Nov. 9, 1954 H. P. SWITZER 2,693,988

DISPENSER FOR TOILET SEAT COVERS

Filed Aug. 17, 1951 3 Sheets-Sheet 1

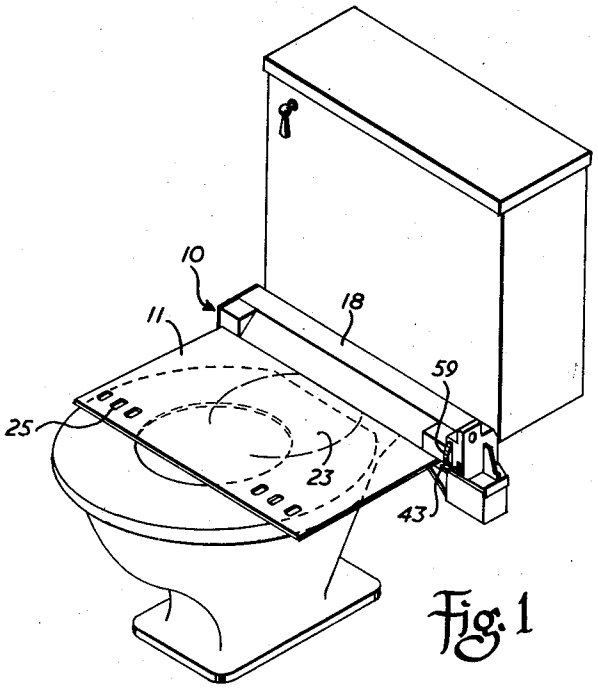


Fig. 1

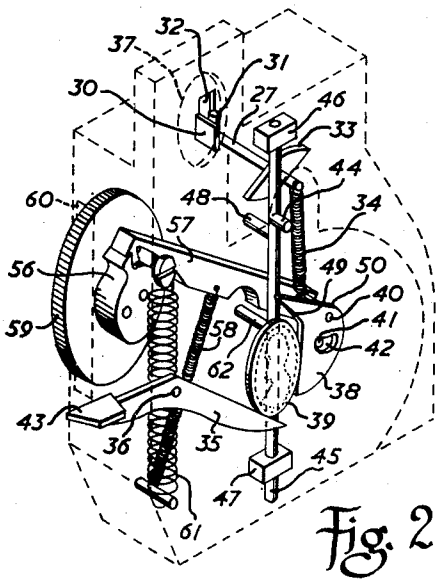


Fig. 2

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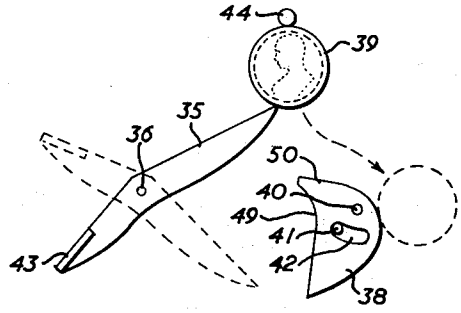


Fig. 4

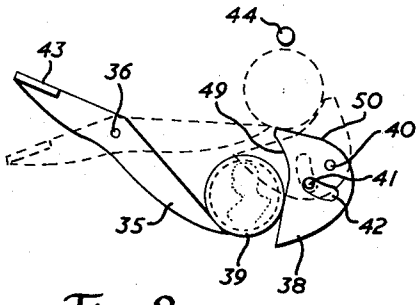


Fig. 3

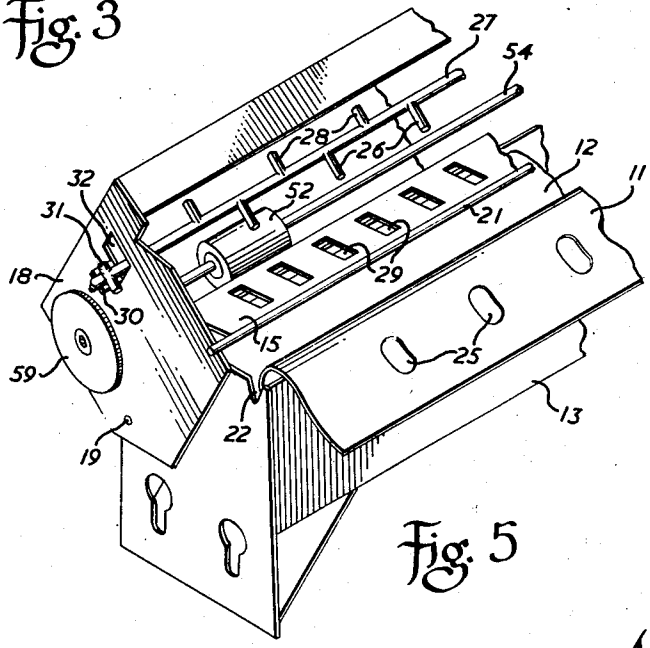


Fig. 5

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DISPENSER FOR TOILET SEAT COVERS

Filed Aug. 17, 1951 3 Sheets-Sheet 3

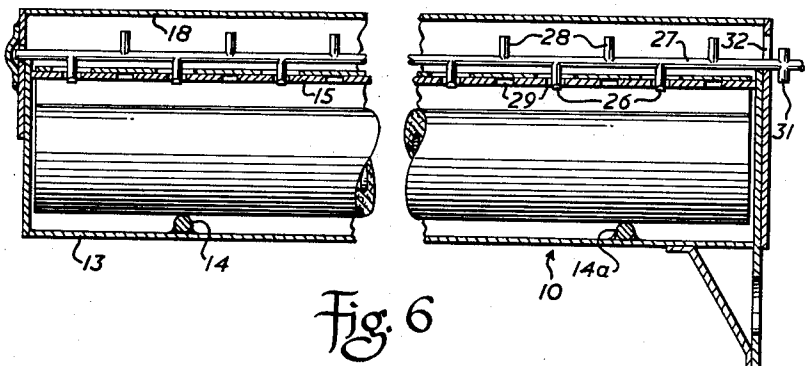


Fig. 6

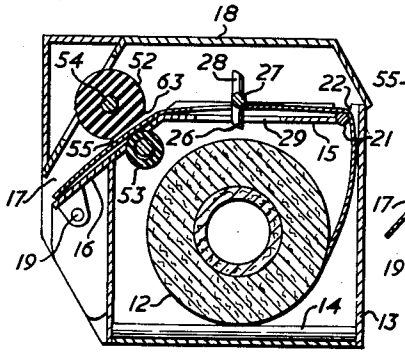


Fig. 7

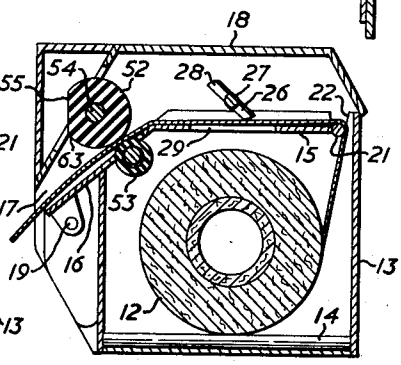


Fig. 8

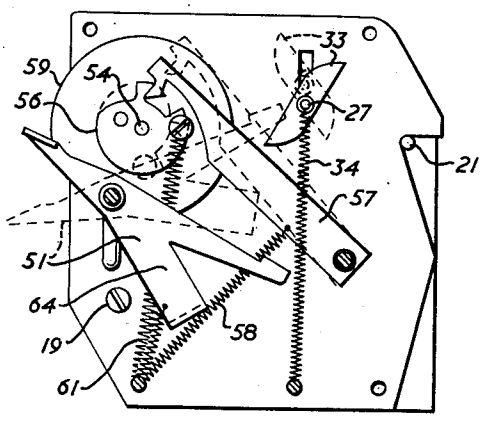


Fig. 9

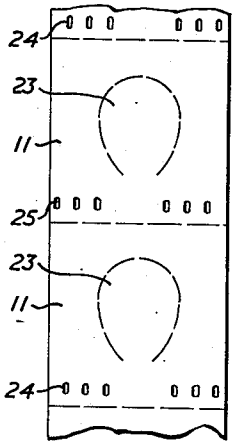


Fig. 10

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DISPENSER FOR TOILET SEAT COVERS

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Application August 17, 1951, Serial No. 242,285

8 Claims. (Cl. 312—39)

This invention relates to a device for controllably dispensing paper in predetermined lengths.

In the past, a great number of devices for dispensing paper in the roll form in predetermined lengths have been tried, and some with considerable success. I feel, however, that I have devised a dispenser for roll paper that is a substantial improvement over the dispensers of the prior art from the point of view of simplicity, cheapness of manufacturing, and ruggedness.

Generally speaking, my dispenser comprises a casing with a body having a top that can be opened to insert a roll of paper that is designed to rotatably mount the roll of paper therein. The casing is formed with an elongated paper dispensing opening, the top and bottom long edges of which are preferably defined by edges of the body of the casing and the top of the casing.

According to the invention, an elongated ledge is mounted within the casing that is substantially co-extensive with the elongated opening and a shaft formed with a plurality of series of radially extending and longitudinally aligned retaining fingers is rotatably mounted above the ledge. There are prererably two series of retaining fingers which are of two types, distinguishable one from the other by the spacing of the aligned fingers longitudinally of the shaft. As the shaft rotates the series of retaining fingers thereon enter into a series of holes formed in the said ledge. Locking means are provided for locking shaft from free rotation as paper is drawn from a roll over said ledge. To release the shaft from the locking means, a manually operable release means is provided which in addition to releasing the shaft from its locked position, also rotates it to present the next series of retaining fingers to the ledge. The two series of radially extending retaining fingers are located 180° apart about the axis of rotation of the shaft.

The paper that is dispensed from the casing is formed with transversely extending series of holes, alternate series of which correspond in their spacing to the alternate series of retaining fingers carried by said shaft, and all of which will register with said series of holes on said ledge. When a series of holes in the paper overlies the holes on the ledge and the corresponding series of normally locked retaining fingers rest on the ledge, the retaining fingers will pass through the holes in the paper and enter in the holes in the ledge to prevent the paper from being drawn further over the ledge.

It will be recalled that locking means are provided for locking the shaft from free rotation as paper is drawn from the roll, so that when the retaining fingers on the shaft pass through a transversely extending series of holes in the paper and through holes in the ledge further withdrawal of paper is not possible until the shaft is released for rotation. By operating the above-noted release means, the shaft can be rotated to present a different series of retaining fingers to the paper. This other series of retaining fingers does not align with a series of holes in the paper, so that the paper can be withdrawn again from the casing until a series of holes in the paper that corresponds with the series of retaining fingers which rest on the paper pass the retaining fingers. When this happens, the fingers again drop through the holes in the paper and through the holes in the ledge to stop further withdrawal. The series of holes in the paper are spaced apart longitudinally of the paper a distance equal to the length of paper that it is desired to controllably dispense. The invention will be clearly understood after reference to the following detailed specification read in conjunction with the drawings.

In the following specification I shall describe an embodiment of my invention for dispensing toilet seat covers. It will be appreciated though that I do not intend that its scope should be limited to this particular use.

In the drawings:

Figure 1 is a perspective view of a toilet seat cover dispenser according to the invention mounted in position.

Figure 2 is a perspective view showing the means for locking the shaft from free rotation as paper is drawn from a roll over the ledge and a coin-operated release means for the locking means.

Figures 3 and 4 are views illustrating the operation of the manually depressible lever of the coin-operated release means of Figure 2.

Figure 5 is a partial perspective view of the casing of a dispenser according to the invention.

Figure 6 is a sectional view broken at the centre, showing the casing of a dispenser according to the invention.

Figures 7 and 8 are cross-sectional views of a dispenser according to the invention, showing the operation of a means for starting the free end of a roll of paper from the casing and the operation of the retaining fingers of the rotatably mounted shaft.

Figure 9 is an end view illustrating a release means for the locked shaft that is not coin-operated.

Figure 10 is a partial plan view of the paper showing two sections in detail.

In Figure 1 of the drawings the numeral **10** generally indicates a dispenser according to the invention, for dispensing toilet seat covers **11** from a roll that is mounted therein. The dispenser is suitably mounted on the water closet of the toilet.

Figures 6, 7 and 8 are appropriate figures for illustrating the general operation of the invention, and I would like to draw attention to them now. The other figures illustrate details of operation and construction and will be considered after the general operation is considered.

The toilet seat covers **11** are drawn from the roll **12** which is rotatably mounted in the suitably proportioned bottom portion **13** of the dispenser **10** on the rails **14** and **14***a*. The free end of the roll is drawn over the elongated ledge **15**, down the inclined guide portion **16** thereof and out the elongated opening **17**. The long edges of the elongated opening **17** are formed by longitudinally extending edges of the inclined guide portion **16** of ledge **15** and the upper portion **18** of the casing **10**.

It might be well to note at this point that the two casting sections **13** and **18** are hinged together as at **19** (Figure 5), so that the casing can be opened for the insertion of the roll **12** into the bottom portion thereof. It might also be well to note that the ledge **15** is hingedly mounted in the casing to swing about an axis adjacent the free longitudinally extending edge of the inclined guide portion **16** thereof. In the embodiment shown it is also hinged about the point **19**. The ledge can be swung to permit the mounting of the roll **12** in the casing. Ledge **15** has a bar **21** extending longitudinally thereof for entry into notches **22** formed in the casing to support it rigidly in use. It will be appreciated that in Figure 5 I have shown only one end of the dispenser but that the casing construction is substantially the same at the other end, and a full view need not be illustrated.

The paper (Figure 10) in the roll **12** is divided into sections **11**, each of a length sufficient to make a toilet seat, the centre section **23** being weakened for easy knocking out. Alternate sections **11** have a series of holes **24** extending transversely thereacross and the sections **11** between the latter mentioned alternate sections have a series of holes **25** extending transversely thereacross. The series of holes **24** and **25** differ from each other in the transverse spacing of the holes.

According to the invention, the amount of paper that can be withdrawn from the roll **12** at one time is controlled by the series of longitudinally aligned radially extending retaining fingers **26** on the rotatable rod **27**, the longitudinally aligned radially extending series of retaining fingers **28** on the rotatably mounted rod **27**, and the longitudinally extending series of holes **29** in the ledge **15** in conjunction with the series of holes **24** and **25**

formed in the roll of paper 12 and means for controlling the rotation of the shaft 27.

The shaft 27, it will be noted, is rotatably mounted in the top portion 18 of the casing to overlie the ledge 15, which latter member is substantially co-extensive with the opening 17 through which the free end of the paper is drawn, and the individual fingers in the series of fingers 26 and 28 are of a length such that they enter into the series of holes 29 as the shaft 27 is rotated; the series of holes 29 being appropriately spaced apart longitudinally of the ledge 15.

The series of holes 24 in the paper are spaced apart such that the series of fingers 28 will enter into them when the paper is drawn over the ledge 15, and the series of holes 25 are spaced apart such that the series of retaining fingers 26 will enter into them when they are drawn across the ledge 15.

It will be apparent, having regard to the fact that the series of holes 29 will accommodate each of the series of retaining fingers 26 and 28, that when the series of holes 25 overlies the series of holes 29 in the ledge 15 and the series of retaining fingers 26 rests on the paper, that the retaining fingers 26 will drop through the holes in the paper 11 and in the ledge 15 (see Figure 7) to prevent the paper from being further withdrawn if a locking means for the retaining of the shaft 27 from free rotation as the paper is withdrawn is provided.

I provide such a locking means in my invention for preventing the shaft 27 from rotating due to the action of the paper when a series of retaining fingers passes through a series of holes in the paper 11 and the series of holes in the ledge 15. In the embodiment of the invention shown, the locking means is most clearly illustrated in Figure 2, and it comprises a lug 30 rigidly mounted on the casing of the dispenser, and a locking bar 31 carried by the shaft 27 that cooperates therewith. Locking bar 31 is aligned with the diametrically opposed series of retaining fingers 26 and 28, and lug 30 is on the side of the shaft 27 adjacent the elongated paper dispensing opening 17, so that the turning force of the paper on the retaining fingers and shaft 27 as it is drawn from the roll 12 which tends to turn the shaft 27, is resisted.

As well as providing means for locking the shaft 27 from rotation, I also must, of course, provide means for controllably releasing the shaft from the locking means and for rotating it; this latter operation being necessary to release a further length of paper for withdrawal. In the embodiment of the invention shown I mount one end of the shaft 27 in a slot 32 so that this end of the shaft can be raised to cause a locking bar 31 to clear the locking lug 30, and mount a cam 33 on the free end of the shaft 27. Cam 33 is designed when lever-actuated to raise the end of the shaft 27 and release the locking bar 31 from engagement with the lug 30, and also rotate the shaft to present a different series of retaining fingers to the sheet of paper 11 which overlies the ledge 15 (see Figure 8). It will be apparent that when a fresh series of retaining fingers is presented to the paper that they will not be able to enter into the series of holes 29 on the ledge 15 because the spacing of the newly presented series of retaining fingers does not correspond with the spacing of the series of holes in the paper that overlie the series of holes 29 in the ledge. A further length of paper can now be withdrawn over the ledge and through the opening 17 until the next series of holes in the paper overlie the series of holes 29 in the ledge. When this occurs the spacing of the newly presented series of retaining fingers will correspond to the spacing of the series of holes in the paper that overlie the holes in the ledge, and the retaining fingers will drop through the aligned holes in the paper and ledge again to stop the withdrawal of paper.

The series of retaining fingers 26 and 28 on the shaft 27 normally fall into the series of holes 29 on the ledge 15 or else rest on a piece of paper that overlies the ledge 15 but to ensure that the shaft with its retaining fingers normally assume this position I preferably employ a spring 34 anchored at one end to a free end of the shaft 27 and at the other end to the casing 10.

I have previously mentioned that the cam 33 which controls the releasing of the shaft 27 from its locking means and the rotation of the shaft 27 to present a different series of retaining fingers to the ledge 15 is lever-actuated. In the drawings I have illustrated two types of levers, one that is coin controlled (Figures 2, 3 and 4) and the other (Figure 9) that is not coin controlled.

I shall discuss first the coin controlled operating lever. The lever 35 is pivotally mounted on the casing of the dispenser as at 36 and is located such that a coin inserted into the opening 37 will drop down a chute and come to rest between the free end thereof and a pivotally mounted plate 38 as at 39. Stop means for lever 35 are provided to cause it to assume a normal position substantially as shown in Figure 2. Plate 38 is also pivotally mounted to the casing of the dispenser as at 40 but its pivotal movement is limited by means of the pin 41 which enters into the arcuate slot 42.

When a coin has been dropped to the position illustrated in Figure 2 and the end 43 of lever 35 is depressed, coin 39 is raised as plate 38 pivots about its pivot point to engage with the shoulder 44 and raise the slidably mounted bar 45. Bar 45 is slidably mounted in blocks 46 and 47 carried by the casing.

As the bar 45 is raised the lug 48 engages with the cam 33 to raise the shaft 27 against the tension of spring 34 thereby releasing the locking bar 31 from engagement with the lug 30 and turning the shaft 27 to present a different series of shaft locking fingers to the ledge 15 (see Figure 8 for position of locking fingers at this time).

The plate 38 is formed with a concave contour as at 49 so that it will cooperate with the lever 35 until the shaft 27 has been raised by the lug and with a convex contour as at 50 so that once the shaft 27 has been raised the coin will roll down the convex contour and drop into a coin collecting box that can be mounted beneath the lever system. Figures 3 and 4 show the manner in which the cooperating and meeting concave and convex edges 49 and 50 respectively cooperate with the lever as the plate 38 moves the full extent of its travel permitted by the pin 41 under actuation by the lever 35 in combination with a coin. The solid line in Figure 3 shows the coin in its initial position. The dotted line positions of the lever and plate in Figure 3 show the coin raised and almost to the point where it is about to engage with the lug 44 on the slidably mounted shaft 45. The solid line position shown in Figure 4 illustrates the lug 44 after it has been raised to clear the plate 38 and raising the lug 44 to raise the end of the shaft 27. When the lever 35 is released the free end thereof will again drop to the position illustrated in dotted lines in Figure 4 permitting the coin to drop over the convex surface of the plate 38, which has in the meantime assumed its normal position, into the coin receiving receptacle. Only the operating handle of the lock release lever extends from the casing 10 as indicated in Figure 1. It will be appreciated further that the lever is weighted to normally assume the position of Figure 2.

It will be appreciated that the cam 33 need not be actuated by a coin operated lever and to illustrate this in Figure 9 I have shown a simple lever 51 having a length such that the free end thereof can be raised to engage with and operate the cam 33. The dotted line position of the lever 51 in Figure 9 illustrates the position to which the lever must be pivoted to operate the cam 33 in the manner just illustrated for the coin operated lever. The cam 33 is shown in a dotted line position after it has been actuated by the lever.

After the toilet seat cover 11 has been withdrawn from the longitudinally extending opening 17, it is torn off against a longitudinally extending lip of the opening 17. In order to withdraw another toilet seat cover after the retaining fingers have released their hold, it is, of course, necessary to start the paper out of the opening 17 so that it can be gripped for further withdrawal. There are a number of ways in which the paper could be started. I have shown cooperating feed rollers 52 and 53 through which the paper is threaded. Rolls 52 are carried by a shaft 54 that is rotatably mounted at each of its ends in the top portion 18 of the casing. Rolls 53 are rotatably mounted in the inclined portion 16 of the ledge 15 over which the paper is drawn. Roll 52 is preferably formed with a flat 55 so that the rollers only cooperate with each other to start the paper from the opening.

Rollers 52 and 53 are normally locked from rotation in the position illustrated in Figure 7 by means of the locking cam 56 carried by the shaft 54 and the cooperating locking arm 57 which is normally spring urged into locking engagement with the cam 56 by means of spring

58. A knurled wheel 59, a portion of which extends through a suitable opening 60 formed in the casing (indicated in Figure 2) is manually turned to rotate the rolls 52 and 53 during use. A release spring 61 tends to rotate the cam 56 against the locking action of the arm 57.

As for the retaining fingers of the shaft 27 when they are in a locked position, so for the locked rolls 52 and 53, I must provide a means for releasing the lock. In the embodiments of the invention shown the release takes a somewhat different form in the coin operated mechanism to the simple lever operated mechanism. I shall describe first the coin operated mechanism release.

In the coin operated mechanism release the slidably mounted bar 45 is provided with a lug 62 which, as the bar is released, engages with the locking lever 57 to raise the free end thereof clear of the locking cam 56. Tension spring 61 then contracts to rotate the cam and cause the rounded tip 63 of the roller 52 to operatively engage with the paper that passes between it and the roller 53. The two rollers can then be manually rotated to expel the free end of the paper from the opening 17 by means of the portion of the knurled wheel 59 that extends through the opening 60 in the casing. When, of course, the roll 52 has turned one complete rotation the lever 57 which is spring urged into contact with the cam 56 again engages with the cam to lock it from further rotation. When this occurs the flat 55 of roller 52 is again overlying the paper but sufficient paper has been ejected from the opening 17 for a user to grasp it and pull a length 11 from the casing.

With the non-coin operated mechanism, the operation is substantially the same except that an arm 64 carried by lever 51 operates the locking bar 57 instead of the lug 62. It will be appreciated that the arm 64 of lever 51 does not operate in the same plane as the free end of lever 51 that engages with the cam 33. The operative end of lever 51 is merely spread apart from the operative end of arm 64 carried thereby to prevent fouling on operation. The dotted line position in Figure 9 illustrates the locking bar 57 in a raised position.

Other means for starting the free end of the roll of paper out of the opening are, of course, possible. One could, for example, merely form the paper such that when a section 11 is torn off tabs would form which could be gripped to withdraw the next piece. A further alternative would be to replace the cam 56 and its control lever 57 with an opening in the cover 18 of the casing 10 through which it would be possible to manually turn the roll 52. Again the roll could be omitted and openings in the cover over the sloped portion 16 of ledge 15 could be provided which would give access to the paper sufficiently to start it out of the opening 17.

Embodiments of the invention other than the one shown will be apparent to those skilled in the art and I do not intend that the foregoing should be read in a limiting sense.

What I claim as my invention is:

1. A dispenser for paper or the like in the roll form comprising, a casing, means for inserting and rotatably mounting a roll of paper therein, said casing being formed with an elongated opening through which paper can be drawn from said roll and along the edge of which a length of paper can be torn, an elongated ledge mounted within said casing substantially co-extensive with said elongated opening over which paper can be passed as it is drawn from a roll through said opening, a shaft rotatably mounted in said casing formed with a plurality of series of radially extending and longitudinally aligned retaining fingers, said series being spaced apart at regular intervals around said shaft and of at least two types distinguishable by the spacing of the aligned fingers longitudinally of the shaft, said shaft being mounted to overlie said ledge with its longitudinal axis parallel to the longitudinal axis of said opening, said ledge being formed with a series of holes extending longitudinally thereof and spaced apart to receive each of said series of locking fingers carried by said shaft as the shaft rotates, locking means for locking said shaft from free rotation from the force of paper on said retaining fingers as it is drawn from a roll over said ledge, said fingers having a length such that they enter into said holes as said shaft rotates, manually operable means for releasing said shaft from said locking means and for rotating said shaft to present a different series of locking fingers

to said ledge, said locking means comprising a stop rigidly mounted on said casing, a lug carried by said shaft for cooperation with said stop that normally engages with said stop to lock said shaft from rotation, said shaft being mounted for movement in said frame whereby said lug can be freed from engagement with said stop means, said manually operable means for releasing said shaft from said locking means and for rotating said shaft comprising a cam carried by said shaft and a lever for operating said cam.

2. A dispenser as claimed in claim 1, having tension spring means connected to said shaft and to said frame to normally cause said cooperating finger to engage with said stop means as aforesaid.

3. A dispenser as claimed in claim 1, in which said lever operates through a coin.

4. A dispenser for paper or the like in the roll form comprising, a casing, means for inserting and rotatably mounting a roll of paper therein, said casing being formed with an elongated opening through which paper can be drawn from said roll and along the edge of which a length of paper can be torn, an elongated ledge mounted within said casing substantially co-extensive with said elongated opening over which paper can be passed as it is drawn from a roll through said opening, a shaft rotatably mounted in said casing formed with two series of radially extending and longitudinally aligned retaining fingers, said latter two series being spaced apart 180° from each other on said shaft and distinguishable from each other by the spacing of the aligned fingers thereof longitudinally of the shaft, said shaft being mounted to overlie said ledge with its longitudinal axis parallel to the longitudinal axis of said opening, said ledge being formed with a series of holes extending longitudinally thereof and spaced apart to receive said two series of locking fingers carried by said shaft as the shaft rotates, locking means for locking said shaft from free rotation from the force of paper on said retaining fingers as it is drawn from a roll over said ledge, said fingers having a length such that they enter into said holes as said shaft rotates, manually operable means for releasing said shaft from said locking means and for rotating said shaft to present a different series of locking fingers to said ledge, said locking means comprising a stop rigidly mounted on said casing, a lug carried by said shaft for cooperation with said stop that normally engages with said stop to lock said shaft from rotation, said shaft being mounted for movement in said frame whereby said lug can be freed from engagement with said stop means, said manually operable means for releasing said shaft from said locking means and for rotating said shaft comprising a cam carried by said shaft and a lever for operating said cam.

5. A dispenser as claimed in claim 4, having tension spring means connected to said shaft and to said frame to normally cause said cooperating finger to engage with said stop means as aforesaid.

6. A dispenser as claimed in claim 4, in which said lever operates through a coin.

7. A dispenser as claimed in claim 1, having tension spring means connected to said shaft and to said frame to normally cause said cooperating finger to engage with said stop means as aforesaid, and manually operable means for starting paper from said casing out of said opening after said shaft has been released by said manually operable means for releasing it.

8. A dispenser as claimed in claim 4, having tension spring means connected to said shaft and to said frame to normally cause said cooperating finger to engage with said stop means as aforesaid, and manually operable means for starting paper from said casing out of said opening after said shaft has been released by said manually operable means for releasing it.

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