

PATENT SPECIFICATION

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(54) DISPENSER FOR ROLLED STRIP MATERIAL

(71) We, BEGHIN—SAY of 59239 Thumeries (France) A Societe Anonyme organised under the laws of France do hereby declare the invention, for which we pray

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that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

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This invention relates to a dispenser for rolled strip material of predetermined axial length, e.g. paper rolls, particularly toilet rolls, and comprising a case having a dispensing aperture through which the strip material may be pulled from a roll within the case, and particularly relates to such a dispenser in which a rotatable turret containing at least two roll-supporting pegs may automatically present a fresh roll at the dispensing aperture when a first roll is exhausted, by asymmetric loading of the turret with rolls to be dispensed.

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One form of conventional dispenser for toilet rolls comprises a case with at least one partially cylindrical surface against which the outside of the rolls turns when the paper is drawn out through an aperture. The case has a movable wall portion of a permanent opening for insertion of a fresh toilet roll. For technical reasons which will be readily appreciated, the rolls are formed by paper wound onto cardboard spools of the same width.

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Frequent recharging of the dispenser is onerous, and must be attended to diligently if a supply of paper must constantly be available. The provision of a spare roll, often balanced on a makeshift support, has disadvantages which may include disappearance of the spare roll, or damage thereto.

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The dispenser in accordance with the invention is intended to remedy these disadvantages, and in particular to enable sufficient rolls to be supplied for refilling to be required at longer intervals, while ensuring that the spare rolls are properly used.

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The invention provides a dispenser for rolled strip material of predetermined axial length, comprising a case having a dispensing aper-

ture through which the strip material may be pulled from a roll within the case, a turret freely rotatably mounted on an internal side wall of the said case and having at least two roll-supporting pegs attached thereto so as to extend in a direction across the interior of the said case, the said pegs being of length less than the said predetermined axial length of rolls to be dispensed but which extend partially the length of the said dispensing aperture, whereby rotation of the said turret allows the said pegs sequentially to pass past the said dispensing aperture, and a roll stop means arranged in the case in the vicinity of the said dispensing aperture to allow free movement of an unladen peg past the said dispensing aperture but to stop upward movement of a roll mounted on a peg from a dispensing position, the said turret and pegs mounted therein and the said stop means being arranged and disposed relative to each other so that when the pegs are loaded with rolls to produce an asymmetric loading on the turret, the turret rotates until a roll mounted on a peg is held by gravity bias in a dispensing position by the said stop means, and when the roll is exhausted the roll on the next successive peg will automatically move to the dispensing position.

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In one form of the invention, at least three pegs are symmetrically mounted in the turret. The turret may for example be mounted for rotation on a spindle, or the turret may be provided with a circular perimeter supported by rolling devices attached to an internal side wall of the case.

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One embodiment of the invention is hereinafter described and illustrated in the accompanying drawings, of which

Figure 1 is a representation of a perspective view of one embodiment of the dispenser in accordance with the invention, showing details of the internal mechanism of the dispenser and rolls mounted therein;

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Figure 2 is a partial section on A—A in Figure 1, showing a peg and two-part spool against a stop.

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Referring to Figure 1, the dispenser comprises a case 1 with a fixed, vertical rear wall

2 and a front wall 3 pivoted by means of a hinge 5 to an upper portion of the case. Inside the case is a turret 6 rotatable about a horizontal spindle 7 attached to the rear wall 2. The turret 6 carries horizontal pegs 8 (numbering three in the embodiment illustrated) attached thereto and symmetrically arranged relative to its spindle 7. These pegs 8 are adapted to support the rolls, two of which are shown mounted thereon at 9 and 9'. The rolls are wound on spools 10 and 10' which in the embodiment illustrated, consist of tubes of cardboard or of thin plastics material. The spools can rotate freely on the pegs 8. The pegs 8 are axially shorter than the rolls which they are designed to carry. A stop member 11 is attached to the wall 2 of the case 1, preferably at a position displaced from the vertical plane passing through the axis of rotation of the turret, and after said vertical plane in the sense in which the turret rotates (anticlockwise as indicated by the arrow R in Figure 1). The length of the stop member is less than the axial length of a roll on its spool, so that it will not prevent rotation of a peg on which no roll is mounted.

In accordance with an important characteristic of the invention as illustrated, when a roll mounted on a peg is in contact with the stop 11, at least one other roll 9' (i.e. one other peg) has its axis situated on the opposite side of the vertical plane in which lies the turret axis as is the axis of the roll against the stop. Thus the asymmetric loading on the turret produced by relative positions of the rolls mounted thereon is such as to ensure spontaneous rotation of the turret in the sense indicated by the arrow R. This condition can be defined by specifying that the number of roll-supporting pegs within the angle α containing the roll against the stop and defined by the stop and the vertical plane leading up from and bounded by the turret axis must be at least one greater than the number of pegs within the angle $(2\pi - \alpha)$ radians. Figure 1 shows a turret with three pegs.

With the form of case shown in Figure 1, only two pegs are loaded simultaneously. When roll 9 is used up, roll 9' takes its place, and the empty peg appears in a position which enables the device to be reloaded with a further roll.

It is possible to provide an arrangement having only two pegs which are disposed unsymmetrically on the turret which when loaded produce an effect according to the invention. An expeditious arrangement is however provided if at least three pegs are arranged symmetrically on the turret, whereby in use at least one of the pegs is unloaded with a roll.

In the embodiment shown in Figure 1, the rolls are wound on spools 10 and 10' which

are designed with a detachable portion 13 of the spool facing the stop 11. To this end the spool consists of two separate sections with the same diameter coaxially arranged end to end, the two sections in the example illustrated having the same length. The two sections are held in place by the paper wound onto them. When all the material of the roll has been dispensed the portion 13 of the spool which lies beyond the peg on which the other portion is supported, comes into contact with the stop 11 (Figure 2) and is detached from the other portion because of rotation of the turret due to the effect of the weight of the upper roll 9' exerting a movement about the axis of rotation of the turret. When this portion 13 becomes detached, the turret rotates in the sense shown by the arrow until the upper roll 9' becomes located against the stop 11. At this time the third (empty) peg moves to the position originally occupied by the said upper roll 9'.

If desired the two sections of the spool can be of different lengths; care must then be taken to ensure that the correct portion of the wound spool lies off the peg. To overcome this disadvantage, the spool may be in more than two sections, or wound without gluing (e.g. helicoidally wound), or is of a design which is only retained in its wound format by the pressure of the paper in the roll. Other designs of the spool which may achieve the desired effect include a tube. If desired the roll may be wound without a spool.

To prevent the turret 6 rotating in the opposite direction to its operating movement, a ratchet 14 is fitted to the spindle. However any other device may be used which prevents rotation in a direction opposite to that shown by the arrow R.

If the friction exerted on the roll by the stop 11 is too high to allow easy withdrawal of material on the roll by pulling, especially with paper divided into separate sheet by lines of perforations as in toilet rolls, it is advantageous to fit the stop with a friction-reducing device, for example by making all or part of the stop in the form of a roller 15 with its axis substantially parallel to the axis of the roll.

In a modification of the embodiment illustrated in the drawings, the turret 6 has a circular perimeter which rolls on rolling supports, for example rollers rotating on spindles attached to the wall 2, thus dispensing with the spindle 7.

WHAT WE CLAIM IS:—

1. A dispenser for rolled strip material of predetermined axial length, comprising a case having a dispensing aperture through which the strip material may be pulled from a roll within the case, a turret freely rotatably

5 mounted on an internal side wall of
 the said case and having at least two
 roll-supporting pegs attached thereto so
 as to extend in a direction across the interior
 10 of the said case, the said pegs being of length
 less than the said predetermined axial length
 of rolls to be dispensed but which extend
 partially the length of the said dispensing
 aperture, whereby rotation of the said turret
 15 allows the said pegs sequentially to pass
 past the said dispensing aperture, and a roll
 stop means arranged in the case in the vicinity
 of the said dispensing aperture to allow free
 movement of an unladen peg past the said
 20 dispensing aperture but to stop upward move-
 ment of a roll mounted on a peg from a
 dispensing position, the said turret and pegs
 mounted therein and the said stop means
 being arranged and disposed relative to each
 25 other so that when the pegs are loaded with
 rolls to produce an asymmetric loading on the
 turret, the turret rotates until a roll mounted
 on a peg is held by gravity bias in a dispensing
 position by the stop means, and when the
 30 roll is exhausted the roll on the next suc-
 cessive peg will automatically move to the
 dispensing position.

2. A dispenser according to Claim 1, wherein
 at least three pegs are symmetrically mounted
 on the said turret.

3. A dispenser according to Claim 1 or
 Claim 2, wherein the said turret is rotatable
 on a spindle.

4. A dispenser according to Claim 1 or
 Claim 2, wherein the said turret has a circular
 35 perimeter supported by rolling devices attached
 to an internal side wall of the case.

5. A dispenser according to any of Claims 1
 to 4, wherein the said turret is associated with
 40 a ratchet device.

6. A dispenser according to any of Claims
 1 to 5, wherein the said stop means consists
 of, or includes, a roller against which a roll
 mounted on a said peg abuts when in a dis-
 45 pensing position.

7. A dispenser according to any of Claims
 1 to 6, wherein a side of the said case
 opposite to that which supports the said
 roller is hinged whereby an unladen peg may
 50 be loaded with a fresh roll.

8. A dispenser substantially as hereinbe-
 fore described and illustrated in the accom-
 panying drawing.

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