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PAPER DISPENSERS

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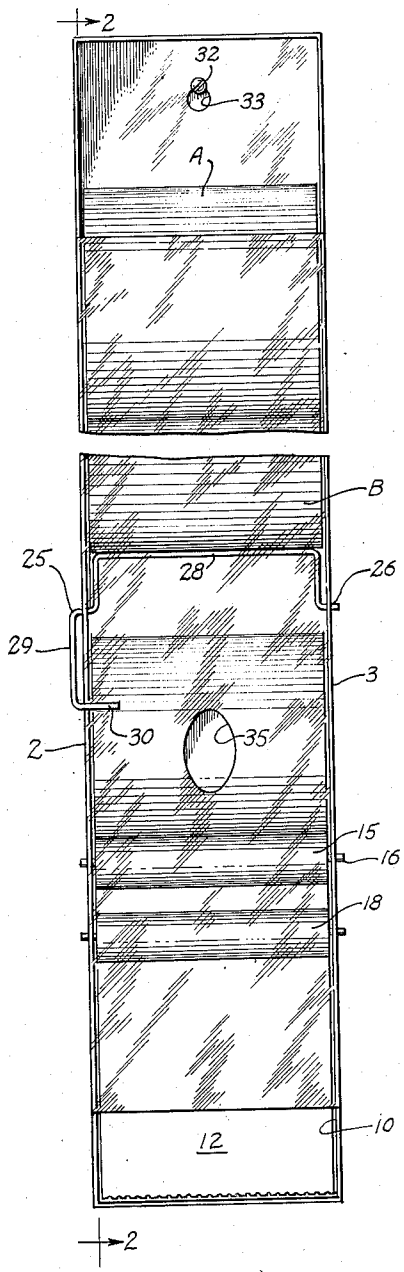



Fig. 1

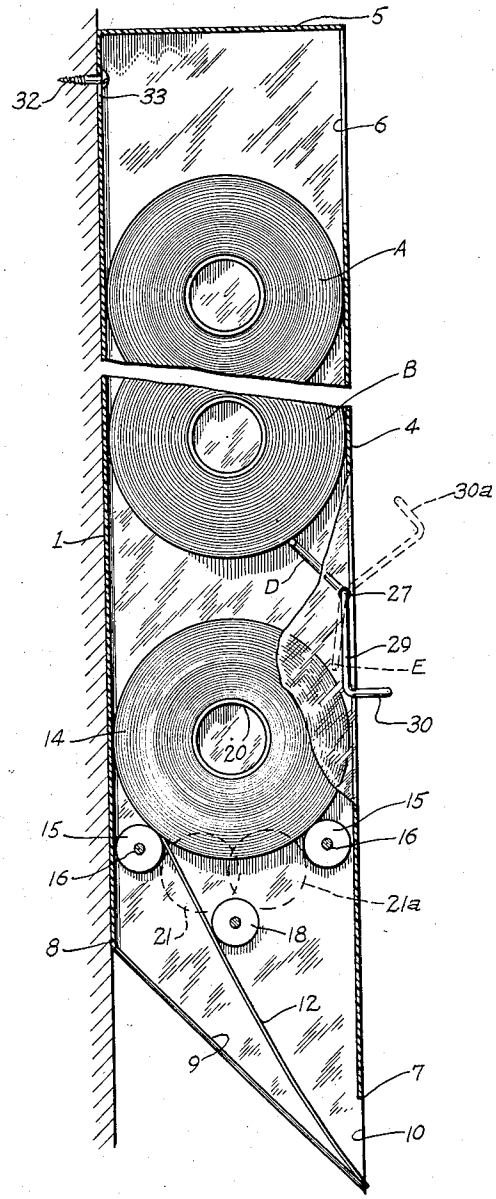



Fig. 2

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# PAPER DISPENSERS

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8 Claims. (Cl. 312—39)

This invention relates to paper dispensers.

The main object of the present invention is to provide a wall supported structure which is capable of maintaining a supply of rolls of paper which may be lowered to roll-dispensing position upon the operation of suitable control mechanism.

Another object of the invention is to provide a simple durable structure of sheet material and preferably of plastic of a type which will permit an inspection of the contents of the receptacle so that an operator can readily determine when it is necessary to lower a roll to dispensing position.

Another object of the invention is to provide a simple integral element which functions as a lowering means for a roll of paper from the main supply and from which paper is to be dispensed and also operates as a supporting device which lifts the reserve supply of rolls and leaves the dispensing roll free for normal operation.

These and other objects of the invention will more clearly hereinafter appear by reference to the accompanying drawings forming a part of the instant specification and wherein like characters of reference designate corresponding parts throughout the several views, in which:

Fig. 1 is a front elevation of the invention; and

Fig. 2 is a transverse section on line 2—2 of Fig. 1.

Basically the invention comprehends the use of an elongated receptacle which is adapted to be arranged vertically and supported against the outer face of a wall or in a recess formed in the wall. This receptacle includes a rear wall 1, side walls 2 and 3 and front wall 4, the latter terminating short of the top 5 to provide an opening 6 of such dimension as to permit the feeding of the rolls, one by one, into the receptacle. The bottom marginal edge of the front wall 7 extends below the bottom edge 8 of the rear wall 1 and with the bottom wall 9 defines an opening 10 for the discharge of paper. The side walls 2 and 3 terminate at suitable forwardly and downwardly extending angles to provide a supporting means for bottom 9 and to facilitate the guiding of the sheet to the front lower opening 10 through which the discharging sheet 12 extends from the discharging roll 14. The discharging roll 14 is mounted on the transversely arranged rollers 15 supported in the side walls 2 and 3 and mounted on pins 16, as best shown in Fig. 2. The rollers 15 have their axes in generally the same horizontal plane and these rollers are situated adjacent the rear and front walls providing a mounting for the discharging roll adjacent each lateral face thereof.

A medial guide roller 18 is positioned below the rollers 15 and centrally of the side wall structures to act as a guide for the discharging sheet 12 and also to form a stop for the cores 20 of the rolls. The core 20 is normally made of light deformable or compressible material and this factor will assist its discharge from the apparatus as will hereinafter appear. It will be understood that when all of the paper is removed from the roll 14, the core 20 will be supported between the medial roller 18 and either of the lateral supporting rollers 15, as



shown in dotted lines at 21, 21a. This arrangement is made so that the discharge of all of the paper from the core will be possible without the latter escaping from the receptacle in which it is arranged. On the other hand by having the rollers 15 so spaced with respect to the central roller 18 that the core 20 will not pass freely therebetween does not affect the discharge of the empty core 20 after all of the paper is removed therefrom, as it will be obvious that when the empty core 20 is in either of the positions 21 or 21a the lowering of a full roll of paper would result in forcing this core from between the supporting rollers to discharge the latter from the receptacle out through the opening 10, which latter opening is of a size to permit the discharge of this core therethrough.

Mounted in the side walls of the receptacle and at a point generally medial of the assembly is the triggering mechanism which also functions as a support for holding the reserve supply of rolls out of contact with the delivering roll indicated by reference character 14, it being understood that the receptacle can be made of any length so that it can hold any desired number of rolls. In the present disclosure the compartment is shown as broken away so that the number of supply rolls in necessarily indeterminate. In the present disclosure there are two reserve rolls shown at A and B, these being above and supported by the triggering mechanism. The discharging roll 14 is in position on the supporting rollers 15. The triggering mechanism is formed of a relatively stiff wire or rod and includes bearing portions 25 and 26 mounted in openings 27 in the side walls 2 and 3. Intermediate these bearing portions 25 and 26 is the offset crank portion 28 (Fig. 1) which is swung by the arm 29 and the handle 30 from upper position D to lower position E shown in dotted lines in Fig. 2. In the operation of the triggering mechanism, presuming that the lower roll 14 has had all of the paper removed and its core 20 is in one of the dotted line positions 21 or 21a, the next adjacent roll in the receptacle indicated at B is lowered by swinging the handle 30 to a vertical dotted line position 30a which will lower the offset medial crank portion 28 to dotted line position E. This will permit the roll B to drop down to engage and be supported by the transverse supporting rollers 15 and will cause the discharge of the core 20, which will be in one of the positions 21 or 21a, from between the supporting roller assemblies. The roll B having moved to the position of roll 14, the operating arm 30 is swung from the position of 30a to the solid line position of Fig. 2 which will move the offset portion 28 and lift the roll A free of roll B, it being obvious that roll A will have followed roll B to its lower position. Thus the offset portion 28 will relieve the roll B when it reaches its discharge position from any undesirable pressure and clear the same for unrolling of the paper through the opening 10. In this upper position the crank portion 28 will be locked by the direction of the force of the weight of the upper roll or rolls and will remain in this upper position until manually released.

The present structure may be made of metal in which event a series of slots must be provided in the front wall 4 so that the condition of the discharging roll 14 can be observed. Preferably the receptacle will be made of transparent or translucent material such as a desirable plastic and in most instances will be arranged within a recess in a wall and supported by a supporting screw such as shown at 32 which extends through the slot 33 in the back panel 1 of the receptacle.

The oval opening 35 permits an operator to extend his finger in and engage the dispensing roll 14 to rotate the same so that the loose end 12 of the paper will move down to the discharge opening 10 for gripping engage-

ment to facilitate dispensing of the paper. The size and shape of this opening 35 is not important so long as it permits convenient access to the discharging roll. In this connection it will be noted that roller 15 will turn clockwise and the paper roll 14 anticlockwise insuring proper movement of the free end of the paper. Also it will be obvious to one skilled in the art that normal adhesion of the paper sheet to the body of the roll will assist in the operation.

What I claim is:

1. In a combined roll holder and paper dispenser, an elongated frame including front and rear walls, side walls connecting the front and rear walls, a top structure, said front wall terminating below the top structure to provide a passageway for the insertion of rolls of paper, the bottom of the front wall extending below the bottom of the rear wall, a forwardly and downwardly inclined bottom wall, said bottom wall having its front edge spaced from the bottom of the front wall to provide a discharge opening for sheets of paper and the core of a roll, a spaced pair of transversely arranged supporting rollers for the lower roll of a stack of paper rolls arranged in said device, a medial roller positioned below said spaced rollers and spaced therefrom a distance slightly less than the diameter of a core of one of the rolls of paper for supporting the core as the paper is dispensed therefrom and to permit said core to pass between said rolls and to be discharged upon engagement of a new roll from the stack, and lever means for lowering the stacked rolls onto the supporting rollers, said lever being shiftable to a position for engaging and lifting all but the bottom roll of the stack to permit free rotation and discharge of paper from the latter.

2. The structure of claim 1 characterized in that the lever includes an operating crank arm projecting outside of the roll holder frame and an offset crank portion shiftable into the path of movement of the rolls.

3. In a combined roll holder and paper dispenser, an elongated vertically extending chute of suitable dimension for holding in stacked relation a plurality of rolls of paper, said rolls of paper each being mounted on a deformable core, a pair of spaced supporting rollers arranged at the lower end of the chute and adapted to support the lower roll and to retain the same in position for rotation for discharge of the paper therefrom, a central supporting roller positioned intermediate the first mentioned supporting rollers and spaced from the latter a distance slightly less than the diameter of said deformable core, whereby the core will be retained in the chute until all of the paper has been dispensed therefrom and lever means for lowering the stack of rolls to furnish a new roll to the spaced supporting rollers and to discharge the core from between the lower roll and the spaced supporting rollers by pressure from the lowered stack.

4. In a combined paper roll holder and sheet dispenser, a vertically arranged receptacle having inner dimensions suitable for holding a stack of rolls of paper, means operable for separating the bottom roll from the stack to permit the same to rotate freely for dispensing sheets therefrom, each of said rolls including a core and perforated paper wound thereon, a pair of spaced rollers for supporting the bottom roll of paper at points spaced laterally of its axis, a central roller medially spaced with respect to the pair of rollers, the spacing being slightly less than the diameter of said core for supporting the latter when the paper is removed therefrom but permitting discharge of the core under pressure from the stack of rolls when the stack is lowered, whereby the lower roll is moved into position on said spaced rollers for dispensing of the sheets therefrom.



5. The structure of claim 4 characterized in that the means for separating the bottom roll from the stack includes a transverse rod supported in the receptacle adjacent the front wall thereof and including a medial offset portion and a handle portion extending outwardly of the receptacle.

6. The structure of claim 4 characterized in that the receptacle is formed with an enlarged opening at its upper end portion for inserting paper rolls therein and a slot at the bottom front wall portion for the discharge of a sheet from the dispensing roll.

7. The structure of claim 4 characterized in that the means for separating the bottom roll includes a crank member having an operating arm formed with an inwardly projecting extremity which engages the outer face of the receptacle when in stack supporting position.

8. In a receptacle for holding a stack of rolls of paper and dispensing paper therefrom, each roll including a compressible core and paper wound thereabout, a pair of spaced rollers supported by said receptacle at its bottom portion for supporting a dispensing roll thereon, a core supporting roller arranged intermediate the spaced rollers and below the latter, the peripheral surface of the intermediate roller being spaced from the peripheral faces of the spaced rollers a distance slightly less than the diameter of said core for supporting the latter after paper has been dispensed therefrom, and means for lowering the stack of rolls of paper onto said core to force the same through the roller and to position the lower paper roll on its supporting rollers, said means being operable as a lifting means for elevating the stack of paper rolls from the bottom roll to permit the latter to freely rotate for dispensing.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 551,138 | McGowan | Dec. 10, 1895 |
| 993,416 | Scott | May 30, 1911 |
| 2,603,427 | Holmes | July 15, 1952 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 476,218 | Italy | Dec. 3, 1952 |
| 642,226 | Great Britain | Aug. 30, 1950 |