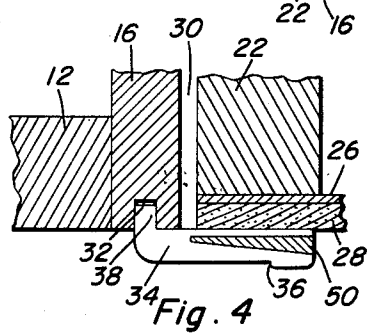
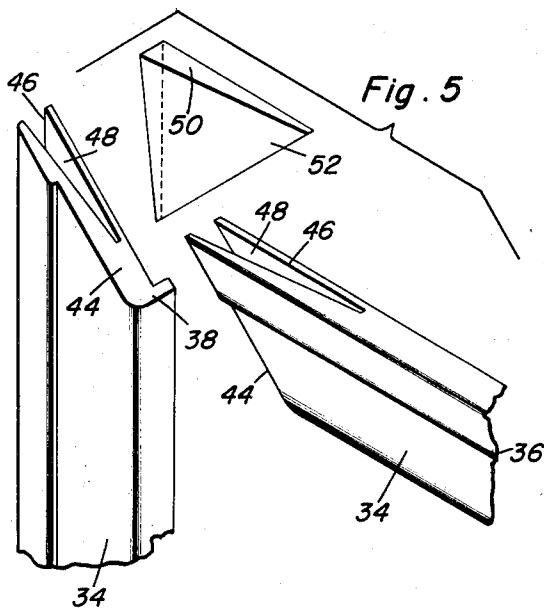
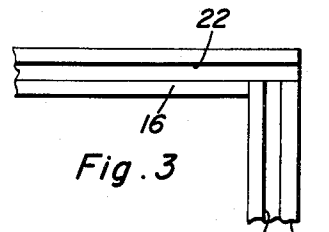
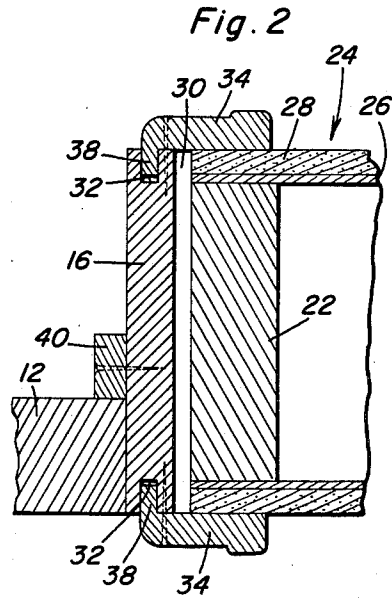
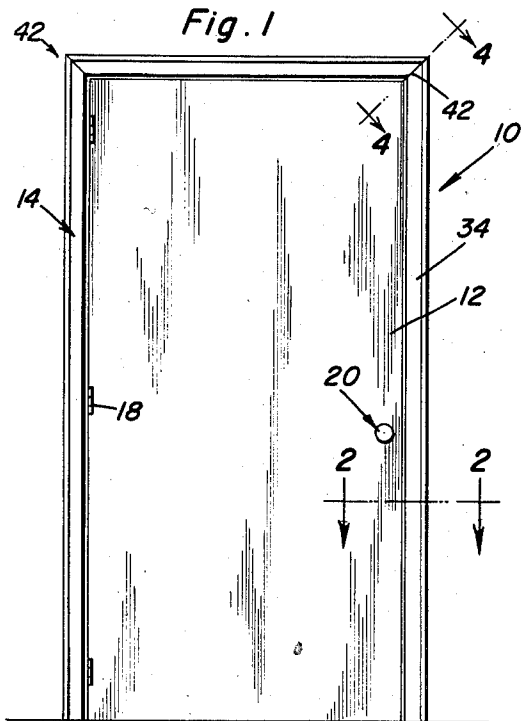


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J. O. KILLEBREW  
DOOR FRAME CONSTRUCTION

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## DOOR FRAME CONSTRUCTION

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4 Claims. (Cl. 20—11)

This invention generally relates to a door frame construction and more specifically a door frame adapted to be mass produced, preassembled and then easily installed in a building.

An object of the present invention is to provide a door frame unit which may be preassembled and shipped to the desired location, after which the preassembled unit may be easily installed in a wall opening wherein the concept of the invention involves the fitting of the opening to the door frame rather than the door frame to the opening whereby the door and door frame have a proper predetermined relationship thereby overcoming the problem of slight variations in wall thickness and alignment without the necessity of altering any of the structural elements such as by planing or sawing as normally occurs when hanging a door.

Another object of the present invention is to provide a door frame construction including a detachable one-piece trim unit having mitered corners which are joined together by a novel joint construction incorporating wedge shaped grooves in the outer corner of the mitered ends together with a wedge shaped insert having glue on the surfaces thereof for retaining the mitered ends in abutting relation thereby forming a rigid mitered joint at each corner of the trim unit.

Other objects of the present invention will reside in its extreme simplicity of construction, ease of installation, adaptation for its particular purposes, adaptation to mass production methods and its relatively inexpensive manufacturing costs.

These together with other objects and advantages which will become subsequent apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an elevational view illustrating the door frame unit of the present invention installed in a wall opening;

Figure 2 is a detailed sectional view taken substantially upon a plane passing along section line 2—2 of Figure 1 illustrating the position of the door jamb, trim unit and adjacent portions of the wall construction;

Figure 3 is a detailed front view of the door jamb with the trim units removed illustrating the continuity of the groove in the front edge thereof;

Figure 4 is a sectional view taken substantially upon a plane passing along section line 4—4 of Figure 1 illustrating the specific structural details of the mitered joint and the wedge shaped insert therein; and

Figure 5 is an exploded group perspective view of the joint construction and illustrating the details of the elements thereof.

Referring now specifically to the drawings, the numeral 10 generally designates the door frame construction of the present invention including a conventional door 12 and a door frame generally designated by the numeral 14 which includes a door jamb 16 to which is hingedly at-

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tached the door 12 by suitable hinge means 18. Any suitable latch mechanism generally designated by the numeral 20 may be employed and forms no particular part of the present invention. As illustrated, the door jamb 16 extends around three sides of the door 12 in the conventional manner and is disposed in spaced relation to the studding 22 of a wall generally designated by the numeral 24 wherein the wall 24 includes some type of lathing 26 and a coating of plaster 328 thereon. Disposed between the studding 22 and the door jamb 16 is a wedge space 30 whereby the door jamb 16 may be properly positioned in relation to the studding 22 thereby rigidly mounting the door jamb 16 in the usual manner.

Each edge of the door jamb 16 is provided with a longitudinal groove 32 extending throughout the length thereof and as illustrated in Figure 3, the grooves 32 are continuous completely around the door jamb 16.

A pair of continuous trim members 34 are provided which are also continuous about the entire periphery of the door jamb members 16. The trim unit 34 may be provided with any suitable trim pattern 36 as desired and the inner edge thereof is provided with an inwardly extending longitudinal tongue 38 adjustably disposed within the longitudinal groove 32 thereby providing a finish to the outer edges of the door jamb 16. With the trim unit 34 being disposed in perpendicular relation to the surfaces of the door jamb 16, it will be seen that the trim unit 34 will engage opposite surfaces of the wall 24 and will permit the installation of the door frame construction in wall openings of walls having slight variations in thickness.

As illustrated in Figure 2, a conventional door stop member 40 is provided on the inner surface of the door jamb member 16 for forming a stop for the door 12 for limiting the movement thereof in the usual manner.

The trim unit construction is continuous and includes a mitered joint generally designated by the numeral 42 for joining the side parts and the top part wherein each of the side parts of the trim unit 34 and each end of the top part of the trim unit 34 is provided with a miter 44. At each outer corner of the mitered end 44 is an inwardly extending groove 46 defined by inwardly converging walls 48 whereby the groove 46 is substantially triangular in shape. An insert 50 having inwardly converging side walls 52 is disposed in the grooves 46 and the walls 52 of the insert 50 are covered with an adhesive prior to insertion in the grooves 46 whereby the entire adhesive coated surface of the wall 52 will be disposed in intimate contact with the walls 48 of the groove 46 thereby rigidly bonding all of the elements of the trim unit 34 into rigid relation with the inserts 50 completely filling the grooves 46. It is noted that the insert 50 is substantially right angular in shape and is equal in area to the adjacent pair of grooves 46 thereby eliminating any looseness in the joint 42.

With the present construction, the production of a one-piece trim unit by splining the mitered trim parts together has been accomplished and the special wedge shaped spline or insert which is dipped in glue and shoved into the V-shaped grooves carries in the glue which facilitates the applying of the glue and also tightens itself in the groove which eliminates the necessity of clamping the glued joint. The trim for these units is joined in a separate operation and the glue is cured electrically by a wood welder. The trim units having the tongues 38 which fit into the grooves in the edge of the door jamb 16 eliminate the numerous problems arising in the field from slight variations in wall thicknesses and alignment. This generally results in a small crack between the jamb and the trim which occurred under the old practice of applying the trim flat against the jamb edge. With this construction, there is no necessity for laboriously altering the finished wall, the trim, the door jamb or all three.

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In this unit, the trim may be applied to conform to the contour of the finished wall and yet the trim tongues will reach into the jamb grooves without the possibility of unsightly cracks. Also, this unit properly establishes the position of the trim in relation to the door jamb thereby eliminating the necessary steps and usual steps of measuring, marking and applying separate trim pieces until the desired relationship is established.

The present door frame unit is installed rather simply since the door, hardware and other component parts of the unit is assembled at a factory by employing a temporary wooden spreader which together with the hinges hold the door and the frame in the proper location to each other and prevent the frame sides from spreading during shipment. One of the trim units and the door stop is only temporarily nailed since the door stop is necessarily adjusted finally after the door frame has been installed and the one trim unit permits the door jamb 16 to be installed after the trim unit has been removed. With the one trim unit removed, the remainder of the unit may be inserted in the wall opening and the other trim may be attached by nailing it to the finished wall surface. This establishes the door and frame unit in its relationship to the wall framing and the door may now be opened for completion of the installation which includes the usual method of blocking the jamb more securely to the door buck or studding. The remaining or separated trim unit is then applied and nailed into place and the door stop is finally positioned in the desired position for proper operation of the door. The separable door stop permits any warpage of the door jamb or the door to be compensated for thereby giving a proper fit and bearing surface to the door. This assembly permits a relatively inexpensive construction and facilitates the installation thereof whereby the usual arduous task of hanging a door has been extremely simplified and the time required to properly install a door has been reduced to an absolute minimum.

With the door jamb 16 fixedly attached to the other trim 34 and the one trim unit removed, the other trim unit will engage the wall surface for positioning and aligning the door jamb in the door opening. The adjustment permitted by the interengaged grooves and tongues permits the unit to be installed in openings in a standard wall wherein the wall has slight variations of thicknesses which normally occur in building construction. This adjustment also permits the door jamb to be properly aligned with the wall regardless of variations in inclination of the wall. While the terminology in which the device is described as being installed in walls of different thicknesses is adequate, it is pointed out that the device will not fit different "standard" wall thicknesses but only slight variations or differences in a single standard wall thickness which is a generally accepted major problem in field conditions in the building industry.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

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What is claimed as new is as follows:

1. A joint comprising a pair of members disposed in intersecting relation, the adjacent end of each member having an inwardly extending transverse wedge-shaped groove having inwardly converging side walls, said grooves being in alignment, and a wedge-shaped insert having inwardly converging side walls disposed in said grooves for joining the members, the adjacent ends being mitered with the grooves disposed at the outer corner thereof and being generally triangular in shape, said insert being generally triangular in shape and equal in area to said grooves thereby completely filling said grooves, and an adhesive coating on said insert for bonding the insert to the walls of the grooves thereby forming a rigid mitered joint.

2. A preassembled door unit comprising a door, a door jamb, and adjustable trim members engaged with the edges of the door jamb and adapted to be attached to opposite surfaces of an adjacent wall, said trim having an returned tongue on the inner edge thereof and said jamb having a groove in the edges thereof adjustably receiving said tongue for permitting the unit to be employed with walls of different thicknesses, said trim members having preassembled mitered outside corners with each mitered end having a groove therein with an insert secured to and interconnecting the mitered ends, said grooves and inserts being substantially transversely wedge shaped and provided with converging side wall surfaces thereby forming a rigid joint.

3. A joint comprising a pair of members disposed in intersecting relation, the adjacent ends of said members having an inwardly extending groove defined by longitudinally extending side wall surfaces, said side wall surfaces converging downwardly and inwardly, and an insert in said grooves for joining the members, said insert having longitudinally extending side wall surfaces, said side wall surfaces of the insert converging laterally towards the inner edge thereof for surface to surface contact with the side wall surfaces of the groove throughout substantially the entire surface area thereof.

4. The combination of claim 3 wherein said side wall surfaces of the insert are coated with adhesive material for bonding with the side wall surfaces of the groove for forming a rigid joint, the complementary converging side wall surfaces of the groove and insert permitting insertion of the coated insert into the groove without wiping the adhesive coating from the insert and without deforming the grooves or insert.

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