Jan. 14, 1941. C. E. NYBERG 2,228,842

PAPER ROLL DISPENSER

Filed Oct. 19, 1939 2 Sheets-Sheet 1

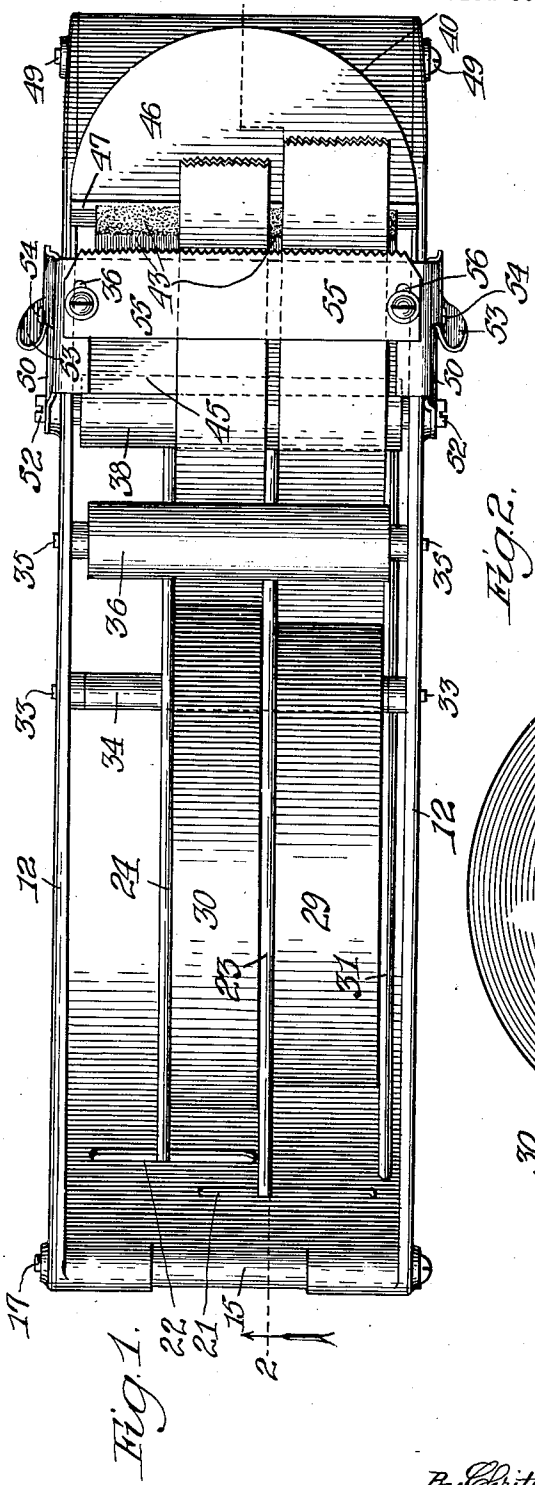


Fig. 1.

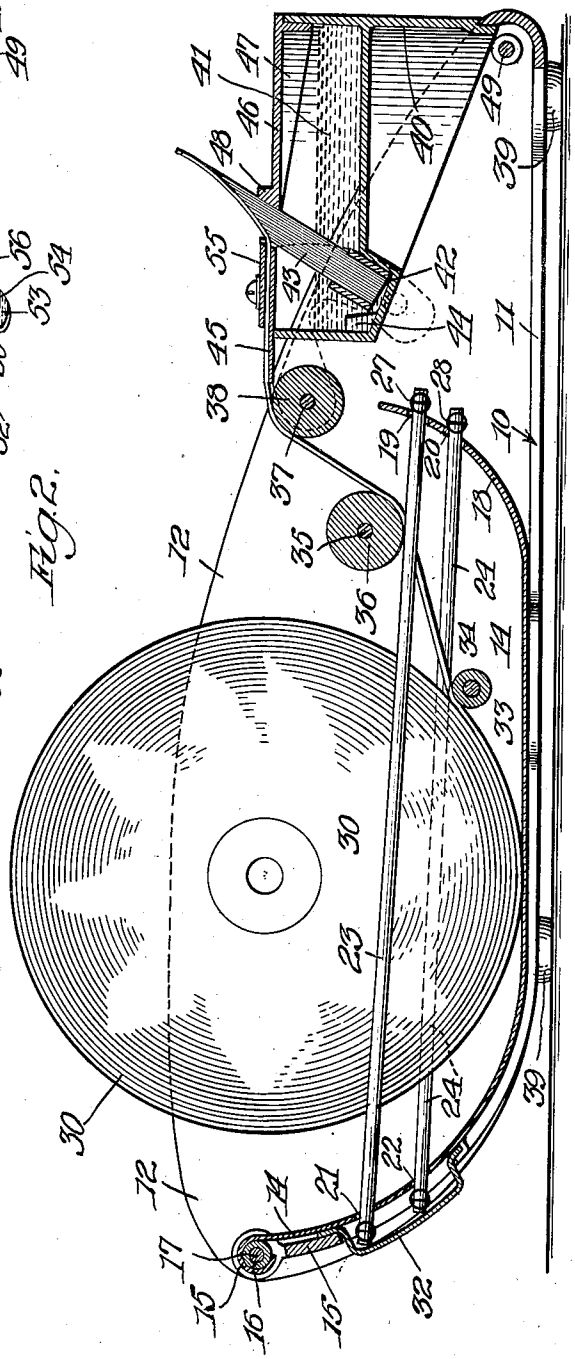


Fig. 2.

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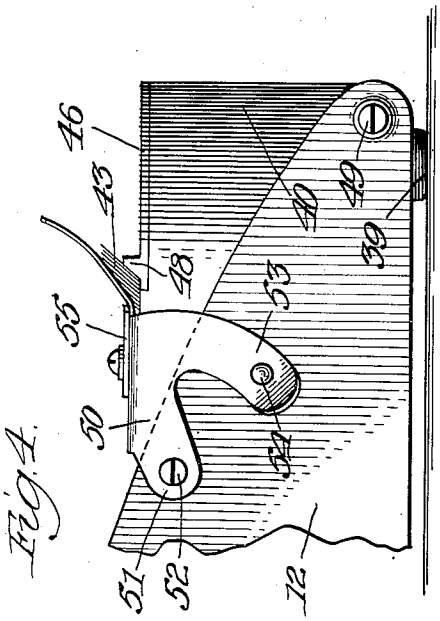


Fig. 4.

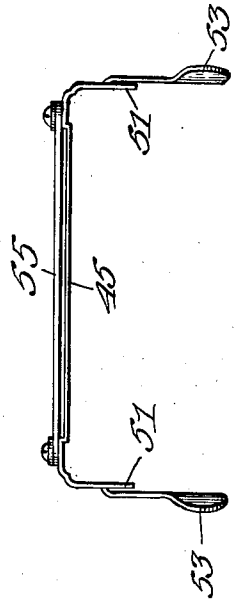


Fig. 5.

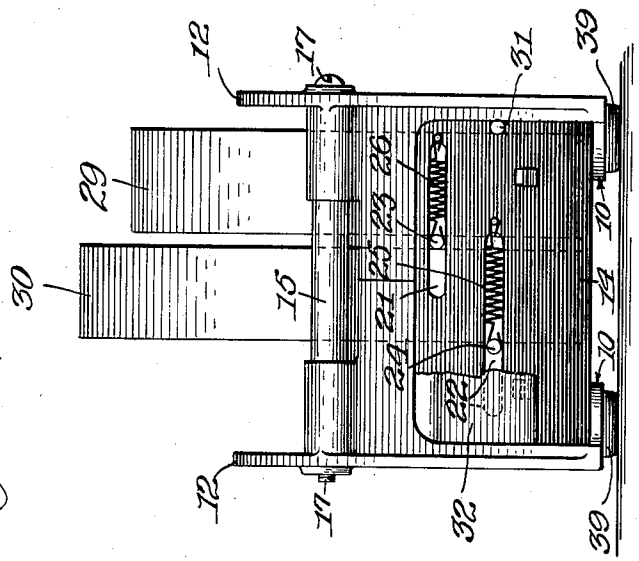


Fig. 3.

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Patented Jan. 14, 1941 2,228,842

UNITED STATES PATENT OFFICE

2,228,842

PAPER ROLL DISPENSER

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Application October 19, 1939, Serial No. 300,284

13 Claims. (Cl. 242—55.2)

This invention relates to a paper roll or tape roll dispenser. It is particularly useful for the dispensing of tape or paper rolls of varying widths, the device being adapted to accommodate a plurality of rolls of varying widths and diameters.

An object of the invention is to provide a dispensing machine for tape, tape rolls, or the like wherein the rolls are allowed to rest within an open bowl, means being provided for maintaining the rolls in the desired dispensing position. A further object is to provide mechanism of extremely simple structure wherein tape rolls or the like of varying widths may be inserted either singly or in groups, within the dispensing container. A further object is to provide an open bowl tape dispensing mechanism in which rolls may be readily removed or inserted either singly or in groups, the rolls of tape, when employed in groups, being of equal and varying sizes as desired. A still further object is to provide a tape dispensing mechanism in which tape rolls of the same or varying widths may be readily inserted without passing mandrels through the center of the rolls, and removed for replacement as desired. A further object is to provide means for tensioning the roll or rolls to insure smoothness in the serving of the strip from the roll through the moistening mechanism and to prevent backlash while at the same time enabling the operator to feed forward the exact desired amount of tape. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a preferred embodiment, by the accompanying drawings, in which—

Figure 1 is a plan view of a dispenser embodying my invention; Fig. 2, a longitudinal sectional view, the section being taken as indicated at line 2 of Fig. 1; Fig. 3, a rear end view of the apparatus, a portion of the rear structure being broken away to show the spring mechanism; Fig. 4, a broken side view in elevation of the front portion of the apparatus showing mechanism for feeding the tape and for severing the front portion thereof; and Fig. 5, a front view in elevation of the knife device removed from the casing.

In the illustration given, I provide a main casing 10 which is of the general shape indicated. The casing provides a bottom wall 11, side walls 12 and a rear curved wall 15. With the casing 10 is a floor member 14 having a rear central portion 15 receiving the shaft member 16. Through the hollow shaft extends the pin 17. It will be noted that the floor member 14 has at its forward end an upwardly curved portion 18. It is provided at its front with spaced horizontal slots 19 and 20, and at its rear with similar slots 21 and 22. Mounted within slots 19 and 21 is a rod rail 23, and slidably mounted within the slots 20 and 22 is the rod 24.

Each of the rods 23 and 24 is drawn by springs connected at each end laterally toward one side of the casing. The springs at the rear of the casing are indicated by the numeral 25, which engages rod 24 and the numeral 26, which engages the rod 23. Similar springs are provided at the curved front portion 18 of the floor member 14, the spring 27 drawing the rod 23 toward one side of the casing and the spring 28 drawing the rod 24 also toward the said side of the casing. By the means shown, the paper rolls indicated in the drawing by the numerals 29 and 30 are drawn toward one side of the casing. Instead of having the rolls pressed against one side of the casing, I prefer to place a rod 31 similar to rods 23 and 24 adjacent one side of the casing and the same passes through openings in the curved portions at the respective ends of the floor member 14.

In order to conceal the springs 26 and 25 at the rear of the casing, I provide a spring cover 32 having end flanges which slip into slots provided by the rear casing 13 of portion 14.

In order to confine the paper rolls 29 and 30 against forward movement, I provide a cross pin 33 bearing a roller 34, the pin extending through the side walls 12 of the casing. By means of the rods 23, 24, and 31, and the roller 34, the rolls 29 and 30 are supported in vertical position within the bowl or floor 14 so that the tape can be readily drawn off as the rolls rotate.

Suitable rollers are provided for the guiding of the tape toward the forward end of the machine. In the illustration given, the pin 35 extends through the side walls 12 and carries a roller 36. A similar pin 37 extends through the side walls and carries a top roller 38.

In the illustration given, the casing 10 is shown supported upon rubber buttons 22.

Any suitable means for wetting the tape or applying adhesive thereto or for severing the tape may be provided at the front end of the machine. In the specific illustration given, I provide a reservoir casing 40 equipped with side walls and adapted to be received between the side walls 12 of the main tape casing. The reservoir casing 40 provides a liquid reservoir at the top thereof indicated by the numeral 41. At the rear portion of the reservoir is a depressed trough 42 adapted to receive the lower end portion of a liquid ap-

plying brush 43. In order to maintain the brush in the desired position, I provide a lug projection 44 at the extreme forward inner side of the trough portion 42. Above the trough portion is a platform section 45 of the water reservoir casing 40 which, at its rear, provides a space through which the brush 43 extends. A removable closure 46 is provided at the rear portion of the reservoir and it is equipped with a depending side flange 47 adapted to fit within the curved walls of the reservoir 41. It will be noted that the forward end of the closure 46 is provided with an inclined box 48 for guiding the brush or liquid applying member 43 to a rearwardly slanting position.

A pin 49 extends through the forward end portion of the side walls 12 and below the reservoir casing wall 40.

Any suitable means for severing the tape may be provided. In the illustration given, I provide a bracket member 50 having rearwardly extending legs 51 hingedly connected upon pivot 52 in side walls 12. The bracket 50 is also provided with downwardly extending latch legs 53 provided with sockets 54 adapted to releasably engage projections carried by the side walls 12. The bracket 50, which straddles the casing, is provided at its upper edge with a rearwardly extending knife 55 provided with a serrated edge. The knife 55 is provided with adjustment slots 56.

Operation

In the operation of the device, tape rolls or paper rolls of the desired width and diameter are inserted within the bowl provided by the floor 14. It will be noted that the rolls drop freely within the bowl and that it is not necessary to pass pivot pins through the central opening of each roll. The fact that the tape rolls are of different widths does not affect the operation, since the spring rods 23 and 24 move within horizontal slots which permit them to receive rolls of varying widths. The rods 23 and 24 urge the rolls toward the side rod 31, the pressure of rod 24 being added to the pressure of rod 23 with respect to the inner roll 29. It will be noted that the different elevations of the rods 23 and 24 aid in maintaining the tape rolls in vertical position. The rolls are free to rotate within the curved floor or bowl and are prevented from moving forwardly beyond the roller 34. It will be noted that the apparatus adapts itself readily to the dispensing of tape in which the printing is outermost and of tape in which the printing is on the inner side, the two different types of rolls being dispensed at the same time so that each has its adhesive side toward the brush 43.

The forward end of the tape passing between the blade 55 and the platform 45 strikes the brush 43 and is moistened. When the desired amount of tape has been withdrawn, it is severed by drawing it against the serrated edge of the knife. The entire casing 40 can be removed from the casing and likewise the closure member 46 can be removed in order to provide access to the reservoir and to permit the removal of the brush 43.

The apparatus is of extremely simple and foolproof construction and permits tape rolls to be quickly inserted or withdrawn and a plurality of rolls simultaneously dispensed irrespective of the diameter of the roll and of its width.

While in the foregoing specification, I have referred to certain details for the purpose of illustrating the invention, it will be understood that those skilled in the art can and will readily vary such details without departing from the spirit of my invention.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:

1. In a tape roll dispenser, a casing provided with side walls and adapted to receive a tape roll extending vertically on end therein, means engaging the front side of said roll to prevent forward movement thereof as the tape is drawn forwardly from said roll, and resilient means frictionally engaging a side of said roll to maintain it in vertical position and against freely rotating movement.

2. In a tape roll dispenser, a casing provided with side walls and adapted to receive a plurality of rolls of equal and unequal widths, means engaging the front side of said rolls to prevent forward movement thereof as the tape is drawn forwardly from said rolls, and spring urged means independently engaging a side of each of said rolls to maintain them in vertical position as said paper is withdrawn.

3. In a tape roll dispenser, a casing providing an open bowl adapted to receive a tape roll standing on end therein, said bowl having curved sides, means engaging the front side of said roll to prevent forward movement thereof as the tape is drawn forwardly, laterally movable means adapted to engage one side of said vertical roll and to urge the same in the direction toward one side of said casing, and spring means for urging said movable means into continuous frictional engagement with said roll.

4. In a tape roll dispenser, a casing providing an open bowl adapted to receive a plurality of tape rolls standing on end, a plurality of laterally and independently movable elements associated with said bowl and engaging the sides of said tape rolls for maintaining them in vertical position, and means asscciated with each of said elements for urging the same into frictional engagement with the adjacent roll.

5. In a tape roll dispenser, a casing providing an open bowl, spaced means within said bowl for engaging the sides of tape rolls, the rolls standing on their curved ends within said bowl, means for guiding the tape withdrawn forwardly from said bowl, and means for preventing forward rolling movement of said rolls as the tape is withdrawn.

6. In a tape roll dispenser, a casing providing a bowl adapted to receive tape rolls standing on their curved ends, said bowl being provided at spaced distances with laterally extending slots, rods extending through said slots, means urging said rods toward one side of said bowl to engage the sides of said rolls and to maintain them in vertical position and against freely rotating movement, and means for guiding the tape from said rolls as the same is drawn forwardly.

7. In a tape roll dispenser, a casing providing a bowl adapted to receive tape rolls standing on their curved ends, guide means for receiving paper drawn forwardly from said rolls, a roller supported within said bowl and adapted to engage the forward portions of said rolls as the same move forwardly upon the withdrawal of tape, and laterally movable means for maintaining said tape rolls in said vertical end position.

8. In a tape roll dispenser, a casing providing an open bowl adapted to receive a tape roll stand-

ing upon its curved end, means for limiting the forward movement of said roll as tape is withdrawn forwardly therefrom, and friction means for maintaining said roll in vertical position within said bowl, said friction means including a laterally slidable member yieldably urged into frictional engagement with the side of said roll.

9. In a tape roll dispenser, a casing providing an open bowl adapted to receive a plurality of tape rolls of varying widths, members associated with said bowl and yieldingly engaging the sides of each of said tape rolls for maintaining them in vertical position, at least one of said members being adjustable laterally to accommodate the varying widths of the rolls, guide means for the tape drawn forwardly from said roll, and means engaging the front portions of said rolls to limit forward rolling movement thereof as the tape is forwardly withdrawn therefrom.

10. In a tape roll dispenser, a casing providing an open bowl adapted to receive a tape roll standing on its curved end, laterally adjustable means engaging at least one side of said roll for maintaining the same in vertical position, guide means for tape drawn forwardly from said roll, said guide means including a roller positioned forwardly of said roll and adapted to receive tape along the lower surface thereof, and a second roller positioned forwardly of said first mentioned roller and adapted to receive the tape along the upper surface thereof, and means for limiting the forward rolling movement of said roll when said tape is withdrawn.

11. In a tape roll dispenser, a casing providing an open bowl adapted to receive a plurality of tape rolls each standing upon its curved end, means for limiting the forward movements of said rolls as tape is withdrawn therefrom, laterally slidable independent friction means associated with each of said rolls for maintaining said rolls in erect position within said bowl, and spring means for urging said friction means into engagement with the sides of said rolls.

12. In a tape roll dispenser, a casing providing an open bowl adapted to receive a plurality of tape rolls of varying diameters, independent members associated with said bowl and yieldably urged into frictional engagement with the sides of each of said tape rolls for maintaining them in erect position, and means for limiting forward rolling movement of said rolls.

13. In a tape roll dispenser, a casing providing an open bowl adapted to receive a plurality of tape rolls of varying diameters, independently movable members associated with said bowl, each of said members being yieldably urged into frictional engagement with a side of one of said tape rolls to prevent backward movement of said tape rolls after a desired length of strip has been drawn, and spring means for yieldably urging said members into said frictional engagement.

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