July 23, 1957 J. R. MYERS 2,799,860

WALL FASTENER AFFIXING DEVICES

Filed July 21, 1954

Fig 1.

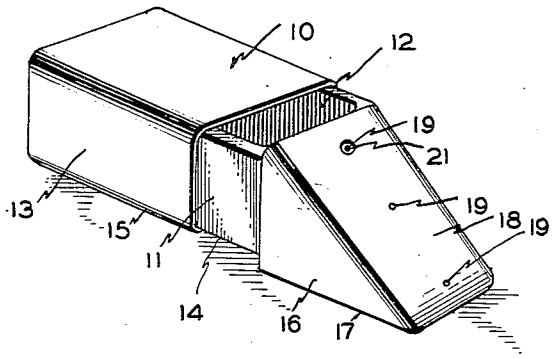
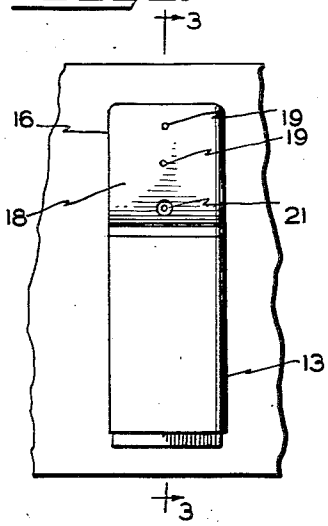


Fig 2.



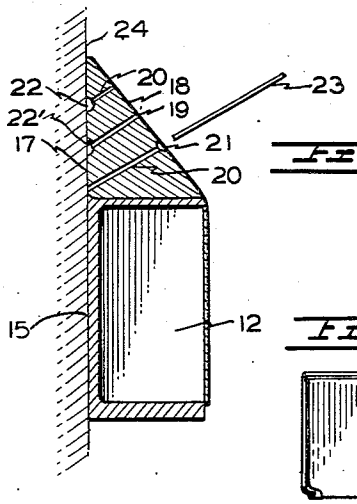


Fig 3.

Fig 7.

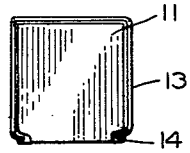
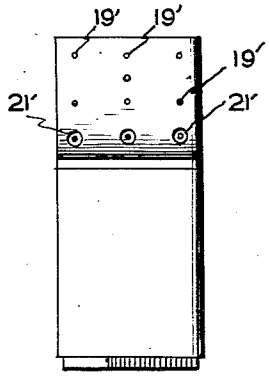


Fig 4.



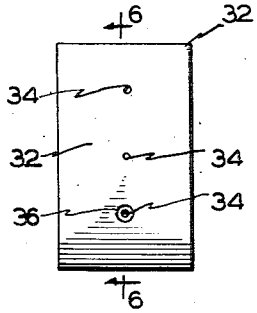


Fig 5.

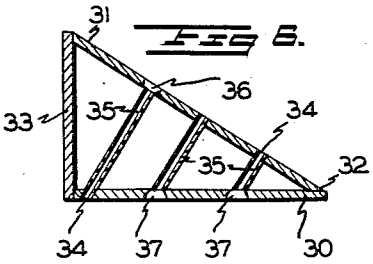


Fig 6.

INVENTOR
JOSEPH R. MYERS

BY Hugh E. Smith

ATTORNEY

United States Patent Office

2,799,860

Patented July 23, 1957

2,799,860

WALL FASTENER AFFIXING DEVICES

Joseph Richard Myers, Charlotte, N. C.

Application July 21, 1954, Serial No. 444,800

3 Claims. (Cl. 1—49.8)

The present invention relates in general to devices for affixing fasteners to walls or like surfaces. More particularly, it relates to nail guide devices especially adapted for use in situations wherein minimum damage and/or visible after-effects from the affixing operation are desired, as in picture hanging or the like.

One problem which nearly everyone is forced to contend with at some time is that of affixing objects to finished, painted or papered, plaster walls; the most common of such objects being, of course, pictures or other ornamental items. Conventionally, such objects are suspended from nails driven securely into the wall surface or from hangers supported by such nails. In the case of plaster walls, damage almost always results when nails are simply driven therein. The walls, being of a calcareous or friable nature, are easily chipped as the nail enters, and additionally usually bulge around the point of ingress of the nail. The chipping or breaking of the surface of the wall presents an unsightly appearance if the object suspended from the nail is removed or does not completely hide the nail and surrounding wall area. Even if chipping does not take place when the nail is driven into the wall, the bulge resulting from displacement of the plaster by the bulk of the nail will crumble with time, or when the nail is removed, producing the same undesirable result. One manner in which this bulging could be minimized would be to reduce the diameter of the nail used. However, reducing the nail diameter greatly weakens the nail and results in bending of the nail before it is properly seated in the wall.

It is therefore an object of the present invention to provide means capable of overcoming the disadvantages set forth above.

It is a further object of the invention to provide a device which minimizes bulging and chipping in plaster walls as a nail is driven therein.

Another object of the invention is to provide a device whch permits the use of very small diameter nails in the hanging of pictures or the like.

Additional objects, if not specifically set forth herein, will be readily apparent to one skilled in the art from the following detailed description of the invention:

In the drawings:

Figure 1 represents a perspective view of the preferred embodiment of the invention.

Figure 2 is a front elevation of the device of Figure 1 with the cover closed and the device in operating position on a wall.

Figure 3 is a sectional view of the device shown in Figure 1, taken on the line 3—3 of Figure 2.

Figure 4 illustrates a top plan view of a modification of the present invention.

Figure 5 is a top plan view of another modification of the present invention.

Figure 6 is a cross-sectional view taken on line 6—6 of Figure 5.

Fig. 7 is a rear plan view of the device of Fig. 1, with the movable cover closed.

Generally, the present invention provides a means for both applying pressure to a wall surface immediately surrounding the point of contact thereof with a nail to be driven therein, and also for so supporting and strengthening the nail that a very small-diameter nail may easily be used.

More particularly, referring to the drawings, 10 in Figure 1 represents generally the device of the present invention. This device comprises a handle or body portion 11 which may be of any shape or size desired, but which preferably is in the form of a rectangular block as shown. This body portion, which may be made of steel, wood, plastic or any other material of a similar nature and may be either solid or hollow, serves as a convenient handle for the device and aids in applying the necessary pressure to the wall surface as described below. In the preferred embodiment, as shown in Figure 1, the body 11 is hollow, being provided with an open-top compartment 12 recessed in the body 11. This compartment is adapted to contain nails and associated hangers for use with the device, and may be closed by slidable top member 13 which rides in channels 14 recessed into the side walls of body 11. Regardless of the general configuration of body portion 11, it is essential that the base 15 thereof be flat in order to provide a smooth work-contacting surface. At one end of the body member 11, is provided an extension 16 which is generally wedge-shaped in configuration. As will be seen from the drawings, one side 17 of extension 16 is coplanar with, and forms an extension of, base 15 of body 11. Extension 16 thus provides a downwardly-inclined surface 18 spaced outwardly from but inclined at an angle towards the plane of base 15 and its extension 17. Spaced longitudinally down this inclined surface 18, are a plurality of openings 19 of small diameter. These openings form the mouths of guide channels 20 extending through member 16 and providing communication between the work-contacting surface 17 and inclined surface 18. As will be seen from the drawings, these channels are of varying lengths due to the decreasing distance between the surfaces which they connect, but are all of the same diameter. The channels 20 are disposed at substantially right angles to the plane of inclined surface 18. A small countersink or recess 21 is provided in inclined surface 18 about the opening 19 of the longest guide channel 20. Corresponding countersinks or recesses 22 and 22' are provided in the work-contacting surface about the mouths of the shorter guide channels, as is more clearly shown in Figure 3.

Referring now to Figures 2 and 3, the method of operation of the present device may be clearly seen. A nail 23, or other suitable straight fastener such as a pin or wire, is inserted into the longest guide channel 20, being guided into said channel through countersink 21. This nail is then driven into the wall or other surface 24 until the top of the nail is flush with inclined surface 18. The nail or other fastener must be of the same uniform diameter throughout, i. e. headless, and of a just slightly smaller diameter than that of the guide channels 20. Thus, when driven in until the top of the nail or pin is flush with inclined surface 18, the guide device 10 may be slid off the nail. The device is then again placed over the nail, this time using the next longest guide channel and engaging the nail with recess 22' to provide proper alignment with the channel. This procedure is repeated with the shortest guide channel, if desired, and each time the nail is driven in until flush with surface 18. The result is that the pin or nail is firmly seated in the wall at the proper angle for holding a suspended object. It will be seen that the channels 20

provide against any bending of the small-diameter, headless pin or nail during the driving thereof, and that work-contacting surface **15** and extension **17** press against the wall surrounding the point of entry of the nail to prevent any bulging of the wall around such point.

Figure 4 illustrates a top plan view of a modification of the device of the present invention wherein a plurality of rows of guide channels **19'** are provided and wherein the number of guide channels in each row may be varied. As in the preceding device, however, each of the channels in any one longitudinal row is of the same diameter, and countersinks **21'** are provided on the top inclines surface of the device at the mouth of the longest guide channels and on the work-contacting surface about the mouths of the shorter channels.

Figures 5 and 6 illustrate a further modification of the device of the present invention. Here, the entire device consists solely of the so-called "extension" of the preceding modifications. While this extension may be solid as in the other modifications referred to above, it is shown here as being formed by a flat work-contacting surface **30** and an inclined surface **31** fixedly secured directly to surface **30** at one end **32**, and at the other end through rigid member **33** which extends at substantially right angles to the plane of surface **30**. Thus is formed a rigid wedge-shaped structure having an open central portion. Ports or openings **34** are provided in surface **31** and also in surface **30**. Connecting these ports and rigidly affixed to the respective surfaces are a plurality of hollow tubes **35**. These tubes extend at substantially right angles to the inclined surface **31**, defining guide channels for the nails or other fasteners as in the case of the earlier-described devices above. A recess or countersink **36** is provided in surface **31** at the mouth **34** of the longest tube **35**; and corresponding recesses **37** are provided about the mouths of the shorter tubes in surface **30**.

In using the present invention, it is preferred that the small-diameter, headless nails be also pointless. In other words, instead of the conventional sharp point, the nail is cut at right angles to its length to provide a blunt end. While it has been heretofore suggested to use nails of this general type in order to avoid the splitting of thin veneers and the like, it is not believed that the art has recognized the fact that when combined with two other factors, i. e. pressure on the wall surface about the point of entry of the nail and the use of very small diameter nails, these square cut nails, as they will be hereinafter referred to, substantially reduce chipping of a plastered surface when driven therein. Although the diameter of the nails may be varied somewhat depending upon the type of surface in which they are to be driven, it has been found desirable to keep the diameter below

0.035 inch. Nails down to 0.020 inch diameter may be used successfully, the diameter of the guide channels in the nail guide device varying, of course, to correspond with the diameter of the nail used. In general, a clearance of about 0.005 inch should be provided in the guide channels over the diameter of the nail used.

Obviously many modifications and variations of the invention as hereinbefore set forth may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims:

I claim:

1. A nail guide device comprising a solid wedge shaped member presenting a flat, work-contacting surface and a second surface disposed at an angle to said work-contacting surface, a plurality of small diameter holes which pass through the wedge shaped member and both of said surfaces, the holes running substantially normal to said second surface, a countersink around the longest of said holes in the second of said surfaces and countersinks around the remainder of said holes in the work-contacting surface.

2. A nail guide device which may be used to drive small diameter nails into plaster walls without bulging and chipping the plaster, and which prevents the nail from being bent while being driven, which comprises a solid wedge shaped member presenting a flat, work-contacting surface and a second surface disposed at an angle to said work-contacting surface, and a plurality of small diameter holes which pass through the wedge shaped member and both of said surfaces, the holes running substantially normal to said second surface.

3. A nail guide device which may be used to drive small diameter nails into plaster walls without bulging and chipping the plaster, and which prevents the nail from being bent while being driven which comprises a solid wedge shaped member presenting a flat, work-contacting surface and a second surface disposed at an angle to said work-contacting surface, and a plurality of small diameter holes which pass through the wedge shaped member and both of said surfaces, the holes running substantially normal to said second surface, and countersinks around at least all but the longest of said holes in said work-contacting surface.

References Cited in the file of this patent

UNITED STATES PATENTS

1,516,421	Cordel	Nov. 18, 1924
1,664,081	Means	Mar. 27, 1928
1,715,819	Dealy	June 4, 1929
2,252,780	Muller	Aug. 19, 1941
2,283,814	La Place	May 19, 1942
2,400,878	Dunn	May 28, 1946