

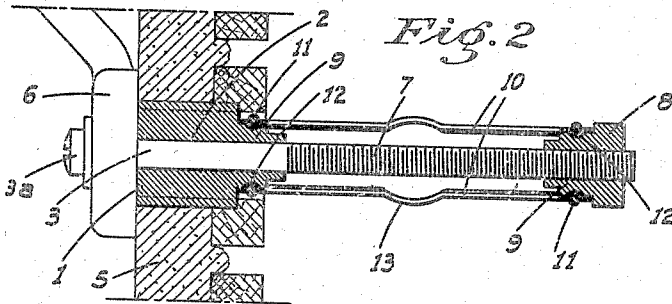
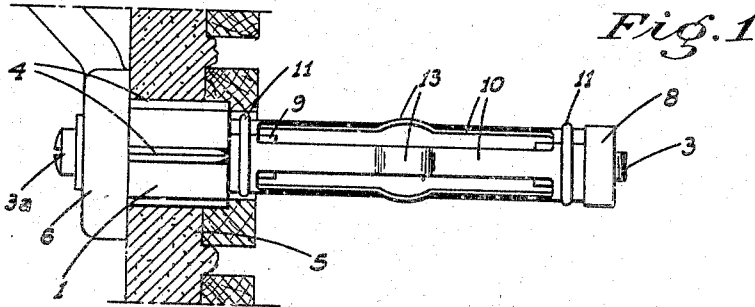
March 25, 1941.

F. F. WIPPER

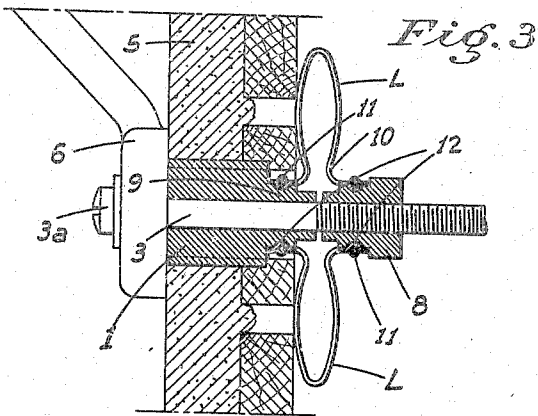
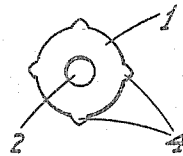
2,236,079

WALL BOLT

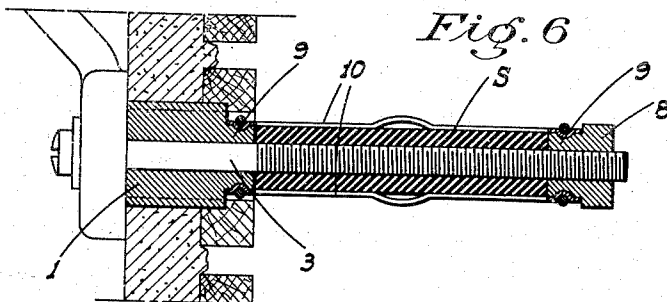
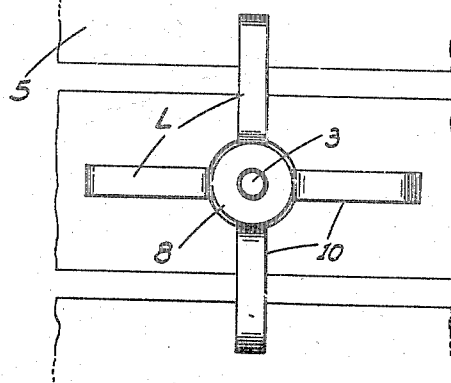
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*Fig. 4*



*Fig. 5*



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# UNITED STATES PATENT OFFICE

2,236,079

## WALL BOLT

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Application February 23, 1940, Serial No. 320,438

2 Claims. (Cl. 85-2.4)

This invention relates generally to wall bolts, and in particular the invention is directed to an improved wall bolt of the type used to attach fixtures and the like on a wall at a point where no stud or other thick solid member is available.

The principal object of the present invention is to provide a wall bolt of unique construction, and a bolt which is not only easier to install but provides much greater support than the now commonly used toggle type wall bolt.

Another object of the invention is to provide a wall bolt of the type described, which after being installed can be readily removed if necessary, and without damage to the portion of the wall surrounding the hole initially bored to receive the bolt.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is an elevation of the improved wall bolt as inserted through a wall but before being drawn up or secured.

Figure 2 is a sectional elevation of the same.

Figure 3 is a sectional elevation of the device in secured position.

Figure 4 is an outer end view of the wall plug.

Figure 5 is an inner end view of the device in secured position.

Figure 6 is a sectional elevation of a slightly modified form of the device as inserted through a wall but before being drawn up or secured.

Referring now more particularly to the characters of reference on the drawing, and particularly at present to the embodiment of the invention shown in Figs. 1 to 5 inclusive, the device comprises a substantially cylindrical plug 1, preferably of a relatively soft metal such as lead.

This plug is provided with an axial bore 2 through which a relatively long bolt 3 extends in rotatable relation. Longitudinally extending, circumferentially spaced ribs 4 project radially outward from the exterior of the plug and prevent rotation thereof when the plug is driven into a hole bored in a plaster and lath wall 5, the hole being bored substantially the same diameter as that of the plug. The head 3a of bolt 3 is disposed outwardly of the outer end of the plug and when the device is in use, engages with

the fixture 6 which is to be supported and through which the bolt projects; the fixture being clamped between head 3a and the outer surface of wall 5.

To secure the device with the wall, I provide the following structure:

The bolt 3, being relatively long, projects some distance inwardly beyond plug 1 and wall 5, such projecting portion being threaded as shown at 7. A head 8 is threaded on bolt portion 7, and the adjacent ends of plug 1 and head 8 are formed with axial necks 9 of reduced diameter. The head 8 is initially adjacent the inner end of the bolt, as shown in Figs. 1 and 2.

A plurality of longitudinally extending, relatively stiff but bendable metal strips 10 extend between and at their ends rest on said necks 9; these strips being circumferentially spaced about the necks and radially spaced from bolt 3. The ends of the strips are fixed with the necks by means of clamping rings 11 which deform the adjacent portions of the strips into annular grooves 12 in the necks. Centrally of their ends, the strips 10 are deformed or struck out radially of bolt 3 and as indicated at 13. To secure the device with the wall, the bolt 3 is rotated by means of head 3a; the direction of rotation being such as to cause the threaded head 8 to move along the bolt in the direction of the wall.

As a result of such movement, the strips 10 first bow outwardly and with continued movement of the head finally fold as radially projecting loops L (see Fig. 3), one side of which firmly and frictionally engage the adjacent wall surface. The plug is of such a length that the adjacent ends of the strips 10 terminate within the bore cut for said plug; this feature assuring that loops L firmly engage the wall.

By means of the above described wall bolt, a fixture can be firmly and securely mounted on a plaster and lath, or wallboard wall at a point where no stud or other rigid member is present. Due to the extent of contact of loops L with the inner surface of the wall, there is no tendency for the bolt to pull out of the wall or to fracture and crack the plaster adjacent the plug 1.

If it is ever necessary to remove the device from the wall, bolt 3 is rotated in a direction to move head 8 away from plug 1; such movement unfolding loops L, and returning same to substantially their initial configuration and parallel to said bolt whereupon the device can be withdrawn from the wall.

The embodiment illustrated in Fig. 6 comprises the same structure as above described, but in ad-

dition includes a soft and deformable rubber sleeve S surrounding bolt 3 between the necks 9 of plug 1 and head 8; this sleeve being of sufficient diameter to snugly occupy the space between the bolt and strips 10. The purpose of said soft and deformable rubber sleeve is to assure that strips 10 bow outward and finally fold together as head 8 moves toward plug 1; the expansion or radial deformation of the rubber sleeve caused by the longitudinal compression thereof pressing against strips 10 and effecting the desired result.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A wall bolt comprising a plug having an axial bore, a bolt rotatably extending through said bore and projecting beyond the plug, the projecting portion of the bolt being threaded, a head threaded on the bolt and initially disposed some distance from the plug, axial necks formed on adjacent ends of the plug and head, a plurality of bendable metal strips engaging at their ends on and extending longitudinally between said necks, and means securing said ends of the strips on the necks in fixed relation; said means comprising clamping rings surrounding the ends of the strips and necks, the necks having annular grooves therein and rings deforming the adjacent portions of the strips thereinto.

2. In a wall bolt assembly, a rotatable bolt, a pair of initially spaced members on the bolt and arranged for relative approaching movement upon rotation of said bolt, a plurality of bendable metal strips secured on and extending between said members longitudinally of but spaced from the bolt, and a deformable rubber sleeve surrounding the bolt and extending from member to member, said sleeve snugly engaging between the bolt and said strips.

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