A. H. MARSHALL & T. L. RICHARDSON.
APPARATUS FOR PRINTING TAPE.
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Witnesses
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Attorneys
To all whom it may concern:

Be it known that we, ALBERT H. MARSHALL and THOMAS L. RICHARDSON, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Printing Tape, of which the following is a specification.

This invention relates to apparatus for printing tape employed for tying packages of merchandise, a roll of gummed tape being provided on which advertising or other matter is printed as the tape is unwound for use. In connection with the printing mechanism, there is also provided a device for moistening the gummed side of the tape, and a tear-off device.

The invention has for its object to provide an efficient apparatus of the kind stated which is simple in construction and devoid of parts liable to get out of order, and adapted for tapes of different widths. This object is attained by means of a novel combination and arrangement of parts to be hereinafter described and claimed, and in order that the invention may be better understood, reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of the apparatus; Fig. 2 is a vertical section thereof on the line 2–2 of Fig. 1; Fig. 3 is a longitudinal section on the line 3–3 of Fig. 2; Fig. 4 is a horizontal section on the line 4–4 of Fig. 3, and Fig. 5 is a sectional view showing a slightly modified support for the tape roll.

Referring specifically to the drawing, the roll of tape and the printing mechanism are inclosed in a housing 10 removably mounted on a base 11, which latter extends forward from one end of the housing and carries a trough 12 containing a moistening roller 13. The rear end wall of the housing is hinged at the bottom, as indicated at 14, to permit access to the mechanism inclosed in the housing. The top of the housing has a hinged lid 15 held closed by a spring catch 16. The base 11 has upstanding lugs 17 over which the housing seats, and by means of transverse pins 18 passing through registering apertures in the lugs and the side walls of the housing, the latter is held in place on the base. Upon withdrawing the pins the housing may be removed from the base.

In the side walls of the housing 10, at the top thereof, are downwardly extending, opposite slots 19 which serve as bearings for the shaft 20 on which the roll of gummed tape 21 is mounted. The slots extend down from the top edges of the housing side walls, and are closed by the lid 15 when the latter is in closed position. The shaft may be a bolt having a head 22 at one end and receiving a wing nut 23 at the other end. Upon removing the wing nut, the shaft may be withdrawn for mounting another tape roll thereon. The tape is carried in a roll on a core 24 having a central bore to receive a sleeve 25 through which the shaft 20 loosely passes. The sleeve projects slightly from the ends of the core, and between the ends of the sleeve and the side walls of the housing are located disks 26 through which the shaft passes. The roll of tape fits between these disks and is prevented thereby from being disarranged. If a roll of tape narrower than the one shown in Fig. 2 is used, spacing sleeves 27 are interposed between the disks 26 and the side walls of the housing 10, as shown in Fig. 5. A shorter core 28 and a core sleeve 29 are also provided. By mounting the tape roll as hereinbefore described, it is properly centered with respect to the printing mechanism, and the advertising and other matter is accurately and evenly printed on the tape.

The printing mechanism comprises a type cylinder 30, an impression cylinder 31, an inking cylinder 32 in contact with the type cylinder, and an ink supply cylinder 33 in peripheral contact with the inking cylinder. The impression cylinder is located beneath the tape roll and journaled between the side walls of the housing 10. The tape passes downward from the roll and upward between the impression and inking cylinders, and thence upward to the rear of the roll and across the top of the roll to the moistening device to be presently described. In front and to the rear of the roll are guide rollers 34 over which the tape passes. The type cylinder 30 is spring-pressed toward the impression cylinder 31 by the following 105 devices:
The shaft 35 of the type cylinder is mounted in slots 36 in the side walls of the housing 10, said slots having downturned portions 37 extending to the bottom edge of said side walls so that the cylinder and its shaft may be mounted in place, or removed, after taking the housing off the base 11. The slots 36 run in the direction of the impression cylinder, and the shaft 35 is slidable therein. On the side walls of the housing are mounted supports 38 for spring-pressed plungers 39 engaging the shaft 35 at the ends of the type cylinder, whereby said cylinder is held pressed toward the impression cylinder. The supports 38 carry sleeves 40 which are screw-threaded externally to screw into said supports. The plungers 39 extend into the sleeves and on the outside of the latter have abutments 41, between which abutments and the ends of the sleeves, springs 42 are coiled around the plungers. The tension of the springs may be adjusted by screwing the sleeves in or out. The support 38 has spaced end portions 43 and 44, respectively, into the former of which the sleeves screw, and the latter have guide apertures through which the plungers pass.

The cylinder 33 is held pressed against the cylinder 32 by springs 45 engageable with the shaft 46 of the former, said shaft being mounted in slots 47 in the side walls of the housing 10. The shaft 48 of the cylinder 32 is also mounted in slots 49 in the housing side walls.

From the front guide roller 34, the tape passes downward and forward between rollers 50 and 51 respectively, the former being spring-pressed toward the latter by a spring 52 bearing against the shaft 53 of said roller 50, said shaft being mounted in slots 54 in the side walls of the housing 10. In the front wall of the housing is a slot 55 through which the tape passes to the moistening roller 13. On the outside of the housing front wall, above the moistening roller, is a tear-off device 56.

In operation, the tape is withdrawn from the housing and moistened on its gummed side by passing it over the roller 13, and when the desired length has been withdrawn, the tape is severed by a quick jerk against the tear-off device 56. When the tape is being unwound from the roll, it is printed on its ungummed side in its passage between the cylinders 30 and 31.

We claim:

1. In a tape-printing machine, a tape roll, a shaft supporting said roll, disks on the shaft between which the roll is mounted, 60 guide rollers in front and to the rear of the roll, a housing inclosing the roll, the front end of said housing having a tape exit slot, a pair of rollers in the housing adjacent to said slot, between which rollers the tape passes, and impression and type cylinders beneath the tape roll and to the rear thereof, between which cylinders the tape passes and thence upward over the rear guide roller and across the top of the roll between the aforesaid disks, and hence over the front guide roller and down to the pair of rollers adjacent to the exit slot.

2. In a tape-printing machine, a tape roll, a shaft supporting said roll; disks on the 75 shaft between which the roll is mounted, guide rollers in front and to the rear of the roll, a housing inclosing the roll, the front end of said housing having a tape exit slot, a pair of rollers in the housing adjacent to said slot, between which rollers the tape passes, one of said rollers being spring-pressed toward the other, impression and type cylinders beneath the tape roll and to the rear thereof, between which cylinders the tape passes and thence upward over the rear guide roller and across the top of the roll between the aforesaid disks, and hence over the front guide roller and down to the pair of rollers adjacent to the exit slot.

3. In a tape-printing apparatus, an impression cylinder, a type cylinder and its shaft, a bearing in which the type cylinder shaft is slidable, plungers engaging said shaft, externally threaded sleeves into which the rear ends of the plungers extend, supports into which the sleeves are screwed, abutments on the plungers, and springs coiled around the plungers between the abutments and the ends of the sleeves.

In testimony whereof we affix our signatures in presence of two witnesses.

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