

May 14, 1957

M. F. SAXTON
MAGNETIC CATCH ASSEMBLY

2,792,249

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2 Sheets-Sheet 1

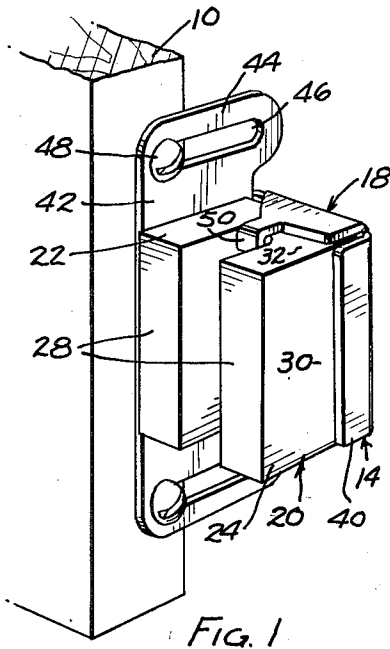


FIG. 1

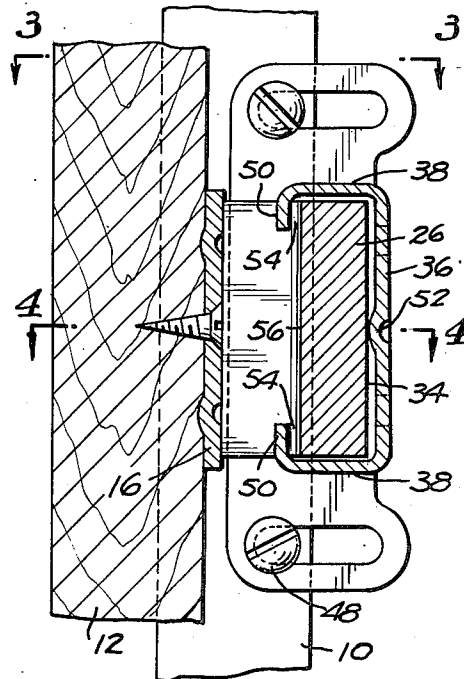


FIG. 2

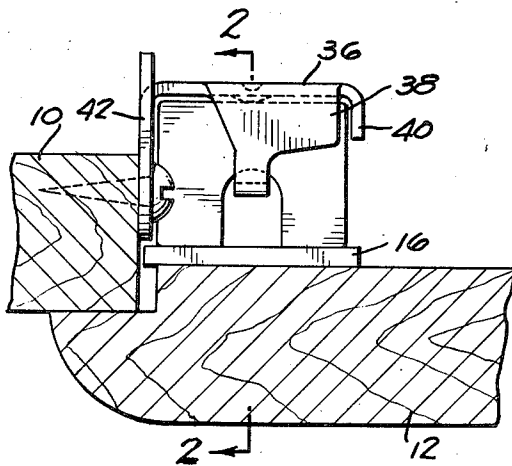


FIG. 3

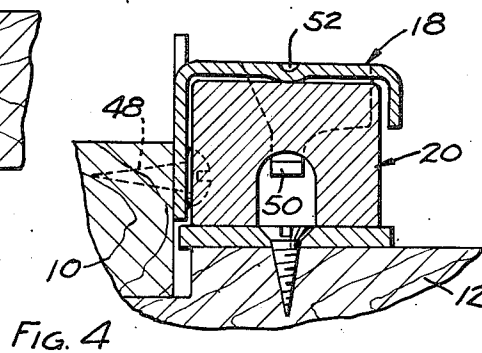


FIG. 4

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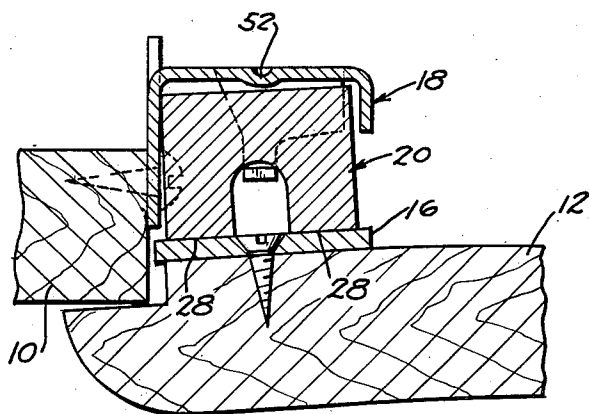


FIG. 5

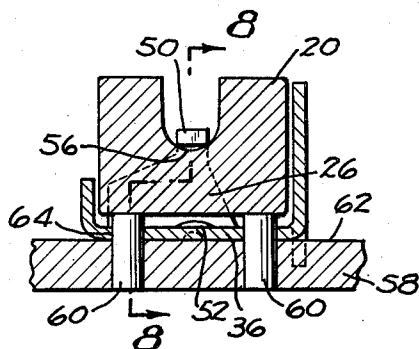


FIG. 7

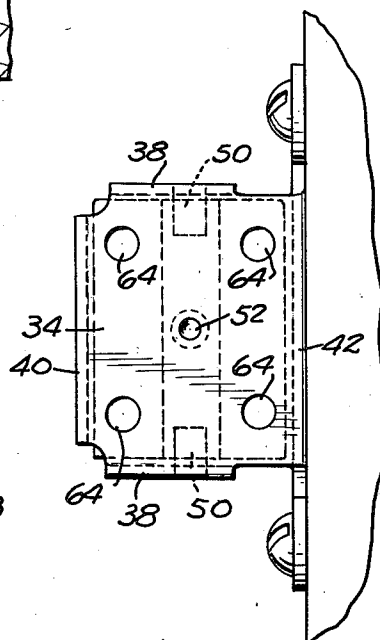


FIG. 6

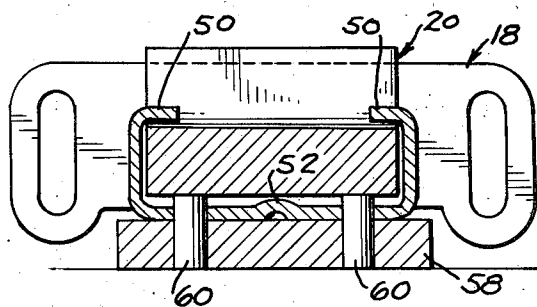


FIG. 8

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1

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MAGNETIC CATCH ASSEMBLY

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2 Claims. (Cl. 292—251.5)

This invention relates to a magnetic catch assembly and more particularly to a magnetic catch assembly for use on cabinet or cupboard doors.

It is an object of this invention to provide a magnetic catch assembly which lends itself admirably to economical construction.

A further object of this invention resides in the provision of a magnetic catch assembly in which the magnet member is mounted in a housing member in a manner such as to accommodate for any misalignment between the door on which the strike plate is mounted and the housing member in which the magnet is retained.

A further object of this invention resides in the provision of a magnetic catch assembly in which the magnet member is loosely and rockably mounted within a housing member.

In the drawings:

Fig. 1 is a perspective view of a magnetic catch assembly of this invention, the assembly being mounted on a door frame member of a cupboard for purposes of illustration.

Fig. 2 is a vertical sectional view taken generally along the line 2—2 in Fig. 3.

Fig. 3 is a sectional view taken generally along the line 3—3 in Fig. 2.

Fig. 4 is a sectional view taken generally along the line 4—4 in Fig. 2.

Fig. 5 is a view generally similar to Fig. 4 and showing the manner in which the catch assembly of this invention is constructed to accommodate for misalignment between the door on which the strike plate is mounted and the frame member of the cabinet on which the housing is mounted.

Fig. 6 is a rear elevational view of the catch assembly of this invention.

Fig. 7 is a sectional view showing the step of assembling the magnet within the housing of the catch assembly.

Fig. 8 is a sectional view taken at right angles to Fig. 7.

Referring to the drawings and particularly to Figs. 1 and 2, there is illustrated a frame member 10 of a cabinet provided with a hinged door 12. Frame member 10 may, for the purposes of description, be considered as an upright rail defining one vertical edge of the door opening in the cabinet. The door 12 is hinged to a similar frame member on the opposite vertical edge of the door opening. The magnetic catch assembly of this invention is arranged for holding the door 12 in a position closing the opening formed by the frame member 10.

The assembly includes a magnetic catch 14 mounted on frame member 10 and a strike plate 16 mounted on the inner face of the door in a position to be engaged by the catch 14. Catch 14 is comprised essentially of two parts, a housing 18 and a magnet 20. Magnet 20 is of the horseshoe type having legs 22 and 24 which are connected by a yoke portion 26 at one end and which terminate in pole faces 28 at their other ends. Magnet 20 is of generally rectangular shape, legs 22 having generally flat outer faces 30 and 32 and yoke portion 26 having a generally flat rear face 34.

2

The housing 18 is preferably stamped from a non-magnetic material, preferably sheet metal such as aluminum. Housing 18 is fashioned with a generally flat rear wall 36, top and bottom walls 38, a side wall 40 and a second side wall 42. Walls 38, 40 and 42 extend perpendicularly forwardly from rear wall 36. Wall 42 is considerably wider in a direction from front to back than walls 38 and 40. At its upper and lower ends wall 42 is extended beyond rear wall 36 as at 44 to provide mounting flanges for the assembly. Flanges 44 are fashioned with elongated slots 46 through which screws 48 or similar fastening means may be extended for adjustably mounting the catch assembly 14 on the inner edge of frame 10.

It will be noted, particularly with reference to Figs. 2 and 3, that the housing defined by rear wall 36 and side walls 38, 40 and 42 is slightly larger than the magnet 20. Top and bottom walls 38 are fashioned with lugs 50 which, when the magnet is inserted within the housing 18, are arranged to be bent inwardly between legs 22 to loosely retain magnet 20 within housing 18. Rear wall 36 has an embossment or inwardly projecting bump 52 formed at the central portion thereof. It will be noted, particularly with reference to Fig. 2, that lugs 50 are bent inwardly between legs 22 and 24 so that, when the rear face 34 of the magnet contacts bump 52 and is substantially parallel to the plane of wall 36, a clearance 54 is provided between lugs 50 and the adjacent rounded face 56 of yoke portion 26. Thus, it will be appreciated that the loose fit between the magnet 20 and housing 18 enables the magnet to shift freely within the confines of the housing. Furthermore, the provision of the bump 52 together with the clearance 54 enables the magnet to pivot or rock about the bump 52. This arrangement is very desirable because it enables the magnet to attract and engage a strike plate such as illustrated at 16 mounted on the cabinet door even if the door should be slightly warped so that the alignment between the door and the frame member 10 of the cabinet is not very accurate.

Referring to Fig. 5, it will be observed that, when closed, door 12 assumes a position inclined to the plane of frame member 10. If magnet 20 were rigidly aligned with respect to frame member 10 and permitted to move solely in a forward and rearward direction, then the magnet would contact the strike plate 16 only at a small portion of one of the pole faces 28. However, since magnet 20, in the construction described, is enabled to shift freely within housing 18 and rock or tilt about bump 52, the magnet is enabled to align itself with the plane of the door 12 so that the pole faces 28 will attract and come into coplanar engagement with strike plate 16. Since magnet 20 is permitted to shift within housing 18 and pivot about bump 52 in all directions, it will be observed that almost any condition of misalignment between the frame member 10 and door 12, if not too excessive, can be accommodated by the catch assembly of this invention.

The clearance between the walls of the housing 18 and the faces of the magnet is not critical. The amount of clearance at 54 is likewise not critical, but the necessity for sufficient clearance is essential in order to achieve the results referred to. Thus, there is shown in Figs. 7 and 8 a means for bending lugs 50 over into engagement with the yoke portion 26 of the magnet and at the same time provide sufficient clearance between these members. In the arrangement illustrated a base member 58 is provided and four pins 60 are mounted in base 58 so as to project upwardly above the top face 62 of base 58. These pins project upwardly above the top face of base 62 a distance equivalent to the thickness of rear wall 36 of housing 18, the extent of inward projection of bump 52 and the necessary clearance 54. Suitable openings 64 are provided in

3

rear wall 36 so that the housing 18 may be inserted over these pins. Thereafter, magnet 20 is positioned within the housing and supported on the upper ends of pin 60. In this position the inner face 56 of yoke portion 26 may serve as an anvil against which the lugs 50 may be bent by any suitable means.

Thus, it will be seen that I have provided a magnetic catch assembly of very economical construction. The assembly is designed to accommodate for misalignment between the door and the frame member of the cabinet on which the assembly is mounted without the use of springs or other compensating devices. Furthermore, it will be observed that the provision of the mounting flanges 44 in the form of extensions, as described, adapts the assembly for universal mounting because the mounting flange does not increase the size of the assembly in a direction from front to back.

I claim:

1. A magnetic catch assembly comprising a generally U-shaped magnet having pole faces at the free ends of the legs of the U, said magnet having a generally flat face opposite said pole faces, a housing having a generally flat rear wall and having side walls, said rear wall having an inwardly projecting bump portion generally at the center thereof, said magnet being disposed in said housing with said flat face juxtaposed to said rear wall and engaging said inwardly projecting bump portion, said housing being sufficiently large to provide clearance between the side walls thereof and the magnet to permit the magnet to shift freely within the confines of the housing laterally of the plane of said pole faces, said housing having opposite side walls provided with integral tabs thereon projecting

4

between the legs of the U to engage the yoke portion of said U, said tab means being spaced from the inner projecting surface of said bump portion a distance only slightly greater than the thickness of the yoke portion of the magnet, said magnet being arranged to rock about said bump portion and to shift outwardly of said housing to a position wherein the yoke portion of the magnet is engaged by said tabs, said housing having a side wall extending in a plane generally parallel to the legs of said magnet and generally transversely of said opposite side walls provided with said tabs, said last mentioned side wall having elongated slots therein extending in a direction perpendicularly to the plane of said rear wall whereby to permit adjustment of the housing on a support in a direction perpendicularly to the plane of said pole faces.

2. A magnetic catch assembly as called for in claim 1 wherein the perpendicular distance between the inner projecting surface of said bump portion and the outer edges of said side walls is less than the dimension of said magnet between said pole faces and said rear wall whereby when said rear face of the magnet is in contact with said bump portion, the pole faces of the magnet project outwardly beyond the plane of the outer edges of said side walls.

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