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G. BLUNT ETAL

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PAPER ROLL HOLDER

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FIG. 1

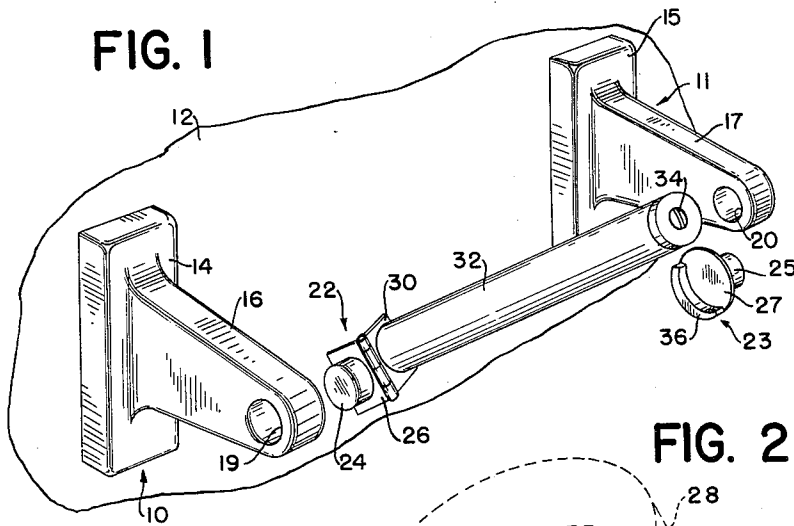


FIG. 2

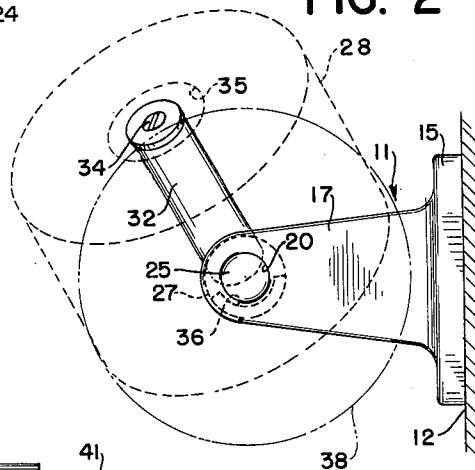
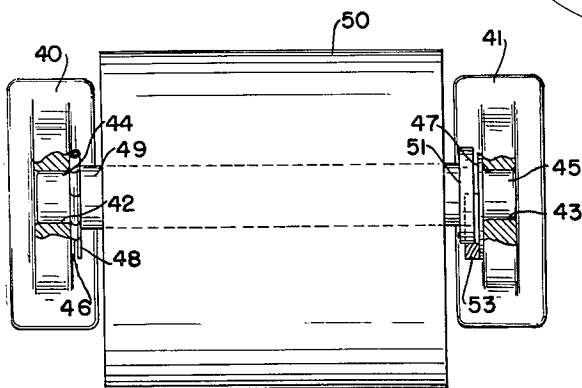


FIG. 3



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PAPER ROLL HOLDER

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This invention relates to holders for rotatably mounting cylindrical rolls of paper, such as toilet tissue, adjacent a wall surface and, more particularly, to a paper roll holder having a roll-carrying spindle which is adapted to be swung upwardly and outwardly from the wall surface about an oblique axis to facilitate attachment and removal of the roll.

In conventional holders, the roll-carrying spindle is usually a detachable element which must be taken from the assembly and inserted in or removed from a roll of paper when a new roll is to be mounted or a depleted one removed. The spindle, with the new roll attached, must then be fitted carefully back into the mounting assembly. This is known to be a clumsy procedure and it is the broad purpose of the present invention to provide a new holder in which the roll of paper can be mounted and removed much more easily.

To achieve this purpose, the new holder is provided with a roll-carrying spindle which is pivotally attached to its support and can be easily swung out of its normal position to permit a roll of paper to be attached to or removed from it. The pivotal mounting of the roll-carrying spindle is such that the spindle is forced by gravity back into its normal operating position after loading. Also, the forces applied to it when the paper is drawn from the roll do not tend to pull the spindle out of normal position. It is a further advantage of the new holder that when the spindle is swung from its normal to loading position, it is directed upwardly and outwardly toward the user to be easily accessible for attachment and removal of a paper roll relative thereto.

Broadly stated, the new holder for rotatably mounting a roll of paper comprises a supporting element adapted to be rigidly mounted with respect to and to intersect a horizontal. A hinge element is hinged to the supporting element defining a hinge axis slanting upwardly toward the wall surface over the horizontal axis and lying in a plane substantially perpendicular to the horizontal axis. A roll-carrying spindle is affixed adjacent one end to the hinge element and normally extends therefrom along the horizontal axis. Means also engage the end of the spindle remote from the hinge element for retaining the roll on the spindle when the spindle is in its normal position. By this construction, the spindle may be swung from its normal position upwardly and outwardly from the wall surface about the hinge axis and is aided by the force of gravity to return to and be held in the normal position.

In one form of the new paper roll holder, the spindle is of magnetic material at the end portion thereof opposite the hinge element. Magnetized receiving means are provided on a second supporting element opposed to and spaced from the first supporting element on the horizontal axis for supporting and releasably securing the magnetic portion of the spindle when the spindle is in its normal position. This provides further assurance that the forces applied to the spindle when the paper is drawn from its roll do not tend to pull the spindle up and out of its normal position.

A preferred embodiment of the new paper roll holder is described hereinbelow with reference to the accompanying drawing, wherein—

FIG. 1 is an exploded perspective view of the holder showing the spindle in its loading position;

FIG. 2 is an end view of the assembled holder of FIG.

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1 showing the spindle, with a paper roll mounted thereon, in both its normal and loading positions; and

FIG. 3 is an elevation partly in section of a modification of the new holder wherein a flange element is provided on the free end of the spindle.

Referring first to FIGS. 1 and 2, the holder includes a pair of brackets 10 and 11 adapted to extend rigidly from a wall surface 12. The brackets 10 and 11 are provided with respective mounting portions 14 and 15 which may be fastened flat against the wall surface 12 by any suitable means and arms 16 and 17 which extend from the mounting portions perpendicularly relative to the wall surface 12. Extending through the outer end portions of the respective arms 16 and 17 are cylindrical holes 19 and 20 which are disposed coaxial with a horizontal axis spaced from the wall surface 12.

A pair of supporting elements 22 and 23 are associated with the respective brackets 10 and 11. The supporting elements include cylindrical base portions 24 and 25 respectively which are adapted to fit closely within the corresponding cylindrical holes 19 and 20. Any suitable cement or other bonding material may be used to fasten the base portions 24 and 25 in the holes 19 and 20 of the brackets. Also, the supporting elements include respective mounting plates 26 and 27 which are secured to the adjacent opposed ends of the base portions 24 and 25. The mounting plates 26 and 27 are disposed perpendicularly relative to the common horizontal axis of the holes 19 and 20 and may be fastened or bonded to the base portions 24 and 25 or be formed integral therewith.

In the assembled holder, the mounting plates 26 and 27 are spaced apart a fixed distance greater than the length of a typical cylindrical roll of paper 28 (shown in FIG. 2 in dotted lines) which is to be rotatably mounted in the holder. In this regard, it will also be noted that the common horizontal axis of the holes 19 and 20 is spaced from the wall surface 12 a distance greater than the maximum outside diameter of a roll of paper 28.

Hinged to the mounting plate 26 of the supporting element 22 is a flat hinge element 30. The axis of the hinged joint between the element 30 and the mounting plate 26 is oblique and is preferably tilted from the horizontal at an angle of about 45° to 60°. The hinge axis lies in a plane perpendicular to the common horizontal axis of the holes 19 and 20 and slants upwardly toward the wall surface 12 over that horizontal axis. In ordinary operation, there are two typical positions of the hinge element 30, one being the loading position shown in FIG. 1 where it is swung about its oblique pivotal axis away from the mounting plate 26 and the other being its normal position where it is swung downwardly and inwardly against the mounting plate 26. In the normal position, the hinge element 30 lies perpendicularly across the common horizontal axis of the holes 19 and 20 between the mounting plate 26 and the other mounting plate 27 on the supporting element 23.

A cylindrical roll-carrying spindle 32 extends perpendicularly from the hinge element 30 and may be fastened thereto by any conventional means or may be integrally attached. The spindle is located on the hinge element 30, however, in such a manner that when the hinge element 30 is in its normal position the spindle 32 lies coaxially along the common horizontal axis of the holes 19 and 20 and extends substantially to the mounting plate 26 on the opposite supporting element 23. Fastened flat against the outer end of the spindle 32 is a metal disc 34 which is of magnetic material, such as iron. In this embodiment of the paper roll holder, the metal disc 34 is substantially equal in diameter to the spindle 32 and, as shown in FIG. 2, the diameter of the spindle 32 is considerably less than the inside diameter 35 of the roll of paper 28 to be mounted on the holder.

Cemented or otherwise affixed to the outer face of the mounting plate 27 on the supporting element 23 is an arcuate seating element 36. The seating element 36 is disposed concentrically about the common horizontal axis of the holes 19 and 20 and is positioned such that its curved body faces upwardly and outwardly away from the wall surface 12. Hence, the seating element 36 is adapted to receive the disc 34 on the end of the spindle 32 when the spindle is swung downwardly and inwardly to its normal position. In this embodiment of the invention, the seating element 36 is of magnetized material so that when the spindle 32 is in its normal position the magnetic disc 34 on the end thereof is securely held by the seating element.

When the cylindrical roll of paper 28 is to be rotatably mounted on this new holder, the spindle 32 is swung upwardly and outwardly off the seating element 36 into its loading position shown in FIGS. 1 and 2. Thus, the spindle 32 is directed substantially toward the user so that it easily receives the roll of paper 28. The spindle 32, with the roll of paper 28 attached, is then permitted to swing downwardly and inwardly by the force of gravity to its normal position, shown in phantom at 38 in FIG. 2. It is held in the normal position by gravity and the force exerted on the disc 34 by the magnetized seating element 36. There is no need to disassemble any elements of the new holder when loading a roll of paper in this manner and the entire operation can be accomplished easily and quickly. When paper is drawn from the roll 28, it is usually unrolled horizontally outwardly and therefore does not tend to pull the spindle 32 up out of its normal position.

The embodiment of the new paper roll shown in FIG. 3 is in most respects similar to that shown in FIG. 1. It includes a pair of brackets 40 and 41 formed at their outer ends with holes 42 and 43 respectively about a horizontal axis spaced from the wall surface against which the holder is mounted. Cylindrical base portions 44 and 45 of a pair of supporting elements are fastened in the respective holes 42 and 43 and they have mounting plates 46 and 47 attached thereto. A hinge element 48 is hinged to the mounting plate 46 about an oblique axis lying in a plane perpendicular to the common horizontal axis of the holes 42 and 43 and slanting upwardly toward the wall surface over that horizontal axis. Extending from the hinge element 48 is a spindle 49 adapted to receive a roll of paper 50.

However, fastened to the outer end of the spindle 49 is a flange element 51 adapted to prevent the roll of paper 50 from displacing sidewardly to the end of the spindle during operation. The flange element 51 is in the form of a disc of considerably greater diameter than the spindle 49 to which it is attached. The flange element 51 may be attached to the end of the spindle 49 in any convenient manner, as for example by means of a screw such as that shown in FIG. 1 securing the disc 34 to the outer end of the spindle 32. Attached to the mounting plate 47 is an arcuate seating element 53 adapted to receive the flange element 51 on the end of the spindle when the spindle is in its normal position. If the angle of the oblique hinge axis of the hinge element 48 is tilted sufficiently from the horizontal, it will not be necessary in many instances that the flange element 51 be gripped magnetically by the seating element 53 to hold the spindle down as paper is drawn from the rod. Hence, in this embodiment of the invention, the seating element 53 is of any suitable material and merely underlies the periphery of the flange element 51.

There are obviously many modifications which may be made in these embodiments of the new paper roll holder without departing from the scope of the invention. For example, the brackets 10—11 and 40—41 may be joined together in a one-piece unit. In fact, the brackets may

not be necessary at all if the wall surface includes one of the conventional recesses into which rolls of paper such as toilet tissue are often mounted. In that event, holes similar to 19—20 and 42—43 are usually provided in the opposite sides of the recess to receive a conventional spindle and it is contemplated that the base portions 24—25 and 44—45 of the new supporting elements be cemented directly into such holes. Another obvious modification to the holder is that the mounting plates 26—27 and 46—47 may be screwed, keyed, or otherwise fastened to their respective brackets or may be an integral part thereof, rather than attached by means of the holes and cylindrical base portions. It is also possible, in the embodiment of FIG. 3, that the bracket 41 and its associated supporting element be eliminated entirely because in many instances the spindle 49 with the flange element 51 could carry the roll 50 without an outer support.

We claim:

1. A holder for rotatably mounting a roll of paper adjacent a wall surface comprising a pair of opposed supporting elements adapted to be rigidly mounted apart a fixed distance greater than the length of said roll and to intersect a common horizontal axis spaced from said wall surface, a hinge element secured to the first of said supporting elements and defining a hinge axis slanting upwardly toward said wall surface over said horizontal axis and lying in a plane perpendicular to said horizontal axis, said hinge element normally lying across said horizontal axis against said first supporting element between it and the second supporting element, a roll-carrying spindle affixed adjacent one end to said hinge element and normally extending therefrom along said horizontal axis substantially to the second supporting element, said spindle being of magnetic material at the end portion thereof opposite said pivotal member, and magnetized receiving means on said second supporting element for supporting and releasably securing the magnetic end portion of said spindle when said spindle is in its normal position, whereby said spindle may be swung from its normal position upwardly and outwardly from said wall surface about said hinge axis and is aided by the force of gravity to return to and be held in said normal position.

2. A holder for rotatably mounting a roll of paper adjacent a wall surface comprising a pair of brackets adapted to extend rigidly from said wall surface, a pair of opposed supporting elements on the respective brackets mounted apart a fixed distance greater than the length of said roll and intersecting a common horizontal axis spaced from said wall surface, a hinge element secured to the first of said supporting elements defining a hinge axis slanting upwardly toward said wall surface over said horizontal axis and lying in a plane perpendicular to said horizontal axis, said hinge element normally lying across said horizontal axis against said first supporting element between it and the second supporting element, a roll-carrying spindle affixed adjacent one end to said hinge element and normally extending therefrom along said horizontal axis substantially to the second supporting element, said spindle being of magnetic material at the end portion thereof opposite said hinge element, and magnetized receiving means on said second supporting element for supporting and releasably securing the magnetic end portion of said spindle when said spindle is in its normal position, whereby said spindle may be swung from its normal position upwardly and outwardly from said wall surface about said hinge axis and is aided by the force of gravity to return to and be held in said normal position.

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