

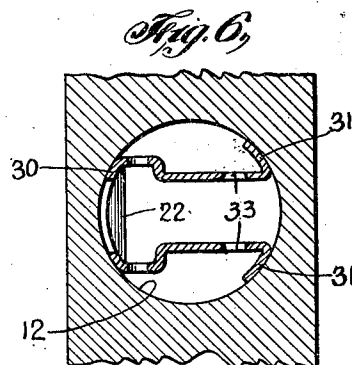
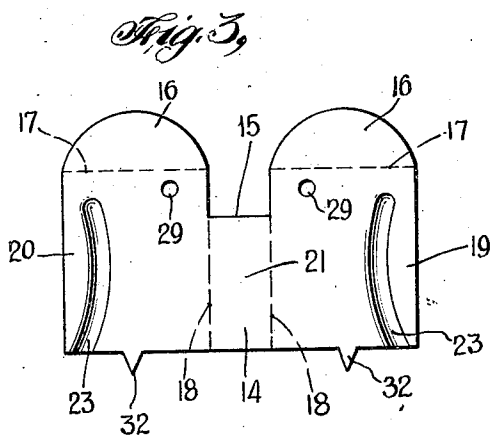
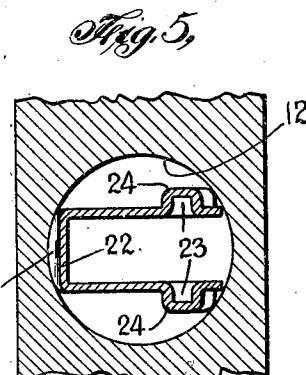
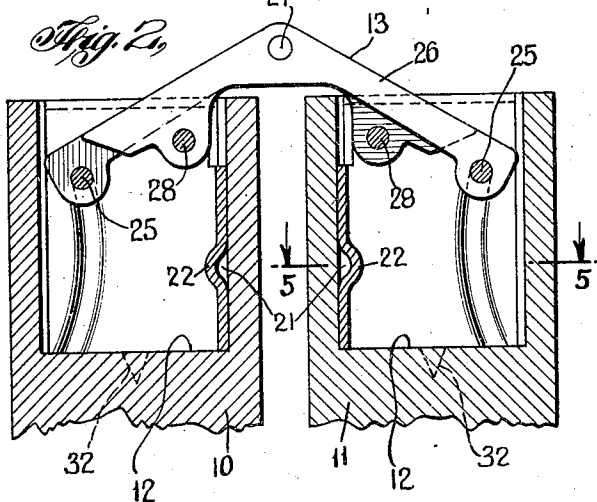
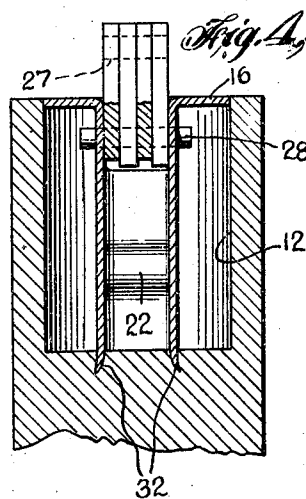
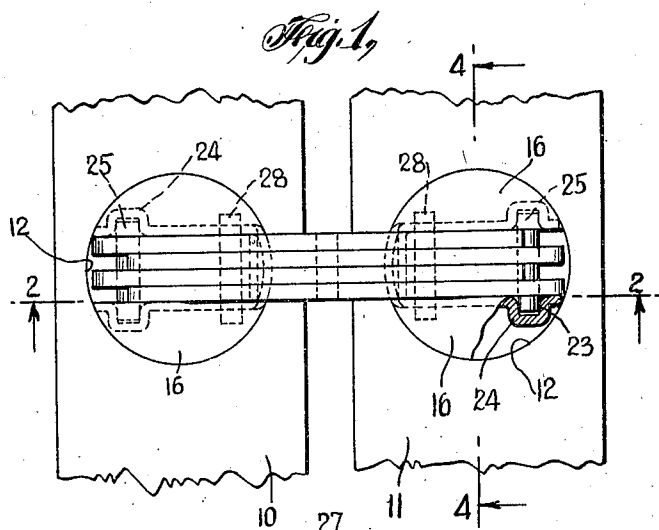
Oct. 23, 1928.

1,688,996

J. SOSS

CONCEALED HINGE

Filed March 1, 1926



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CONCEALED HINGE.

Application filed March 1, 1926. Serial No. 91,400.

This invention relates to concealed hinges and particularly to hinges of this class employing two substantially similar sheet metal butt members, coupled together by one or
 5 more link members, and particularly to hinge butts of this class adapted to be mounted in cylindrical or substantially cylindrical apertures in the stationary support and swinging member, respectively; and the
 10 object of the invention is to construct the hinge butts from a sheet metal blank fashioned to form a channel portion which traverses the bore or aperture in which the butt is mounted, and to provide at the outer end
 15 of said channel body, laterally extending flanges fashioned to form closures for the apertures or sockets in which the butts are mounted; a further object being to provide a hinge butt of the class described, which by
 20 virtue of the construction employed, may be manufactured at a nominal cost and yet provide a strong and durable hinge butt construction, an especially in the construction of small hinges such as used in cabinet work;
 25 a still further object being to provide means for reinforcing the butt and to provide channels therein for guiding the movable link or link members employed; and with these and other objects in view, the invention consists
 30 in a hinge butt of the class and for the purpose specified which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention described and claimed herein is an improvement on that shown and described in a prior application filed by me November 27, 1925, and bearing Serial No. 71,539, and is fully disclosed in the following specification, of which the accompanying
 40 drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Fig. 1 is an edge view of a stationary support and swinging member showing my improved hinge mounted in connection therewith.

Fig. 2 is a partial section on the line 2—2 of Fig. 1.

Fig. 3 is a plan view of a blank from which the hinge butt shown in Figs. 1 and 2 is formed.

Fig. 4 is a partial section on the line 4—4 of Fig. 1.

Fig. 5 is a partial section on the line 5—5 of Fig. 2; and,

Fig. 6 is a view similar to Fig. 5 but showing a modified form of construction.

In the drawing, I have shown at 10 and 11, a stationary support and swinging member, 60 the edge of each of which is provided with an aperture or socket 12 for receiving the separate butts of my improved hinge 13. In the construction shown in Figs. 1 to 5 inclusive, each of the butts is fashioned from 65 a sheet metal blank 14 shown in Fig. 3 of the drawing, one side edge of the blank being cut out to form a recess 15, to form at the opposite sides of said recess, arc-shaped portions 16 foldable on the lines 17 at right 70 angles to the longitudinal plane of the sheet. The blank 14 is also folded on the lines 18 to bring the side portions 19 and 20 thereof into parallel relation to form of the blank, a U-shaped or channel butt body, the cross- 75 head 21 of which is arc-shaped in form to fit the curvature of the walls of the recesses or aperture 12, as clearly seen in Fig. 5 of the drawing. The crosshead is preferably offset at one point as seen at 22 to form a reinforcing and strengthening rib or corrugation. 80 The side members 19 and 20 are provided on their inner and adjacent faces with arc-shaped grooves 23 formed by pressing the metal outwardly in U or channel fashion as 85 seen at 24 in Fig. 5 of the drawing. The outwardly pressed channel portions 24 also form ribs which aid in strengthening or reinforcing the side members or bearing plates 19 and 20 of the separate butts of the hinge. 90 The grooves 23 open through the inner or lower ends of the butts as clearly seen in Figs. 2 and 3 of the drawing to facilitate the mounting of pins 25 in said grooves. The pins 25 are mounted upon and carried 95 by the free end portions of links 26 substantially V-shaped in form, said links being pivoted together as seen at 27. The short arms of said links are pivotally mounted within and to the separate butts on pivot 100 pins 28 passing through apertures 29 formed in the side portions 19 and 20, as clearly seen in Fig. 3 of the drawing.

It will be noted that the separate links 26

shown are in alternate arrangement; that is to say, the long arm of one link is movable in the channel or groove 23 of one butt, and the short arm thereof pivoted on the pin 28 in the other butt, and the next adjacent link is alternately arranged; that is to say, the short arm is pivoted in the first named butt and the long arm movable in the second named butt as is the common structure in invisible hinges of the class under consideration.

In Fig. 6 of the drawing, I have shown a slight modification, wherein the crosshead portion of the body is enlarged as seen at 30 to give a greater bearing for the butt in the socket or aperture 12; while the front or free edges of the side portions of the butt have outwardly turned and curved flanges 31 which provide a greater bearing surface for the butt in the socket 12, and also serve to reinforce and strengthen the front edges of said side portions. In this form of construction, I also substitute for the grooves 23 and arc-shaped ribs 24, formed by said grooves, apertures 33 in the opposite side walls of the hinge butt, and in the same arrangement as the grooves 23, it being understood that the pins 25 of the links 26 operate in the apertures 33. Aside from the modified features above stated, the butt shown in Fig. 6 will be of the same construction as that shown in the other figures of the drawing.

The separate side portions 19 and 20 of the butt are preferably provided at their inner edges with prongs 32 which are preferably placed laterally and adapted to be driven into the base of the sockets or apertures 12, as seen in Figs. 2 and 4 of the drawing. When the butts are mounted in position, the wings or flanges 16 form closures for the sockets or apertures 12 as clearly seen in Figs. 1 and 2 of the drawing, and preferably seat within said socket so that the outer faces of the parts 16 lie flush with the outer faces or edges of the stationary support and swinging member 10 and 11. With the type of hinge construction shown, it will be understood that the adjacent edges of the stationary support and swinging member may be brought into abutting relation by moving the swinging member into closed position, in which position, the links 26 are contained within the respective butts of the hinge, and the swinging member may be moved into a fully open position as seen in Figs. 1 and 2 of the drawing.

By constructing the hinge butts in the manner herein shown and described, it will be apparent that a strong and durable butt may be produced in a simple, quick and economical manner, and with comparatively few bending, forming and other operations, whereby a hinge of the class described may be produced at a very nominal cost, and

especially hinges of this type for light duty such as for use in cabinets and the like.

While I have shown certain details of construction for carrying my invention into effect, it will be understood that various changes in and modifications of the construction herein shown and described, may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new an desire to secure by Letters Patent, is:—

1. A sheet metal hinge butt comprising a U-shaped body and laterally extending flanges at one side of the arms of said body, the opposite walls formed by the arms of said body having apertures for receiving the link pivot pin of the hinge, said walls being provided on adjacent faces with grooves for guiding a link of the hinge in its movement in said butt, and means for reinforcing the crosshead of said body.

2. A sheet metal hinge butt comprising a U-shaped body and laterally extending flanges at one side of the arms of said body, the opposite walls formed by the arms of said body having apertures for receiving the link pivot pin of the hinge, said walls being provided on adjacent faces with grooves for guiding a link of the hinge in its movement in said butt, means for reinforcing the crosshead of said body, and said grooves being formed by pressing the body of the butt outwardly, forming rib members for reinforcing the walls of said butt.

3. A hinge butt for mounting in a cylindrical socket formed in a workpiece, comprising a butt body of a length substantially equal to the depth of the socket, the width of said body being such as to engage opposite walls of said socket and to form chambers in the socket at the opposite sides of the butt body when mounted therein, and means at the outer end of the butt body for closing said chambers.

4. A hinge of the class described adapted for use in connection with supports having cylindrical sockets comprising substantially U-shaped butt bodies adapted when mounted in said sockets to extend transversely thereof and engage oppositely disposed walls of the sockets, and links pivoted to the respective butts and to each other for coupling said butts together, and said butts having laterally extending flanges at their outer ends forming closures for said sockets at the opposite sides of the butts.

5. A hinge of the class described adapted for use in connection with supports having cylindrical sockets comprising substantially U-shaped butt bodies adapted when mounted in said sockets to extend transversely thereof and engage oppositely disposed walls of the sockets, and links pivoted to the respective

butts and to each other for coupling said
butts together, said butts having laterally
extending flanges at their outer ends form-
ing closures for said sockets at the opposite
5 sides of the butts, and said bodies having
bearings and guides for the separate links of
the hinge, and prongs integral with the inner

ends of said bodies for retaining the same
within said sockets.

In testimony that I claim the foregoing 10
as my invention I have signed my name this
17th day of February, 1926.

JOSEPH SOSS.