

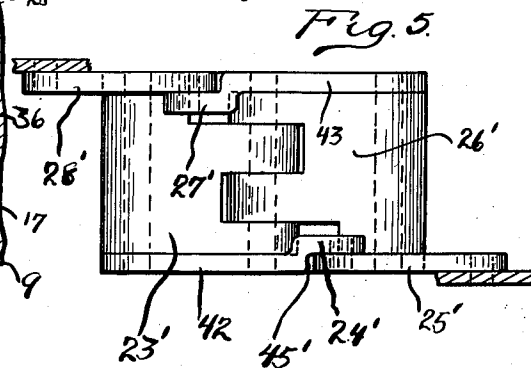
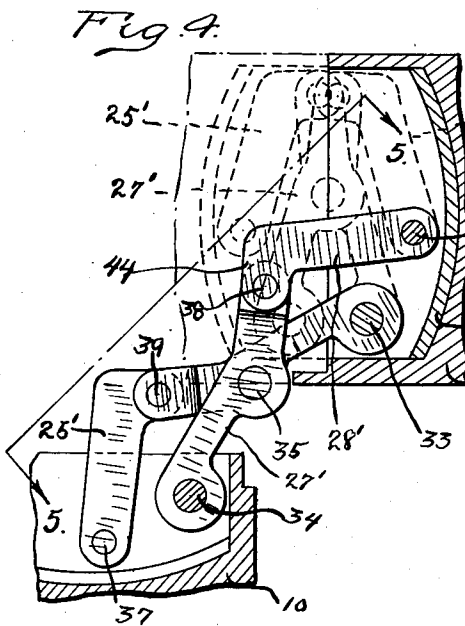
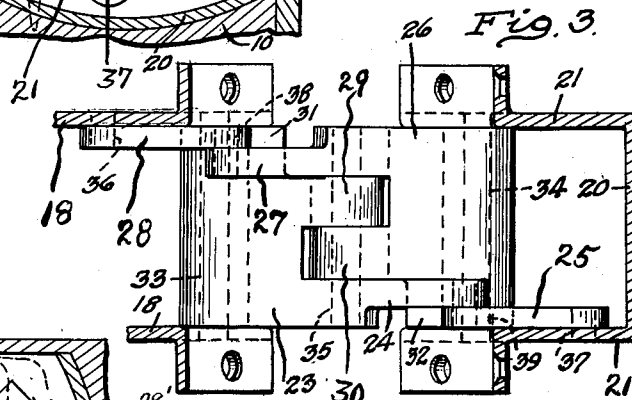
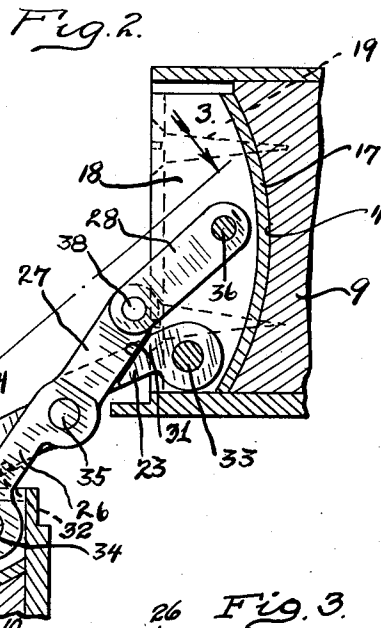
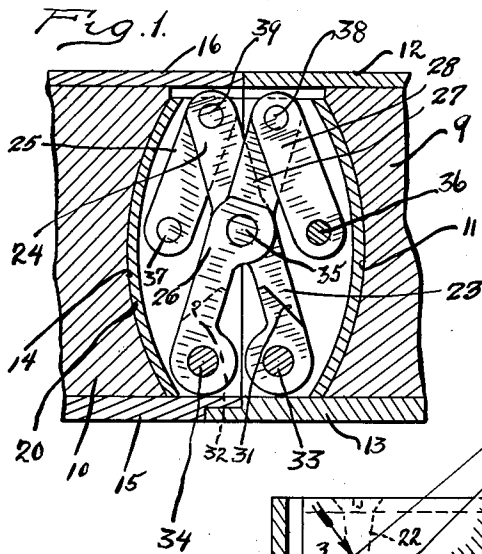
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J. ERICKSON

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HINGE

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HINGE

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1 Claim. (Cl. 16-164)

My invention relates to a new and useful improvement in a hinge, adapted for use in mounting a swinging door on a stationary supporting body which has for its object the provision of a hinge, so constructed and arranged, that when the closure is moved to a closing position the hinge will be folded into compact form and concealed from view.

Another object of the invention is the provision of a hinge of this type, having a plurality of pivotally connected parts, foldable into compact relation and unfoldable in such a manner that the closure hung thereon may move bodily outwardly from the supporting body at the beginning of the swinging movement.

Another object of the invention is the provision of a hinge of this type which may be so constructed as to be economical to manufacture, durable, easily and quickly assembled and mounted in position and highly efficient in use.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawing, which forms a part of this specification and in which:

Fig. 1 is a sectional view of the invention assembled and showing the hinge linkage in top plan.

Fig. 2 is a view similar to Fig. 1, showing the hinge swung outwardly.

Fig. 3 is a view taken on line 3-3 of Fig. 1.

Fig. 4 is a view similar to Fig. 2 showing a slightly modified form of the invention.

Fig. 5 is a view of the invention taken on line 5-5 of Fig. 4.

In the drawing I have illustrated the invention as used with a stationary supporting member 9, associated with a swingable closure 10. In the supporting body 9, is formed a recess 11 and side panels 12 and 13 which are adapted to project beyond the recess 11. In the edge of the swingable closure 10 is formed a recess 14 and the surface panels 15 and 16 are adapted to project beyond the recess 14 and to engage, when the closure is swung to a closed position, the end edges of the panels 12 and 13, each shown in Fig. 1. Mounted on the supporting member, is a U-shaped frame having an arcuate bight 17, which slides in and engages the surface of the recess 11. The ends of the legs 18 of this frame are angularly turned and secured by screws 19 to the supporting body 9. A similar supporting frame is provided for attachment to the closure.

This supporting frame includes the arcuate bight 20, which corresponds to the curvature of recess 14 and lies therein as shown in Fig. 1 and in Fig. 2. The legs 21 of this U-shaped frame are angularly turned to receive attaching screws 22, whereby the frame is secured to the closure 10.

The hinge structure comprises a metallic plate 23, having an arm 24 projecting outwardly from one end adjacent its lower edge. This arm is pivotally connected by the pin 39 to a connecting link 25, which is pivotally connected by the pin 37 to the lower leg 21 of the U-shaped frame. A cooperating plate 26 is provided adjacent its upper edge with an outwardly projecting arm 27, which is pivotally connected by the pin 38 to one end of the link 28, the other end of which is pivotally connected by the pin 36 to the upper leg 18 of the U-shaped frame. The plate 23 is provided with a short arm terminating in a knuckle 29 which overlies a short arm on the plate 26 terminating in the knuckle 30, these knuckles having openings formed therein adapted to register at openings formed in the plates 26 and 23, so that a pintle may be extended through these parts to pivotally connect them together, the pintle 35, illustrated in Fig. 1 and Fig. 2, serving this purpose. The plate 23 is provided with a shoulder 31, against which is adapted to engage the arm 27 when the hinge is fully opened, as clearly appears in Fig. 2. The plate 26 is provided with a similar shoulder 32, against which is adapted to engage the arm 24 when the hinge is fully opened, these shoulders, serving as abutments for limiting the outward swinging of the hinge structure. The plate 23 is provided at its inner edge with a knuckle, through which extends the pintle 33, this pintle extending through the legs 18 of the U-shaped structure. A similar pintle 34 is projected through a knuckle formed in the plate 26 and extended through the legs 21 of the U-shaped structure.

The construction is such, that if the closure is swung to open position, the plates 23 and 26, swinging on their respective pintles 33 and 34, will carry their points of mutual pivot, which is the pintle 35, towards the center of swinging movement, thus moving the closure slightly outwardly bodily at the beginning of the swinging movement. Subsequent swinging will cause the plates 23 and 26 to so swing that the links 28 and 25 move toward a position to extend parallel with and form a continuation of the plates. In fully opened position, this movement has not reached the stage where the links are parallel to their plates, the abutment shoulders limiting the swing-

ing movement as previously mentioned. The construction is such, that the closure swings on a plurality of pivots concurrently and thus the weight of the closure is not transmitted to any one pintle. On account of the folding of the parts together when the closure is moved at closed position, it becomes possible to entirely conceal the hinge, so that there will be no outward projection on either the supporting body or the closure itself.

In Fig. 4 and Fig. 5, I have shown a slightly modified form of construction in which I use a pair of separate plates 42 and 43, the plate 43 being constructed to form a continuation of the plate 26' and the plate 42 being formed to provide a continuation of the plate 23'. The arm 24' corresponds to the arm 24 and the arm 27' corresponds to the arm 27. The link 28' corresponds to the link 28 and the link 25' corresponds to the link 25. It will be noted that each of these links 28' and 25' are provided at one end, with an angularly turned portion 44, this construction being necessary in order that the shoulder 45', provided by the offset arm 24' or the offset arm 27', may properly serve as an abutment and permit the hinge to swing in a full swing.

In the modified form of construction, it becomes possible to construct the device from a very simple forging, so that it is much more economical to manufacture. These plates 42 and 43 are not attached to the plates 23' and 26' by welding or in any manner, excepting by the pintles 35

and 34 and 33, which are projected therethrough. Once the device is assembled with the pintles projecting through their respective knuckles, it is obvious that the various parts will be retained in cooperative relation.

While I have illustrated and described the preferred form of construction, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent is:

A hinge of the class described comprising a pair of U-shaped supporting members; a pair of hinge plates; means for pivotally connecting each of said plates adjacent one end to a supporting member adjacent one edge; means for pivotally connecting said plates to each other intermediate their ends to extend across each other; a pair of links pivotally connected at one of their ends to the opposite end of each of said plates; means for connecting the opposite end of said links to a supporting member adjacent the center thereof, for connecting each plate to the supporting member opposite to the one on which said plate is pivotally mounted; and a shoulder on each of said plates, adapted for engaging the other plate upon swinging of said hinge to open position.

JOHN ERICKSON.