

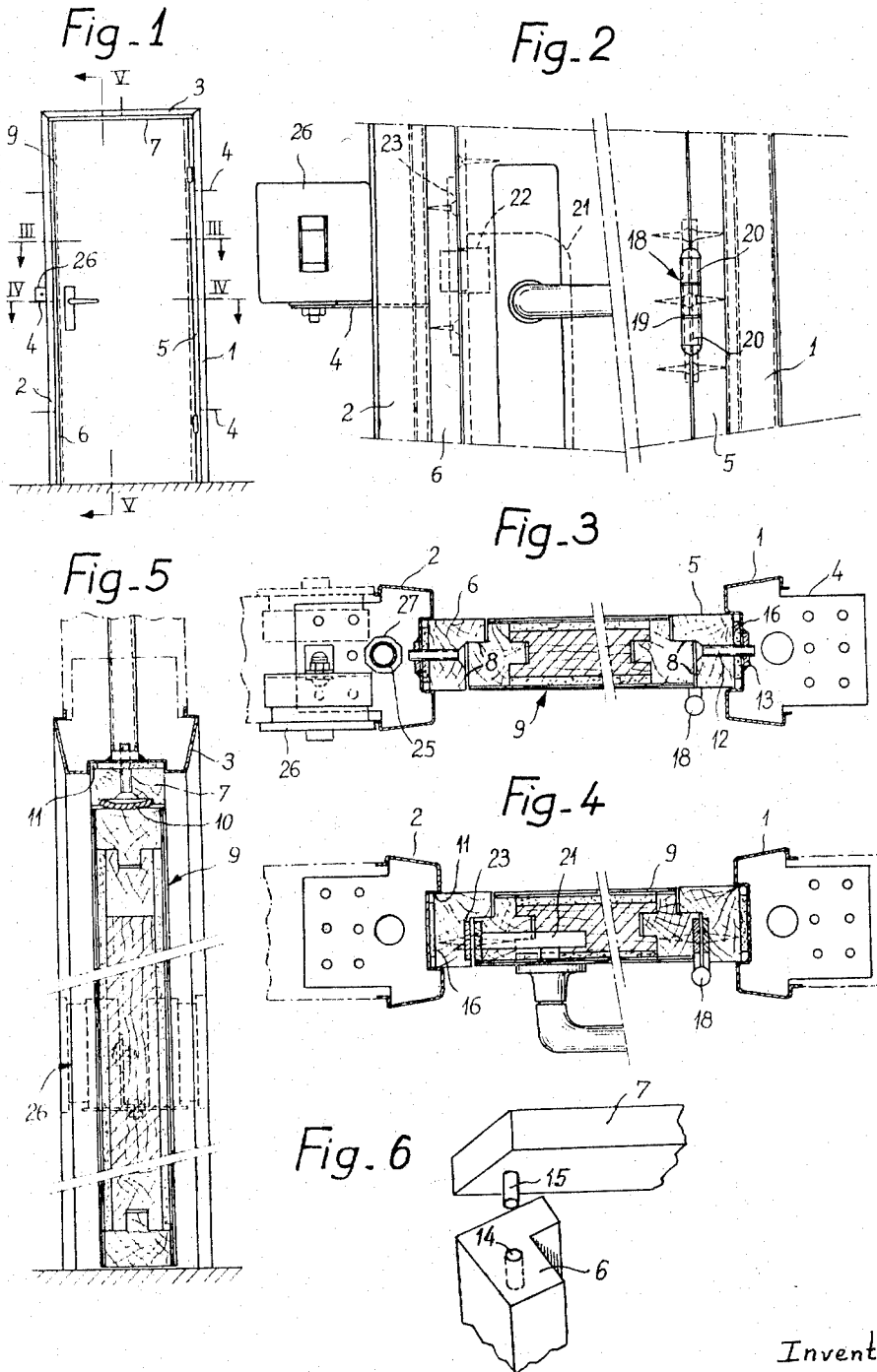
Jan. 3, 1967

M. GRIDAINE
UNIVERSAL DOOR FRAME

3,295,258

Filed Feb. 10, 1965

2 Sheets-Sheet 1



Inventor
Maurice Gridaine
By *Stevens, Davis, Miller & Mosher*
Attorneys

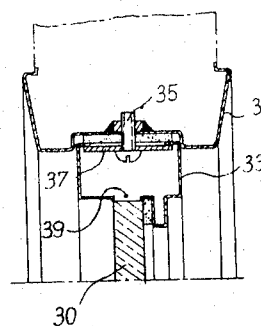
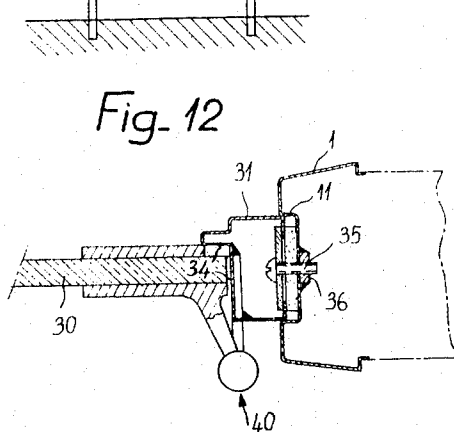
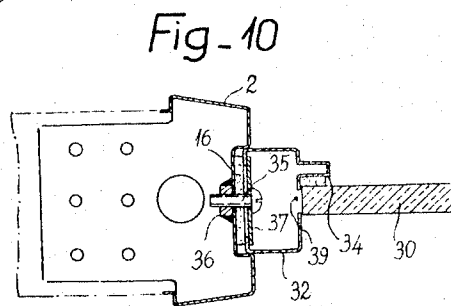
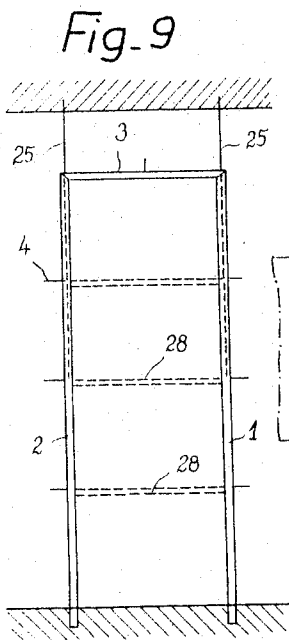
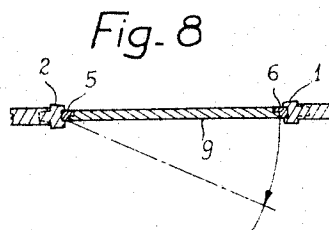
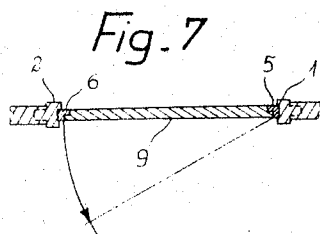
Jan. 3, 1967

M. GRIDAINE
UNIVERSAL DOOR FRAME

3,295,258

Filed Feb. 10, 1965

2 Sheets-Sheet 2



Inventor
Maurice Gridaine
By Stenens, Harris, Miller & Mosher
Attorneys

1

3,295,258

UNIVERSAL DOOR FRAME

Maurice Gridaine, 40 Rue Marbeuf, Paris, France

Filed Feb. 10, 1965, Ser. No. 431,671

Claims priority, application France, Feb. 12, 1964,

963,540, Patent 1,422,042

5 Claims. (Cl. 49—382)

It is known that a door can be opened by pushing or pulling and may be fitted with locks and hinges on the right-hand or left-hand side. This conditions the door casings or frames built during construction, together with the metal parts serving for the door fittings made in the workshop or on site.

The present invention has for its object a construction of an improved universal door-casing which eliminates all limitations due to the fact that it permits a single and complete manufacture of a single type of door and its casing, including the door-fittings made in workshops, irrespective of the direction of fitting and opening desired and even permitting any direction of fitting which has been effected to be modified in a few minutes (without changing the metal fitting and without any repairs to the paintwork or the like).

In particular, according to a characteristic feature of the invention, the door-casing or frame of a single type (made of wood, metal, concrete, plastic material, or any other suitable materials) comprises a conventional system of fixing intended to receive the casing and its door.

The special profile of the door-frame can also be obtained by the pouring or casting of prefabricated partitions or panels.

A further characteristic feature of the invention concerns the system of assembly and the fillisters of the casing which enables the desired direction of opening to be obtained according to its fixing arrangement on the door-frame.

In particular, the reversible door-hinges and locks also enable both directions of opening to be obtained without having to change them.

In view of the profile of the door-frame, it is important to note that two doors placed side by side are symmetrical in appearance if one opens towards the inside and the other towards the outside.

Other particular features will also become apparent from the description which follows of construction of doors according to the invention, shown by way of examples in the accompanying drawings, in which:

FIG. 1 is a view in elevation of a door according to the invention shown mounted in its frame.

FIG. 2 is a detail front view of the door at the level of the lock, of the switch and of a door-hinge.

FIGS. 3, 4 and 5 are views in cross-section of the door taken respectively along the lines III—III, IV—IV and V—V of FIG. 1.

FIG. 6 is a view of an example of an assembly detail of the frame of the door.

FIGS. 7 and 8 illustrate two possible mountings of the same door.

FIG. 9 is a view in elevation illustrating the location of the door-frame during the building of the wall or of the partition.

FIGS. 10, 11 and 12 relate to an example of construction with a door of tempered glass, in a material known under the trademark "Plexiglass" or the like.

FIG. 10 is a horizontal section of the opening side of the door-leaf.

FIG. 11 is a vertical cross-section at the level of the top cross-member of the frame.

FIG. 12 is a horizontal section at the level of a hinge. The door shown in FIG. 1 comprises, as can be seen

2

in detail from FIGS. 2 to 6, a framing composed of two uprights 1 and 2 and a top cross-member 3, in this case made-up of sections of identical and symmetrical form, provided with sealing lugs 4, spaced apart and of which there will be shown later a method of fixing prior to erection of the wall or of the partition in which the door is to be placed. Inside this framing is fixed, in a removable manner, a door-casing with a fillister, in this case composed of two uprights 5 and 6 and a cross-member 7. Only the uprights 5 and 6 are provided here with the fillisters 8, but this could also be the case for the cross-member.

The door-panel 9 fits into the fillisters 8 in the position of closure of the door, in which furthermore it co-operates with a joint 10 built into the cross-member 7 without fillister.

The sections of the door-frame have a mounting groove 11 for the uprights 5 and 6 and the cross-member 7. The uprights are fixed by means of screws 12 placed inside the fillisters 8 and screwing in this case into the nuts 13 welded and retained in the sections of the frame.

The cross-member 7 is fixed in a similar manner by means of screws 12 and nuts 13, its fixing being effected in this case before that of the uprights 5 and 6 which are assembled subsequently each with the cross-member, by engagement of a hole 14 with a corresponding false end-peg 15 of the cross-member. The squaring and the desired positioning of this door-casing can then be ensured by means of thickness wedges 16 intended to be interposed between the door-casing and the door-frame, in the grooves of this latter at the positions of the fixing points of the said framing.

The door-panel 9 is pivotally coupled to one of the uprights 5 by means of hinges 18 of the reversible type, for example with a central ring 19 connected to the door-panel or to the upright, and pivoting between two butts 20 coupled to the other of these two elements.

For a door with a lock, the door-panel 9 is furthermore provided with a flush-type lock 21 with a reversible bolt 22, which can be of any type known per se, while the latch 23 is fixed inside the fillister of the upright 6.

Note should be made of the important fact that the above-mentioned metal fittings of the door-panel and the said framing can be wholly carried out in the workshop, irrespective of the desired subsequent mounting of the door.

FIG. 7 illustrates the case of a door opening to the left by pulling (such as that of the preceding figures), while FIG. 8 illustrates the case of a door opening to the right when pulling, which is obtained by changing over and reversing the uprights 5 and 6, that is to say geometrically by rotation of the whole of the door panel and its framing uprights by 180° about an axis perpendicular to the plane of the door at its centre.

In this latter case, the cross-member 7 does not require to be moved, even when it has a fillister.

Two other cases of door-mounting covering the possibilities which remain desirable are those which can be obtained, geometrically speaking, with respect to FIGS. 7 and 8, by a rotation of the whole of the door-panel and its uprights through 180° about the central vertical axis of the door. In these two cases, if the framing cross-piece comprises a fillister, it must also then be moved as has just been stated above.

As shown in FIGURE 3, the above-mentioned movement is possible due to the fact that the fillisters of the uprights 5 and 6 are symmetrical with respect to a plane perpendicular to the plane defined by door-panel 9 and extending through the central vertical axis of this panel.

The advantage offered by a movable fixing of the parts of the framing is that any specified mounting of the door

3

can be subsequently modified without interfering with that of the casing.

During the building, the door-casing can be placed between the floors prepared before the building of the walls or partitions as is usual, and a particular arrangement of the invention for that purpose consists of joining the fixing lugs 4 of the uprights together by rigid tubes 25 which pass through them and which are intended to form electric conduits for the circuits or controls put at the disposal of the user, that is to say in particular up to the level of the fixing lugs 4 located at the height of the door-handles, and on which is provided in particular the fixing of switches, such as that shown at 26, or current-supply plugs.

These tubes 25 furthermore take the place of needles at their upper parts, that is to say they serve themselves to permit the placing of the door-casing between floors during building, the feet of the uprights of which are directly fixed in the floor, and the upper parts of these tubes 25 being similarly engaged in the flooring of the floor above (FIG. 9).

It should be observed that as the electrical installation is generally carried out essentially at the level and at the same time as the floorings, the arrangements which have been described above further permit the electrician to complete the electrical installation before the walls or partitions are built.

Each tube 25 can be fixed in a removable manner on one only of the fixing lugs 4, for example by means of a screw-connection 27, as can be seen from FIG. 3 on the lug 4 carrying the switch 26. There are also shown in FIG. 9 cross-bracings 28 which it is desirable to insert between the uprights 1 and 2 of the door casing in its fixing prior to the building of the walls or partitions.

FIGS. 10 to 12 illustrate an alternative form of construction in the case of a door having a panel 30 of glass, in which the door-casing frame is constituted by sections 1, 2 and 3, identical with those preceding, while the door-framing is constituted by identical sections forming the uprights 31 and 32 and a cross-member 33 with a fillister 34. The fixing of these framing sections is provided with their open side engaged in the groove 11 of the frame section, and as previously by means of screws 35 co-operating with imprisoned nuts 36 and clamping plates 37 inserted in the sections and applied against the lips 38 of these latter. An entry for a screw-driver is provided by openings 39 formed in the fillister 34 at the fixing points considered. As before, use may be made of the thickness wedges 16 although the hinge 40 shown in FIG. 12 is in the case also of the reversible type.

The possibilities of fixing and mounting of the door explained above, remain fully available in this alternative form of construction, the invention furthermore permitting the replacement of a wooden door by a glass door

4

without any modification of the casing, it being understood that the forms of construction described above are furthermore not limitative in any way with respect to the scope of the present invention.

What I claim is:

1. A door assembly comprising a symmetrical frame having two upright pieces and a cross piece connecting said upright pieces, each of said pieces having a central groove formed in the inner face thereof; a casing having two upright pieces and a cross piece removably mounted in a groove of the corresponding piece of said frame; fillisters formed in at least the upright pieces of said casing; a door panel adapted to register with said fillisters; and a reversible hinge member pivotally mounting said door panel to one of the upright pieces of said casing; said fillisters being symmetrical with respect to a plane perpendicular to the plane defined by said panel and extending through the central vertical axis thereof.

2. A door assembly in accordance with claim 1, characterized in that the casing upright pieces are removably mounted on said frame by fixing members which are located inside the fillister.

3. A door assembly in accordance with claim 1 wherein the door panel is provided with a flush mounting lock and a reversible bolt, while a lock keeper is provided on that of the said casing upright pieces which does not carry the reversible hinge member.

4. A door assembly in accordance with claim 1, characterized in that the upright pieces of the casing are provided with fixing lugs joined together vertically by elements intended to serve for mounting the door assembly between floors before the building of the wall or partition to which the door assembly is attached, and in that at least one of the said elements is a tube forming an electric conduit, in particular up to the level of a control or utilization member intended for fixing on one of the fixing lugs.

5. A door assembly in accordance with claim 4, characterized in that the casing upright pieces are fixed by screws to the frame with the possible interposition of thickness wedges placed in the said groove.

References Cited by the Examiner

UNITED STATES PATENTS

1,576,038	3/1926	Connell	89—36
1,623,874	4/1927	Johnson	189—46
1,929,633	10/1933	Gifford	189—46 X
2,450,673	10/1948	Magaw et al.	189—46
3,083,798	4/1963	Sklar	20—11 X

CHARLES E. O'CONNELL, *Primary Examiner*.

KENNETH DOWNEY, *Examiner*.