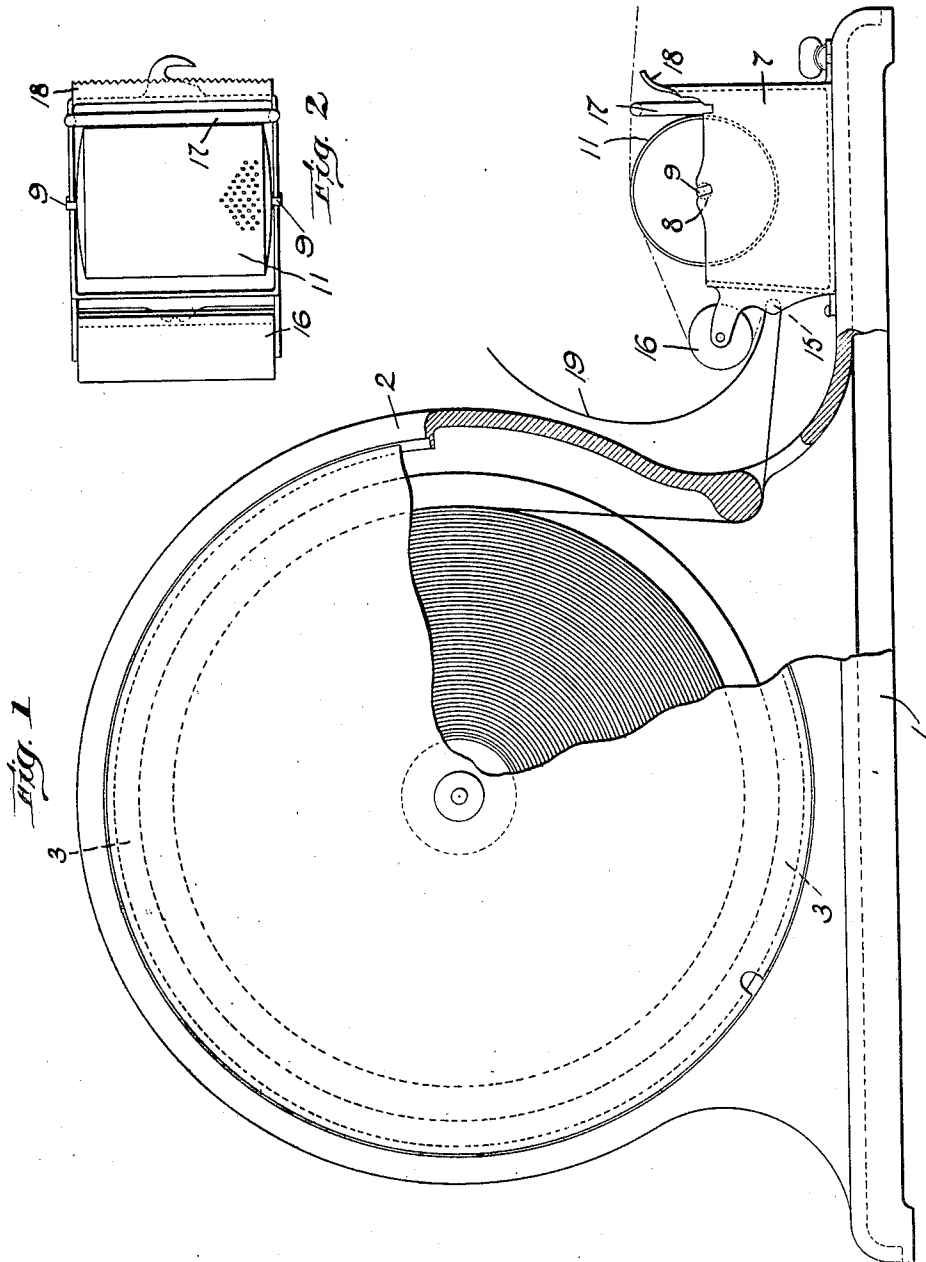


No. 897,258.

PATENTED AUG. 25, 1908.

H. P. ROBERTS.
STRIP SERVING DEVICE.
APPLICATION FILED OCT. 31, 1907.

2 SHEETS—SHEET 1.



Witnesses:
Wm. H. Howe
James H. Stark

Inventor:
Henry Pitt Roberts

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2 SHEETS—SHEET 2.

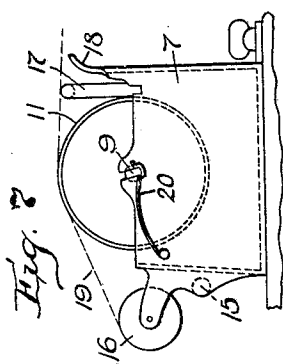


Fig. 4

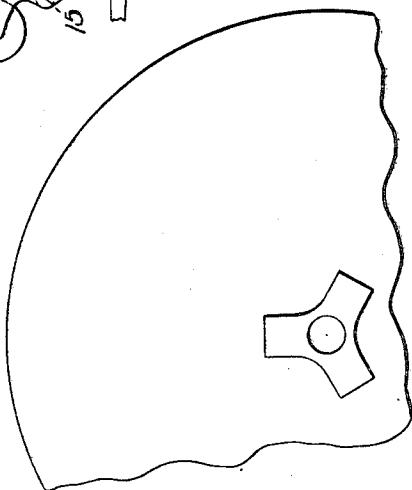


Fig. 6

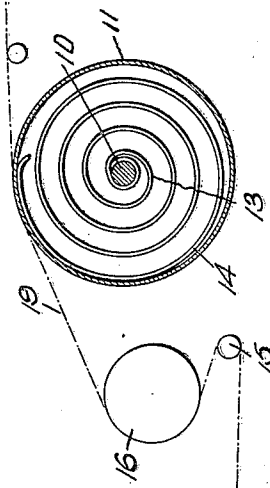


Fig. 3

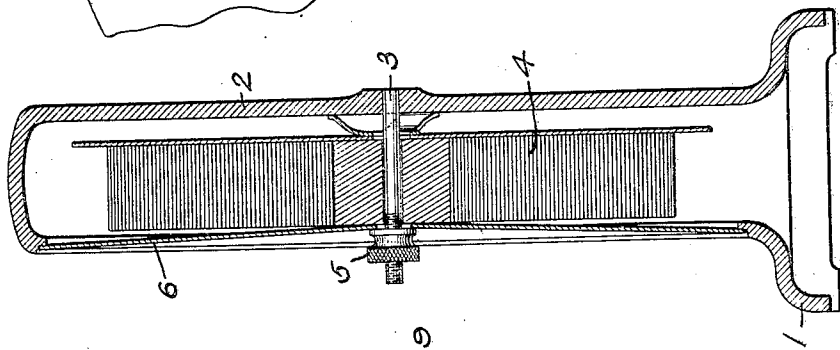
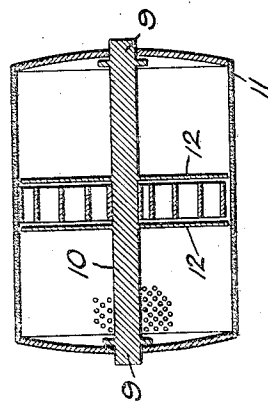


Fig. 5



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UNITED STATES PATENT OFFICE.

HENRY PITT ROBERTS, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL BINDING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

STRIP-SERVING DEVICE.

No. 897,258.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed October 31, 1907. Serial No. 400,034.

To all whom it may concern:

Be it known that I, HENRY PITT ROBERTS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Strip-Serving Devices, 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 devices or apparatus for supplying strips of paper, cloth or the like employed for wrapping or binding packages, or for use as labels, or for other purposes, and has particular reference to that type of devices or apparatus employing a support for a coil of paper or other strip having an adhesive previously applied to one side thereof and then dried and having means for moistening the gummed side of the strip as the latter is withdrawn from its coil. It is apparent, however, that an ungummed strip of paper, cloth or the like might be employed, in which case the moistening device for the strip, suitably positioned with respect thereto, would contain an adhesive instead of water.

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

Figure 1 is a side elevation, partially in section, of a strip serving device embodying my invention; Fig. 2 is a plan view of the moistener and parts immediately adjacent thereto; Fig. 3 is a vertical transverse section of the strip serving device shown in Fig. 1 upon the line 3—3 of that figure; Fig. 4 is a side elevation of a portion of the casing, within which the coil of the strip is supported; Fig. 5 is a central longitudinal section taken through the moistener; Fig. 6 is a view, partially diagrammatic and partially in vertical transverse section, illustrative of my invention; and Fig. 7 is a side elevation of a modified form of my invention.

Referring more particularly to that single type or embodiment of my invention herein illustrated, the framing wherein the parts of the device may be supported is represented at 1, it being of any preferred form, material or construction. Formed therewith or mounted thereon is a suitable casing 2, wherein is suitably supported, as upon the

spindle 3, a coil or roll 4 of paper, cloth or the like having an adhesive applied to one face thereof. Tension may be applied to the coil or roll in any suitable manner, as by the provision of a nut 5 mounted upon the threaded end of the spindle 3, a cover 6 being provided, if desired, for convenient access to the interior of the casing and cooperating with the nut 5 in imparting suitable tension to the roll or coil. Suitably and preferably removably supported upon the base 1 of the framing is a tank 7 adapted to contain water or an adhesive if desired. The side walls of said tank are provided with polygonal sockets 8 to receive the squared ends 9 of a spindle 10 having loosely mounted thereon a moistener 11 of any suitable construction, and herein represented as a hollow barrel or cylinder.

If desired, the peripheral surface of said moistener may be provided with any suitable absorbent, such as flannel, wicking or the like, to convey moisture from the tank to the strip. In practice, however, I find it unnecessary to provide such absorbent and rely upon the rotation of the moistener to convey moisture from the tank to the strip. This result, I most satisfactorily accomplish by perforating the surface of the moistener, preferably throughout the peripheral portion thereof. In Figs. 2 and 5, I have, for convenience of illustration, represented a portion only of such peripheral surface as provided with perforations. Such perforations should be relatively small in diameter. I find in practice that moisture readily adheres in a film-like form to the edges of the perforations, so that it is conveyed in sufficient quantities to the strip to moisten the surface thereof. Any suitable material may be employed to provide the peripheral surface of the moistener such, for example, as thin sheet metal, wire gauze or the like.

Upon the spindle 10 I preferably provide guiding disks 12 and between them attach to the spindle 11 one end of a coiled spring 13, the opposite end portion 14 whereof bears frictionally upon the inner peripheral surface of the moistener 11.

Intermediate the casing 2 and the moistener, I provide suitable guiding means, herein represented as a fixed rod or guide 15, and a preferably rotatable guide or roll 16, herein represented as mounted above the guide

15, the strip being passed reversely about said guides 15 and 16, as clearly represented in Figs. 1 and 6. In advance of the moistener roll I provide suitable means to remove
5 excess moisture from the strip. Herein such means is represented as a yoke or inverted U-shaped member 17 mounted upon the opposite side walls of the tank 7. Any suitable means may be provided to sever the strip
10 after the same has been drawn upon for use. Herein, for the purpose, I form the upper forward edge of the tank 7 as a severing blade 18.

It is highly desirable in a strip serving device that means be provided to separate the moistener and the strip after the termination of the serving operation. Heretofore devices have been employed located in the rear or in advance of the moistener and tend-
20 ing to elevate or separate the strip from the moistener or to move the moistener from the strip. I have discovered that I may employ the moistener itself to separate the strip therefrom after the strain upon the strip is
25 relaxed. I may employ for this purpose any suitable means associated with or operatively connected to the moistener. The mechanism herein described I have, however, found to be highly efficient for the purpose.

30 As the forward end of the strip 19 is drawn upon for use, the surface thereof to be moistened is drawn across and in contact with the surface of the moistener in the direction of the arrow represented in Fig. 6. In so doing,
35 the friction between the strip and the moistener imparts a movement of forward rotation to the latter, and by reason of the frictional engagement of the inner peripheral surface of the moistener and the spring 13,
40 the latter is moved clockwise in such manner as to tension the same. If desired, suitable means may be provided so that the tension of the spring may be adapted to the requirements of the particular moistener to which it
45 is applied or, if desired, different springs may be employed of different strengths, according to the particular needs of the device to which the invention is applied.

I may, if desired, employ other types of
50 springs as, for example, coiled springs mounted exteriorly of the moistener and suitably connected thereto, to accomplish the purpose described, and may provide suitable means to adjust the tension of such spring or
55 springs. It is also apparent that I may employ weights to accomplish the purpose described and in other ways carry out the purpose of my invention. It is apparent that, when the strip is drawn upon for use, the forward draft
60 upon the strip imparts a movement of forward rotation to the moistener, which more tightly coils or tensions the spring 13 until such tension exceeds the coefficient of friction between the moistener and the strip 19,
65 whereupon said tensioned spring prevents

further forward rotation of the strip. Immediately upon the severing of the strip, the tensioned spring becomes active and imparts a reverse movement or a movement of back-
lash to the said moistener.

70 In lieu of the guides 15 and 16, about which the strip is passed on its way from the casing 2 to the moistener, I may provide any suitable guiding means. In practice, the leading end of an adhesive strip passed reversely
75 about a plurality of guides, substantially as indicated in Figs. 1 and 6, tends, after the severing action, to lift or elevate itself from the surface of the moistener. This action is
80 apparently due to the rigidity, stiffness or resiliency of the strip. Such inherent quality of the strip, which quality is perhaps somewhat intensified by the application of the adhesive, tends somewhat as stated to elevate
85 the leading end of the strip. In order, however, to render such lifting action fully effective, I have provided the means herein described, whereby the moistener in its retrograde movement discharges the strip there-
90 from to such an extent as to prevent the immediate return of the strip thereto. That is to say, by the action of the moistener, the strip is elevated past the critical angle within
95 which the free end of the strip may tend immediately to return to the moistener, even though such means as the guides 15 and 16 may be provided in the rear thereof.

It is apparent that I may employ, in substitution of the guides 15 and 16, any suitable
100 strip lifting device tending to elevate the free end of the strip with which the moistener herein described coöperates, to insure the effective separation of the strip therefrom.

In Fig. 7, I have illustrated a modified form of my invention, wherein spring sup-
105 ports 20 of any suitable type may be provided, tending to elevate the moistener in opposition to the downward impulse given thereto by the forward draft upon the strip, thus increasing the frictional engagement of
110 the strip and moistener, which latter in any form thereof may be suitably roughened to increase the friction between it and the strip.

Having thus described one type or embodiment of my invention, I desire it to be under-
115 stood 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 device comprising a strip support and a moistener in operative relation thereto, said moistener being constructed to separate the strip therefrom after the mois-
125 tening operation.

2. A strip serving device comprising a strip support from which the strip may be drawn by draft thereon by the operator, and a mois-
130 tener in operative relation thereto, said mois-

tener being constructed to separate the strip therefrom when the strain upon the strip is relaxed.

3. A strip serving device comprising a strip support, a moistener in operative relation thereto, and strip severing means, said moistener being constructed and arranged to separate the strip therefrom when the strip is severed.

4. A strip serving device comprising a strip support and a moistener in operative relation thereto, said moistener being constructed to receive a forward impulse from the strip when the latter is drawn upon for use and to separate the strip therefrom at the termination of the serving operation.

5. A strip serving device comprising a strip support and a moistener in operative relation thereto, said moistener being constructed to receive a forward impulse when the strip is drawn upon for use and a return movement at the termination of the serving operation.

6. A strip serving device comprising a strip support, a moistener in operative relation thereto, strip severing means, said moistener being constructed and arranged to receive, when the strip is moved past and in contact with the same in the serving operation, a forward impulse from the said strip, and means operatively connected with said moistener to impart a return movement thereto, when the strip is severed for use.

7. A strip serving device comprising a strip support and a moistener in operative relation thereto, said moistener being mounted for rotary movement, and mechanical means to impart a movement of rotation to said moistener only in a direction opposed to that in which the strip is drawn upon for use.

8. A strip serving device comprising a strip support and a moistener in operative relation thereto, said moistener being mounted for rotary movement and adapted to be forwardly rotated by friction of the strip thereon when the latter is drawn upon for use, and means operatively connected with said moistener to impart a movement of reverse rotation thereto at the termination of draft upon the strip for use.

9. A strip serving device comprising a strip support, and a moistener in operative relation thereto, said moistener being mounted for rotary movement and being constructed to receive a movement of back-lash at the termination of the strip serving operation.

10. A strip serving device comprising a strip support and a moistener in operative relation thereto, said moistener being mounted for rotary movement, and means associated with said moistener to oppose the forward draft of the strip when the latter is drawn past the same for use, said means, when the strain upon the strip is relaxed, being effective to separate the strip from the moistener.

11. A strip serving device comprising a strip support and a moistener in operative relation thereto, said moistener being mounted for movement in the direction of forward draft of the strip, and means associated with said moistener to oppose the forward draft of the strip when the latter is drawn past the same for use, said means, when strain upon the strip is relaxed, being effective to separate the strip from the moistener.

12. A strip serving device comprising a strip support, a moistener in operative relation thereto, said moistener being mounted for rotary movement in opposite directions and adapted to be forwardly rotated by friction of the strip when moved past the same for use, and means rendered potential by such forward rotation, to separate the strip from the moistener at the termination of the serving operation.

13. A strip serving device comprising a strip support, a moistener in operative relation thereto, strip severing means in advance of the moistener, said moistener being mounted for rotary movement in opposite directions and adapted to be forwardly rotated by friction of the strip when moved past the same for use, and means rendered potential by such forward rotation, to separate the strip from the moistener when the strip is severed.

14. A strip serving device comprising a strip support, a moistener in operative relation thereto, and means operatively connected with said moistener and rendered potential by draft upon the strip for use to separate the strip from the moistener when strain upon the strip is relaxed.

15. A strip serving device comprising a strip support, a movable moistener in operative relation thereto, and means contacting with the moistener and rendered potential by draft upon the strip for use to separate the strip from the moistener when strain upon the strip is relaxed.

16. A strip serving device comprising a strip support, a moistener in operative relation thereto, said moistener being mounted for rotary movement and adapted to be forwardly rotated by draft upon the strip for use, and a spring operatively connected with the moistener and rendered potential by draft upon the strip for use, said spring acting, at the termination of the serving operation, to impart a movement of reverse rotation to said moistener, thereby to separate the strip from the moistener.

17. A strip serving device comprising a strip support, a rotary moistener mounted in operative relation thereto, and a coil spring mounted within said moistener and having a portion contacting with the inner surface thereof, the arrangement of parts being such that the spring is tensioned by forward rotation of the moistener when the

strip is drawn past and in contact therewith and imparts a reverse movement to the moistener when the strip is severed.

18. A strip serving device comprising a strip support, a rotary moistener mounted in operative relation thereto, a stationary spindle whereon said moistener is loosely mounted and a coil spring mounted upon said spindle within said moistener and having a portion contacting with the interior thereof, the forward movement of rotation of said moistener, due to the friction of the strip when drawn upon for use, serving to tension said spring, whereby when the strip is severed a movement of back-lash is imparted to the moistener.

19. A strip serving device comprising a strip support, a moistener mounted in operative relation thereto, strip guiding means to support the strip when passing from the support to the moistener, and means operatively connected to the moistener and rendered potential by forward draft upon the strip to separate the strip from the moistener.

20. A strip serving device comprising a strip support, a moistener mounted in operative relation thereto, a plurality of guides about which the strip may be reversely passed, when passing from the support to the moistener, and means associated with the moistener and rendered potential by forward draft upon the strip to elevate the strip from the moistener.

21. A strip serving device comprising a strip support, a moistener mounted in operative relation thereto, means engaging the strip upon its passage from the support to the moistener and tending to separate the free end of the strip from the moistener when the strip is severed, and means operatively connected with the moistener and tending to position the free end of the strip from contact with the moistener.

22. A strip serving device comprising a strip support, a rotary moistener mounted in operative relation thereto, strip guiding means engaging the strip upon its passage from its support to the moistener and tending to elevate the free end of the strip after the serving operation, and means rendered potential by the movement of forward rotation of said moistener by engagement of the strip therewith when drawn upon for use and active when the strip is severed to elevate the free end thereof from the moistener.

23. A strip serving device comprising a strip support, a moistener mounted in operative relation thereto, strip severing means,

means to elevate the free end of the strip from the moistener after the severing action, and means intermediate the moistener and the strip severing means to remove excess of moisture from the strip.

24. A strip serving device comprising a strip support, a tank mounted in operative relation thereto, and a rotary moistener mounted in said tank, said moistener having its peripheral surface provided with relatively small perforations, whereby, in the rotation of the moistener, moisture from the tank adheres to the edges of said perforations and is thereby conveyed to the strip.

25. A strip serving device comprising a strip support, a moistener in operative relation thereto, said moistener being mounted for rotary movement, means associated with said moistener to oppose the forward draft of the strip when the latter is drawn past the same for use, said means, when the strain upon the strip is relaxed, being effective to separate the strip from the moistener, and means tending to force said moistener into increased frictional engagement with the strip, when the latter is drawn upon for use.

26. A strip serving device comprising a strip support, a moistener mounted in operative relation thereto, means to elevate the free end of the strip from the moistener after the severing operation, and means in advance of the moistener to remove excess of moisture from the strip.

27. A strip serving device comprising a strip support, a moistener mounted in operative relation thereto, strip severing means, and means operative intermediate the moistener and the strip severing means to remove excess of moisture from the strip.

28. A strip serving apparatus comprising in combination a strip roll support, a severing device, a tank or reservoir, a moistener supported therein beneath the service path of the strip, and a spring or springs constituting the support for the moistener and tending normally to project the moistener toward the service path of the strip, the moistener being movable downwardly against the stress of the spring or springs by forward draft with downward pressure upon the strip, thereby increasing the frictional engagement of the strip and moistener.

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

HENRY PITT ROBERTS.

Witnesses:

CHAS. F. HOWE,
JAMES H. STARK.