June 5, 1934. D. I. REITER 1,962,035

FASTENER POST

Filed Feb. 6, 1933

Fig: 1

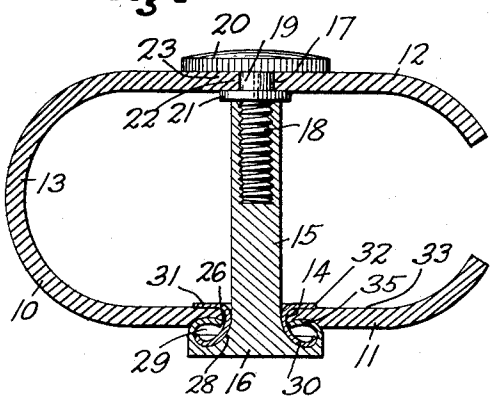


Fig: 3

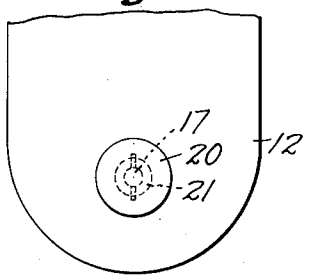


Fig: 4

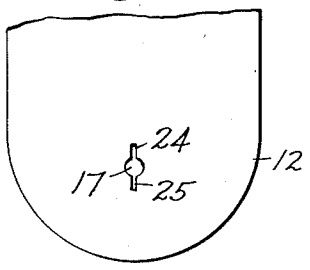


Fig: 2

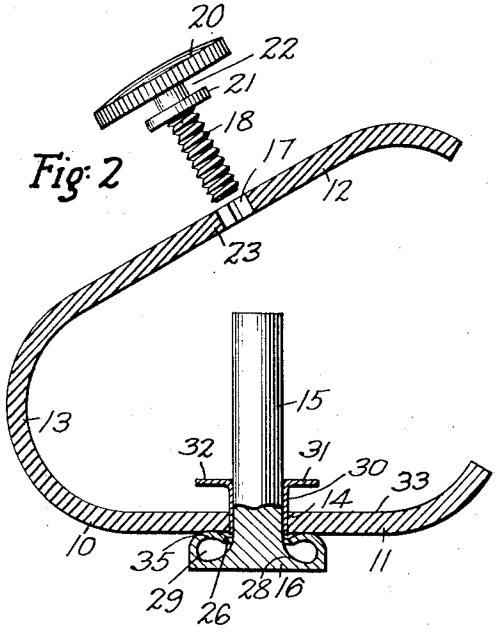


Fig: 5

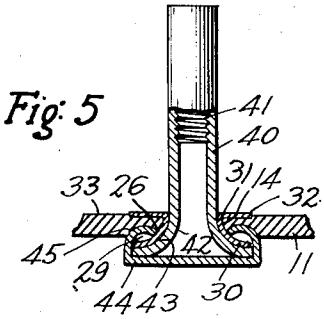
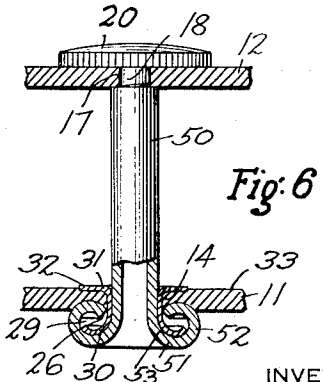


Fig: 6



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FASTENER POST

Daniel I. Reiter, New York, N. Y.

Application February 6, 1933, Serial No. 655,306

12 Claims. (Cl. 129—23)

This invention relates to screw post fasteners and particularly, to that type adapted to be attached to another article such as a key case or a loose leaf book for the purpose of removably supporting apertured keys or sheets.

My invention contemplates the provision of a fastener post adapted to be permanently secured to its support, whereby the danger of the post becoming detached from the support and lost is avoided, and the post remains in its proper position at all times, ready to receive its cooperating fastener member.

My invention further contemplates the provision of means for attaching the cooperating screw member of the fastener to the opposed support therefor in such a manner as to decrease the possibility of loss thereof.

My invention further contemplates the provision of a fastener of the post type adapted to be economically manufactured in large quantities, which is simple and inexpensive to construct and to be inserted in place or attached to a support.

The various objects of my invention will be clear from the description which follows, and from the drawing, in which,

Fig. 1 is a vertical section of one form of my improved fastener as it appears in its operative position secured to a suitable support.

Fig. 2 is a similar view of the same, showing the parts, however, in their disassembled or unsecured positions.

Fig. 3 is a top plan view of the screw as it appears inserted into place in a flexible support such as a leather sheet.

Fig. 4 is a similar view of the flexible support showing the slot provided therein for the reception of the screw.

Fig. 5 is a vertical section of a modified form of my improved fastener as it appears in its operative or assembled position.

Fig. 6 is a similar view of a modified form of the post as it appears when secured in place.

In the practical embodiment of my invention illustrated in Figs. 1 to 4 inclusive, I have shown the preferably flexible support sheet 10 which may be a book cover, a leather key case, or the like, provided with the post support portion 11 and the screw support 12. The lower support portion 11 and the upper support portion 12 are joined integrally or otherwise, as may be found convenient or desirable, by means of the hinged portion 13, which may be in the form of a separate hinge, if desired, as is well known in the art. An aperture as 14 is preferably made in the portion 11 for the passage of the shank 15 of the post, the head 16 being of sufficient diameter to prevent its passage through said aperture. Similarly, an aperture as 17 is made in the upper portion 12 for the passage of the externally threaded shank 18 of the headed screw 19, the head 20 of which limits the extent to which the screw passes through said aperture.

If desired and as illustrated, particularly in connection with flexible supports such as leather key cases, a flange as 21 may be formed on the screw shank 18, parallel to the bottom of the head 20, and spaced below said bottom a distance substantially equal to the thickness of the flexible sheet portion 12. Said flange 21 is preferably of greater diameter than the aperture 17 and consequently of greater diameter than the shank 18. It will thus be seen that an annular groove as 22 is provided between the head 20 and the flange 21 for the reception of the annular portion 23 surrounding the aperture 17 of the sheet 12.

As is best illustrated in Fig. 4, a pair of preferably opposed radial slots or slits as 24 and 25 communicate with the aperture 17 in those cases where the sheet 12 is made of flexible material such as leather, imitation leather, fabric or other suitable material, used for example in key cases. It will be seen that the screw 19 may be readily and quickly attached to the sheet 12 so that while forcibly removable from said sheet, there is little danger of the screw falling off or otherwise becoming accidentally detached from the support.

It will further be seen that the flange 21, though of greater diameter than the aperture 17, may be forced through said aperture, the flexible material surrounding the aperture yielding to permit the passage of the flange, and that as the flange reaches the under surface of the support, the material 23 surrounding the aperture 17 arranges itself automatically in the groove 22 to hold the screw 19 against removal therefrom.

It will further be understood that if desired, and as illustrated in Fig. 6, the flange 21 may be completely omitted, in which case the slots 24 and 25 or equivalent slots or slits are similarly dispensed with.

The post 15 of Figs. 1 and 2 is designed for economical production in large quantities, as for example, by screw machines, and is preferably made of a single piece of material, being internally threaded to receive the screw shank 18. The head 16 is formed with a thinned rim 35, bent inwardly towards the shank of the post to provide an annular space as 26 between the peripheral edge of the rim and the integral flared anvil surface 28, which joins the shank of the post to its

head. To provide the space 26, the rim 35 is first made in cylindrical form and arranged coaxially with the post, being of substantially the outermost diameter of the head 16. Thereafter, said rim is bent downwardly and inwardly toward the bottom of the shank of the post the required distance. Such bending of the rim provides the anvil space 29 below the entrance space 26 and between the rim 35 and the anvil surface 28 for the reception of the tubular eyelet portion 30 of the grommet 31, as will soon be explained in detail. Said grommet is provided with the annular flange 32 which is adapted to be pressed into firm contact and in the case where flexible material is used, slightly into the upper surface 33 of the lower support portion 11.

To secure the post 15 in place, said post is first passed upwardly through the aperture 14 until the rim 35 of the head contacts with the support. The grommet 31 is now slipped over the post into the position shown in Fig. 2.

On pressing the flange 32 of the grommet and the head 16 of the post together, the tubular eyelet portion 30 is spread and expanded by the flared anvil portion 28 of the post and following the curve of said portion, enters the space 29 and locks the grommet, the support, and the post together in the assembled positions thereof shown in Fig. 1. The screw shank 18 may now be inserted through the aperture 17 into the internally threaded upper portion of the post to assemble the parts in their operative positions.

In that form of my invention shown in Fig. 5, the post 40 is of tubular or hollow rod-like form internally threaded at its upper end as at 41. The lower end 42 of the post 40 is, however, expanded, spread or flared to provide the outer anvil surface 43, whereby the grommet 31 may be expanded and locked when the parts are pressed together. In this form of my invention, a separate cap as 44, preferably formed of sheet material, is provided with the inwardly bent rim 45 and may be first secured to the post 40 to provide the grommet receiving entrance 26 to the space 29. The post, in this case, is made of two pieces, both of comparatively inexpensive material instead of in one piece.

As shown in Fig. 6, however, the post 50 may, similarly to the post 40, be of tubular form, but the lower end 51 thereof is bent to form a head or ring 52, dispensing with the cap 44 but nevertheless providing the desired grommet entrance 26, and grommet receiving space 29, as well as the anvil wall 53.

In any of the forms of my invention, the grommet is pressed toward the bottom of the post so that the eyelet portion 30 thereof passes through the entrance 26 and into the space 29 and while in contact with the anvil wall of the post, is flared or bent to a sufficient extent to secure the parts together.

It will be seen that I have provided a simple and inexpensive screw fastener, and particularly, a post therefor, designed to be quickly and easily as well as efficiently secured to a suitable flexible or rigid support, and therefore meeting the varied requirements of practical use. It will also be seen that I have provided means for securing the cooperating screw portion of the post to its support in an efficient and inexpensive manner.

While I have shown and described certain specific embodiments of my invention, it will be understood that I do not intend to limit myself thereto but desire to claim my invention as broadly as may be permitted by the state of the prior art and the scope of the appended claims.

I claim:

1. In a screw fastener installation, a hinged supporting member having a pair of opposed perforations therein, a post provided with a head, said head being arranged on one side of one of the perforations, an internally threaded post portion projecting from the head through the perforation adjacent the head, said post portion terminating in an outwardly and downwardly tapered anvil portion extending toward the head, a comparatively thin rim on the head having an upstanding outermost portion and an inner portion bent inwardly toward the anvil portion and terminating in an annular edge in spaced relation and concentric with said anvil portion, a grommet having a flange arranged on the other side of the last-mentioned perforation and having a tubular portion passing through said perforation and spread outwardly by said anvil portion on said one side of the perforation, and cooperating with the rim to prevent separation of the post from said member, a screw provided with a head, passing through the other perforation of the member and adapted to engage the internal threads of the post portion, said screw head being arranged on one side of said second perforation, and a flange parallel to and in spaced relation to the head of the screw arranged on the other side of said second perforation to retain the screw in place in the supporting member.

2. In a screw fastener installation, a support provided with a pair of flexible members hinged together, one of said members having a perforation therethrough and the other of said members having an opening therein consisting of a central opening and a pair of radial openings terminating at said central opening, a screw comprising a head, a threaded shank and a flange on the shank substantially parallel to the head and spaced therefrom a distance substantially equal to the thickness of the second-mentioned member to provide a groove therebetween for the reception of the material of said second-mentioned member surrounding the opening, a post passed through the perforation of the first-mentioned member and provided with an enlarged head, said post having an internally threaded opening for the reception of the shank of the screw, and means for permanently securing the post to said first-mentioned member.

3. In a screw fastener installation, a support provided with a pair of flexible members hinged together, one of said members having a perforation therethrough and the other of said members having an opening therein consisting of a central opening and an elongated opening terminating at said central opening, a screw comprising a head, a threaded shank and a flange on the shank substantially parallel to the head and spaced therefrom a distance substantially equal to the thickness of the second-mentioned member to provide a groove therebetween for the reception of the material of said second-mentioned member surrounding the opening, said flange being adapted to pass through said opening, and a cooperating fastener element passed through the perforation of the other member.

4. In an elongated screw fastener, a post comprising a hollow internally threaded member outwardly flared at one end thereof to provide an integral anvil portion, and a continuous and uninterrupted rim portion integral with the anvil portion and bent inwardly therefrom in the form of a hollow ring and through an angle greater than 180° to provide a space just sufficient for

the reception of a grommet and to reinforce said anvil portion against the pressure of a grommet.

5. In a screw fastener installation, a one-piece flexible support provided with a pair of spaced opposed perforations therein, a one-piece post having a post portion passed through one of said perforations, said post portion having a cylindrical surface of uniform diameter throughout its length and being solid throughout except at one end thereof and being there provided with an internally threaded opening, an integral annular enlarged head at the other end of said post, said head being of greater diameter than that of the post portion and having a flat imperforate circular outer surface extending completely across the head, a preformed annular continuous and uninterrupted bent rim integral with and extending from said head and bent inwardly and downwardly and terminating in an edge concentric with and spaced slightly from the post portion, the outer surface of said rim being cylindrical and of greater height than the radius of said post, said surface being substantially perpendicular to the flat surface of the head, a flanged grommet passing through the post perforation of the support and through the space between said edge and the post portion and distorted by said head and cooperating with the rim to permanently secure the post to the support, said space being of its least dimension between said edge and the post portion just sufficient to permit the passage of the grommet, said space increasing in height between the rim and the head in a direction away from the post portion and the wall defining said space being concave throughout, and a screw comprising a head and a threaded shank passed through the other perforation of the support and adapted to enter the internally threaded opening of the post portion.

6. In a screw fastener installation, a one-piece supporting member of flexible leather or the like material provided with a pair of flaps each having a perforation therein and further provided with a portion integral with the flaps and hingedly connecting said flaps, a one-piece post having a solid cylindrical post portion passing through the perforation of one of the flaps and internally threaded at its upper end and terminating at its other end in an integral head, said head having an inner annular wall flared downwardly and outwardly from the bottom of the post portion, an outermost imperforate circular surface on the head, a preformed rim upstanding from the periphery of the head and integral therewith and having an outermost uninterrupted and continuous cylindrical surface arranged at substantially right angles to said circular surface, said cylindrical surface being of greater height than the radius of the upper end of the post, said rim terminating in an inwardly and downwardly bent continuous portion providing an upper convex surface on the rim, the inner edge of the rim being spaced from the post a distance just sufficient to permit a grommet to be passed therebetween, a flanged grommet passing through the post perforation of the support and through the space between the post and said inner edge of the rim and spread by the annular wall of the head, and a screw comprising a head and a threaded shank passed through the perforation of the other flap and adapted to enter and engage the internally threaded end of the post portion.

7. In an elongated screw fastener, a one-piece cylindrical post having an internally threaded opening at one end portion thereof and being otherwise solid and of sufficient length to support a number of perforated articles, and having an integral outwardly flared anvil portion at its other end, a flanged grommet distortable by the anvil portion, and means on the post adjacent the anvil portion for engaging said distortable portion, when distorted, and for cooperating with the flange of the grommet to secure the post to a support therefor comprising an imperforate annular head integral with the remainder of the post and provided with an integral continuous rim bent toward the anvil portion through an angle greater than 180°, said rim having an outer cylindrical surface of substantial height, the innermost edge of said rim terminating closely adjacent the post to provide an annular space therebetween just sufficient to permit the entrance of the grommet for distortion by the anvil portion.

8. In an elongated fastener, a one-piece post comprising an elongated post portion open and internally threaded at one end, and an enlarged imperforate head at the other end of said post comprising an annular anvil portion integral with the post portion, an annular continuous rim integral with the anvil portion and bent through an angle greater than 180° inwardly toward, and terminating in an edge concentric with and in slight outwardly spaced relation to, the anvil portion, said bent rim providing an annular space between said rim and the anvil portion of just sufficient width for the reception of part of a grommet forced past said edge and into said head, and a headed screw adapted to enter said open end.

9. In a fastener installation, a flexible one-piece support having a pair of opposed perforations therein, a one-piece post comprising an elongated post portion, having an outermost cylindrical surface throughout and open and internally threaded at one end thereof, and terminating at the other end thereof in an integral enlarged imperforate head, said head having a continuous rim portion bent inwardly toward said post portion and downwardly but in spaced relation thereto to provide an annular space therebetween of just sufficient width for the reception of a grommet, said post portion being joined to the head by an outwardly flared surface opposed to the rim and constituting an anvil, said post portion being passed through one of the perforations of the support, a flanged grommet adapted to be spread by said anvil and forced into said space and cooperating with the rim to secure the post to the support, and a headed screw having a shank portion adapted to be passed through the other perforation of the support and adapted to enter the open end of the post.

10. In an elongated fastener, a one-piece solid post comprising an elongated post portion cylindrical throughout its length and open and internally threaded at one end thereof, and terminating at the other end thereof in an integral enlarged annular and imperforate head, said head having an integral annular continuous rim portion bent inwardly and downwardly toward said post portion but in just sufficient spaced relation thereto to provide an annular space therebetween for the reception of the tubular portion of the grommet hereinafter mentioned, said post portion being provided adjacent the head with an integral annular outwardly flared surface opposed to the rim and constituting an anvil, a

flanged grommet provided with a tubular portion adapted to be spread by said flared surface and to cooperate with said rim to secure the post and the grommet to a support therefor, and a headed screw adapted to pass through a spaced part of the support and to be rotated into screw threaded engagement with the post portion to secure the parts of the support together and to prevent perforated articles mounted on the post portion from becoming detached therefrom until the screw is first removed from the post portion.

11. In an elongated screw fastener, a post comprising an elongated cylindrical portion open and internally threaded at one end, an outwardly flared part at the other end thereof to provide an integral annular anvil portion, an annular enlarged head of greater diameter than that of the cylindrical portion and of the anvil portion, said head covering the anvil portion of the post, and an annular integral continuous inwardly and downwardly bent rim in the form of a hollow ring extending past the anvil portion and terminating at an edge concentric with and spaced slightly outwardly from the anvil portion to provide a space between the anvil portion and the rim just sufficient for the reception of a grommet, and to reinforce said rim against the pressure of a grommet, said rim being bent through an angle greater than 180°.

12. In an elongated screw fastener, a cylindrical post having an internally threaded opening at one end portion thereof and being of sufficient length to support a number of perforated articles, said post having an integral outwardly flared anvil portion at its other end, a flanged grommet distortable by the anvil portion, and means on the post adjacent the anvil portion for engaging said distortable grommet when distorted, and for cooperating with the flange of the grommet to secure the post to a support therefor comprising an annular head extending beyond the anvil portion, a preformed annular rim upstanding from the periphery of the head and integral therewith and having an outermost uninterrupted and continuous surface of greater height than the radius of the upper end of the threaded end portion of the post, said rim terminating in an inwardly and downwardly bent continuous portion providing an upper convex surface on the rim, the inner edge of the rim being spaced from the post a distance just sufficient to permit the distortable portion of the grommet to be passed therebetween, and spread by the anvil portion.

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