

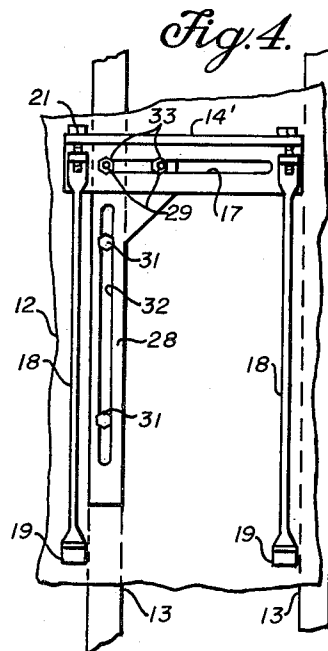
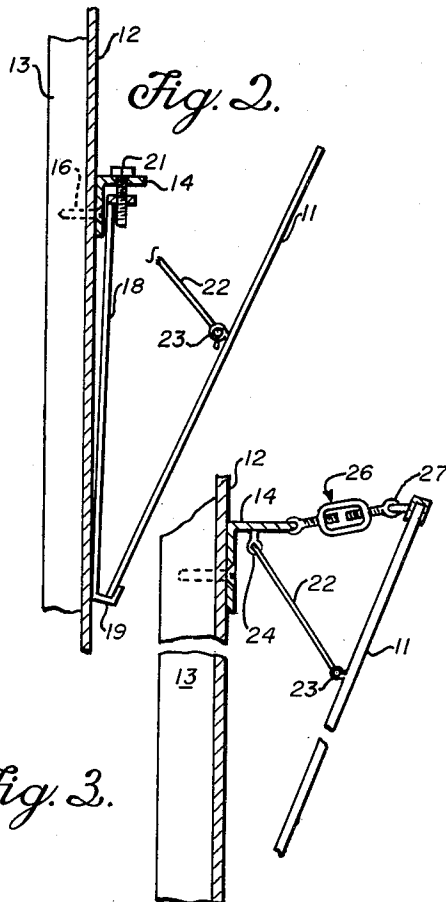
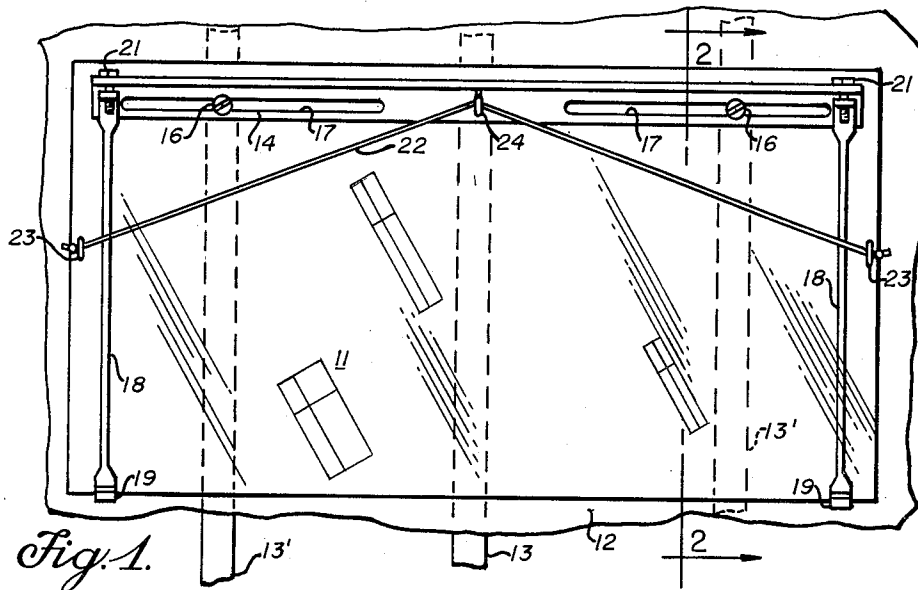
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SUPPORT FOR WALL-HUNG OBJECTS

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SUPPORT FOR WALL-HUNG OBJECTS

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1 Claim. (Cl. 248—31)

This invention relates to an improved apparatus for supporting objects on a wall, such as, for example, a wall mirror.

Objects and especially decorative objects, if they are to be hung on a wall, should be located where they will produce the greatest utility and aesthetic value. If the object is heavy, a suitable foundation must be built within the wall to support the object. Most walls in residential homes are made of thin layers of sheet rock nailed on wood studs. A moderately heavy object on these walls should be supported directly by the studs, but an object that is hung on the wall, as determined by the location of the studs, will have its utility and aesthetic value greatly diminished. Heretofore objects were hung on the wall with the aid of a wire forming a sling on its back which sling engaged a hook that is anchored in a wall stud. The vertical angle formed between the wall and the object was difficult to adjust, also the wire sling tends to shift position on the hook, for example, whenever a door is slammed, placing the object in a "non-square" position.

An object of this invention is to provide an improved apparatus for supporting objects in any given fixed position on a wall.

A feature of this invention is the provision for mounting a fixed member directly to a wall stud at any place on a wall.

Another feature of this invention is the provision of a means for rigidly mounting an object to the fixed member of the above feature.

Another feature of this invention is the provision of a means for adjusting the vertical angle between the wall and an object hung thereon.

Another feature of this invention is the provision of a means for adjusting the object in its horizontal position.

These and other features of advantage of the present invention will become apparent upon a perusal of the specification taken in conjunction with the accompanying drawing, wherein;

FIG. 1 is the front view of a transparent object supported by the novel apparatus on a wall,

FIG. 2 is a sectional view taken on line 2—2 of FIG. 1,

FIG. 3 is an alternate embodiment of the apparatus, and

FIG. 4 is another alternate embodiment of the apparatus.

Referring to the drawing and to FIGS. 1 and 2, in particular, item 11 represents an object to be supported on a wall 12 and for the purpose of explaining the invention, the object could be a large glass plate of the type which is made into mirrors. The glass plate is shown not silvered so that the details of the novel apparatus are visible therethrough. The object 11 could also be a picture, a back panel to which a television is mounted, etc. The wall 12 is a typical sheet rock wall that is one-half inch thick plaster tacked on wall studs 13 that are usually 2 x 4 wooden members.

The apparatus that supports the object 11 has a fixed structural member 14 bolted by screws 16 to two wall studs 13; although member 14 could be made of any convenient form, in this embodiment member 14 is a structural steel angle one inch by one inch by one eighth inch thick. The screws 16 extend through elongated slots 17 formed in the vertical leg of the angle member 14. At each end of fixed member 14 and depending therefrom are support members 18 that have a means prefer-

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ably in the form of a flange 19 on which rests the bottom of object 11. The support members 18 also have an adjustable length means by which their length are adjusted. In the embodiment shown, the adjustable length means is a bolt 21 that screws in the threaded top end of the support member 18. Both bolts 21 fit freely within suitable holes formed in the horizontal leg of the angle member 14. The object 11 is prevented from rotating downward about flange 19 by a picture wire 22 fixed at its ends to suitable eyelets 23 disposed on the back of the object 11. A means in the form of a hook 24 is disposed on the fixed member 14, preferably in the center thereof, engages wire 22, and prevents the object from falling. The wire 22 is preferably attached to the object 11 in the normal manner that picture wires are attached to the back of mirrors or pictures to hang them on walls.

The novel apparatus is mounted on the wall and the object 11 mounted thereon in the following preferred manner, first the position where object 11 is to be located on the wall is decided on. Preferably the vertical center line of the object and the bottom edge of the object are projected on the wall. Since the hook 24 is preferably located on the angle member 14 midway between support members 18, the angle member 14 is bolted to two convenient wall studs 13 by screws 16 so that the hook 24 lies on the projection of the vertical center line. Since the screws 16 extend through slots 17, the horizontal position of the fixed support could be precisely located. As an alternative suitable holes for accommodating screws 16 could be drilled in member 14 where required, or other means could be used to anchor member 14 directly to the wall studs 13. The vertical location of angle member 14 was determined by placing the flanges 19 at approximately the same elevation as the projection of the bottom edge of the object. The bolts 21 should be preferably threaded halfway into the support member 18 so that the bolts are free to rotate into or out of the member 18 to shorten or lengthen member 18 as would be required. Then, the object 11 is placed on flanges 19 with the wire 22 engaging the hook 24. The vertical angle that the object makes with the wall is coarsely adjusted by changing the length of wire 22 and the position of eyelets 23. Then for precise adjustment of the vertical angle, bolts 21 are threaded out of the member 18 to make the angle smaller, and threaded into the member 18 to make the angle larger. Of course, if eyelets 23 were located vertical, higher than hook 24, then the vertical angle is increased by screwing bolts 24 further into member 18 and is decreased by screwing the bolts out of the member 18. The eyelets 23 should be preferably located vertical lower than hook 24 and, of course, above the center of gravity of object 11. Since the vertical angle is small, very little change in the length of the support member 18 is needed to change the vertical angle appreciably. As an alternative, the object 11 could be supported only on member 14 without the aid of the depending support member 18.

As shown in the drawing, the apparatus has obvious utility in hanging large heavy objects on a wall since the weight of the object is efficiently transferred to the wall studs. The object is thus securely held at a precise vertical angle, upright, and square so that there is no need of straightening the object everytime a door is slammed. The apparatus also has utility when used to hang lighter objects even though they could be hung directly on the sheet rock 12, since a light object also is prevented from tilting and shifting out of square by the teaching of this invention. The wire 22 and support members 18 are in tension therefor the vertical angle between the object and the wall is stable and members 18 could be made relatively light.

Referring to FIG. 3 there is shown another embodiment for adjusting the vertical angle between the object

11 and the wall 12. The angle member 14, as in FIG. 1, is bolted to studs 13 and the object is hung on hooks 24 by a wire 22. The vertical angle between the object 11 and the wall is adjusted by an adjustable member in the form of a turnbuckle assembly 26 which has an adjustable length but also takes compressive forces. One end of the turnbuckle assembly 26 engages the horizontal leg of angle 14 and the other end engages the object 11 by an eyelet 27 preferably disposed near the top of the object. The eyelets 23 should now be disposed vertically lower than hook 24. Like support member 18, two spaced turnbuckle assemblies 26 are preferred, but in some embodiments one turnbuckle assembly 26 or one support member 18 would be sufficient. Then, of course, the fixed member 14 could be made very short, for example, having sufficient size to hold only the hook 24 and one adjustable support member fixed thereon.

If some objects 11 are narrow, the fixed support 14 should be made short enough so that it could still be hidden behind the object 11. In some embodiments the width of the object 11 is less than the distance between two adjacent studs 13 or the object 11 is less than the distance between three adjacent studs 13. Then if the object 11 with a width less than three adjacent studs should have vertical center line of the object projecting slightly to the right or left a stud 13 when the object is located on a wall so that in either case there is only one stud 13 available to which one could bolt the fixed member 14 and still have it hidden behind the object. A means should be provided to fix the member 14 rigidly. Referring to FIG. 4, where like members refer to similar items as in FIG. 1, a short fixed support member 14' with adjustable-length support-members 18 is bolted to a bracket member 28. Member 14' also has a hook (not shown) similar to hook 24 on member 14 (FIG. 1) by which hook an object is supported in a substantially similar manner as shown in FIG. 1. The bracket member 28 is preferably an elongated metal bar $\frac{1}{8}$ inch thick or less to reduce its bulk. Since the member is thin, two spaced metal threaded studs 29 are preferably welded on one side thereof. The bracket 28 is mounted on the one wall stud

13 by two spaced screws 31 extending through a slot 32 that is formed in the bracket substantially perpendicular to a line joining the two threaded studs 29. The fixed member 14' has the slot 17 formed in vertical leg by which it is fixed to the bracket 28 by suitable nuts 33 threaded onto metal studs 29. Adjustment is thus provided to the apparatus both vertically and horizontally.

Since many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, all matter contained in the above description or shown in the accompanying drawings is intended to be interpreted as illustrative and not in a limiting sense.

What is claimed is:

In combination a wall having spaced wall studs covered with sheet rock, and a hanger comprising an elongated member having an elongated slot, said elongated slot being longer than the spacing between two adjacent studs on said wall, bolt means for bolting said elongated member to at least two of said studs to provide structural strength to said elongated member, said bolt means protruding through said elongated slot, and at least two support members having adjustable lengths depending from said elongated member, means on the lower end of said support members for engaging an object, and a wire disposed on said elongated member for engaging said object.

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