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ADJUSTABLE STUD ANCHOR

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FIG. 1.

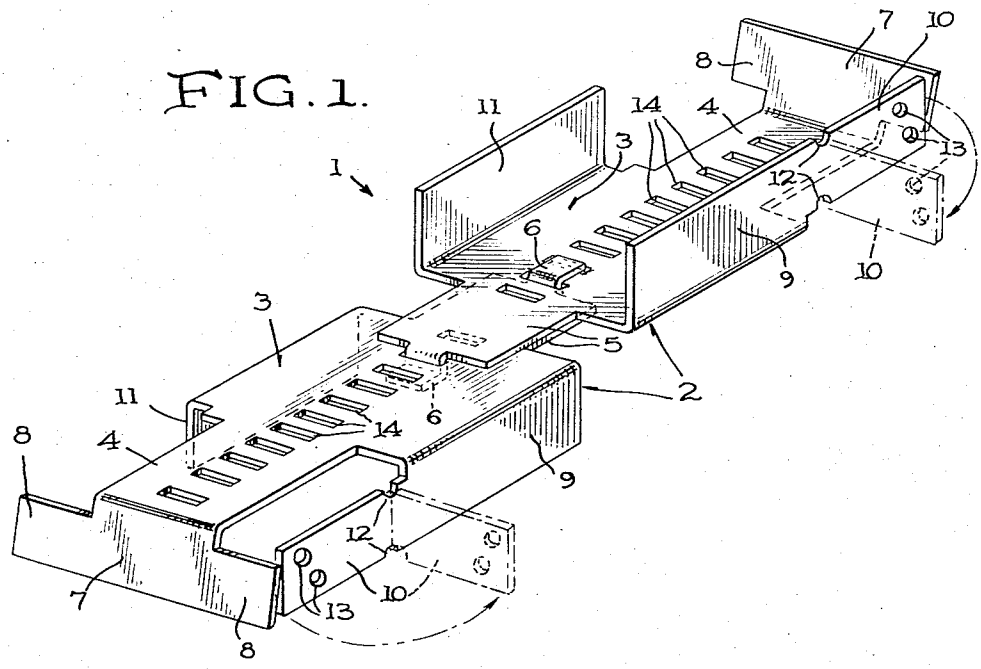


FIG. 2.

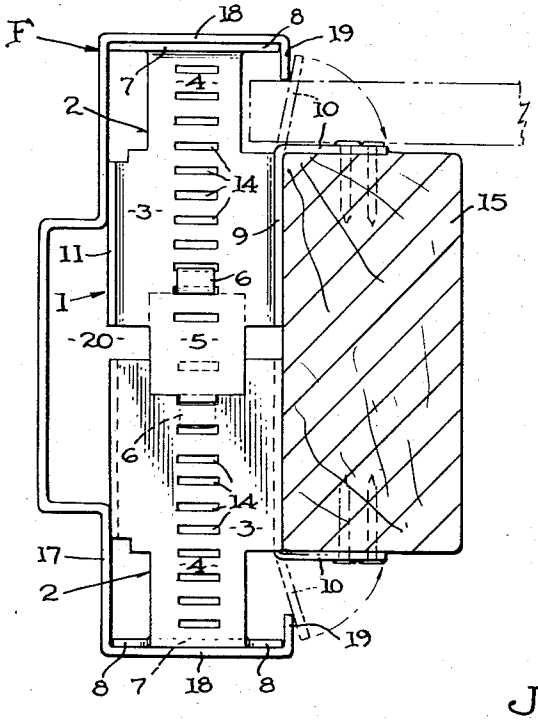
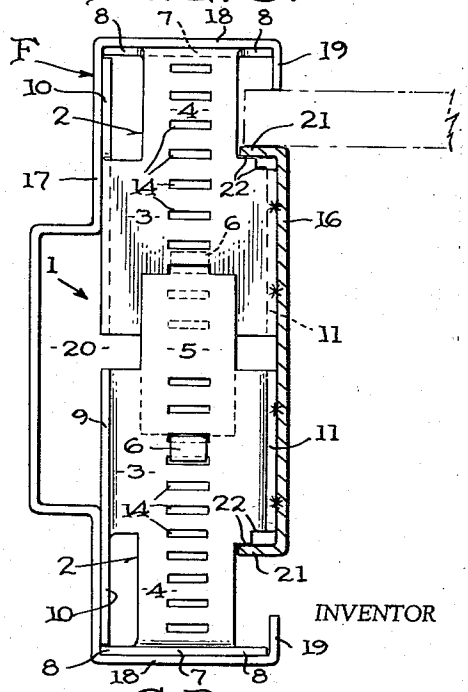


FIG. 3.



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ADJUSTABLE STUD ANCHOR

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ABSTRACT OF THE DISCLOSURE

An adjustable anchor assembly including a pair of identical elements disposed in opposed and overlapping relationship and including means for selectively interlocking the two elements to provide an assembly having an overall length corresponding to the internal dimension of a hollow metal frame member.

This invention relates generally to construction elements, and more particularly, to a stud anchor assembly adapted to secure frame members of the hollow metal type to various forms of stud elements.

It is well recognized, in the construction of dwellings of either the dry wall or plaster wall type, that one of the greatest points of joint failure is the juncture between the studding forming the door and window openings and the metal door or window jambs or frame members. Many prior art devices have been offered in an effort to minimize or eliminate this joint failure by furnishing, to some degree, a more or less rigid interconnection between the metal framing members and the immediately adjacent studding elements. The width or depth of the frame members varies greatly not only between different construction projects but also at times within any single dwelling and accordingly it has been necessary to provide a different size anchor element to accommodate each of the various sizes of frame members since the majority of the known stud anchors require the maintenance of a tight fit within the hollow frame member in order to achieve the desired anchorage.

Another disadvantage of the prior known stud anchor elements is that any one particular element was usually adaptable to only an installation utilizing either wood studs or steel studs but not both. This will become obvious when one considers the difference in construction and manner of attachment of the two types of stud elements to the anchor member. In a wood stud installation the anchor member is usually attached to the stud as by nailing through one or more mounting tabs, while a steel stud, which usually includes a pair of laterally offset flanges, requires an anchor member of different configuration to which the steel stud is wire-tied, and/or tack-welded, or otherwise mechanically fastened.

Accordingly, one of the primary objects of the present invention is to provide an improved anchor member adapted to rigidly secure hollow frame members of various sizes to adjacent stud elements.

Another object of the present invention is to provide a stud anchor assembly comprising a pair of similar elements including means permitting attachment to one another in adjustable relationship.

A further object of the present invention is to provide an improved adjustable stud anchor including means for attaching hollow frame elements to both wood and metal stud members.

With these and other objects in view which will more readily appear as the nature of the invention is better understood, the invention consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawing in which:

FIGURE 1 is a perspective view of the adjustable stud anchor according to the present invention.

FIGURE 2 is a top plan view, partly in section, of the adjustable stud anchor as applied to a wood stud.

FIGURE 3 is a top plan view, partly in section, of the adjustable stud anchor as applied to a steel stud.

Similar reference characters designate corresponding parts throughout the several figures of the drawing.

Referring now to the drawing, particularly FIGURE 1, the stud anchor assembly of the present invention, generally designated 1, comprises a pair of anchor elements 2—2 each of which elements it will be understood is of identical construction when considered apart from the assembly 1. The elements 2—2 are preferably formed from sheet steel stock and may readily be cut and bent to provide the desired construction as illustrated in the drawing. The elements 2 are provided with a longitudinal body including a main body section 3 and an end body section 4, which end body section it will be seen includes a transverse dimension substantially less than the main body section 3. Projecting from the free end of the main body section 3 is a connecting body tongue 5 having a relatively narrow connecting tab 6 further projecting upwardly from its free end. An end tab 7 is provided at the opposite end of the element 2 and includes a pair of lateral ears 8—8 providing a lateral dimension to the end tab 7 substantially equal to the lateral dimension of the main body section 3. As will be seen in FIGURE 1, prior to installation of the stud anchor assembly within a frame member, the end tabs 7—7 are disposed at an angle which is less than 90° to the plane of the body section of the anchor elements for reasons which will become obvious hereinafter.

Attached at right angles to one side edge of the main body section 3 is a long side flange 9 which includes a stud mounting tab 10 extending axially to the end of the body section 4. Along the opposite side edge of the main body section 3 is a short side flange 11 likewise projecting at right angles to the body section of the anchor element. The stud mounting tab 10 of the long side flange 9 is provided with a plurality of notches 12 and as will be seen in the lower portion of FIGURE 1, these notches, which are formed in the edges of the tab are disposed in vertical alignment to one another. The stud tabs 10 are also provided with a plurality of fastener receiving apertures 13 adjacent the free ends thereof which are disposed in a vertically offset relationship with respect to one another.

Formed in the main and end body sections of each anchor element 2 are a plurality of longitudinally aligned, equispaced, transverse slots 14 which are of a dimension sufficient to admit the connecting tabs 6. As previously mentioned, the assembly illustrated in FIGURE 1 is provided by joining two anchors 2—2 each of which is of identical construction. To provide this assembly, it will be seen that a pair of anchor elements are selected, one of the elements is inverted end to end with respect to the other element and the two connecting body tongues 5—5 are disposed in overlying relationship. The degree of overlap of the two elements will be determined by the desired overall longitudinal length of the stud anchor assembly as determined by the corresponding internal dimension of the frame member F to which the stud anchor is to be applied. Prior to the assembly of a pair of anchor elements 2—2, it will be understood that the elements as initially constructed include a connecting tab 6 which projects in a normal direction to the plane of the body tongue 5. In this manner when the tongues 5 of two overlying elements are brought together in proper longitudinal alignment the tabs 6—6 will be positioned through the juxtaposed transverse slots 14 of the mating anchor element. After the two

elements are thus positioned, the two connecting tabs **6—6** are bent over as in FIGURE 1, or otherwise twisted or clinched to secure the two elements in a rigid assembly.

FIGURES 2 and 3 illustrate the stud anchor of the present invention as applied to secure a hollow frame member F to a wood stud **15** and steel stud **16**, respectively. It will be understood that the frame member F may be for the purpose of providing a door casing or any other type of construction such as a window frame. The frame F is constructed of sheet metal and formed to provide a face **17** having opposite side channels **18—18** and a pair of opposed inturned flanges **19—19**, thus providing an interior frame opening **20**.

Although the lateral dimension of the various frame members is more or less standard, it will be appreciated that the longitudinal dimension of the frame opening **20** will vary greatly between different installations and also within any single construction project, this dimension being controlled by the specified wall or partition thickness. As a result of the aforedescribed stud anchor assembly, a pair of the anchor elements **2—2** may be rigidly connected together to provide a longitudinal dimension mating with the longitudinal dimension of the current frame opening **20** being utilized. The reason for initially constructing ends tabs **7** at an angle slightly offset from a vertical plane will now be obvious when the manner of installing the stud anchor assembly **1** within the frame opening **20** is described. In an installation utilizing wood studs **15** a connected pair of anchor elements **2—2** are inserted within the frame opening **20** at an inclined angle with the long side flanges **9—9** of the joined anchor elements disposed oppositely to the adjacent face of the wood stud **15** while the short side flanges **11—11** are abutted against the inner surface of the face **17** of the frame member F. After the end tabs **7—7** are disposed in abutment with the inner surface of the side channels **18—18**, the anchor assembly **1** is twisted in a clockwise or counter-clockwise direction to a horizontal plane whereupon the end tabs of the anchor assembly will provide a tight wedging of the assembly within the frame member as these tabs are forced to assume a normal relationship with respect to the body sections of the anchor element.

With the anchor assembly thus wedged into tight engagement within the frame opening **20**, the frame is installed against the exposed face of the wood stud **15** with the long side flanges **9—9** juxtaposed the outer face of the wood stud **15** as in FIGURE 2. At this point the stud mounting tabs **10—10** which were previously displaced to the dotted line position of FIGURE 2 are readily moved from this dotted line position to a position normal to the long side flanges **9—9** and securely attached to the front and rear edges of the wood stud **15** by means of a plurality of nails applied through the fastener receiving apertures **13**. It will be understood that a plurality of the anchor assemblies **1** are positioned as above described within any single frame member F, and suitably spaced from one another to provide sufficient anchorage of the frame member to the studding.

The displacement of the stud mounting tabs **10—10** from the dotted line position of FIGURE 2 to the full line position in abutment with the wood stud **15** is facilitated by means of the bending notches **12** formed adjacent the juncture of the stud mounting tab with the long side flange **9**.

The anchor assembly **1** of the present invention is readily adapted to an installation utilizing steel studs **16** by merely twisting the assembly 180° about its transverse axis. In such an installation the assembly will appear as in FIGURE 3 wherein it will be noted that the long side flanges **9—9** will now abut the inner surface of the face **17** of the frame member F. In this instance the anchor assembly is inserted and secured within the frame member F in a manner identical to the anchor assembly as applied in FIGURE 2; however, in view of the construction of a steel stud **16** and the manner of attaching the anchor assembly thereto, it will be obvious that the stud mounting

tabs **10—10** cannot be utilized in securing the assembly to a steel stud. The steel stud **16** as shown in FIGURE 3 includes a pair of opposed side flanges **21—21** projecting outwardly towards the frame opening **20**. When the frame member F having a plurality of the anchor assemblies **1** secured therein is positioned against the exposed face of the steel stud **16** of the side flanges **21—21** will engage one or the other of a pair of stepped transverse shoulders **22—22** formed between the juncture of the main body section **3** and end body section **4** of each of the anchor elements **2—2**. With the assembly thus positioned, the short side flanges **11—11** will be juxtaposed the outer exposed face of the steel stud **16** following which any suitable means may be utilized for connecting the anchor assembly **1** to the steel stud such as tack-welding, mechanical fasteners or wire-tying. From a review of FIGURE 3 it will be seen that if a narrower steel stud **16** having shorter side flanges **21** were utilized, then the same rigid inner fitting of the steel stud with the anchor assembly **1** would be achieved as the side flanges would engage the other pair of transverse shoulders **22—22**.

From the foregoing it will be seen that an improved stud anchor assembly is provided which may be readily adjusted to accommodate hollow metal frame members of various internal dimension and which may be utilized to secure these frame members to both wood and steel stud elements.

I claim:

1. An adjustable anchor assembly adapted to secure a hollow metal frame member to an adjacent stud member, comprising, a pair of identical anchor elements each including, a longitudinal body having a plurality of spaced apart connector receiving means, an end tab projecting from one end of said body, a connecting tab extending from the opposite end of said body, side flanges projecting from said body, one of which is adapted to engage said stud member, and said assembly includes said pair of elements disposed in opposed and partially overlapping relationship with one of said elements inverted with respect to the other and with said connecting tab and connector receiving means of one element engaging the corresponding tab and receiving means of the other element, and said stud engaging side flanges of said two elements of said assembly disposed in a single vertical plane, whereby, certain of said receiving means are selected to provide a rigid assembly with said end tabs engaging opposite sides of said hollow frame member to secure said assembly therein according to the internal dimension thereof.

2. An adjustable anchor assembly, according to claim **1**, wherein, one of said side flanges of each anchor element includes a mounting tab displaceable to engage said stud member.

3. An adjustable anchor assembly, according to claim **2**, wherein, said mounting tabs include means adjacent the juncture of said tabs and their respective side flanges facilitating the displacement of said tabs.

4. An adjustable anchor assembly, according to claim **1**, wherein, said connector receiving means comprises a plurality of transverse slots disposed along the longitudinal axis of said element body.

5. An adjustable anchor assembly, according to claim **1**, wherein, said body each includes, a main and end body section, a tongue axially extending from said main section, said end section of lesser width than said main section, one of said side flanges extending the axial length of said main section and the other of said side flanges extending the axial length of said main and end sections to provide a displaceable mounting tab at its free end.

6. An adjustable anchor assembly, according to claim **5**, wherein, said mounting tab includes fastener receiving means.

7. An adjustable anchor assembly, according to claim **5**, including, stepped transverse shoulders at one side of said anchor element at the juncture of said main and end sections.

8. An adjustable anchor assembly, according to claim

5, wherein, said end tab includes, a pair of ears extending laterally to provide a width equal to that of said main section.

9. An adjustable anchor assembly, according to claim 5, wherein, said pair of anchor elements are interconnected with said flanges having said mounting tabs disposed on the same side of said assembly.

10. An adjustable anchor assembly, according to claim 1, wherein, said connecting tabs, prior to joining of said pair of anchor elements, project outwardly from the plane of said bodies.

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