

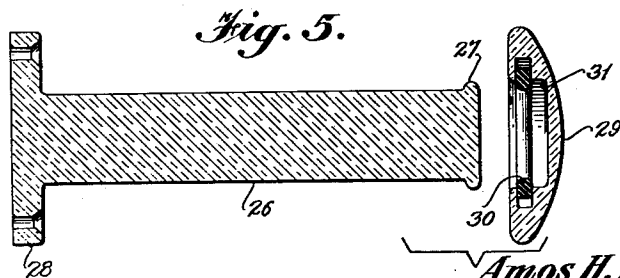
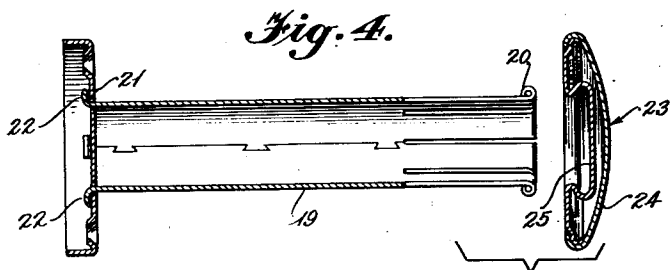
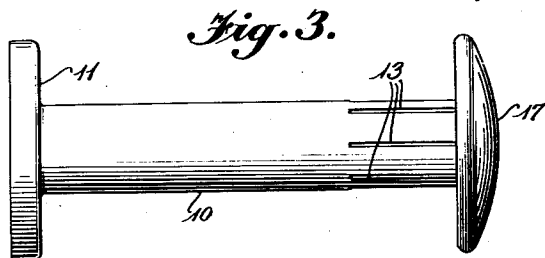
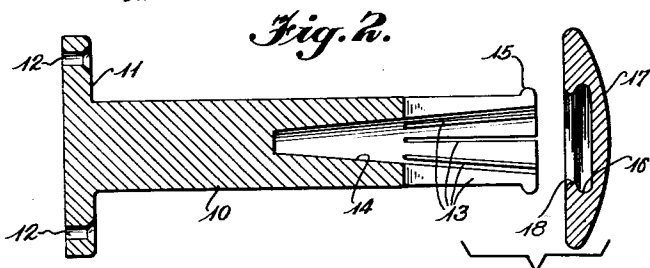
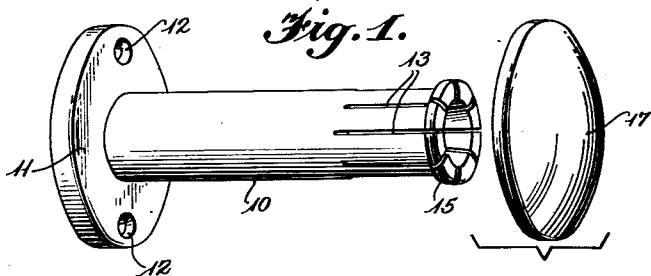
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ROLL HOLDER

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ROLL HOLDER

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This invention relates to holders of the type used for supporting rolls of web-like material such as cloth, paper or cord and is more particularly concerned with a holder of the foregoing type in which the roll of paper, cord or cloth is supported for free rotation during use, but is restrained against axial displacement beyond a predetermined range. Materials such as paper towels, toilet tissue, cloth, etc., that find frequent use in the home and in industry are sold in roll form, the web of material being wound around a hollow central support or cop. In use, it is customary to support the wound roll for rotation about an internal member over which the hollow cop or tube of the roll freely fits. In use, sheets or lengths of the material are withdrawn from the roll by pulling the free end and tearing or cutting off the length required, unwinding of the roll resulting in rotation thereof about the support.

The art relating to supports for rolls of web-like material is highly developed, and many different types of roll holders are presently available. Most of these are characterized by a central support and flanges at either end which prevent the roll from sliding axially off of the support. Since the rolls have to be replaced from time to time after they have become depleted of material, the roll holder assembly is usually comprised of detachable parts so that the end caps or the like may be removed to permit replacement of a roll over the central support. Quick detachable connections between the ends or caps of a roll holder and the cylindrical supporting portion thereof have been the subject of considerable study and numerous patents have been granted with respect to such connections. Despite this activity, however, prior arrangements usually involve a connection that is released by pressure somewhere on the cylindrical supporting portion of the holder which is not conveniently accessible when a roll change is required. Furthermore, prior art roll holders in general are characterized by a rather large number of parts which renders their construction somewhat expensive and their operation subject to mechanical failures.

It is therefore an object of this invention to provide a roll holder consisting of but two parts which is characterized by a conveniently operable quick detachable connection between an end cap and a cylindrical roll supporting portion, and which is simple in design so that construction is inexpensive and operation is free of mechanical failures.

Other objects and advantages of this invention

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will be apparent upon consideration of the following detailed description of several embodiments thereof in conjunction with the annexed drawings wherein:

5 Figure 1 is a perspective view of a roll holder constructed in accordance with the present invention showing the end cap in detached position;

Figure 2 is a longitudinal sectional view of the holder of Figure 1;

10 Figure 3 is a view in side elevation of the holder of Figure 1 showing the cap in assembled or roll restraining position;

Figure 4 is a view in longitudinal section of a modified type of roll holder constructed in accordance with the present invention; and,

15 Figure 5 is a similar view of another modified form of roll holder also constructed in accordance with the present invention.

Referring now in greater detail to Figures 1, 20 2 and 3 of the drawings, the roll holder there illustrated is comprised of a central cylindrical portion 10 adapted to receive thereover the hollow tube or cop about which a roll of web or cord-like material is wound. At one end of the cylindrical portion 10 is provided with an integral flange 11 of sufficient diameter to block the roll against movement off of the cylindrical portion at that end thereof. The flange 11 is provided with a plurality of holes at 12 for the reception of screws or the like for mounting the roll holder so that the flange may perform the dual function of restraining the roll against movement off of the cylindrical portion at that end thereof, and may support the cylindrical portion in cantilever fashion from a wall surface or the like.

Now upon reference to Figure 2, it can be seen that the cylindrical portion 10 may be made of molded plastic or cast metal which is solid for a substantial portion of its length extending from the left end of Figure 2. The right hand end of the cylindrical portion as shown in Figure 2, is provided with a number of slots 13 which extend longitudinally inwardly from the end of the cylindrical portion remote from the flange 11, the slots communicating with a frusto conical cavity 14 extending inwardly from the slotted end of a cylindrical portion to a point slightly beyond the middle thereof. The slotted end of the cylindrical portion is provided with an annular, external rim 15 which is adapted to be received in an annular groove 16 in a cavity or socket in an end cap 17. The groove 16 is complementary to the rim 15 and is of slightly lesser diameter than the external diameter of the rim.

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Ahead of the groove 16, and partially defining it, is an internal rim 18 at the mouth of the socket in the cap 17.

It can now be seen that in normal roll supporting position, Figure 3, the cap 17 and the flange 11 restrain the roll supported on the cylindrical portion 10 against axial movement off of either end thereof. However, since slots 13 afford a certain resiliency to the slotted end of the cylindrical portion 10, it is evident that the rim 15 is continuously biased into firm engagement with the portions of the surface of the cap 17 which define the groove 16, thus insuring the holding of the cap in position. When a roll replacement is necessary, it is only required that the cap 17 be pulled axially to the right, as viewed in Figure 3, to cause the rim 18 of the cap to wedge the rim 15 of the cylindrical portion to a sufficiently small cross section so that the cap may be removed. The resiliency of the material immediately restores the rim 15 to its normal unrestrained position as shown in Figures 1 and 2. With the cap removed the roll may be slid over the rim 15 and on to the cylindrical portion 10. Thereafter, the cap is moved axially to the left, as viewed in Figure 2, causing the rim to compress the rim 15 which then expands again into the groove 16 to hold the cap in position.

The construction shown in Figure 4 is similar to that described in connection with the Figures 1 to 3 inclusive except that the cylindrical portion 19 is made of sheet metal which is blanked, pierced, rolled and curled to produce a rim 20 and then attached to a flange 21 by cleated tabs 22. The cap 23 is made of two parts, 24 and 25, joined together at the margins. Once constructed the device of Figure 4 consists of but two parts, the assembly including the cylindrical portion and the flange, and the cap assembly. As described in Figures 1, 2 and 3, the rim 20 coacts with the cap 23 in the same way that the rim 15 coacts with the cap 17.

Referring now to Figure 5, there is shown a roll holder comprised of a solid integral cylindrical portion 26 having an integral rigid rim 27 at one end and an integral flange 28 at the other end. This assembly may be made of porcelain, pot metal, aluminum, brass, plastic or wood. It is intended that the flange 27 coact with a cap 29 provided with an internal rim 30 and an internal groove 31. In the previous embodiments described, the rim on the cylindrical portion is indicated as resilient. In the present case, the internal rim of the cap 29 is made of rubber or as a spring ring so that the rim 30 rather than the rim 27 is resiliently held in a normal position and is compressible in a radial sense to permit detaching and attaching of the cap.

It will be understood that the embodiments described do not constitute all of the forms in which the present invention may be constructed, but are merely illustrative of the nature and principles of the present invention, the scope of which is defined in the appended claims.

What is claimed is:

1. A roll holder comprising a roll receiving cylindrical portion having permanently attached at one end thereof means adapted to restrain a roll against axial movement off of the cylindrical portion at that end, said means being adapted for attachment to a vertical surface to constitute a cantilever support for said cylindrical portion and a roll supported thereby, a rim at

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the other end thereof, and a cap for restraining a roll against axial movement off of said cylindrical portion at the rim end thereof, said cap including an internal rim partially defining an internal groove for the reception of the rim of said cylindrical portion, one of said rims being resiliently urged to a normal position but compressible to a smaller cross section to permit detachment and attachment of the cap.

2. A roll holder comprising a roll receiving cylindrical portion having permanently attached at one end thereof means adapted to restrain a roll against axial movement off of the cylindrical portion at that end, said means being adapted for attachment to a vertical surface to constitute a cantilever support for said cylindrical portion and a roll supported thereby, a rim at the other end thereof, a cap for restraining a roll against axial movement off of said cylindrical portion, said cap having an internal socket with a rigid rim at its mouth partially defining an internal groove for the reception of the rim of said cylindrical portion, the rim of said cylindrical portion being resiliently compressible to permit reduction in cross section during attachment and detachment of said cap.

3. A roll holder comprising a roll receiving cylindrical portion having permanently attached at one end thereof means adapted to restrain a roll against axial movement off of the cylindrical portion at that end, said means being adapted for attachment to a vertical surface to constitute a cantilever support for said cylindrical portion and a roll supported thereby, a rim at the other end thereof, a cap for restraining a roll against axial movement off of said cylindrical portion, said cap having an internal socket, the mouth of which is defined by an internal annular rim of resilient material which defines in part an internal groove for the quick detachable reception of the rim of said cylindrical portion.

4. A roll holder comprising a roll receiving cylindrical portion having permanently attached at one end thereof means adapted to restrain a roll against axial movement off of the cylindrical portion at that end, said means being adapted for attachment to a vertical surface to constitute a cantilever support for said cylindrical portion and a roll supported thereby, a rim at the other end thereof, a cap for restraining a roll against axial movement off of the rim end of said cylindrical portion, said cap having a socket therein, the mouth of which is defined by a rigid annular rim which partially defines an internal annular groove for the reception of the rim of said cylindrical portion, said cylindrical portion being hollow and longitudinally slotted at the rim end thereof so as to render the rim resiliently compressible to permit quick detachable connection of the cap.

5. A roll holder comprising a roll receiving cylindrical portion having an integral flange at one end adapted to restrain a roll against axial movement off of the cylindrical portion at that end, said flange being adapted for attachment to a vertical surface to constitute a cantilever support for said cylindrical portion and a roll supported thereby, a rim at the other end of said cylindrical portion over which a roll will pass, a cap for fitting over said rim to restrain a roll against axial movement off the rim end of the cylindrical portion, said cap having an internal socket with an internal rim at its mouth partially defining an internal groove for the recep-

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tion of the rim of the cylindrical portion, one of said rims being resiliently compressible to permit quick detachable connection of said cylindrical portion to said cap.

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