United States Patent

[11] 3,620,465

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[54] **TOILET PAPER HOLDER**
5 Claims, 10 Drawing Figs.

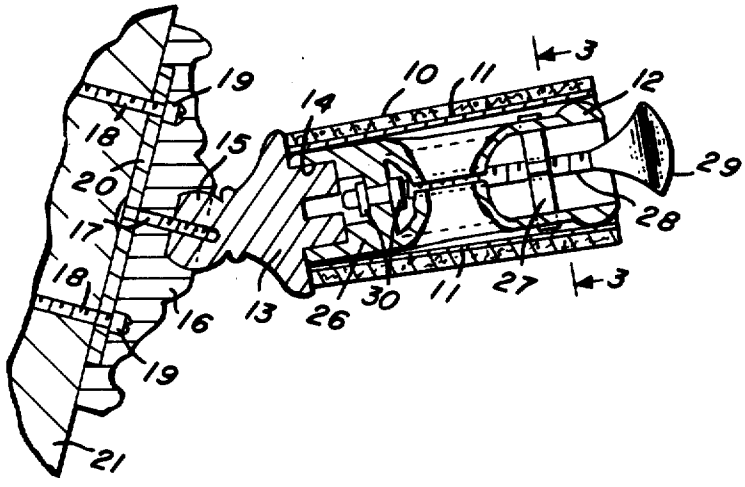
[52] **U.S. Cl.** **242/55.2,** 242/72
[51] **Int. Cl.** **B65h 19/00**
[50] **Field of Search** 242/55.2, 55.3, 55.42, 55.53, 55.54, 55.55, 72–73, 110; 269/48.1; 279/2

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Primary Examiner—Leonard D. Christian
Attorney—Allen & Chromy

ABSTRACT: A device for supporting and holding a roll of paper such as toilet paper in an angular position which permits slip off and on roll changes and provides for the paper to be uncoiled therefrom with one hand in pad form. This device is provided with an adjustable or fixed expansion-type mandrel which may be expanded inside of the cardboard tube on which the roll of paper is wound so that the proper amount of friction is applied to the roll of paper to control rotation and paper removal.



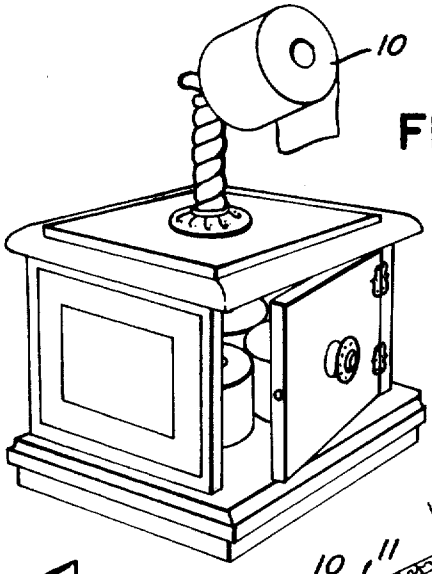


FIG. 1

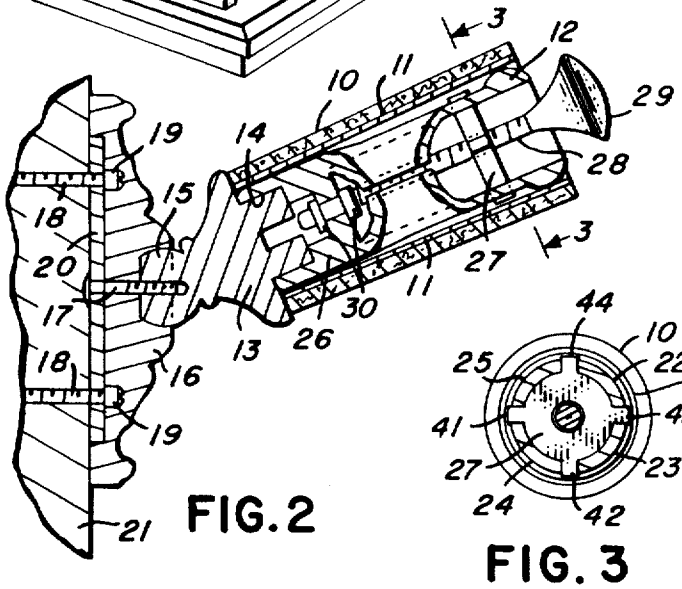


FIG. 2

FIG. 3

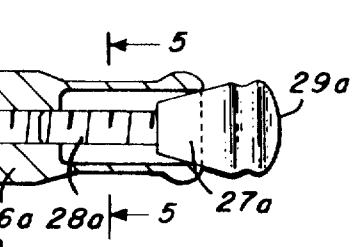


FIG. 9

FIG. 4

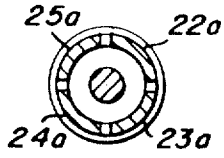


FIG. 5

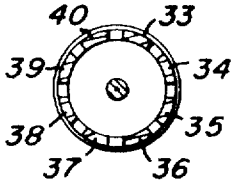


FIG. 7

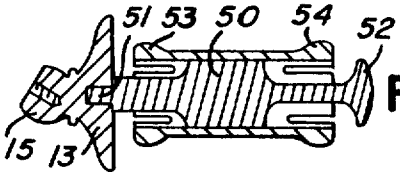


FIG. 10

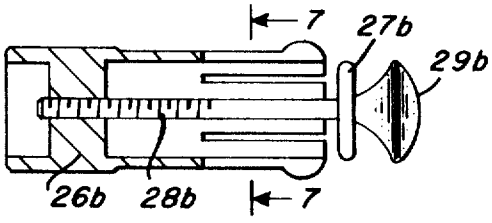


FIG. 6

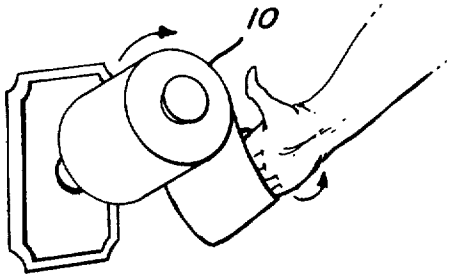


FIG. 8

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DESCRIPTION OF THE INVENTION

This invention relates to a device for holding a roll of paper at a predetermined angle to facilitate unwinding the paper from the roll.

An object of this invention is to provide an improved roll paper supporting device which permits quantities of paper to be unwound therefrom upon a person's hand thereby forming a pad of paper.

Another object of this invention is to provide an improved roll paper supporting device which is provided with a fixed expansion or an adjustable expansion-type mandrel which supports the roll of paper and applies a controlled amount of friction internally to the roll thereby holding said roll but allowing rotation of same while the paper is being unwound from the roll.

Still another object of this invention is to provide an improved roll paper supporting device which permits slip on and off roll changes without removing or adjusting any part of the device.

Still another object of this invention is to provide an improved device for supporting a roll of paper firmly at a predetermined angle so that the outer end of the roll is tilted upwardly to prevent the roll of paper from coming off in use and to facilitate unwinding of the paper off of the roll by grasping the paper with thumb and fingers or between the fingers of a person's hand and then moving the hand around the roll so that as the paper is unwound from the roll it is wound on the person's hand.

Other and further objects of this invention will be apparent to those skilled in the art to which it relates from the following specification, claims, and drawing.

In accordance with this invention there is provided a device for supporting a roll of paper such as toilet paper in such a way that a predetermined amount of the paper may be removed from the roll. This device is provided with a mandrel which is adapted to be expanded inside of the cardboard tube on which the roll of paper is wound so that the said roll is supported thereon and rotation is controlled. The expandable mandrel is attached at one end thereof to a bracket which rigidly supports the mandrel and the roll of paper placed thereon at a predetermined angle with the outer end of the mandrel and the paper roll facing upward. This angular position facilitates removal of the paper from the roll and holds the roll on the mandrel. When a person desires to remove a certain amount of paper from the roll the free end of the paper is gripped between the middle fingers of the person's hand and then by holding the thumb out of the way the person simply winds the paper around the fingers of his hand while he unwinds it from the roll.

Further details and features of this invention will be set forth in the following specification, claims and drawing in which, briefly:

FIG. 1 is a perspective view of this device supporting a roll of paper on the top of a small paper storage cabinet;

FIG. 2 is a sectional view of an embodiment of this invention provided with a plate and bracket for attaching it to a wall;

FIG. 3 is a sectional view of the mandrel taken along the line 3—3 of FIG. 2;

FIG. 4 is a modified form of expanding mandrel which is adapted to be used in accordance with this invention;

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 4;

FIG. 6 is a sectional view of another form of expanding mandrel that is adapted to be used in accordance with this invention;

FIG. 7 is a sectional view taken along the line 7—7 of FIG. 6; and

FIG. 8 is a view of an embodiment of this invention provided with a roll of paper and showing how the paper is removed therefrom;

FIG. 9 is a sectional view of a fixed friction embodiment of this invention; and

FIG. 10 is a sectional view of another fixed friction embodiment of this invention.

Referring to the drawing in detail reference numeral **10** designates a roll of paper such as toilet paper which is provided with a cardboard tube **11** upon which the paper is wound. The roll of paper is adapted to be supported on the expanding mandrel **12** as shown in FIG. 2 which may be made of plastic, metal, wood and the like. The expanding mandrel **12** is provided with a recess **14** at one end of the body thereof which is adapted to receive the boss of the bracket **13** which also may be made of metal, plastic, wood and the like. The mandrel **12** may be attached to the bracket **13** by suitable adhesives, cements or the like.

Bracket **13** is provided with a rounded part **15** which is adapted to fit into a rounded recess in the member **16** for supporting the bracket **13** and mandrel **12** so that the free end of the mandrel **12** is tilted upwardly. Rounded part **15** of the bracket **13** is provided with a threaded hole for receiving the bolt **17** which holds the bracket **13** assembled with the member **16**.

Before the bracket **13** is assembled with the member **16** the plate **20** with the bolt **16** positioned in a hole through this plate is attached to the wall **21** by the screws **18**. The screws **18** are provided with relatively large heads which are adapted to extend into the recesses formed in the back of the member **16**. In addition the member **16** is provided with a relatively large recess for receiving the plate **20**. Thus, when the member **16** is placed against the wall **21** the plate **20** is positioned in this large recess and the heads of the bolts or screws **18** are positioned in the recesses **19**. Also, the bolt **17** extends through the member **16** into the rounded cavity which is adapted to receive the rounded portion **15** of the bracket **13**. The bracket **13** is then attached to the member **16** by threading the bolt **17** into the threaded hole of the rounded part **15**.

The expandable part of the mandrel **12** is provided with four fingers **22**, **23**, **24** and **25** as shown in FIG. **3** and these fingers are integral with the body portion **26** of the mandrel. The inside surfaces of the fingers **22**, **23**, **24** and **25** are gradually sloped or tapered inward so that the outer ends of these fingers are spaced to receive the expanding member **27** therebetween snugly. Expanding member **27** is threaded to the rod of the member **28** which is provided with a knob or finger grip **29** and the inner end portion of this rod is provided with collars **30** fixedly attached thereto. The collars **30** are adapted to engage the shoulder in the body **26** to prevent the rod **28** from moving along the axis of the mandrel **12** when the knob **29** is rotated and the expanding member **27** is pressed into the mandrel to expand the fingers **22**, **23**, **24** and **25**. Since the inner surfaces of these fingers are tapered, pressing the expanding member **27** into the mandrel causes these fingers to expand outwardly slightly so that the bulging outer ends thereof are pressed into frictional engagement with the inside of the cardboard tube **11**. Thus, the roll of paper **10** is frictionally supported on the mandrel and rotation thereof when paper is removed therefrom, is restrained but not prevented.

When the rod **28** is rotated by gripping and rotating the knob **29**, member **27** which is threaded to this rod is moved longitudinally along this rod and is prevented from rotation by the fingers **41**, **42**, **43** and **44** which are integral therewith and which extend into the slots formed between the fingers of the mandrel. It will be noted that the expanding member **27** may be made integral with the rod **28** and such a construction is shown in FIGS. **4** and **6**.

In FIG. **4** the rod **28***a* is guided into the body **26***a* of the mandrel when the knob **29***a* is gripped and rotated. At the same time the expanding member **27***a* which in this case is tapered as shown in FIG. **4** is caused to bear against the inside surfaces of the fingers **22***a*, **23***a*, **24***a* and **25***a*, thus causing the fingers to be expanded or moved outward slightly so that the bulging outer surfaces thereof expand into the cardboard tube of the paper roll and frictionally grip the roll to restrain but not prevent rotation thereof.

A similar arrangement is shown in FIG. 6 in which the rod 28*b* is threaded into the body 26*b* of the mandrel. This rod is provided with a knob or finger grip 29*b* and a finger-expanding member 27*b*. In this form of the invention the mandrel is provided with a larger number of fingers 33, 34, 35, 36, 37, 38, 39 and 40, and the inside surfaces of these fingers are tapered slightly so that as the expanding member 27*b* is moved into the mandrel by rotating the knob 29*b* and threaded rod 28*b* these fingers are caused to expand outward slightly and the bulging end portions thereof are caused to frictionally engage the inside surfaces of the cardboard tube which supports the roll of paper.

In FIGS. 9 and 10 modified forms of this device are illustrated. The body 46 shown in FIG. 9 is provided with a stud 47 that is attached to the bracket 13 and may be cemented or glued thereto. The sleeve 48 is supported by the body 46 and is held thereon by friction. A roll of toilet paper which is provided with a tubular cardboard core or inner tube (not shown) is adapted to be supported on the sleeve 48 and held frictionally thereon by the fingers 49 provided to the inner end of the sleeve. Fingers 49 restrain but do not prevent rotation of the paper roll so that paper may be unwound therefrom in the manner illustrated in FIG. 8. The embodiment of this invention shown in FIG. 10 is provided with a body 50 having a stud 51 attached to the bracket 13. A knob 52 is provided to the outer end of the body 50. The sleeve supported frictionally on the body 50 is provided with fingers 53 and 54 at the ends thereof which frictionally grip the tubular core of the roll of paper and restrain but do not prevent rotation of the roll during removal of paper therefrom.

While we have shown and described a preferred embodiment of the invention it will be understood that the invention is capable of variation and modification from the form shown and should be limited only by the scope of the claims appended hereto.

What we claim is:

1. In apparatus for supporting a roll of paper having a hollow cylindrical core open at both ends, said roll being supported so that paper may be unwound therefrom under a certain amount of restraint, the combination comprising a bracket member, an arm, means attaching said arm to said bracket member, said arm having a body portion extending over a substantial part of the length thereof, said body portion having a diameter such that it fits snugly into the hollow core of said roll of paper, said arm also having a plurality of flexible fingers extending from said body parallel to each other, said fingers having enlarged end portions frictionally engaging the inside of said core, said fingers pressing against the hollow inside of said core of said roll of paper positioned thereon to apply friction to said core so as to permit rotation of said roll of paper on said arm only when a predetermined pulling force is exerted on the paper, said means supporting said arm pointing upwardly at a predetermined angle so that the roll of paper supported on said arm is also supported at this predetermined angle to facilitate removal of quantities of paper from said roll.

2. In apparatus for supporting a roll of paper so that paper may be unwound from the roll under restraint, the combination as set forth in claim 1, further comprising finger-expanding means attached to said body and having a knob extending out beyond a side of the roll of paper, said expanding means having means engaging the inner surfaces of said fingers for expanding said fingers against the hollow inside of said roll of paper positioned thereon to control said friction and thereby control said rotation of said roll of paper on said arm.

3. In apparatus for supporting a roll of paper so that paper may be unwound from the roll under restraint, the combination as set forth in claim 2, further characterized in that said finger-expanding means includes a rod, said arm body portion being provided with a hole rotatably receiving said rod, said knob being attached to the outer end of said rod, said means engaging the inner surfaces of said fingers comprising a member that is moved inward toward said arm body portion when said knob is rotated.

4. In apparatus for supporting a roll of paper so that paper may be unwound from the roll under restraint, the combination as set forth in claim 3, further characterized in that said rod is threaded to said finger-engaging means and said finger-engaging means is moved toward said arm body portion and expands said fingers to grip said paper roll when said knob is rotated in one direction and release said roll when said knob is rotated in the opposite direction.

5. In apparatus for supporting a roll of paper so that predetermined amounts thereof may be unwound from the roll, the combination as set forth in claim 4, further characterized in that said rod is threaded to said arm body portion and said finger-engaging means is an enlarged member integral with said rod.

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