

[54] EXPANSION HANGER DEVICE

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[22] Filed: Nov. 12, 1971

[21] Appl. No.: 198,371

[52] U.S. Cl. 85/73, 85/84

[51] Int. Cl. F16b 13/06

[58] Field of Search 85/73, 74, 75, 76,
85/80, 82, 83, 84, 85, 26, 77, 78, 72; 24/73
PF, 73 PM, 73 P

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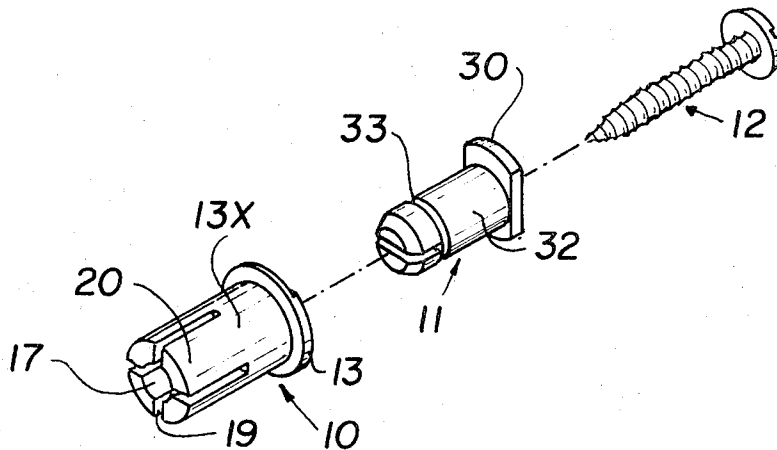
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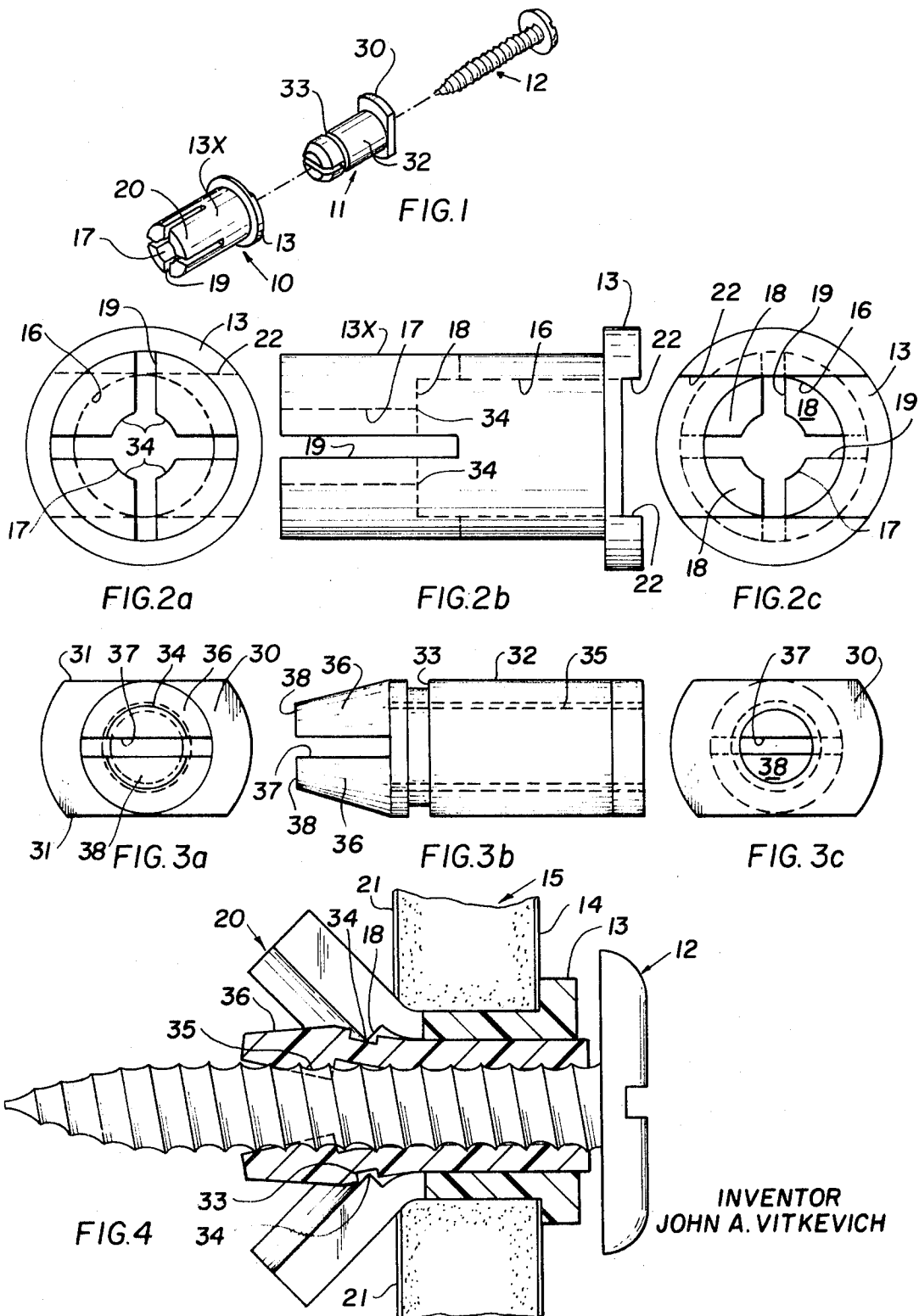
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[57] ABSTRACT

This invention relates to a device for hanging frames or fixtures to a dry wall of a building. More particularly the device comprises a body portion which is inserted into a suitable aperture of a relatively thin, dry wall and expanded there behind, by an insertion of a unique plug portion. Lastly, a conventional screw or other suitable hanger element is inserted into said plug portion for holding a fixture thereto.

1 Claim, 8 Drawing Figures





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EXPANSION HANGER DEVICE

It is an objective of this invention to provide an inexpensive device for rapid insertion into an aperture of a dry wall, and to be locked in place thereto, said plug being adapted to receive a metal screw or like element for holding a fixture to said wall.

This and other objectives of this invention will become readily apparent upon reading the following description of an illustrative embodiment, shown in the accompanying drawing in which;

FIG. 1 is an exploded perspective view of the invention,

FIG. 2a is a view of the fixture receiving end of the body portion,

FIG. 2b is a side view of the body portion,

FIG. 2c is a view of the inserted end of said body portion,

FIG. 3a is an end view of the fixture receiving end of the insertable plug portion,

FIG. 3b is a side view of the plug portion,

FIG. 3c is a view of the insertable end of said plug, and

FIG. 4 is a section view of the plug inserted in the body portion in an aperture of a dry wall and having a fixture receiving screw inserted in said plug.

As a statement of this invention, the device consists of two elements, an expandable body portion, and a co-acting plug portion. An important feature of this invention is the locking concept of the body portion to the inner surface of the dry wall and the locking engagement and the locking concept of the plug portion to said body portion to effect the over-all locking of the device to the dry wall.

Turning to the drawing, a body portion 10, preferably of plastic material, is provided with a co-acting, preferably plastic plug portion 11 and a co-acting hanger element 12 adapted to receive or secure a fixture thereto.

The body portion 10, is of cylindrical construction, having a flange portion 13 of largest diameter, and adapted to seat against the exposed surface 14 of the dry wall 15 (FIG. 4). The flange portion 13, is molded integrally with an insertable lesser diameter portion, and inserted into the dry wall 15. A cylindrical front cavity 16, is molded in the front or flange end of the body portion 10, and is of a substantially large diameter. Said cavity 16, communicates with a rear cylindrical cavity 17, to provide a tunnel aperture of two diameters in said body portion, separated by an interior vertically disposed wall 18 (FIG. 2b).

The insertable end of the body portion 10, is provided with four slots 19, to produce four quadrant portions 20, adapted to be outwardly, and angularly disposed lockingly to the inner surface 21 of the dry wall 15 upon actuation by the inserted plug portion 11 (FIG. 4). The flange circular portion 13 is provided with a suitably wide and deep parallel wall channel having the depth of walls 22. The slots 19, extend into the body portion 10 beyond wall 18, in order to provide predetermined and suitable locking flexibility to said body portion.

Turning now to the insertable plug portion 11, said plug portion 11 is provided with generally cylindrical construction integral with a truncated flange portion 30 having parallel disposed side walls 31. The length of the plug 11 is substantially that of the body portion 11 and the cylindrical surface 32 thereof adapted to mate with the surface of the cavity 16. The cylindrical surface 32

of the plug 11 is provided with a circular channel 33 adapted to receive the circular peripheral edges 34 of the quadrant portions 20 of the body portion 10 (FIG. 4) in captive relationship.

The parallel walls 31 of the flange 30 of the plug 11 mates with the walls 22 of the flange 13 of the body portion 10. Thus, the flange 30 of the plug 11 is seated in the receiving channel 22 in the flange 13 of the body portion 10, to prevent rotation of the plug 11 in said body portion 10, upon inserting the screw 12. The interior of the plug portion 11, is preferably provided with molded-in-place threads shown in dotted outline 35 (FIG. 3b), to better receive the threads of the co-acting screw 12. The inner or rear portion away from the flange 30 of the plug portion 11 is provided with conical nose portions 36 adapted to slidably engage the peripheral edges 34 of the quadrant portions 20 to guide them into the channel 33. The nose cone portions 36 are separated by slot 37 dividing them into the equal and opposed sections adapted to be outwardly and divergently actuated by the conical portion of the screw 12. The plug portion 11 is further provided preferably with an inner wall 38 on each of its nose cone portions 36.

In the operation of the device of this invention the relatively thin wall 15 is drilled with a drill of suitable diameter to receive the diametrical surface 13X of the plug portion 10 in snug frictional seizure relationship (FIG. 4). Next the plug portion 11 is pushed or tapped into the body portion 10, to slidably engage the nose cone portion 36 to fall into the channel 33 to lock the plug portion 11 to the body portion 10 with the flange 30 of said plug portion disposed in channel 22 of the body portion.

This insertion of plug portion 11 forces the four body quadrant portions 20 to flare outwardly behind the inner surface 21 of the wall 15, to immovably lock the body portion 10 to said wall 15.

The insertion of the metal screw 12 similarly forces the two nose cone portions 36, to flare outwardly to additionally force the quadrant portions 20 to greater pressure, locking engagement with the inner wall surface 21.

I claim:

1. A two piece flexible material hanger device comprising a hollow body portion and a hollow plug portion, said plug portion adapted to receive a hanger to hold a fixture thereto and being insertable into a receiving cylindrical aperture defined by a relatively thin wall of said body portion, comprising an integral cylindrical tubular portion frictionally insertable into said cylindrical aperture defined by said thin wall in seizure relationship thereto, said body portion having a front end having a circular flange of a diameter greater than said insertable cylindrical tubular portion of said plug portion, said flange having a channel thereacross, said body portion having said cylindrical aperture therethrough, said aperture having a front cavity of larger diameter communicating with a rear cavity of lesser diameter and forming a vertical wall between said cavities having a peripheral edge, said body portion having at the rear end four quadrant portions separated by four respective slots extending suitably into said cylindrical aperture; and an integral cylindrical tubular plug portion having an exterior cylindrical surface mateable with the surface of said larger cavity of said cylindrical aperture, said plug having a truncated flange at its front

3

end having parallel side walls and adapted to seat in said channel of the flange of said body portion, said plug portion partly separated into two opposed portions by a slot therebetween, said cylindrical surface of said plug portion having an external circular channel therein adapted to receive said peripheral edges of said cylindrical aperture of said body portion in locked rela-

4

tionship whereby forced insertion of said plug portion in said body portion forces outwardly and lockingly said quadrants of said body portion behind said wall and with said truncated flange of said plug portion being non-rotatably seated in the channel of said flange of said body portion.

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