

April 26, 1932.

P. BILTON

1,855,470

DOOR

Filed Feb. 24, 1930

3 Sheets-Sheet 1

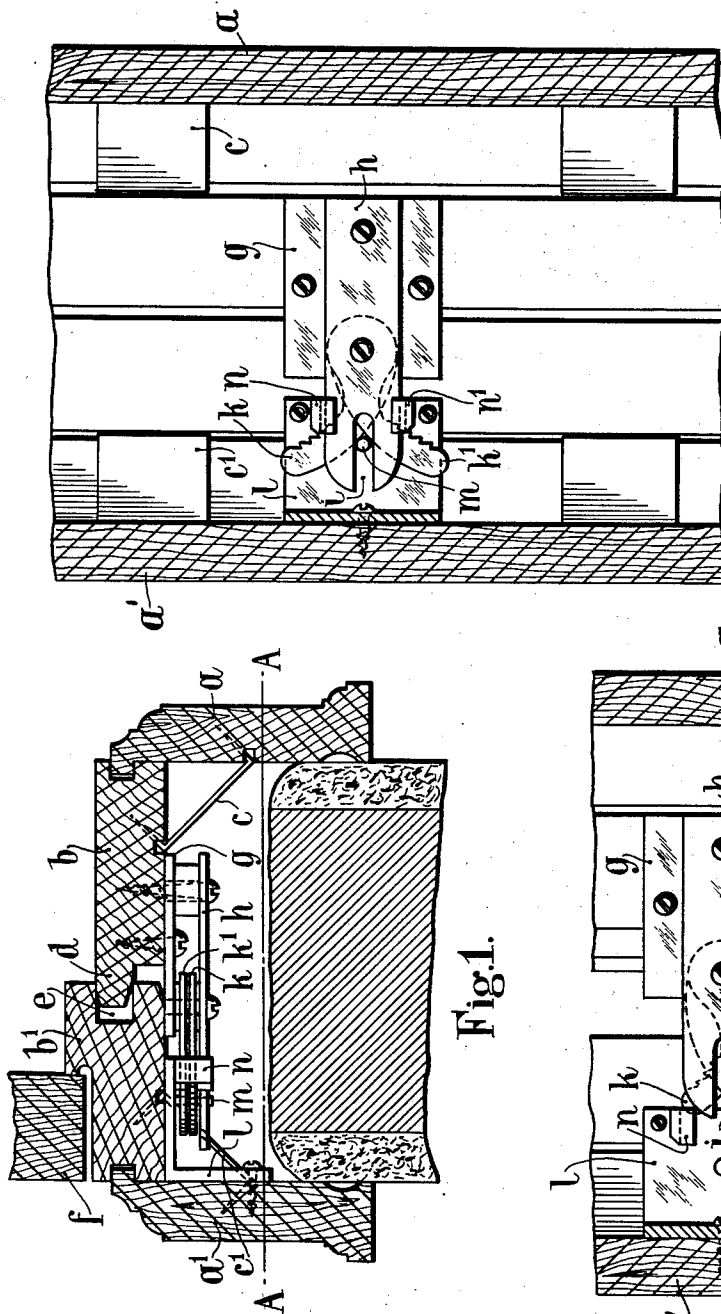


Fig. 1.

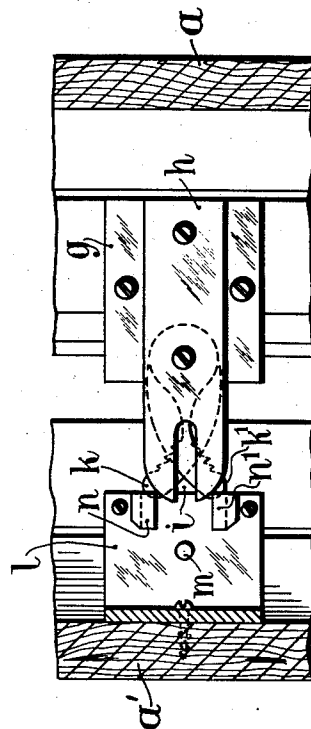


Fig. 2.

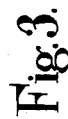
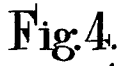


Fig. 3.

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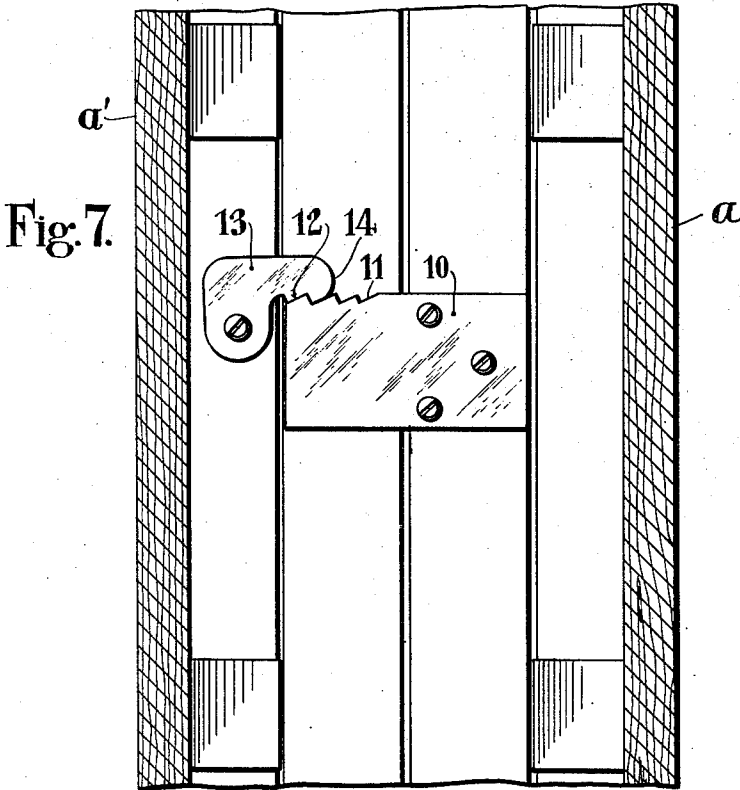
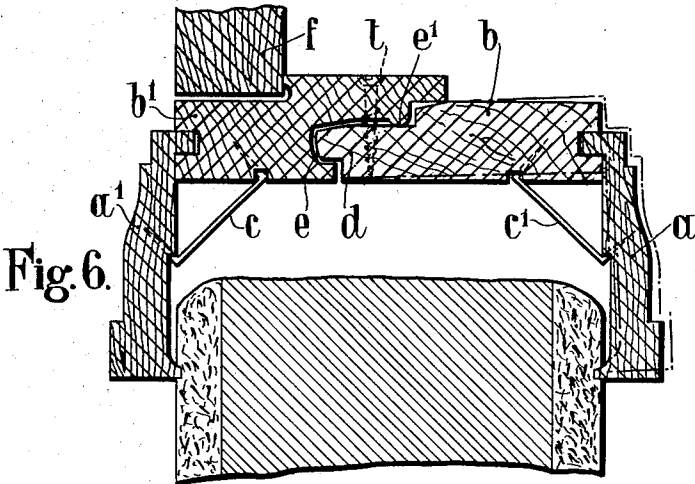
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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DOOR

Application filed February 24, 1930, Serial No. 430,665, and in Great Britain June 21, 1929.

This invention relates to doors, and has for its object to provide an improved construction of door, together with an improved method of fixing doors in position.

The method of fixing a door in position, according to the present invention, consists in clamping the door assembly or the door frame to the wall in such a way as to secure the door tightly in position by pressure alone.

According to the present invention the door assembly may be made complete in two parts, the operation of connecting the two parts together causing the door assembly to grip tightly by pressure alone on the wall. The door assembly according to the present invention may include the door frame made in two or more parts, in which case the door may be hinged to one of the said parts.

In a preferred way of carrying out the invention, the door frame comprises two angle portions, the adjacent longitudinal edges of which are adapted, when the unit is being assembled, to be drawn together by mechanical means thereby causing the remaining limbs of the angle members to be pressed tightly against the sides of the wall adjacent the opening in the wall.

The invention will be illustrated, by way of example, with reference to the accompanying drawings, wherein:—

Fig. 1 is a sectional plan of one form of door made according to the present invention, and

Figs. 2 and 3 are elevations on the line A—A, Fig. 1 respectively.

Fig. 4 is a sectional plan of another form of door made according to the present invention,

Fig. 5 is a section on the line 5—5, Fig. 4.

Fig. 6 is a sectional plan of another form of door made according to the present invention.

Fig. 7 is a view illustrating a further modification.

Referring to Figs. 1 to 3, the door frame comprises two angle portions made up of moulding *a*, *a'* and strips of wood *b*, *b'* respectively, each pair of members being rigidly connected together by bolts *c*, *c'*. The member *b* is provided with a longitudinal tongued extension *d* adapted to engage in a corresponding recess *e* in the member *b'*. The door

f is hinged to the member *b'*. Screwed on the member *b* is a plate *g* carrying a guide plate *h* provided at one end with a recess *i*. Two curved pawl members *k*, *k'* are pivotally mounted between the plates *g*, *h*. A further plate *l* is carried on the members *a'*, *b'* and is provided with a pin *m*, the arrangement being such that on approaching the members *b*, *b'*, the recess *i* in the guide plate *h* slides over the pin *m*, which latter serves to force the two pawl members *k*, *k'* in opposite directions. The pawl members, *k*, *k'* are adapted to co-act with ratchet members *n*, *n'* mounted on the plate *l*.

Fig. 2 shows the relative position of the parts just prior to fixing the door into position, and Fig. 3 shows the relative position of the parts when the door has been fixed.

In order to fix the door in position, the parts are assembled as shown in Fig. 2, a clamp is applied across the members *a*, *a'*, the tongue *d* of the member *b* being forced into the recess *e*, the same operation serving to force the plate *h* across the plate *l* so that on releasing the pressure of the clamp, the parts are held securely in position by the pawl and ratchet device *k*, *n*. It will be seen that the door assembly is held on to the wall by pressure between the members *a*, *a'* and the wall.

In the form shown in Figs. 4 and 5, like parts are referred to by like letters of reference. In this construction the plates *g* and *l* are of different construction. The plate *g* has a cut-away portion *p*, and three turned down portions forming teeth *q*, *q'*, *q''*. In this case, the tongue *d* is forced into the recess *e* likewise by means of a clamp, and whilst the clamp is in position, a threaded bolt *r* is screwed into and through the member *b'*, and the plate *l* thereby causing the teeth *q*, *q'*, *q''* to be forced into the material of *b'*, thus holding the door firmly in its assembled position, in which again the door is held in position by pressure, on the wall only. The bolt *r* may be counter sunk, the head being hidden from view by a pellet of wood.

In the form shown in Fig. 6, the recess

c and tongue *d* are of peculiar construction having long and short co-acting sides. The long side of the slot *c* is provided with a cam surface *e'*, and the design is such that on screwing the parts *b, b'* together by means of the screw *t*, the member *a* is caused to leave the position indicated by dotted lines and to abut with great pressure against the wall. This constructional form indicates a very simple way of carrying out the invention.

In the form shown in Fig. 7 plate 10 is screwed on one angle member and is provided for part of the way along the top edge with teeth 11 which are adapted to engage with teeth 12 on a second plate 13 pivotally connected on the other angle member. One end 14 of the plate 13 is rounded so that on forcing the two angle members together the end 14 is raised and the teeth 12 on the plate 13 can over-ride teeth 11 on the plate 10. When the angle members have been forced together as much as desired, the plate 13 drops by gravity so that the teeth 12 and 14 come into engagement and hold the two members firmly together.

In all forms shown in the drawings, the door assembly comprises only two parts, namely the angle members *a, a'*, and *b, b'*, the door being hinged to one of the angle members, and being already fitted with locks and other necessary fittings when the doors are brought to the site. The joints *c, c'* are so designed as to afford ample covering for any variation in thickness of plaster.

With doors made as above described, the hitherto considerable labour of plumbing, securing and fixing ground pieces, door linings or jambs, together with the necessary packing and counter wedging is entirely eliminated. The invention further allows of considerable latitude in the preparation of the door opening in the wall, and will cover roughness in the building up of the face of the opening as well as allowing for variation in thickness of bricks and plastering.

What I claim and desire to secure by Letters Patent is:—

1. Method of fixing doors in position consisting in making the door frame in two L-shaped parts and pressing the two parts together in a direction perpendicular to the wall with their inner edges against each other and their outer edges against the wall and positively locking the parts together along the contacting inner edges so that the outer edges are held in position against the wall by pressure alone.

2. A door frame comprising two L-shaped parts, inner and outer edges to each of said parts, a tongue and groove connection between the said inner edges and positive locking means associated with the inner edges of the L-shaped parts which positively lock

the outer edges of the parts in position against the wall by pressure alone.

3. A door frame comprising two L-shaped parts, inner and outer edges to each of said parts, a tongue and groove connection between the said inner edges and ratchet devices associated with the inner edges of the L-shaped parts which positively lock the outer edges of the parts in position against the wall by pressure alone.

In testimony whereof, I affix my signature.
PERCY BILTON.

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