Aug. 23, 1927. 1,640,043

J. F. LEIDECKER

PAPER TOWEL DISPENSER

Filed Sept. 19, 1923 3 Sheets-Sheet 1

FIG. 1

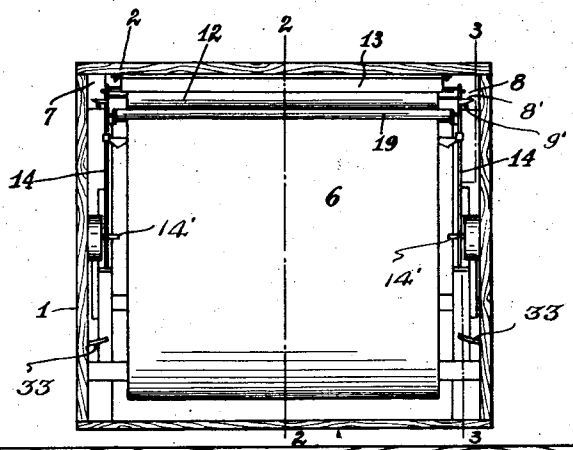
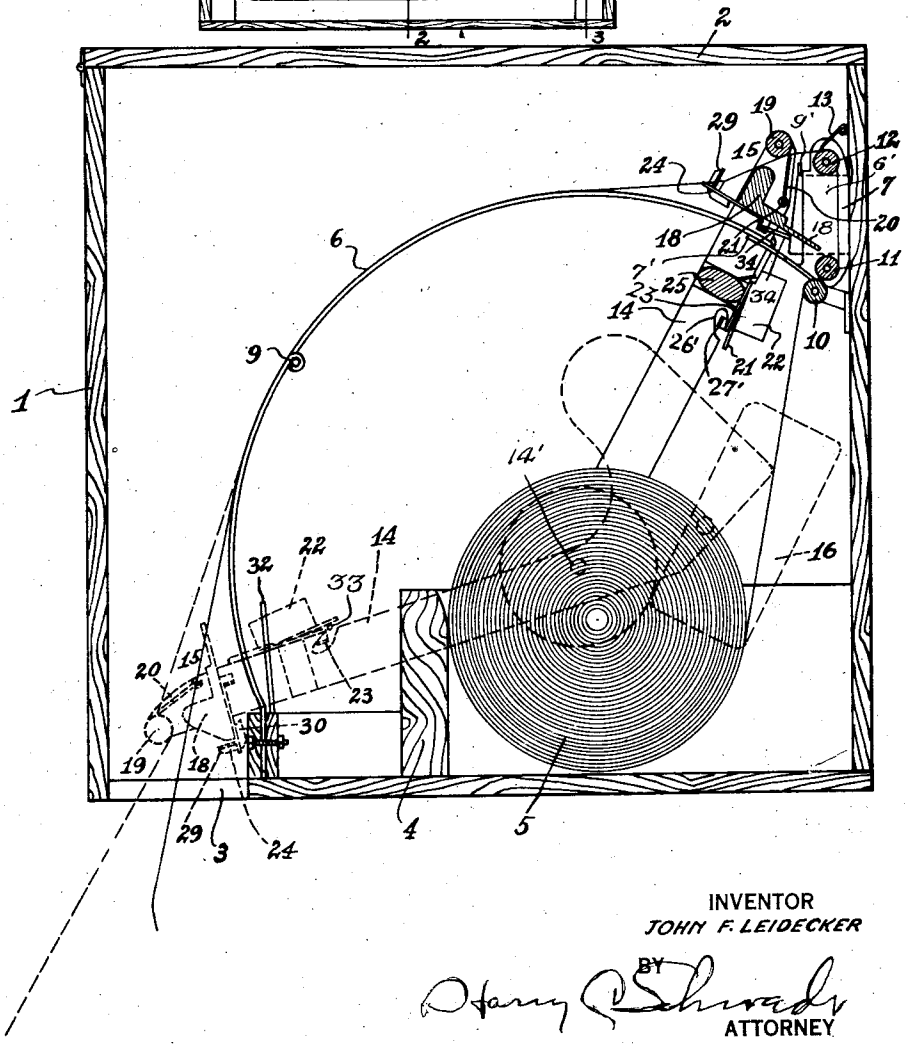


FIG. 2



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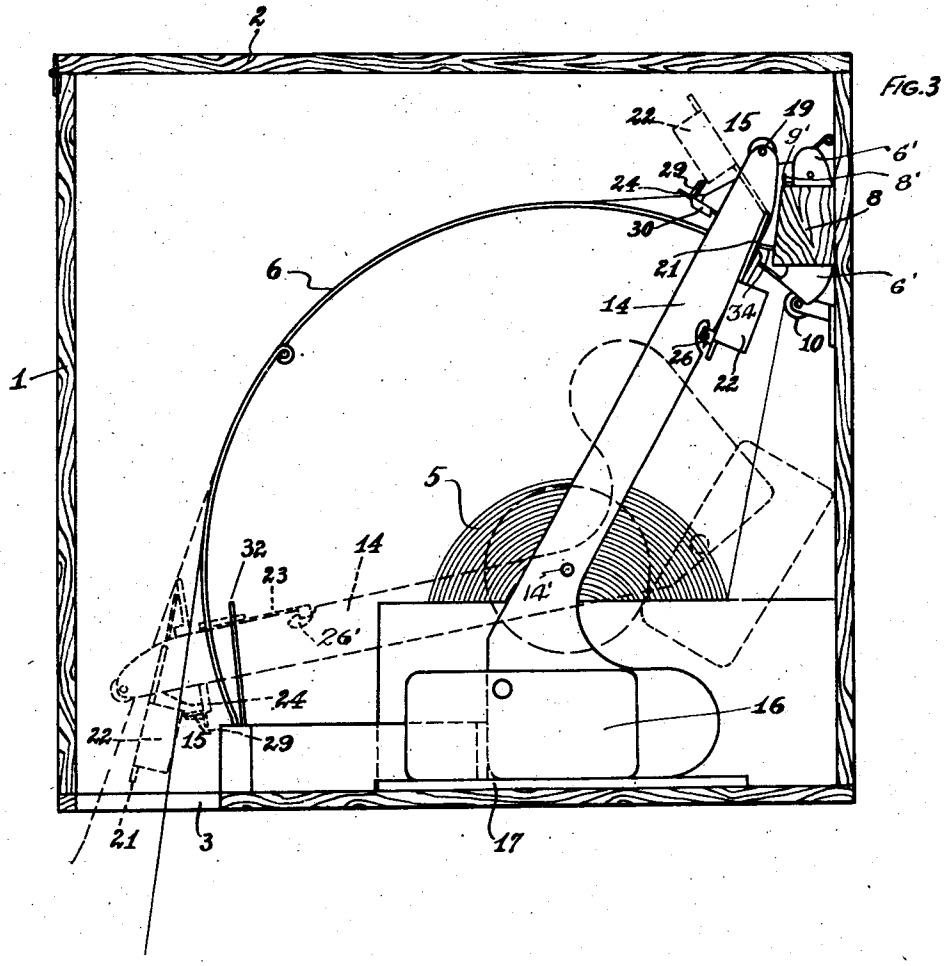
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FIG. 3



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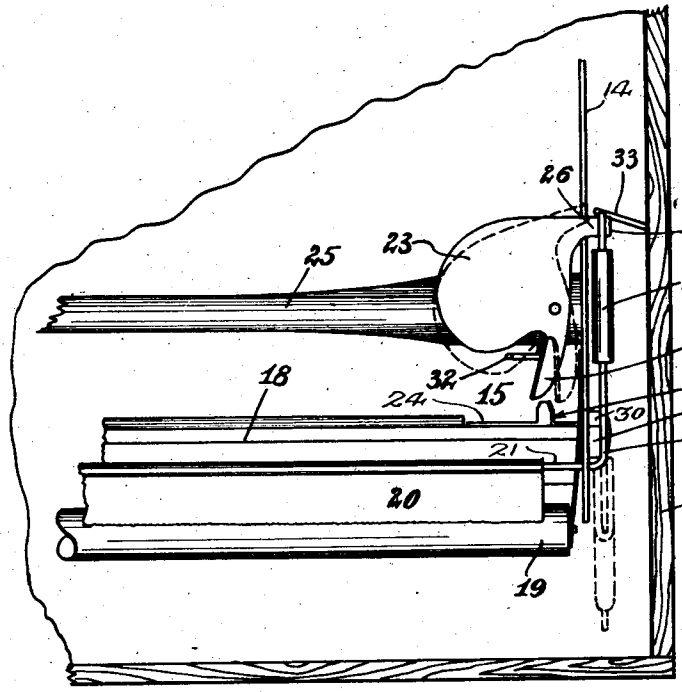


FIG. 4

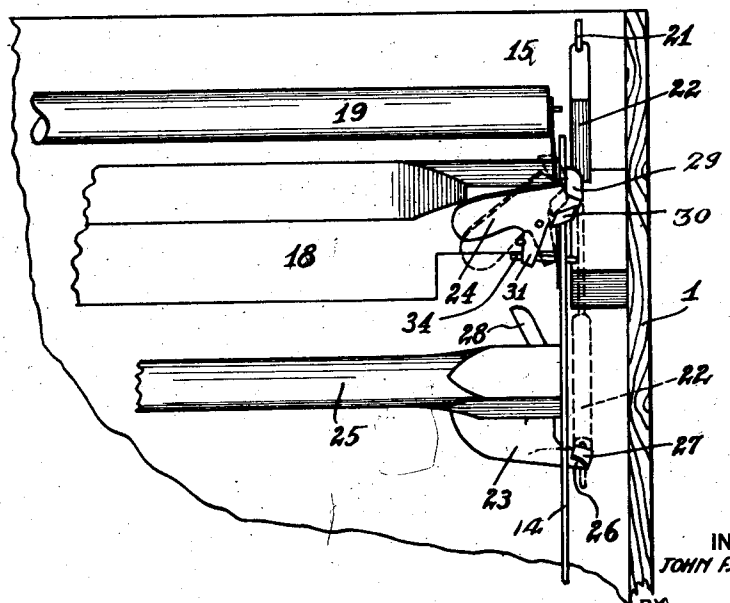


FIG. 5

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UNITED STATES PATENT OFFICE.

JOHN F. LEIDECKER, OF ALAMEDA, CALIFORNIA.

PAPER-TOWEL DISPENSER.

Application filed September 19, 1923. Serial No. 663,607.

My invention is an improved paper dispenser, particularly applicable for dispensing rolled paper towels.

The object of my invention is to provide a dispenser, from which only a predetermined amount of paper can be taken at each operation.

A further object is to provide a novel gripping means for the paper which is automatically released when the paper is torn.

Further objects and advantages will be more specifically pointed out and described in the following detailed description.

In the annexed drawings in which my invention is illustrated, I have shown the preferred form but it may also be embodied in other forms and in this application I desire to cover my invention in whatever form it may be embodied.

Referring to the drawing:

Figure 1 is a plan view of my dispenser with the top wall removed.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary plan view of the gripping device showing the latter almost at the end of the downward travel and just before being dropped, the dotted lines indicating the position of the weight carrying crank after the dropping operation.

Figure 5 is a bottom plan view of the gripping device showing the same almost at the end of the upward travel just before the dropping operation, the dotted lines indicating the position of the weight carrying crank after the dropping operation.

Referring more particularly to the drawing, my dispenser is enclosed within a box 1, having a cover 2 at the top and a slot 3 in the bottom through which the paper extends. A vertical wall 4 extends across the box 1, and the paper roll 5 is positioned back of the wall.

An arcuate paper guide plate 6 is secured at one end to the floor of the box 1. To the other end of guide 6, and at each side as at 7′ are secured brackets 6′. These brackets extend forward beyond the edge of guide 6 slightly outward, and then at right angles upward to receive the rolls 11 and 12. Referring to Figure 3, a small section from the upper end of bracket 6′ is cut and bent at right angles as at 8′ to form a rest for the guide 6 on the blocks 7 and 8. A pin 9′ is secured in blocks 7 and 8 and allows the rest 8′ to catch behind the same. The blocks 7 and 8 are secured to the side walls of the box 1, as shown. The guide 6 is hinged as at 9 to permit its being swung rearwardly when it is desired to load the dispenser.

From the roll 5 the paper extends upwardly between the rollers 10 and 11, the former being journaled in the side walls of the box 1 adjacent the roller 11. It then passes over the roller 12 to be engaged by a bar 13 hinged to the box 1, which bar prevents the paper from slipping back.

Arms 14—14 are pivoted to the side walls of the box 1 as shown at 14′, one on either side, and a gripping mechanism 15 is secured to the ends of said arms and extends over the plate 6. Counter weights 16—16 are pivoted to the lower ends of the arms 14—14, and rest on a rubber pad 17 in the normal position of the arms.

When the arms 14—14 are returning to their normal position from the lower position, the weights 16—16 will stroke the pads 17 and act as a brake to slow up the motion of the arms.

The gripping mechanism 15 comprises a bar 18 which extends between the arms 14 and serves to space said arms apart. A roller 19 is journaled in the arms 14—14 above the bar 18, and a plate 20 with its top edge serrated is mounted upon a rod 21 which is journaled in the said arms. The plate 20 bears against the roller 19 and the paper is thus securely gripped. The rod 21 is bent at right angles after it passes through the arms 14—14 and counter weights 22 are secured to the bent portions of the rod. These counter weights hold the plate 20 against the roller 19 in the upper position of the arms 14, and rotate the plate away from the roller in the lower position as shown in Figure 3.

As the arms 14 are moving downwardly it is necessary to hold the rod 21 against rotation, thus keeping the plate 20 against the roller 19 and securely gripping the paper. As the arms 14 are returning to their upper position the rod 21 must be held so that the plate 20 is away from the roller 19 and the gripping mechanism 15 slides past the paper. To accomplish this, I have provided two sets of triggers, releasing triggers 23 and engaging triggers 24. The triggers 23 are pivoted to a brace 25, (see Fig. 4) and the triggers 24 are pivoted to the lower face of the bar

18 (see Fig. 5). The trigger 23 is formed with a lug 26 against which the crank of the rod 21 rests on the downward swing of the arms 14. A slot 26′ is cut into arm 14 to allow the cam 27 to pass the arm 14. A cam 27 is formed on the lower surface of the lug 26, the purpose of which will be further described. A finger 28 on the trigger 23 is engaged by the releasing device, as will be further described.

The trigger 24 is formed with a lug 29 which supports the weight 22 and holds the plate 20 away from the roller 19 during the upward travel of the arms 14. A cam 30 is formed adjacent the lug 29 against which the weight 22 strikes as it swings downwardly and moves the trigger 24 to one side as it passes. A finger 31 is formed on the trigger 24 which strikes against the releasing pins 34 projecting from blocks 7 and 8 and swing the trigger to release the weights 20. The triggers 23 and 24 are eccentrically pivoted so that they normally lie in the path of the rod 21.

The operation of my device is as follows: The roll 5 is loosely mounted in the box behind the transverse wall 4; the guide 6 after having its lower end fastened in the manner shown, particularly in Figure 2, is placed with its upper end against the rear wall of the box so that the small rests 8′ extending laterally from the brackets 6′ come to rest on the two blocks 7 and 8 behind the pins 9′. The guide with the two rollers 11 and 12 supported in the brackets 6′ are now in place and the end of the paper may be guided over the roller 10 under the roller 11 and over the roller 12 to follow the guide 6 to the slot 3 in the bottom of the box.

The operation of the dispensing device will be best understood by reference to the drawing. In Figure 4 the two arms 14 are shown almost at the end of the downward travel—that is in a substantially horizontal position in which position the paper is confined between the roll 19 and the plate 20. It will be noted that at this time the crank of the rod 21 carrying the weight 22 is held in a horizontal position by the end of the crank resting on the lug 26 of the trigger 23. On a slight continuation of the downward motion the other lug 28 extending from the trigger 23 engages with the slanting pin 32 rising from the bottom of the box and riding downwardly thereon is pushed to the right as indicated by the dotted line position. Thereby the support of the lug 26 is withdrawn from the weight carrying crank of the rod 21 which latter is now free to drop. After dropping a very short distance, however, its motion is again arrested by the pin 33 extending into the box from the side as will be seen from Figure 4. In this position the crank of the rod 21 remains until the arms 14 begin to swing upwardly again when the crank is drawn away from the pin 33 due to the greater radius of its rotation and the crank with its weight 22 is allowed to drop into the dotted line position indicated in Figure 4. In dropping the crank strikes the cam 30 of the other trigger 24, which is supported on its pivot in such a manner that the said cam projects into the path of the crank due to gravity. In dropping the crank pushes the cam aside, passes the same, and is caught by the lug 29 so that the weight 22 and the crank on which it is supported are now again held in a definite position and cannot yield to the laws of gravity. This causes the plate 20 to remain turned away from the roll 19 so that the whole dispensing device may run up on the paper without pushing the same back.

Attention is herein called to the fact that during the upward travel of the dispensing device the serrated edge of the plate 20 lies against the projecting edge of the bar 18 whereby it is prevented from accidentally cutting into the paper. Allowing the arms 14 to be swung upwardly now by their weights 16 the situation remains unchanged until the end of the upward travel is almost reached. The situation now resembles that illustrated in Figure 5 in which the weight 22 still rests on the lug 29 of the trigger 24 while the lug 31 of the same trigger has approached the pin 34 extending slantingly from the blocks 7 and 8. On continuation of the travel the lug 31 is pushed aside by the pin 34 into the dotted line position, which motion causes the lug 29 to move away from under the weight 22 so that the latter may now drop returning the plate 20 into engagement with the roller 19 for clamping the paper between the same. In dropping the weight 22 or the crank of the rod 21 strikes the cam 27 of the lug 26 of the trigger 23 and pushing the same aside becomes locked behind the same as illustrated in the dotted line position in Figure 5 so that now the dispensing device may be lowered without allowing the weight to drop until the original position of Figure 4 has been reached and the weight been liberated from the lug 26 by the engagement of the lug 28 with the pin 32.

Having described my invention, I claim:

1. A paper dispenser comprising a box adapted to retain the paper, a pair of arms pivoted in said box, a roller journaled between said arms, a plate adapted to bear against said roller and grip the paper, a rod upon which said plate is mounted, said rod being bent at an angle to said plate at its outer ends, a trigger mounted on said arms adapted to engage said rod to hold the plate against the roller, and means to release said trigger when the arms are in the lowered position.

2. A paper dispenser comprising a box adapted to retain the paper, a pair of arms

pivoted in said box, a roller journaled between said arms, a plate adapted to bear against said roller and grip the paper, a rod upon which said plate is mounted, said rod being bent at an angle to said plate at its outer ends, a trigger mounted on said arms adapted to engage said rod to hold the plate against the roller, means to release said trigger when the arms are in the lowest position, a second trigger pivoted to said arms, and adapted to engage said rod to hold the plate in the released position, and means to release said second trigger when the arms are in their raised position.

3. In a dispensing device for a roll of paper, a yoke pivoted to swing from vertical to horizontal position and weighted to normally come to rest in a vertical position with its cross-member above the roll, a gripping plate for the paper associated with the cross member, weighted arms extending from the gripping plate and normally holding the plate in gripping position, a trigger arranged to support the arms when the yoke is swung to a horizontal position, a cam element releasing the trigger at the end of the travel so as to allow the plate to drop into non-gripping position on its return travel and a second trigger supporting the arms for maintaining the plate in non-gripping position during the upward travel.

4. In a dispensing device for a roll of paper, a yoke pivoted to swing from vertical to horizontal position and weighted to normally come to rest in a vertical position with its cross-member above the roll, a gripping plate for the paper associated with the cross member, weighted arms extending from the gripping plate and normally holding the plate in gripping position, a trigger arranged to support the arms when the yoke is swung to a horizontal position, a cam element releasing the trigger at the end of the travel so as to allow the plate to drop into non-gripping position on its return travel and a second trigger supporting the arms for maintaining the plate in non-gripping position during the upward travel, and a second cam element releasing the second trigger at the end of the upward travel to allow the plate to drop back into gripping position.

5. In a dispenser for a roll of paper, a base, a yoke pivoted to swing from vertical to horizontal position and weighted to normally come to rest in a vertical position with its cross-member above the roll, a gripping element for the paper associated with the cross-member, means rendering the gripping element active when the yoke occupies a vertical position, means for maintaining the gripping element active when the yoke is swung into a horizontal position and means for releasing the gripping element when the yoke starts to return, the weighted yoke including a pivoted element normally resting on the base and lifted when the yoke swings into horizontal position so as to urge the same back to normal, but dragging on the base when the yoke approaches normal position for retarding the speed of the returning yoke at the end of its stroke.

In testimony whereof I affix my signature.

JOHN F. LEIDECKER.