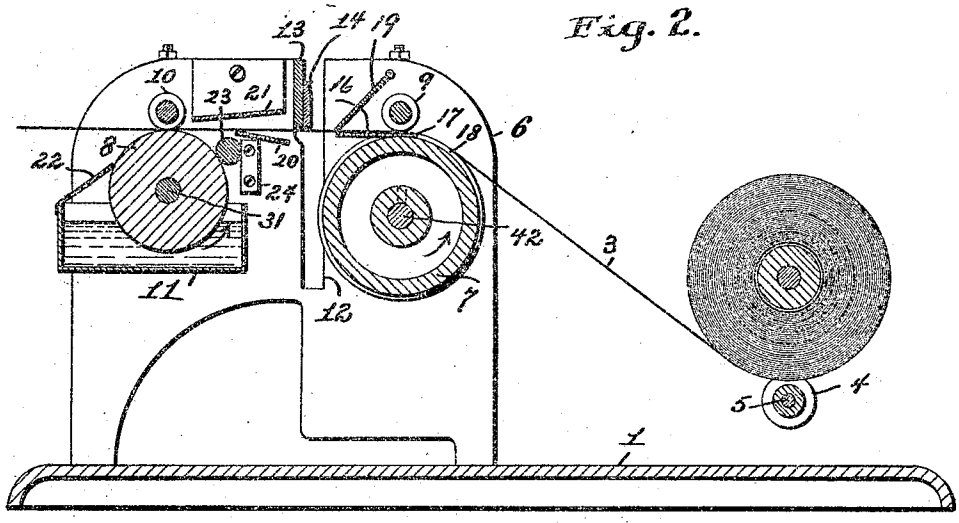


Fig. 2.



WITNESS

Geo. C. Senior

Anna Egan

INVENTOR

Hugh Sidney Torrance

BY

Frank C. Fischer.

ATTORNEYS

THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 3.

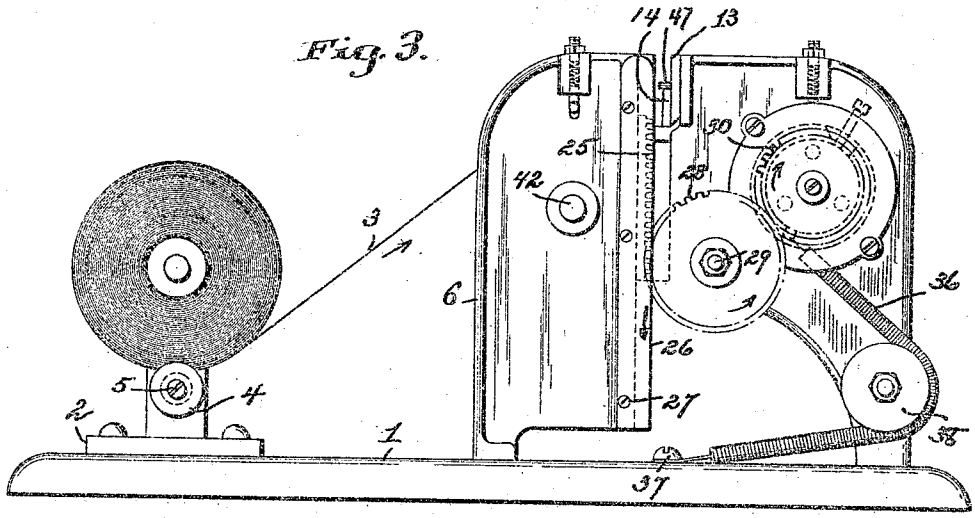
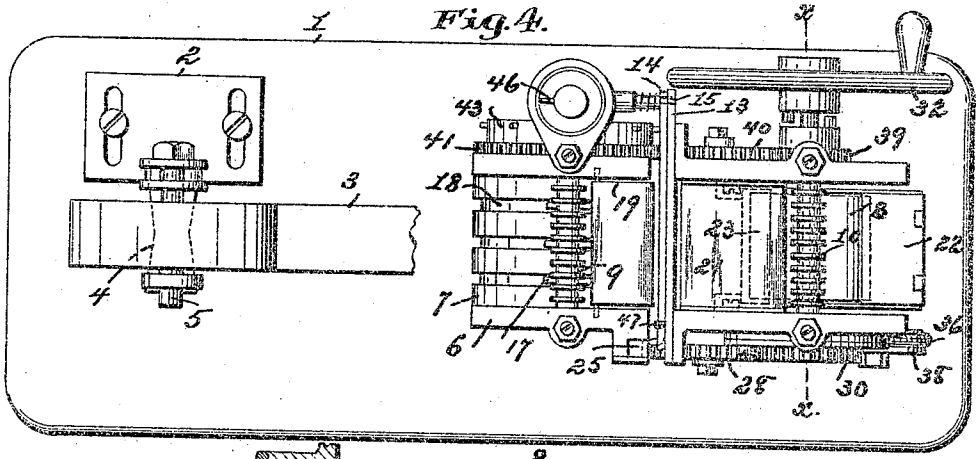


Fig. 4.



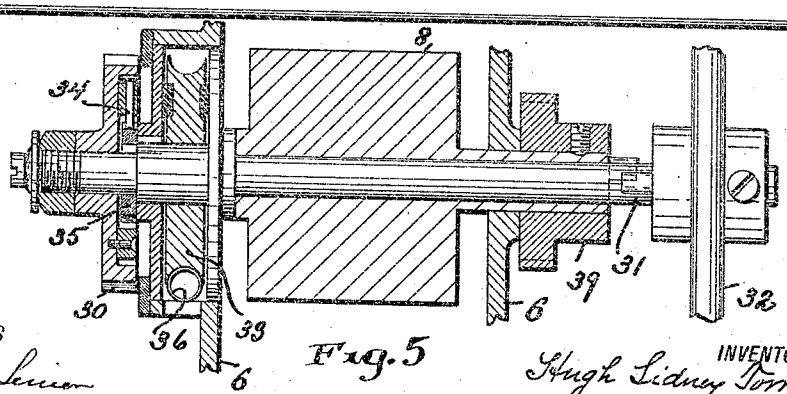


Fig. 5

WITNESS

Geo. A. Senior

Anna Egan

INVENTOR

Hugh Sidney Torrance

BY Fred'k C. Fischer.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HUGH SIDNEY TORRANCE, OF KEARNEY, NEW JERSEY.

STRIP-SERVING DEVICE.

1,287,140. Specification of Letters Patent. Patented Dec. 10, 1918.

Application filed May 13, 1918. Serial No. 234,153.

To all whom it may concern:

Be it known that I, HUGH SIDNEY TORRANCE, a citizen of the United States, residing in the town of Kearney, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Strip-Serving Devices, of which the following is a full, clear and exact description, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, forming a part of this specification.

This invention relates to devices for supplying strips of paper employed for wrapping or binding packages and has particular reference to that type of apparatus of this character, employing a support for a coil of the paper strip which has been previously gummed on one side and then dried, and having means for moistening the gummed side of the strip as the latter is drawn from its coil, and having also means for measuring the gummed tape, and cutting the same off automatically.

The object of my invention is to provide an apparatus of this type having means for moistening the strip, cutting off the strip and measuring the same, means for automatically throwing up the knife and severing the tape, positive means of keeping the tank free from small pieces of paper, thus avoiding a serious defect in the present type of gummed strip machines, and a means of preventing backward movement of the moistening roller when the knife is operated by the return of the wheel.

With this end in view my invention consists in certain novelties of construction and arrangement of parts, as hereinafter set forth and pointed out in the claims.

While the preferred form of my invention is illustrated in the accompanying drawings, yet it is to be understood that minor changes may be made without departing from the scope thereof.

In the accompanying drawings—

Figure 1 represents a front elevation of a complete apparatus embodying my invention.

Fig. 2 represents a similar view in section.

Fig. 3 represents a rear elevation of the complete apparatus embodying my invention.

Fig. 4 represents a plan view thereof, and Fig. 5 represents a fragmentary sectional elevation taken on lines x—x of Fig. 4.

Similar characters of reference refer to like parts throughout the specification and drawings.

In the drawings 1 represents a base upon which is adjustably supported a bracket 2 for the roll or coil of the paper strip 3, the roll or coil being so mounted in the bracket 2 that the lower portion thereof rests upon a truncated roller 4 which is suitably mounted upon a stud 5 carried by the bracket 2. The construction of the roller 4 imparts to the roll or coil of the paper strip 3 a desirable degree of freedom and guidance in its movement.

A frame 6 is mounted upon the base 1, between the side pieces of which are suitably mounted a feed roller 7 and a moistening roller 8. Suitably mounted directly above said feed roller 7 and said moistening roller 8 are spring pressed tension rollers 9 and 10. These tension rollers are also located between the side pieces of the frame 6 and are mounted in any desired or well-known manner. A substantially rectangular tank or reservoir 11 is mounted between the side pieces of the frame 6 near the front thereof, in any desired or convenient manner. Suitably secured within slots 12 formed in the side pieces of the frame 6 is a cutter 13, the cutting edge of which is preferably slightly above the plane of the top of the feed roller 7 and moistening roller 8. A cutting bar 14 is pivotally secured to one end of the cutter 13, as at 15, the operation of which will be presently described. The feed roller 7, as illustrated in the drawings, in its preferred form is a grooved roller, and located above the feed roller 7 and secured to the sides of frame 6 is a sheet metal guiding comb 16 so arranged that the tongues 17 of the comb are received into the grooves 18 of the feed roller 7. The comb 16 together with the pivoted guide plate 19 which is also pivotally secured between the side pieces of the frame 6 provide means for guiding the paper strip over the feed roller 7 and under the tension roller 9 and over the end of the comb 16 and under the guide plate 19 and thence under cutter 13. The comb 16 and guide plate 19 are secured to the frame on one side of the slots 12 and secured to the side pieces of the frame, on the other side of the slots 12 are means for guiding the

paper strip over the moistening roller 8 and under the tension roller 10. These guides 20 and 21 consist of metal plates secured to said side pieces of the frame 6 in any desired or convenient manner. The forward edge of the reservoir 11 is provided with an upward and rearward extension 22 forming a closure for the front end of said reservoir. It will thus be seen that the previously described guides together with the construction of the reservoir, provide positive means of keeping the reservoir free from small pieces of paper thereby eliminating a serious defect in the present type of apparatus to which my invention relates. A suitable roller 23 loosely located between the side pieces of the frame 6 in such a manner that a portion of said roller contacts with a portion of the moistening roller 8, and the opposite portion of said roller 23 contacts with two small brackets 24, one of the said brackets being suitably secured on each side piece of the frame 6. The location and arrangement of the roller 23 as just described, provides an excellent means for preventing the moistening roller from being rotated in a rearward direction. Rotation of the moistening roller in the direction indicated by the arrow in Fig. 2 of the drawings, simply causes rotation of the roller 23, but any rotation of the moistening roller 8 in the opposite direction of that indicated by the arrow, will cause the roller 23 to bind between the surface of the moistening roller and the brackets 24 thereby preventing rotation of the moistening roller. One side of the frame 6 is provided with a guideway in which is slidably located a toothed rack 25, held in position by means of a plate 26 secured to the frame in any convenient manner, preferably by means of screws 27. One end of the cutting bar 14, is pivoted to the cutter at 15, and rests upon the top of the toothed rack 25. A gear wheel 28 mounted upon a suitable stud 29 meshes with said rack 25 and derives rotation from the gear wheel 30. The gear wheel 30 is loosely mounted upon a shaft 31 upon which the moistening roller 8 is secured. A hand wheel 32 is secured to one end of the shaft 31 whereby the apparatus is operated. To the other end of the shaft 31 a friction disk 33, of ordinary construction, is loosely mounted. Secured in a suitable recess formed within the gear wheel 30, which is also loosely mounted upon the shaft 31, is a pawl 34 which engages with a ratchet wheel 35 which is fast on said shaft 31 so that movement of the wheel 32, in the direction indicated by the arrow in Fig. 1 of the drawings, causes the gear wheel 30 to move in the direction indicated by the arrow as clearly illustrated in Fig. 3 of the drawings, thereby causing the gear wheel 28 to move in the direction indicated by the arrow. This movement causes the rack to be drawn downward in the direction indicated by the arrow, at the same time causing the spiral spring 36 one end of which is secured to the base 1 by means of a screw 37 and which passes over the idler 38, and the other end of the spring being secured to the friction disk, to be expanded. A small gear wheel 39 is also secured to the shaft 31 which meshes with a gear wheel 40 which in turn meshes with a gear wheel 41, mounted upon a shaft 42 whereby motion is imparted to the feed roller 7 and moistening roller 8 by the rotation of the wheel 32. Adjacent to the gear wheel 41 and also mounted upon the stud 42 is a pin wheel 43 which meshes with a crown wheel 44 secured to the shaft 45 carrying a counter 46.

The operation of the device is as follows:

The parts as shown in the drawings illustrate the cutting bar 14 in its raised position, the position it assumes after having severed the paper strip. In order to draw the paper strip 3 from the paper roll or coil the handle 32 is moved in the direction indicated by the arrow in Fig. 1 of the drawings, which causes the paper strip 3 to pass over the feed roller 7, over the comb 16 and under the tension roller 9, and under the guide 19, under the cutter 13, and between the guides 20 and 21 and over the moistening roller 8 and under the tension roller 10. However, before the paper strip 3 passes under the cutter 13 rotation of the wheel 32 in the direction indicated by the arrow causes the rotation of the shaft 31 thereby rotating the gear wheels 30 and 28 in the direction indicated by the arrows in Fig. 3 of the drawings, which causes the toothed rack 25 to be moved downward in the direction indicated by the arrow, thereby permitting the cutting bar 14 to drop down between the slot 12 of the frame 6. While the toothed rack 25 is being drawn down, the spiral spring 36 is being expanded owing to the fact that it is secured to the friction disk 33, and the knife is held in its lowered position until the wheel 32 is released, when the spring 36 will cause rotation of the gear wheels 30 and 28 in the opposite direction from that indicated by the arrows of Fig. 3 of the drawings, thereby moving the rack upward, and in that manner carrying the knife with it until it assumes the position indicated in Fig. 2 of the drawings. The movement of the cutting bar 14 being limited in its upper direction by a stop secured to the cutter 13, the movement of the cutting bar 14 in the direction just indicated severs the strip.

So far as the apparatus shown is concerned, however, an ungummed strip of paper might be employed, in which case the reservoir or tank 11 which contains the liquid to be transferred to the underside of

the strip would contain an adhesive instead of water.

Experience has demonstrated that the organization above described is a highly efficient one, and while I have shown the preferred embodiment of my present invention, I do not wish to be limited to the exact details of construction shown and described, as obvious modifications thereof, not involving the exercise of invention,, may be made by any skilled mechanic, and such departures from what is herein set forth, I consider within the scope and terms of my claims.

Having described my invention, what I claim, and desire to secure by Letters Patent,

1. In an apparatus of the class described, comprising strip supporting means, a reservoir supported in operative relation thereto beneath the surface path of the strip, a moistener operatively connected to the reservoir, means to guide a strip to the reservoir, means for measuring and cutting off the strip automatically, means the forward movement of which, draws the strip over the moistening roller and the rearward movement of which operates the knife and severs the strip, and means for preventing rearward movement of the moistening roller.

2. In an apparatus of the class described, comprising strip supporting means, a conical roller carried by said strip supporting means in engagement with the strip, a reservoir supported in operative relation thereto beneath the surface path of the strip, a moistener operatively connected to the reservoir, means to guide a strip to the reservoir, means for measuring and cutting off the strip automatically, means the forward movement of which, draws the strip over the moistening roller and the rearward movement of which operates the knife and severs the strip, and means for preventing rearward movement of the moistening roller.

3. In an apparatus of the class described, comprising strip supporting means, a conical roller carried by said strip supporting means in engagement with the strip, a reservoir supported in operative relation thereto beneath the surface path of the strip, a moistener operatively connected to the reservoir, means to guide a strip to the reservoir, means for preventing pieces of the strip from entering the reservoir, means for measuring and cutting off the strip automatically, means the forward movement of which, draws the strip over the moistening roller and the rearward movement of which operates the knife and severs the strip, and means for preventing rearward movement of the moistening roller.

4. In an apparatus of the class described, comprising strip supporting means, a reservoir supported in operative relation thereto beneath the surface path of the strip, a moistener operatively connected to the reservoir, means to guide a strip to the reservoir, means for measuring and cutting off the strip automatically, spring actuated means carried by the moistening roller shaft movement of which in one direction draws the knife away from the strip and movement of which in the opposite direction operates the knife and severs the strip, and means for preventing rearward movement of the moistening roller.

This specification signed and witnessed this 29th day of April, 1918.

HUGH SIDNEY TORRANCE.

Witnesses:
FRED'K C. FISCHER,
ANNA EGAN.

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