(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 210 144**
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: 86830212.6

(51) Int. Cl.⁴: **A47K 10/40**

(22) Date of filing: 17.07.86

(30) Priority: 23.07.85 IT 5361985 U
18.11.85 IT 5405285 U

(43) Date of publication of application:
28.01.87 Bulletin 87/05

(84) Designated Contracting States:
BE DE FR GB LU NL SE

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(54) Support for rolls of paper which can be separated into sheets.

(57) The support includes a mounting block (10) which carries a swinging bracket (12) for supporting a roll (R) of paper. The mounting block (10) has a rubbing surface (42) relative to which the roll (R) can be displaced owing to the fact that the arms (16) of the bracket (12) are able to swing.

The strip (N) is unwound from the opposite side of the roll (R) in relation to the rubbing surface (42). A pulling force exerted on the un wound part of the strip (N) in a direction such as to keep the roll (R) against the rubbing surface (42) produces in the arms (16) a self-locking torque in order to press the roll (R) against the rubbing surface (42) with increasing firmness as the pulling force becomes greater.

Preferably the bracket (12) can be detached from the mounting block (10) to be rested on a horizontal surface with the axis of the roll (R) oriented vertically.

FIG. 1

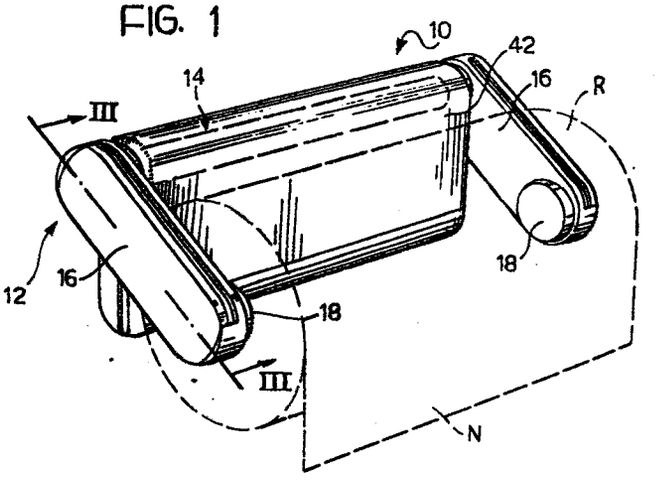

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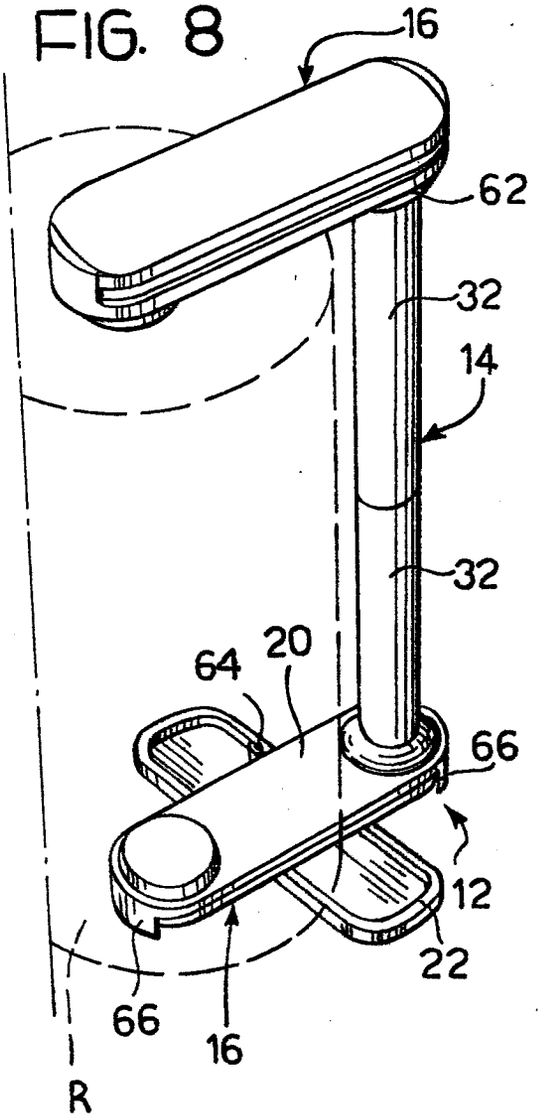
FIG. 8



Support for rolls of paper which can be separated into sheets

The present invention relates to a support for rolls of paper strips (for example multi-purpose paper or toilet paper) which can be separated into sheets by tearing the strip along transverse lines of weakness, comprising a U-shaped bracket with two arms interconnected by a crosspiece and each provided with a pin which is engageable in one of the ends of the roll core, and means for retaining the bracket.

The supports of this type, as well as the rolls of paper intended for them, are well known. Examples thereof are disclosed by the documents DE-B-1 301 030 and CH-A-437 690.

A common type of support merely comprises a crosspiece with which the two arms are rigid or hinged. The crosspiece is provided, on its rear, with a bi-adhesive strip for fixing it to a vertical wall and also has holes through which any fixing screws can pass.

In order to detach one or more sheets from a roll mounted on a support of this type, it is necessary to use both hands. One hand must hold the roll firmly, while the other hand pulls the sheet to be detached or the sheet of the series which is closest to the roll.

There are many situations in which anyone wishing to remove a sheet has one hand already occupied and has to resort to complicated manoeuvres in order to proceed with the removal of the sheet.

The aim of the invention is to provide a support of the type under consideration which makes it possible to detach a sheet or a series of sheets using only one hand.

According to the invention, this aim is achieved by means of a support of the abovementioned type, characterized in that the means for retaining the bracket comprise a mounting block in which the crosspiece of the bracket is mounted rotatably in the manner of a spindle so as to allow the arms and the roll to swing angularly in unison about an axis parallel to that of the roll, and in that the mounting block has a rubbing surface relative to which the roll can be displaced owing to the fact that the arms are able to swing, the support being intended to receive the roll so that the strip is unwound on the opposite side of the roll in relation to the rubbing surface, the arrangement being such that a pulling force exerted on the unwound part of the strip in a direction such as to keep the roll against the rubbing surface produces in the arms a self-locking torque in order to press the roll against the rubbing surface with increasing firmness as the pulling force becomes greater.

As a result of this proposed solution, it is possible to detach from the roll a sheet or a series of sheets using the following sequence.

The end of the strip is gripped, using only one hand if necessary, and is pulled in a direction so as to separate the roll from the rubbing surface, until the length of strip equivalent to the sheet or to the series of sheets to be removed is unwound.

Then, still using only one hand if necessary, the pulling direction is changed so as to press the roll against the rubbing surface. A self-locking torque is thereby created in the arms, as a result of which the roll is locked against the rubbing surface, and tearing is then performed along the line of weakness. When it is desired to remove a single sheet, the grip on the strip must not be released when the pulling direction is changed. When, on the other hand, it is desired to remove a series of sheets, it is advisable to grip, during the second operation, the sheet closest to the line of weakness which is to be torn.

The document US-A-2 834 557 discloses a horizontal plate with a swingable bracket which supports a paper roll. The paper roll rests with friction on the plate. Friction between the roll and the plate has the effect of braking the rotation of the roll when the paper is being pulled. This device, however, does not allow to obtain the purpose of the invention because it does not permit to pull the paper in an obliquous direction with respect to the plate.

Also known are table supports for rolls which comprise a base provided with an upright L-shaped strut. In these supports the roll is rotatably mounted between the base and the upper arm, by means of which it is maintained with its axis vertical.

There are situations in which it would be desirable to have available a versatile support which could be readily transformed from a wall-mounted unit to a table unit. A situation of this type may be one in which the roll needs to be transported from the wall on which it is hanging to a luncheon table in order to use the sheets as napkins.

A preferred embodiment of the support according to the invention is capable of being subjected to this type of transformation and also possesses the above-mentioned "self-locking" feature.

In this preferred embodiment the support is charachterized in that the mounting block has a socket inside which the crosspiece of the bracket can be supported horizontally in a detachable manner so as to allow the removal of the strip from the top downwards, and in that at least one of the arms of the bracket is shaped in such a way as to form a

base for resting, on a horizontal surface, the bracket separated from the mounting block, with the axis of the roll oriented vertically so as to allow the strip to be removed from the roll in the horizontal direction.

As a result of this proposed solution, a support according to the invention represents a device with a dual use in the sense that the bracket with its roll can be transferred from the wall mounting block to a table or another supporting surface, and viceversa, without the need for handling the roll alone. The mounting block, moreover, constitutes the element which is used to store away the bracket, or the table support, which, when it is together with the mounting block, is hung up and does not take up space on a surface, shelf or other object.

Further characteristic features of the invention will become apparent from reading the detailed description which follows, reference being made to the attached drawings which are provided by way of a non-limiting example and in which:

Figure 1 is a perspective view of a wall-mounted support, with the roll shown as though it were transparent;

Figure 2 is a partially cut-away plan view of the support;

Figure 3 is a longitudinal section of only the bracket of the support, along the line III-III shown in Figure 1;

Figure 4 is a cross-section of the wall-mounted support, through the vertical plane IV-IV shown in Figure 2;

Figure 5 is a detailed section through the horizontal plane V-V shown in Figure 4;

Figure 6 is a section similar to that shown in Figure 4, but with the bracket disengaged from the mounting block of the support;

Figure 7 is a cross-section through the plane VII-VII shown in Figure 3;

Figure 8 is a perspective view of the bracket used as a table support, again with the roll shown as though it were transparent; and

Figure 9 is a partial and exploded perspective view of the bracket.

With reference to Figures 1 to 4, a support according to the invention comprises two separate parts, preferably made using pieces of moulded plastic material. One of these parts is a mounting block 10 intended to be fixed to a vertical wall P - (Figure 4), for example by means of a bi-adhesive strip or screws. The other part is a bracket 12.

The bracket 12 comprises a crosspiece 14 and a pair of arms 16. Each arm 16 has an elongated and flattened shape and has, on its side facing the other arm, a pin 18 in the form of an annular projection. The pins 18 are intended to engage, in a known manner, inside the tubular core of a roll R of multi-purpose paper.

Each of the arms 16 consists, for the purpose which will be explained more clearly below, of two parts in the form of flattened half-shells. The innermost part, indicated by 20, has the pin or boss 18. The outermost part, indicated by 22, is hinged in the middle of the innermost part 20 by means of an elastic button 24 (see Figures 7 and 9 also) snap-engaged in a corresponding tubular lug 26 of the innermost part 20.

When the support is mounted on a wall, as in Figure 4, the two half-shells 20 and 22 of each arm 16 are held together owing to the presence of mutually engaging shaped parts, such as, for example, (figure 7) a small tooth 28 on the half-shell 20, engaged in a corresponding impression 30 in the half-shell 22.

The crosspiece 14 is shaped like a spindle and has a tubular structure consisting (Figure 3) of a pair of aligned tubular sections 32. Each of these sections 32 is formed as one piece with the innermost half-shell 20 of the corresponding arm 16 or, in any case, rigidly fixed to this half-shell. The joining ends of these sections 32 are coupled to each other, towards the middle of the bracket 14, in sliding fashion and with radial play, all of which as indicated by 34 in Figure 3. The two sections 32 are pulled into a mutually abutting position by an internal helical tension spring 36. This system allows the arms 16 to be splayed in relation to each other, as indicated by broken lines 16a in Figure 3, so that a roll R can be mounted on the pins 18 and the core of a used roll removed from the pins themselves.

As can be seen in particular in Figures 4 and 6, the mounting block 10 has a box-like shape, elongated in the direction of the crosspiece or spindle 14, and consists of two half-boxes 38 and 40. The half-box 38 is provided with means for fixing it to the wall P, and the other half-box 40 has, amongst other things, a front surface 42, the function of which will be explained below.

Each half-box 38, 40 comprises lateral flanks, 44 and 46 respectively. Resilient lamellar side lugs 48 extend from the flanks 46 (Figures 4 and 5). Respective pins 50, which are engaged in corresponding blind holes 52 in the flanks 44, are formed as one piece with these lugs 48. In this way, the two half-boxes 38 and 40 are hinged at the bottom so that they can open freely at the top, as shown in Figure 6.

The half-box 42 has, at the top, a pair of resilient hook-shaped lugs 54 which engage in corresponding rectangular openings 56 in the top part of the half-box 38 so as to keep the two half-boxes 38, 40 coupled together, as shown in Figure 4.

Substantially semi-circular, corresponding cavities 58, 60 are formed in the two flanks 44, 46, respectively, of each half-box 38, 40 (Figures 4 and 6). As can be seen in Figure 4, these cavities 58, 56 define circular apertures when the two half-boxes 38 and 40 are coupled.

The tubular sections 32 of the crosspiece 14 are connected to the parts 20 of the arms 16 by respective cup-shaped end parts 62 (Figure 3).

As can be seen in Figure 4, the openings 58, 60 form a socket inside which the spindle or crosspiece 14 is mounted in rotating fashion by means of its tapered end parts 62. The rotational coupling obtained by means of the tapered parts 62 ensures good compensation of the play.

Thus, the entire bracket 12 and the roll R are able to swing in the direction of the double arrow F_1 (Figure 4).

When the support is used on a wall, as in Figure 4, the roll R is mounted so that the strip N forming it is unwound on the opposite side in relation to the rubbing surface 42, and is normally held by gravity a gainst this surface.

In order to remove a sheet from the roll R, the end of the strip N is pulled downwards in a direction such that the roll R is separated from the rubbing sur face 42; this is possible because the spindle 14 is mounted in the sockets 58, 60 in such a way that the arms 16 are able to swing. The strip is unwound until the line of weakness marked L_1, which defines the sheet to be removed, is more or less in the position shown in Figure 4 and a successive line of weakness is more or less in the position marked L_2, or "upstream" of the rubbing surface 42.

Subsequently, the roll R is brought back or allowed to return to the position shown in Figure 4 and a downwards pulling force is exerted on the sheet to be removed. This pulling force produces in the arms 16 a torque which tends to press the roll R against the rubbing surface 42 all the more firmly, the greater the pulling force. In this case it is sufficient to pull the sheet to be removed, with one hand only in order to produce the tear along the line L_1, whereas the next sheet, which has not been removed, remains attached to the strip owing to the fact that the next line of weak ness L_2 is located, as already mentioned, upstream of the surface 42.

If several attached sheets are to be removed, it is sufficient to continue the operation for the strip length required. In this case, in order to perform the tearing operation, the last sheet in the series, or the sheet defined by the line L_1, must be taken hold of , in order to avoid separating the removed sheets from each other.

The bracket 12 is suitable for use on a table, as shown in Figure 8. In order to use the bracket in this manner, assuming that it is together with the mounting block 10, the two half-boxes 44 and 46 are opened, as shown in Figure 6. In order to open them, the hook-shaped lugs 54 are disengaged from the openings 56 by means of external pressure. It is now possible to remove the crosspiece or spindle 14 from the mounting block 10, as indicated by the arrow F_2 in Figure 6.

Preferably, as already mentioned, each of the arms 16 is in two parts 20, 22. This allows either of the arms to be used indifferently as a resting base on a table, as shown in Figure 8, and has, moreover, the constructional advantage consisting of the similarity of the parts which make up the arms 16.

In order to use an arm 16 as a base (the bottom arm 16 in Figure 8), its outermost part 22 is turned through 90°, arranging it crosswise in relation to the innermost part 20. This rotation is obtained by apply ing a slight force in order to disengage the small tooth 28 (Figure 7) from the impression 30. The external part 22 arranged crosswise is held firmly in the crosswise position owing to the small tooth 28 which engages in another impression 64 (Figure 9).

A cross-shaped base for supporting the bracket on a horizontal surface, such as that of a table, is thus obtained, without the need for other means.

In order for the cross-shaped base to be correctly supported on the surface, the innermost part of the arm or of each arm 16 has, at its ends, projections 66 which, when the outermost part 22 is arranged crosswise, rest on the surface together with the external or bottom face of the latter.

Thus, in the configuration shown in Figure 8, the bracket 14 may be used advantageously on a dining table or other supporting surface in order to remove napkins horizontally from the roll R.

In order to use the bracket 12 in its wall mounting-block again, the crosspiece 14 is fixed in the mounting block 10 again, and the two half-boxes 38, 42 are closed up again. When closed, locking is performed by simply pressing the half-box 42, this causing the hook-shaped lugs 54 to snap-engage again inside the openings 56.

In a modification, not shown, it is foreseen to provide a base separate from the bracket and to be used as a support on a horizontal surface. This base has a recess for removably receiving the bracket arm which is to be used as a foot to indirectly support the bracket in a stable manner with the axis of the roll oriented vertically.

Claims

1. Support for rolls (R) of paper strips which can be separated into sheets by tearing the strip - (N) along transverse lines of weakness, comprising a U-shaped bracket (12) with two arms (16) interconnected by a crosspiece (14) and each provided with a pin (18) which is engageable in one of the ends of the roll core, and means (10) for retaining the bracket, characterized in that the means for retaining the bracket (12) comprise a mounting block (10) in which the crosspiece (14) of the bracket (12) is mounted rotatably in the manner of a spindle so as to allow the arms (16) and the roll - (R) to swing angularly in unison about an axis parallel to that of the roll, and in that the mounting block (10) has a rubb ing surface (42) relative to which the roll can be displa ced owing to the fact that the arms (16) are able to swing, the support being intended to receive the roll (R) so that the strip (N), is unwound from the opposite side of the roll in relation to the rubbing surface (42), the arrangement being such that a pulling force exerted on the unwound part of the strip in a direction such as to keep the roll (R) against the rubbing surfa ce (42) produces in the arms (16) a self-locking torque in order to press the roll against the rubbing surface with increasing firmness as the pulling force becomes greater.

2. Support for rolls according to claim 1, characterized in that the mounting block (10) is provided with means for fixing it to a vertical wall in such a way that the rubbing surface (42) is substantially vertical and the said axes are horizontal, so as to allow the strip to be removed from the roll in the horizontal direction.

3. Support for rolls according to claim 2, characterized in that the mounting block (10) has a socket (58, 60) inside which the crosspiece (14) of the bracket (12) is supported horizontally in a detachable manner so as to allow the removal of the strip (N) from the top downwards, and in that at least one of the arms (16) of the bracket (12) is shaped in such a way as to form a base for resting, on a horizontal surface, the bracket (12) separated from the mounting block (10), with the axis of the roll (R) oriented vertically so as to allow the strip to be removed from the roll in the horizontal direction.

4. Support for rolls according to claim 3, characterized in that at least one of the arms (16) of the bracket (12) consists of two parts hinged together in the middle, a first (20) innermost one of which is fixed to the crosspiece (14) and has the associated pin (18) for supporting the roll (R) and the second one of which (22) can be oriented crosswise in relation to the previous one so as to form a cross-shaped base for supporting the bracket (12) on a horizontal surface, the first part (20) of the arm - (16) having end projections (66) for supporting it on the surface together with the external face of the second part (22) when the latter is arranged crosswise.

5. Support for rolls according to claim 3, characterized in that it includes a base separate from the bracket and to be used as a support on a horizontal surface, said base having a recess for removably receiving the bracket arm which is to be used as a foot to indirectly support the bracket in a stable manner with the axis of the roll oriented vertically.

6. Support for rolls according to any of claims 2 to 5, characterized in that the mounting block - (10) has a box-like shape consisting of two half-boxes (38, 40) hinged together at the bottom so that they can open freely at the top, one (38) of which is provided with means for fixing it to the wall (P) and the other (40) of which has the front rubbing surface (42), the two half-boxes provided with mutually hooking means (54, 56) which can be unhooked so as to keep them coupled, and in that the two half-boxes have flanks (44, 46) in which there are substantially semi-circular cavities (58, 60) which, when the half-boxes are coupled, define circular openings forming the socket for the crosspiece (14), the cross piece being removable when the half-boxes are freely open.

7. Support for rolls according to claim 6, characterized in that the crosspiece (14) of the bracket (12) has tapered revolving end parts (62), which are connected to the arms (16) and converge towards each other, for adapting the crosspiece (14) to the diameter of the circular openings (58, 60) in the mounting block (10).

8. Support for rolls according to any one of the preceding claims, characterized in that the crosspiece (14) of the bracket (12) consists of a pair of aligned tubular sections (32), each of which is ridigly fixed to one of the arms (16) and the joining ends of which are coupled together in sliding fashion and with radial play, and in that the tubular sections (32) are pulled into a mutually abutting position by an internal tension spring (36) so as to permit mutual splaying of the arms (16) so that a roll (R) can be mounted on the pins (18) and the core of a used roll removed from the pins.

FIG. 1

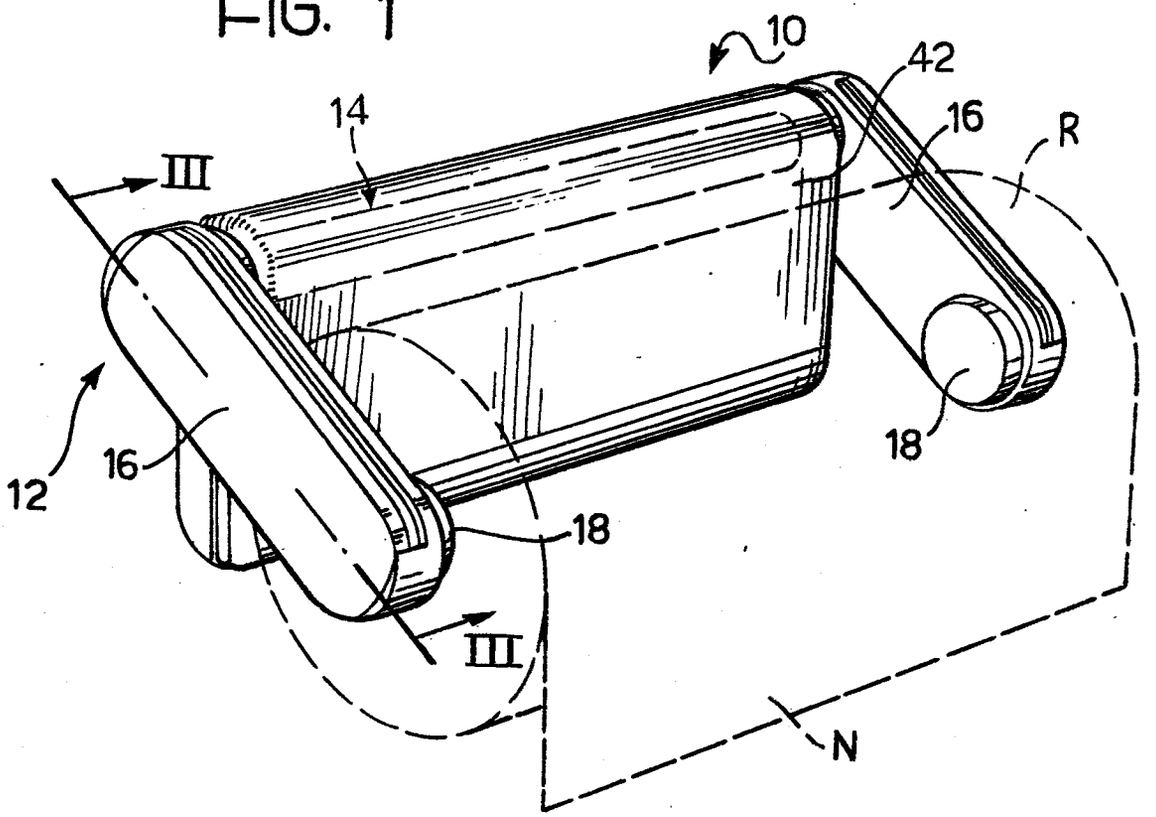

10
42
14
16
R
III
12
16
18
18
III
N

FIG. 2

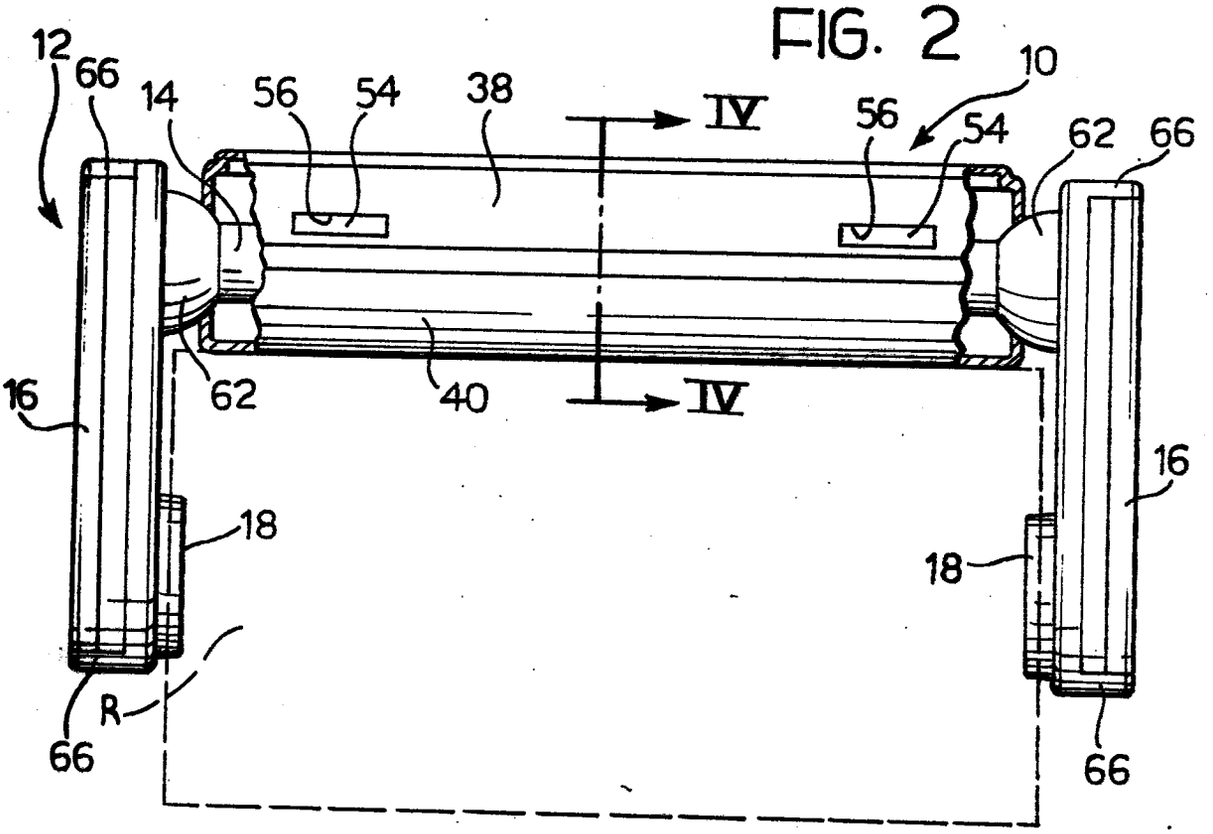

12
66
14
56
54
38
IV
56
10
54
62
66
16
62
40
IV
16
18
18
16
R
66
66

FIG. 4

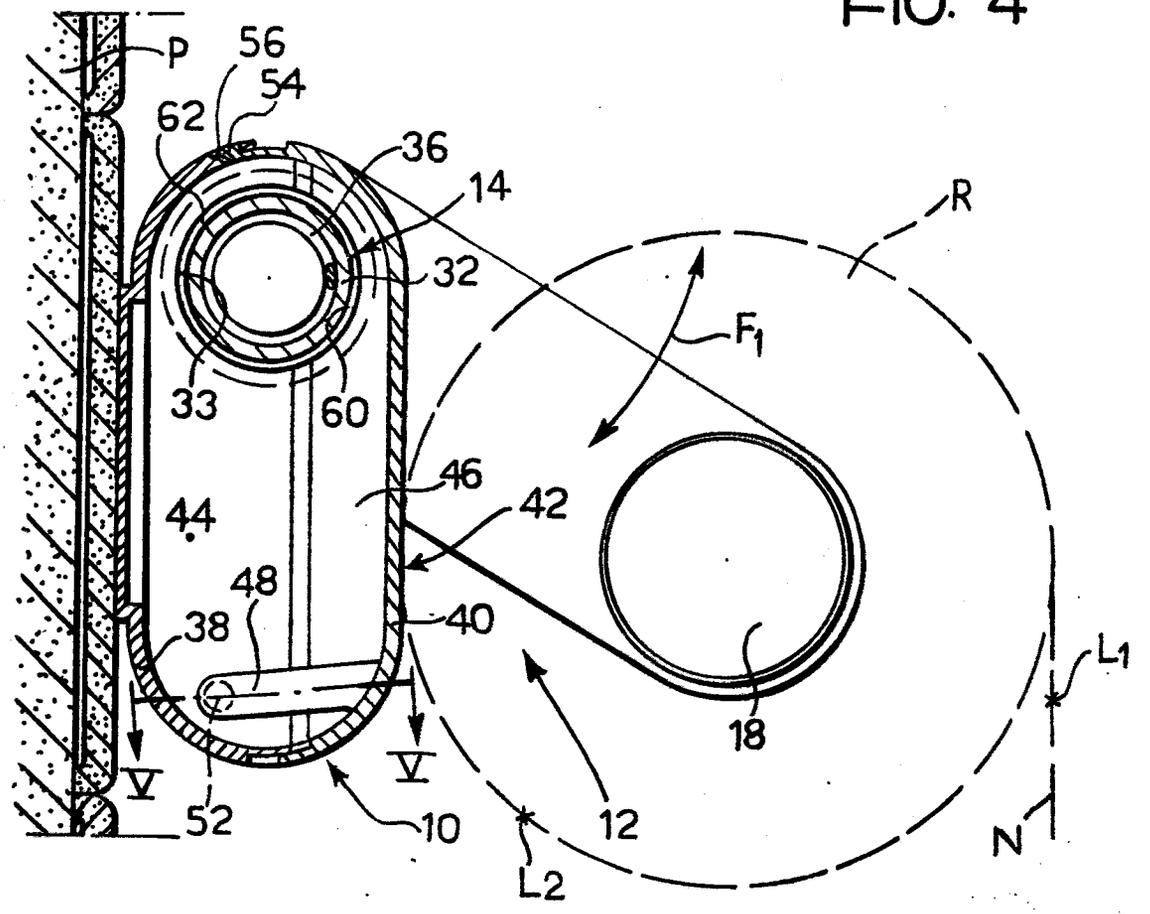


FIG. 6

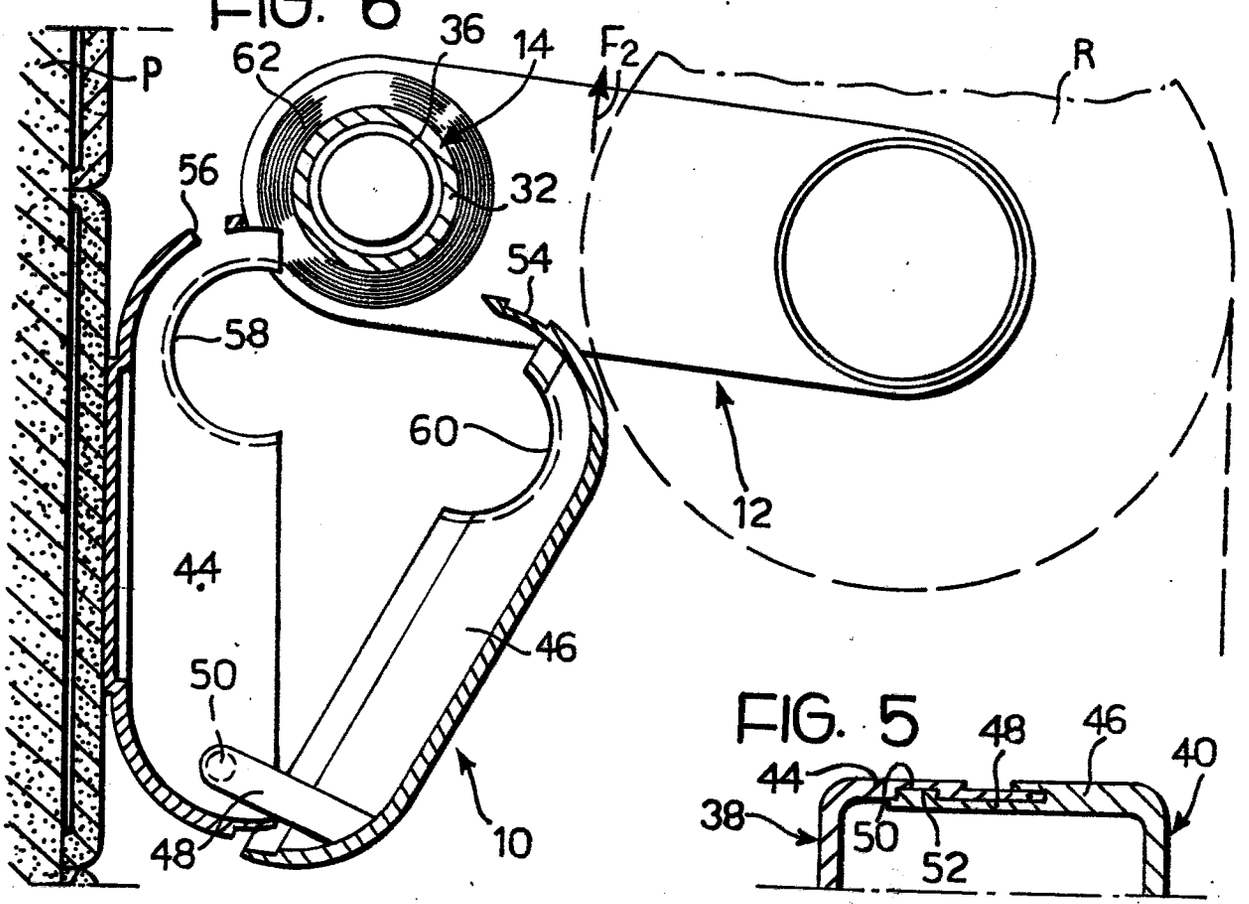


FIG. 5

FIG. 8

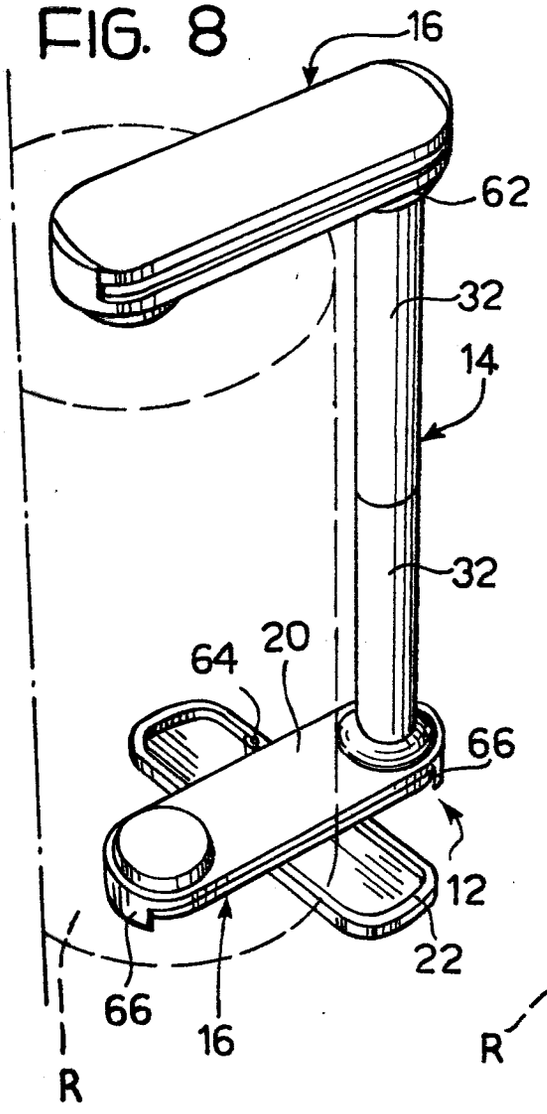


FIG. 3

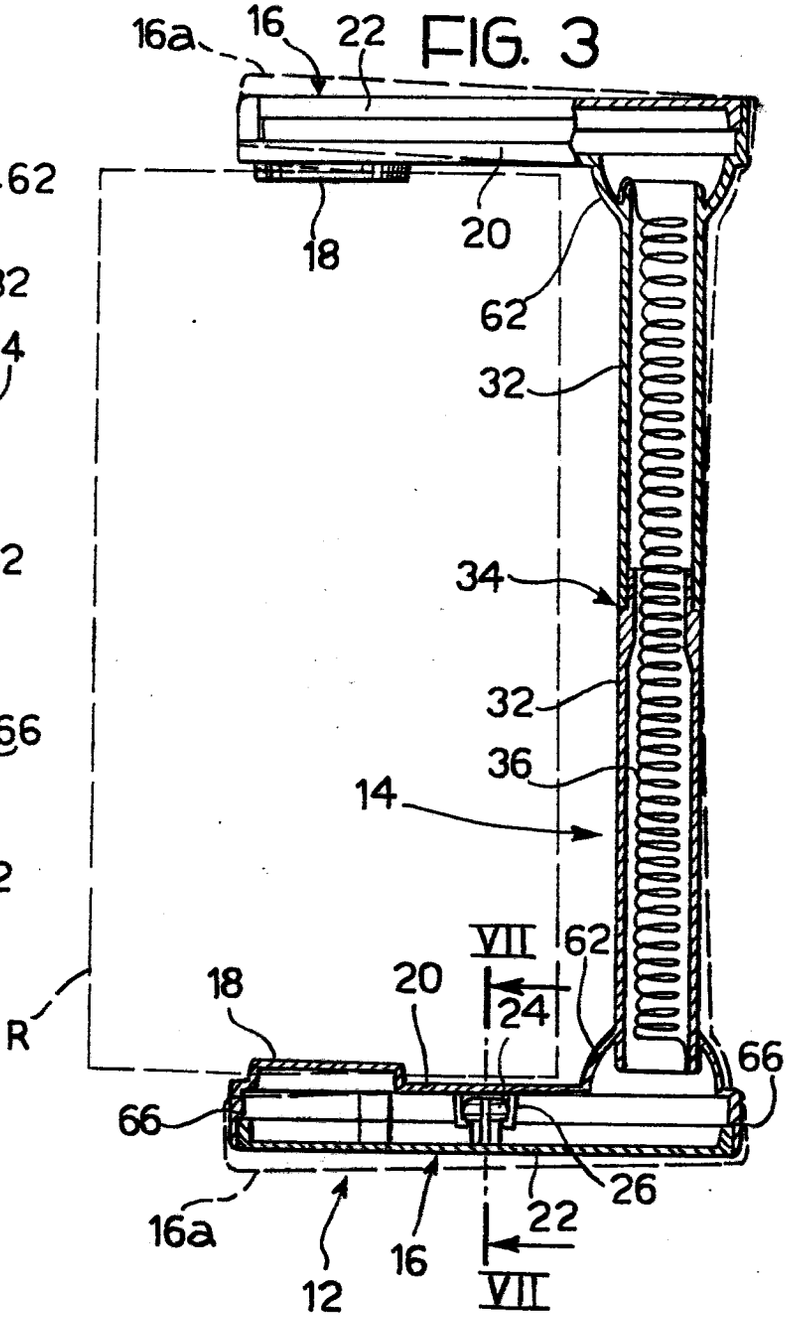


FIG. 9

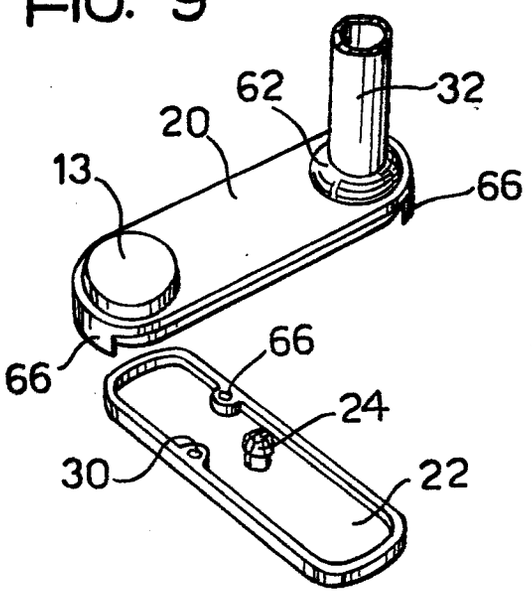


FIG. 7