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TEAR-OFF DEVICE FOR ROTATABLY MOUNTED PAPER ROLLS  
PARTICULARLY TOILET PAPER ROLLS

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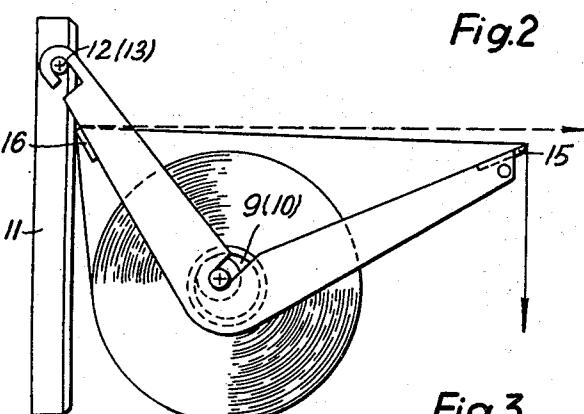
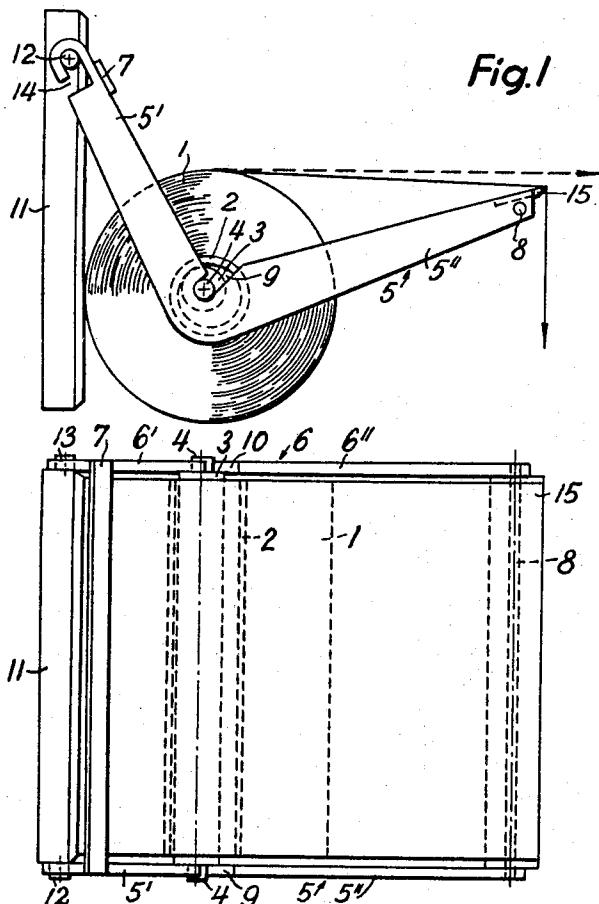


Fig.3

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## TEAR-OFF DEVICE FOR ROTATABLY MOUNTED PAPER ROLLS PARTICULARLY TOILET PAPER ROLLS

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### ABSTRACT OF THE DISCLOSURE

A tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein, due to the pressure exerted upon a separation knife disposed at one end of a lever, said paper roll is pressed towards a wall plate and prevented from rotation thereby, which comprises a mandrel adapted to support rotatably a paper roll, and two levers bent for about a right angle at substantially the center thereof and disposed parallel relative to and spaced apart from each other at a distance corresponding with the length of the paper roll. At least one cross-member is provided which connects the levers to form a pair of levers. A carrying plate is adapted to be secured to a wall, and the pair of levers is swingably mounted on the carrying plate at the free end of one of the levers to swing about a common axis, and the free end of the other of the levers is disposed in a horizontal plane, higher than a horizontal plane extending through the rotary axis of the paper roll, so that upon pulling downwardly the end of the paper roll the latter is pressed towards the carrying plate and prevented from further rotation. A separating knife is carried by the free end of the other of the levers, and the mandrel is rotatably mounted in the levers at least near to the bent portion of the latter.

The present invention relates to a tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls in general, and to such toilet paper rolls in which, by the pressure upon the separating knife disposed at the end of a lever, the paper rolls are pressed toward a wall plate and, thereby, are prevented from rotation, in particular.

In a known device of this type, the rolls are mounted in a U-shaped carrying support with resilient leg members, the free ends of which are bent inwardly and which engage the open ends of the rolls. Furthermore, another U-shaped support is mounted with its free leg ends on the carrying support, the cross-members of which engage the roll and serve as separating knife. For the mounting of the carrying support, a wall plate is provided. In this arrangement thus two pairs of levers in the form of the carrying support and of the support with the separating knife are required, and since the separating knife engages the roll, the free removal of the paper from the roll is rendered also more difficult.

Other tear-off devices are also known, in which the paper roll is not retained by the pressure to the wall plate, rather the paper roll is freely rotatable in a bearing secured to the wall and a swingably mounted frame is provided on the wall, which frame engages with a cross rail the paper roll and the front portion of the frame serves as a separating knife for tearing-off a paper strip. The engaging cross rail is pressed to the roll during the tearing-off of a paper strip, in order to secure the paper roll against rotation. Due to the arrangement of the

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cross rail, a damage to the paper can take place easier than by pressing the roll to a smooth wall plate. Furthermore, the paper must be pulled through between the cross rail and the separating part of the frame, whereby the service is rendered more difficult. Finally, the frame must be swung up upwardly for the free removal of the paper.

It is, therefore, one object of the present invention to provide a tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein a simpler and improved tear-off device is brought about.

It is another object of the present invention to provide a tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, which includes two levers bent about rectangularly substantially at the center portion thereof at a distance from each other corresponding to the length of the paper roll and parallel to each other and crosswise connected to form a pair of levers. One end of each of the levers is swingably mounted about a common axis on a carrying plate, and the other free end of the levers carries the separating knife and the mounting for the paper roll is provided on the levers close or adjacent to its bent portion.

It is still another object of the present invention to provide a tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein only a single pair of levers is provided and wherein the separating knife is not supported on the roll, but rather stands free and the paper also runs free over the separating knife, so that only the paper must be lifted, in order to assure a free paper removal.

It is yet another object of the present invention to provide a tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein, on the levers, in their part between the mounting of the paper roll and the swinging axis of the levers, a cross rail is provided at a distance from the mounting of the paper roll in the direction towards the swinging axis, which distance is larger than the radius of a paper roll. In this case, the paper strip is guided over the cross rail and is pressed against the carrying plate during the separating of the paper strip and is retained thereby.

With these and other objects in view which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

FIGURE 1 is a side elevation of the tear-off device designed in accordance with the present invention;

FIG. 2 is a top plan view of the device disclosed in FIG. 1; and

FIG. 3 is a side elevation of another embodiment of the tear-off device.

Referring now to the drawing, and in particular to FIGS. 1 and 2, the tear-off device comprises a toilet paper roll 1, which is wound in conventional manner on a cardboard sleeve 2 and is mounted on a mandrel 3 having lateral pins 4. The toilet paper roll 1 is mounted by means of the pins 4 in two levers 5 and 6 bent up substantially at a right angle, which levers 5 and 6 are disposed parallel to each other at a distance corresponding to the length of the roll 1 and which levers 5 and 6 are connected together by means of cross-members 7 and 8 to form a pair of levers. The mounting of the roll 1 in the levers 5 and 6 takes place at about the center portion of the latter or close to the rectangular bend into two slots 9 and 10, respectively, provided in the levers 5 and 6.

The upwardly directed lever portion 5' and 6', respectively, is swingably mounted at its end on a carrying plate 11, which forms the rear wall and is secured to a wall face. The joint swinging axis for both levers 5 and 6 is defined by two pins 12 and 13, from which the ends of the levers are suspended by means of bent slots 14.

The substantially rectangular, forwardly extending lever portions 5' and 6', respectively, carry at their free ends a cross plate 15, which constitutes a separating knife. This cross-connection of the levers 5 and 6 can, under circumstances, render superfluous the cross-members 7 and 8.

The swinging axis of the levers 5 and 6 defined by the pins 12 and 13 is rearwardly set off relative to the bearing axis of the roll 1 defined by the pins 4, so that the roll engages the carrying plate 11. The roll 1 could, however, also be suspended freely.

If the paper is to be removed from the roll 1, the pair of levers 5 and 6 swings slightly forwardly and the paper roll engaging the carrying plate 11 is removed from the latter, so that it can rotate freely. In order to separate a portion of the paper roll, the removed paper strip is pulled upwardly over the separating knife 15, whereby a lever movement is brought about in clock-wise direction, and the roll 1 is pressed towards the carrying plate 11 and is braked, so that the paper strip is now secured for the purpose of easier separation of the paper strip.

Referring now again to the drawing, and in particular to FIG. 3, this embodiment follows substantially the embodiment disclosed in FIGS. 1 and 2. The paper roll 1 is not pressed directly towards the carrying plate 11, rather a cross-bar 16 is provided between the lever portions 5' and 6', over which cross-bar 16 the paper strip runs towards the separating knife 15. The paper strip is clamped during the separation between the cross-bar 16 and the carrying plate 11 by the mentioned lever movement in clock-wise direction. In order to permit the mounting of a complete or full paper roll, the cross-bar 16 must be disposed at a distance from the bearing pins 9 and 10 for the roll 1 in the direction towards the swinging pins 12 and 13, which is larger than the radius of the full roll. The tear-off device, according to the present invention, is preferably made of synthetic material.

While I have disclosed two embodiments of the present invention, it is to be understood that these embodiments are given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

What is claimed is:

1. A tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein, due to the pressure exerted upon a separation knife disposed at one end of a lever, said paper roll is pressed towards a wall plate and prevented from rotation thereby, comprising:

a mandrel adapted to support rotatably a paper roll, two levers bent for about a right angle at substantially the center thereof and disposed parallel relative to and spaced apart from each other at a distance corresponding with the length of said paper roll, at least one cross-member connecting said levers to form a pair of levers, a carrying plate adapted to be secured to a wall,

said pair of levers being swingably mounted on said carrying plate at the free end of one of said levers to swing about a common axis, and the free end of the other of said levers being disposed in a horizontal plane higher than a horizontal plane extending through the rotary axis of said paper roll, so that upon pulling downwardly the end of said paper roll the latter is pressed towards said carrying plate and prevented from further rotation, a separating knife carried by said free end of the other of said levers, and

said mandrel being rotatably mounted in said levers at least near to the bent portion of the latter.

2. The tear-off device, as set forth in claim 1, which includes:

a pin projecting from each of the lateral faces of said carrying plate and said pins defining a swinging axis for said lever, and means for suspending said levers from said carrying plate.

3. A tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein, due to the pressure exerted upon a separation knife disposed at one end of a lever, said paper roll is pressed towards a wall plate and prevented from rotation thereby, comprising:

a mandrel adapted to support rotatably a paper roll, two levers bent for about a right angle at substantially the center thereof and disposed parallel relative to and spaced apart from each other at a distance corresponding with the length of said paper roll, at least one cross-member connecting said levers to form a pair of levers,

a carrying plate adapted to be secured to a wall, said levers being swingably mounted on said carrying plate to swing about a common axis, a separating knife carried by the other free end of said levers,

said mandrel being rotatably mounted in said levers at least near to the bent portion of the latter,

a pin projecting from each of the lateral faces of said carrying plate and said pins defining a swinging axis for said lever,

means for suspending said levers from said carrying plate,

a cross bar secured to said levers at a point between said swinging axis of said levers and the rotary axis of said paper roll at a distance from said rotary axis in the direction towards said swinging axis, and said distance being greater than the radius of said paper roll.

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