

Dec. 23, 1969

W. OTT
DECORATIVE WASHER

3,485,134

Filed Feb. 20, 1968

2 Sheets-Sheet 1

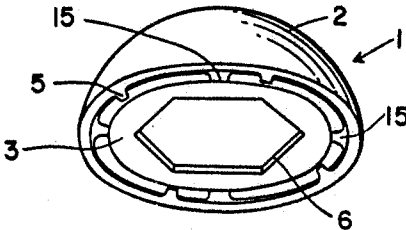


Fig. 1

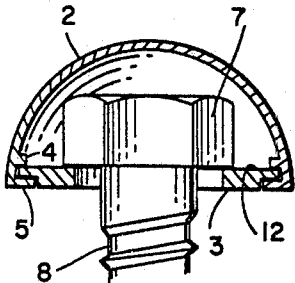


Fig. 3

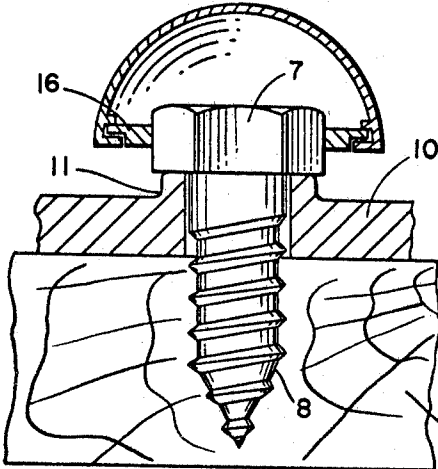


Fig. 2

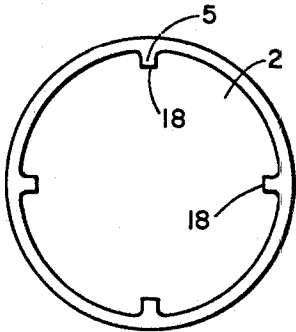


Fig. 4

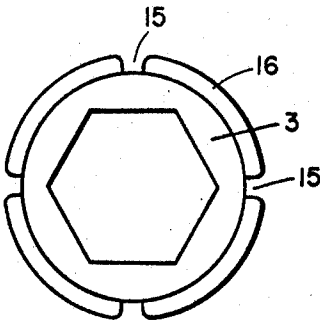


Fig. 5

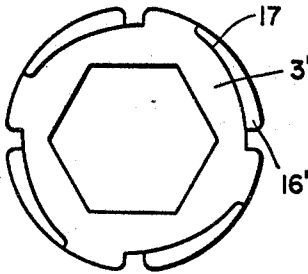


Fig. 6

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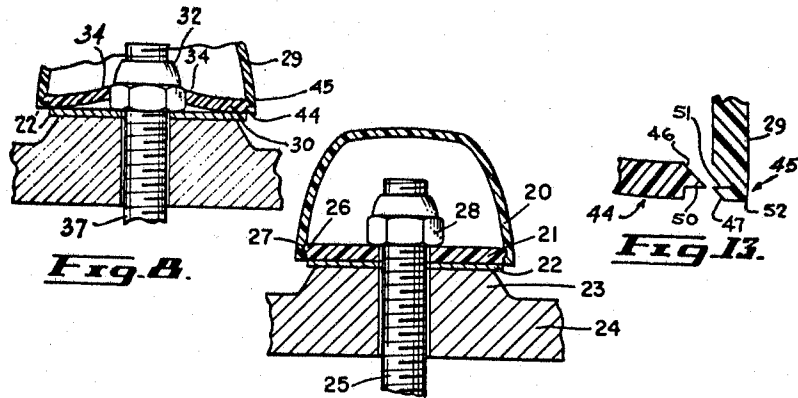


Fig. 7

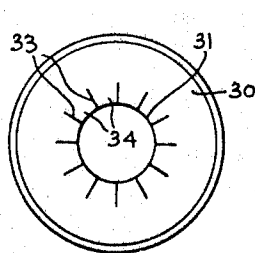


Fig. 9.

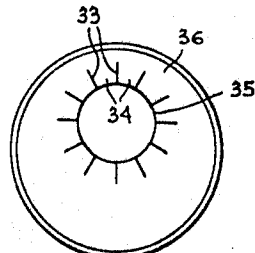


Fig. 10.

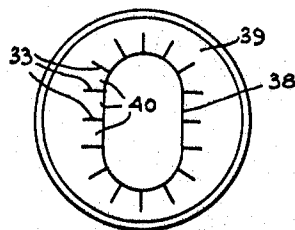


Fig. II.

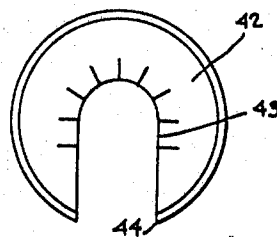


Fig. 12.

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DECORATIVE WASHER

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5 Claims

ABSTRACT OF THE DISCLOSURE

A dismountable cover to be placed over a fastening member is described which consists of an attaching disc of resilient material and a cap of resilient material detachably joined to the disc. A hole is defined in the disc for receiving part of the fastening and is formed with generally radical cuts extending therefrom so that the whole assembly can be pressed over the fastening by resilient deformation of the material of the disc. When desired, the cap and disc may be separated from one another.

This invention relates to improvements in covers for bolts, nuts, screws and other fastening members which are unsightly in the situation in which they are used.

More particularly the invention relates to a cover which can be placed rapidly but which may be easily removed, and is effectively held in position while in use.

This type of cover is widely employed in fixtures such as baths, washbasins and toilets, in which the fixture must be securely anchored, but in which the fastening must be unseen, or blend, for best effect.

In the past such covers have been placed over their respective bolt, usually by glueing, in such a way that they are difficult to remove if at any time servicing of the bolt is required.

Bolt covers have also been made of metal and provided with ears or tabs which may be bent into position to embrace the bolt head. These have been unsatisfactory since removal of the decorative cover generally leads to breaking of the tabs. A similar replacement is unlikely to be on hand at such time so that glueing or removal and replacement of all the bolt covers which are visible in any particular area in order to maintain uniformity of appearance are the only solutions.

Other bolt covers have been designed specifically for cooperation with individual bolt heads manufactured in certain specific ways so that the cover screws onto or otherwise lockingly engages the bolt. This is again unsatisfactory since during repairs it may be necessary to replace the bolt and the replacement is unlikely to be specifically designed.

In following the teaching of the present invention, a bolt cover is provided which is rapidly assembled on any hexagonal or rectangular bolt head or other fastening member and which can be disassembled quickly for inspection or removal from the fastening without damage to the decorative washer.

More particularly in accordance with the invention there is provided a dismountable two piece cover for a fastening which comprises a cap of resilient material, and an attaching disc of resilient material, means detachably joining said cap and said disc together as a unit, and a hole defined in said disc for receiving part of said fastening for attaching the cover thereto, said hole being shaped for passing by resilient deformation distortion of said material over said fastening and gripping the part of said fastening.

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Embodiments of the invention will now be described with reference to the accompanying drawings in which:

FIGURE 1 shows a perspective view from below of a cover made in accordance with the teaching of the invention,

FIGURE 2 shows a side sectional elevation of a bolt onto which the cover of FIGURE 1 is sliding,

FIGURE 3 shows a side sectional elevation of the cover in place on a bolt head,

FIGURE 4 shows a plan view from below of the cap portion of the cover,

FIGURES 5 and 6 show two embodiments of an engaging disc, and

FIGURE 7 shows a further embodiment of a cover with another means of attachment to its disc,

FIGURE 8 shows a side view partly in section of another embodiment of the invention in position on a fastening nut,

FIGURE 9 shows a plan view of a disc of the type illustrated in FIGURE 8,

FIGURE 10 shows an alternative embodiment of the disc of FIGURE 8,

FIGURE 11 shows a further embodiment of the disc of FIG. 8,

FIGURE 12 shows a yet further embodiment of a disc of the type shown in FIGURE 8, and

FIGURE 13 shows in greater detail part of FIGURE 8.

With reference now to FIGURE 1, the cover 1 includes a cap 2 and attaching disc 3. The disc can be received against stop 4 (FIGURE 3) in the base of the cap 2 and is embraced by the tabs 5 on the cap. The attaching disc 3 is pierced by a hole 6 shaped to fit the type of bolt head 7 with which the cover will cooperate. In the instance shown the bolt head 7 is hexagonal but, if intended to be used with rectangular heads, hole 6 would be rectangular.

In FIGURE 2 is a lag bolt 8 screwed into support 9 against which it is holding a portion 10 of a fixture with raised land 11.

The cover 1 is then grasped and placed over the head 7 of bolt 8, so that the hole 6 in the disc 5 is distorted by the head, and forced onto and down the head (as in FIGURE 2) until it takes up the position of FIGURE 3. For the most secure fastening of disc 5 it is preferable that the land 11 be overlapped by the bolt head 7 so that the lips 12 of the hole cooperate with the underside of the head. However the edges of the hole 6 will grip the head 7 firmly and for most purposes even if the disc remains on the bolt head it will be sufficiently tightly held. The material of which the attaching disc 3 is made should be both tough and resilient, such as nylon, polyethylene, polytetrafluorethylene or polypropylene as examples.

The surface colour and texture of cap 2 is suitably chosen to resemble that of the adjacent part 10 of the fixture or to harmonize with it.

The bolt 8 is thus hidden by an aesthetically appealing cover which can be selected for the particular design of fixture concerned.

When the cover must be removed for servicing the bolt, it is merely necessary to grasp the cap 2, and rotate it with respect to the attaching disc 3 so that the tabs 5 are aligned with the slots 15 of the disc (FIGURES 1 and 5). The cap can then be lifted off. The disc 3 can be removed from the bolt either after the bolt has been removed or by prying it off with, for example, a screwdriver. As shown in FIGURES 2, 3, and 5, the disc 3 is provided with relieved shoulder 16 against which the tabs 5 en-

gage. This shoulder 16 may however be of the same thickness as the disc 3 itself if so desired.

In FIGURE 6 a second embodiment of the disc 3' is shown where the shoulder 16' has a cam faced edge 17 rising from it. In this case the tips 18 of tabs 5 will press against the cam surface as the cap is placed on disc 3' and rotated with respect to it. This structure ensures a more positive locking of cap 2 on disc 3'.

By providing the cover 1 as a single unit of cap and attaching disc, which only need be separated when the cover must be removed from a bolt it is protecting, a very conveniently applied device has been provided. It will be understood that although the cover has been shown cooperating with a bolt head it may equally well be constructed to cooperate with a nut, screw, bolt or nail of whatever shape may be desired. The cap need not be hemispherical as shown but may be varied and ornamented to suit the situation.

In FIGURE 7 another embodiment of the invention has a cap 20 which engages a disc 21. The disc 21 is held against a washer 22 which in turn presses on land 23 of a fixture 24. The lower part of the bolt 25 is now shown. The disc 21 includes a ridge 26 which runs around its perimeter and engages in a groove 27 formed in and running around the inside of cap 20.

This disc 21 as shown, is mounted under nut 28 by first separating cap 20 from it. After tightening the nut 28 the cap is pushed onto the disc and ridge 26 falls into groove 27. The cap can be removed for servicing the nut at any time merely by grasping it firmly and lifting.

The arrangement of FIGURE 7 may be modified as described for the discs 3 and 3' so that disc 21 is pierced with a nut or bolt head receiving opening. The assembly can then be put onto the head of a fastening member without separating disc 21 and cap 20 in the manner described for the device of FIGURES 1, 2 and 3. The cap and disc may subsequently be separated for servicing as explained above.

In another embodiment of the invention, the disc takes the form as shown at 30 in FIGURES 8 and 9. The disc is formed with a hole 31 whose diameter is smaller than the width of the faces of the nut or bolt head 32 with which it is to cooperate. Cuts 33 are formed in the material of the disc terminating at the hole 31 and extending for a short distance towards the outer periphery of the disc. In a typical case where the nut or bolt head is hexagonal (as is conventional) the disc would be formed with twelve cuts 33. When the cap and disc assembly is to be placed over the nut 32 as shown in FIGURE 8, it is forced down, and the sections 34 between the cuts 33 are pushed up in the manner shown in FIGURE 8 allowing the whole assembly to be pushed onto the nut 32 with ease and with an effort determined principally by the thickness of the disc 30 and the resilience of the material of which it is formed. The disc is forced down until it contacts the washer 22' (c.f. FIGURE 7), but any attempt to remove the assembly will cause the sections 34 to be pressed more tightly into contact with the nut 32 and therefore to provide a positive locking action preventing withdrawal.

In instances where it is desired to have some control over the lateral position of the assembly, the hole 31 can usefully be offset as shown at 35 in FIGURE 10. When the assembly of disc 36 and cap 29 are pushed on to the nut 32, the sections 34 between cuts 33 behave exactly as shown in the embodiment of FIGURE 9.

A further embodiment shown in FIGURE 11 has an elongated hole 38 defined in the disc 39 again with cuts 33. The embodiment allows the assembly to be offset with respect to the nut or positioned centrally if desired. The sections 40 between the cuts 33 behave in their locking action in the same way as the parts 34 of FIGURES 9 and 10.

In FIGURE 12 yet a further embodiment is shown with a disc 42 having an elongated hole 43 defined in it termi-

nating at the perimeter of the disc 44. This arrangement allows the assembly of cap 29 and disc 42 to be forced on to the nut 32 in the manner described before, but also allows the alternative of inserting the disc 42 beneath a nut or bolt head such as shown in FIGURE 2 by sliding the disc 42 under the head. The cap 29 can then subsequently be snapped over the disc 42.

It will be understood that in all the embodiments should the worker or artisan installing the apparatus so desire, the assembly of disc and cap can first be separated and the discs such as 30, 36, 39 or 42 used as a simple washer by placing under the bolt, or on the shaft 37 before affixing the nut 32. This is made possible by the fact that widths of holes 31, 35, 38 or 43 are smaller than the minimum widths of the nut 32 or bolt head. In such a case, the washer 22' (FIGURE 8) might well be dispensed with. The cap 29 is placed on the disc after tightening the nut 32.

It will thus be seen that the devices in accordance with the invention allow for a great multiplicity of methods of assembly. They can be used with new work by forming part of the complete installation and allowing the use of fewer parts, such as by dispensing with the washer 22', or alternatively, can be installed on apparatus already in place by pressing onto the nut or bolt head concerned. In some embodiments the disc may be entered under the head of the fastening and in other embodiments for lateral orientation of the disc is permitted, allowing the cover to give the most pleasing aesthetic effect or best mechanical positioning.

In their locking action the sections 34 or 40 tightly attach the appropriate disc onto the bolt or nut 32, but the use of a lever such as a screwdriver can readily remove cap 29 by separation at the edge 44 and 45.

Reference to FIGURE 13 shows a particularly satisfactory interlocking arrangement between disc and cap in that the disc carries a chamfered edge 46 which cooperates with an inclined edge 47 on the cap 29 as the assembly is pressed together. The lips 50 and 51 cooperate when the assembly is joined together to prevent removal except when a lever is placed under the edge 52.

Furthermore by providing the discs 30, 36, 39 and 42 with a multiplicity of cuts 33 they can readily accommodate 4- or 6-sided, round or other uniformly shaped fastening heads.

I claim:

1. A dismountable two piece cover for a fastening which comprises a dome-shaped cap of resilient plastic material being open at its base, and a one-piece, substantially planar attaching disc of resilient plastic material received within the open end of said cap, interengaging means on said cap and said disc detachably joining said cap and said disc together as a unit, and a hole defined in said disc for receiving part of said fastening for attaching the cover thereto, said hole being shaped for passing by resilient deformation distortion of said material over said fastening and gripping the part of said fastening, said disc including generally radial cuts passing through the entire thickness of said disc terminating at said hole and extending into the material of the disc towards the perimeter of said disc, said cuts defining sections of said disc therebetween resiliently deflectable when said assembly is forced down over said fastening and providing the means for gripping the said part of said fastening.

2. Apparatus as defined in claim 1 the periphery of said disc including a chamfered edge, a second chamfered edge on said cap for cooperation with said first chamfered edge upon mutual assembly of said cap and disc.

3. A cover as defined in claim 1 said hole being offset from the center of said disc.

4. A cover as defined in claim 1 said hole being elongated and extending laterally of said disc.

5. A cover as defined in claim 3 said hole extending

laterally of said disc and terminating at one edge of said disc.

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