

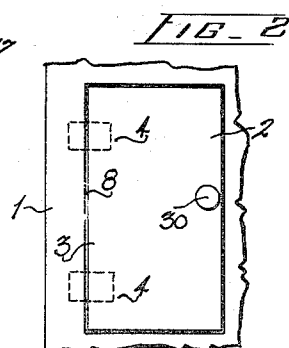
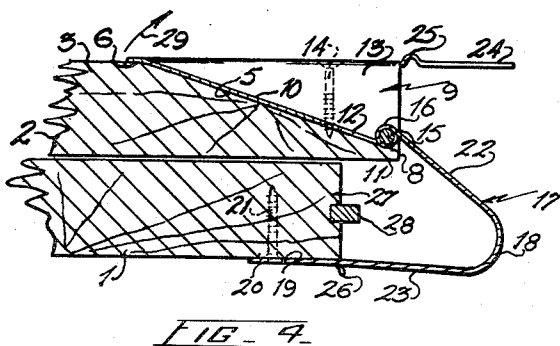
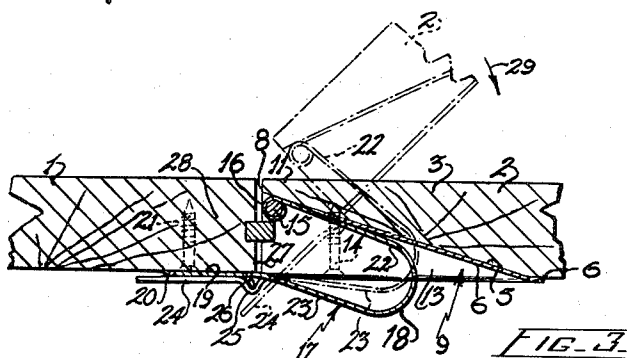
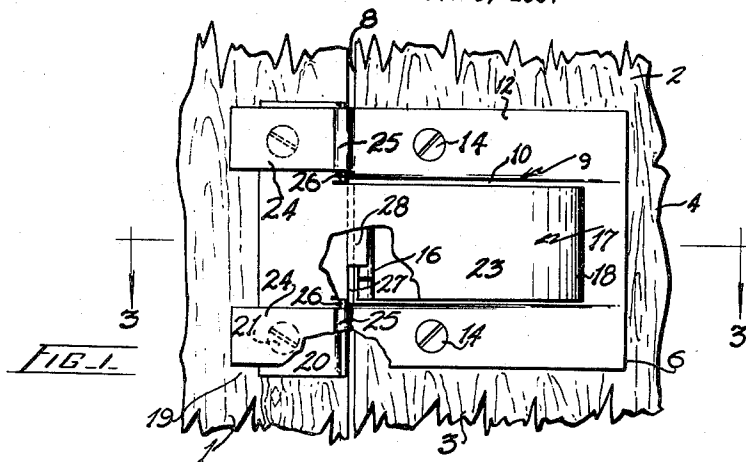
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2,948,015

DOOR HINGE

Filed Oct. 3, 1957



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2,948,015

DOOR HINGE

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My invention relates to new and useful improvements in hinges for doors, particularly flush fitting doors normally used for kitchen cabinets and the like, the principal object of my invention being to provide a device of the character herewithin described in which the hinge is situated internally thus being completely invisible from the outside when the door is closed.

Conventional hinges normally show a hinge line externally, the only exception being when the door is not permitted to open through 180°. Furthermore, conventional kitchen cabinets require a latch of one form or another to hold the door in the closed position.

My improved hinge is completely hidden when the door is closed, permitting the door to open through 180° and furthermore eliminates the necessity of a latch to hold the door closed.

Another object of my invention is to provide a device of the character herewithin described which is simple in installation.

A yet further object of my invention is to provide a device of the character herewithin described which is simple in construction, economical in manufacture and otherwise well-suited to the purpose for which it is designed.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is an internal view of my hinge in situ with the door and frame shown fragmentary, the door being in the closed position.

Figure 2 is an external view of a door and frame shown reduced in scale from Figure 1.

Figure 3 is a view substantially along the line 3—3 of Figure 1.

Figure 4 is a view similar to Figure 3, but showing the door open through 180°.

In the drawings like characters of reference indicate corresponding parts in the different figures.

Proceeding therefore to describe my invention in detail, the device is designed primarily for flush-fitting kitchen cabinets. Such cabinets include a vertical stationary supporting frame member 1 and the cabinet door 2 may either be made from one piece of material such as plywood or, alternatively, may be made with a framework. In the present application, the vertical inner portion 3 of the door is shown.

At the hinge area designated 4 in the drawings, a tapered recess 5 is formed, said recess starting at a point 6 and extending to the vertical edge 8 of the door 3 as clearly shown in Figure 3. A tapered channel collectively designated 9 is fitted into this recess, said tapered channel having a base 10 sloping outwardly towards the edge 8 and the outer face 11 of the door so that this base fits snugly within the aforementioned recess 5.

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Planar side flanges 12 are formed integrally with the base together with horizontal triangular side plates 13 so that the channel fits into the recess 5 and may be secured by means of screws 14 extending through the flanges 12 into the door 3.

A hinge pin 15 is mounted between the horizontal side walls 13 of the channel adjacent the door edge 8, said hinge pins acting as a pivotal mounting for the end 16 of a U-shaped resilient member collectively designated 17. This U-shaped resilient member is adapted to nest within the channel 9 when the door is in the closed position, the loop 18 being remote from the edge 8 of the door. The opposite end 19 of the U-shaped member is formed with outwardly extending flanges or ears 20 whereby this end 19 is secured to the supporting frame 1 by means of screws 21. The resilient U-shaped member 17 is formed so that normally it will take up the position shown in Figure 4, but the resiliency thereof enables the two arms 22 and 23 thereof to become parallel when the door is closed as shown in Figure 3 and as will hereinafter be described.

With the construction hereinbefore described, it will be apparent that the door 3 will open and will lie back against the frame 1 as shown in Figure 4, it being understood that the door pivots on pin 15.

However, means are provided to cause the compression of the U-shaped member when the door is closed and I have therefore provided a pair of resilient tongues 24 formed integrally with and extending from the planar flanges 12 of the channel 9, it being understood that these tongues extend beyond the vertical edge 8 of the door 3. These tongues are formed so that recesses or grooves 25 are formed adjacent the edge 8 and projections 26 are formed on the flanges 20 of the U-shaped resilient member adjacent the corresponding vertical edge 27 of the supporting frame 1.

Finally, a vertically situated stop 28 is secured within the edge 27 in a position corresponding to the recess 5 in the door, said stop being engageable by the hinge 16 as will now be described.

When the door is closed by moving same in the direction of arrow 29, the resilient tongues 24 strike the projections 26 as shown in phantom in Figure 3. Further movement of the door in the direction of arrow 29 causes these tongues to slide over the projections 26 and as the resiliency of these tongues is greater than the resiliency of the U-shaped member 17, the U-shaped member is compressed until the hinge 16 strikes the projection 28. Further movement urges the door into the position shown in Figure 3 at which time the recesses 25 snap over the projections 26 thus maintaining the door in the perfectly flush position shown in Figure 3 without the necessity of a latch.

A slight pull on handle 30 disengages the resilient tongues from the projections 26 whereupon the resiliency of the U-shaped member 17 takes over urging the door outwardly and away from the frame so that it can then be folded back to take up the position shown in Figure 4.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. The combination of a door frame, a swingable door, and a hinge attaching said door to said frame for swinging movement through 180° between open and closed positions, said hinge comprising a first hinge member in the form of a normally V-shaped resilient strip having one end portion thereof secured to one side of said door

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frame and having its other end normally disposed in outwardly spaced relation from the relatively opposite side of the door frame when the door is open, a hinge pin carried by said other end of said strip, and a second hinge member in the form of a tapered channel secured in a recess provided in said door adjacent the door frame and having said hinge pin connected thereto, said channel receiving said other end portion of said strip during swinging movement of the door through 180° from a fully open position parallel to and at the outside of said opposite side of the door frame to a closed position coplanar with the door frame during which movement said strip is resiliently compressed from a substantially V-shaped to a substantially U-shaped form, and coacting means provided on the first and second hinge members

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for releasably retaining said door in its closed position.

2. The combination as defined in claim 1 wherein said means comprise a detent provided on said one end portion of said strip member secured to said door frame, and a resilient tongue provided on said channel and extending over said frame when the door is closed, said tongue being provided with a depression releasably receiving said detent when the door is in its closed position.

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