

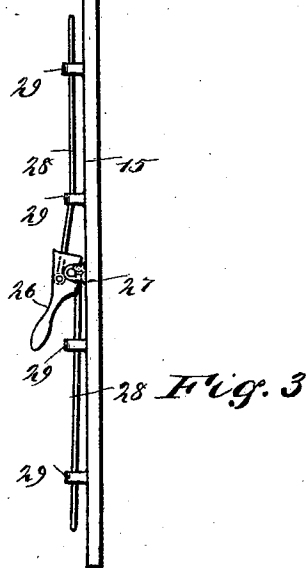
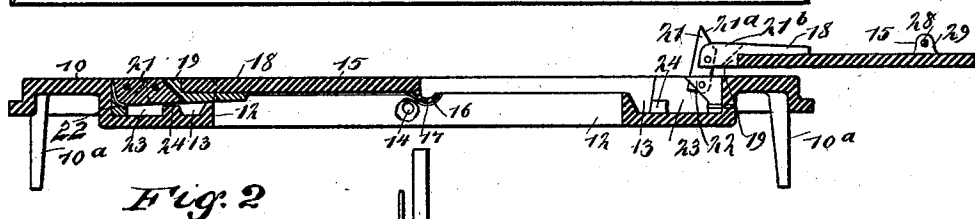
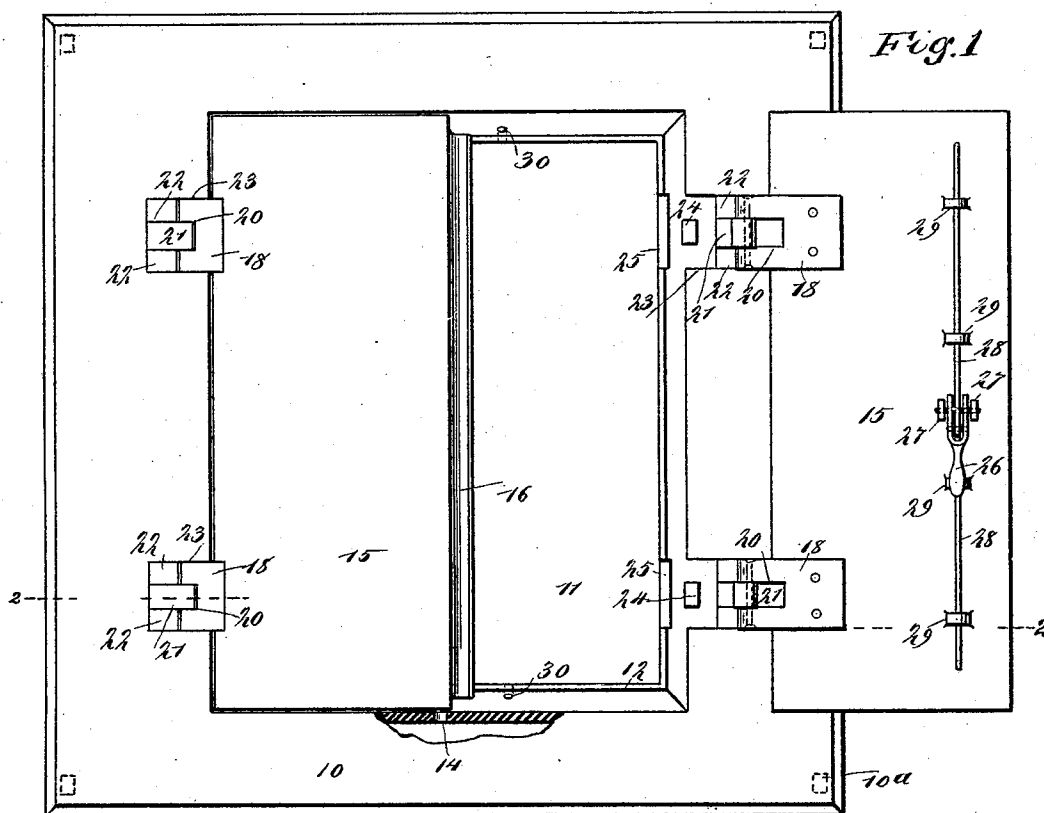
(No Model.)

2 Sheets—Sheet 1.

W. VAUGHAN, Jr.
DOOR AND HINGE.

No. 521,772.

Patented June 19, 1894.



WITNESSES:

J. a. Berghman
C. Sedgwick

INVENTOR

W. Vaughan Jr

BY

BY *Munn & Co*

ATTORNEYS.

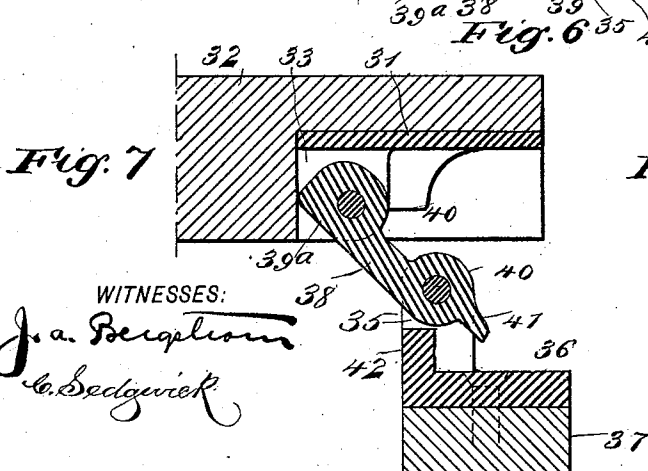
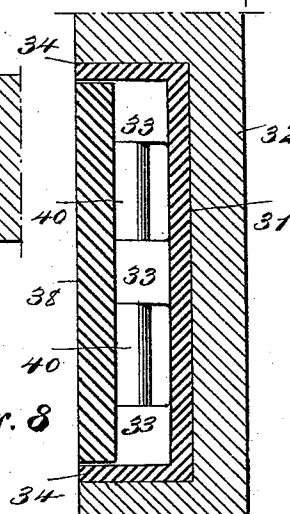
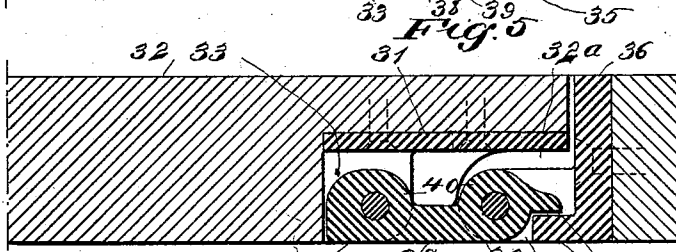
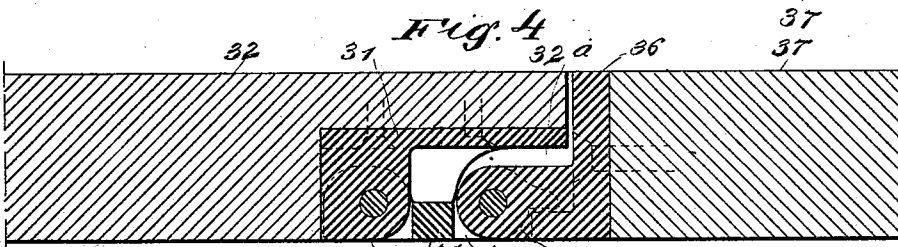
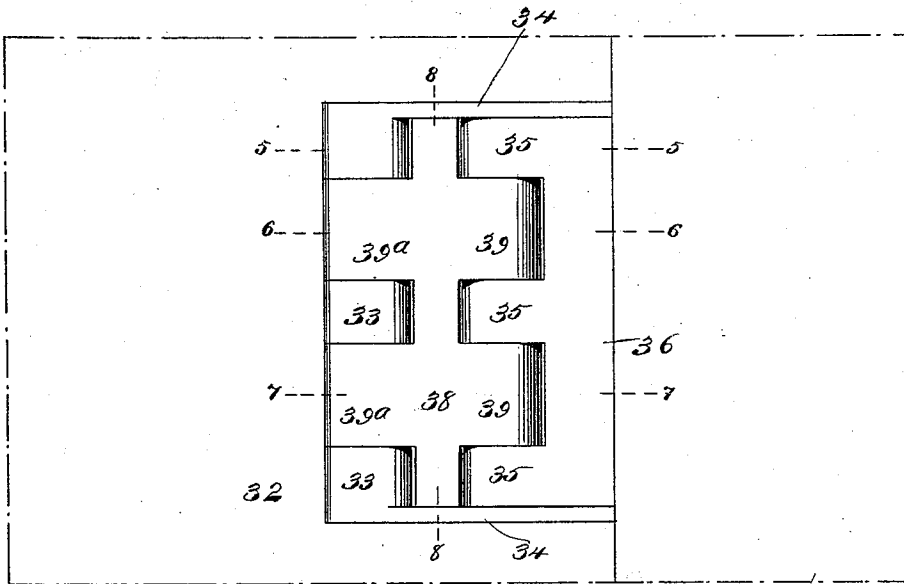
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DOOR AND HINGE.

No. 521,772.

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UNITED STATES PATENT OFFICE.

WILLIAM VAUGHAN, JR., OF PASSAIC, NEW JERSEY, ASSIGNOR OF ONE-HALF
TO WILLIAM LATHAM, OF SAME PLACE.

DOOR AND HINGE.

SPECIFICATION forming part of Letters Patent No. 521,772, dated June 19, 1894.

Application filed February 9, 1894. Serial No. 499,591. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VAUGHAN, Jr., of Passaic, in the county of Passaic and State of New Jersey, have invented a new and Improved Door and Hinge, of which the following is a full, clear, and exact description.

My invention relates to improvements in doors and hinges and especially in hinges.

The object of my invention is to produce a door and hinge which may be hung in any ordinary structure, but which is especially applicable for a cellarway, or bulk-head, which is adapted to close snugly and leave a practically flat exterior surface without any protruding of hinges or other parts, which permits the doors to be securely locked on the inside, and which provides for thorough drainage so that no water can run through the doors into the room below.

To this end my invention consists of certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken plan view of my improved doors and hinges, the doors being hung in a suitable frame and one door being thrown open. Fig. 2 is a cross section on the line 2—2 in Fig. 1. Fig. 3 is an edge view of one of the doors, showing in detail the fastening device thereon. Fig. 4 is a front elevation of a modified form of hinge which is adapted for use on furniture and the like. Fig. 5 is a cross section on the line 5—5 of Fig. 4. Fig. 6 is a cross section on the line 6—6 of Fig. 4. Fig. 7 is a cross section on the line 7—7 of Fig. 4; and Fig. 8 is a longitudinal section on the line 8—8 of Fig. 4.

The doors are hung in a suitable flat frame 10, which is preferably of metal and which, as illustrated, is provided with pins 10^a on the under side, which are adapted to be embedded in masonry or other material, so as to hold the frame in place. The frame is provided with the usual opening 11, which is closed by the doors to be hereinafter described, and

around it is a raised rib 12, which forms a gutter 13, and the back side of the gutter is perforated, as shown at 14, and any suitable drain pipe may be connected with this perforation and the frame be placed at a slight inclination, and thus any water which leaks through the frame around the doors will be caught by the gutter and carried off without doing any damage.

The doors 15 are hung on opposite sides of the opening 11 so as to completely cover the same when closed, and one door is provided with a gutter 16 at its free edge, which gutter is adapted to lie beneath the edge of the opposite door and in grooves 17 in the rib 12, as shown in Fig. 2, and so any water which leaks between the doors will be caught in the gutter 16 and delivered into the gutter 13.

The hinges of the doors 15 are arranged so as to sustain the weight of the doors and any extra weight which may be placed upon them, and each hinge is provided with a butt 18 which is firmly bolted to the edge of the door on the under side of the latter and which has a shoulder 19 fitted against the edge of the door, and the outer portion of the butt is thus brought flush with the top of the door. The butt 18 projects beyond the edge of the door and is slotted, as shown at 20, to receive the hinged link 21 which is pivoted in the slot and is provided with an inclined end 21^a to fit a corresponding inclination 21^b on the butt 18, as shown in Fig. 2. The other end of the link is pivoted in a slotted block 22 which is fastened rigidly to the frame 10 or which may be made a part of the frame as desired. The tops of the blocks 22 on the frame are flush with the top surface of the frame, and to provide for this, the frame is recessed, as shown at 23, opposite each hinge, so that the hinges may lie snugly in the recesses and leave the frame and door tops perfectly smooth. When the doors are closed, the links 21 lie upon bearing blocks 24 in the recesses 23, and the bottoms of the butts 18 lie in the recesses 23 in the rib 12, although the rib may be made a little lower and the recesses dispensed with with the same effect.

It will be seen that this construction of

hinge is very strong and that no part of the hinge projects above the level of the doors and frame. The fastening device with which the doors are provided does not form a part
 5 of my invention and any other suitable fastening may be substituted. Its construction will be briefly described, however, to show that the doors may be securely locked.

On one of the doors, near its free edge and
 10 on the under side is a cam lever 26 which is pivoted between lugs 27 and to which are secured fastening bolts or rods 28, these being arranged in the usual way so as to move in opposite directions, and they slide in keepers
 15 29 and are adapted to enter holes 30 in the rib 12, so that by throwing the lever in a way to push the bolts through the holes 30, the door will be securely locked, and by moving the lever in the opposite direction, the bolts
 20 will be withdrawn and the door unlocked. The fastening device is secured to the outer door which, when closed, lies over the gutter 16, and by fastening this door the inner door is also fastened as the projecting gutter, contact-
 25 ing with the outer door, prevents the inner one from being raised.

It will be understood that the doors lie perfectly flush with each other on their outer faces, but one is called the inner door because
 30 it has a projection thereon; that is the gutter 16 extending beneath the door.

As shown in Figs. 4 to 8, the hinge is adapted for use on articles of furniture having swinging doors, but may be used in connection
 35 with any swinging door. As here shown the hinge is provided with a butt or plate 31 which is fastened to the support 32, the latter being recessed, as shown at 32^a, so that the butt may lie within the recess and the outer
 40 portions of the knuckles 33 on the back part of the butt be flush with the front face of the support 32. The butt 31 has also end flanges 34 which, at their outer edges are also flush with the support 32 and these serve, in a measure,
 45 as guides and wear plates for the end knuckles 35 of the butt 36, which is attached to the edge of the door 37 and has its outer edge as well as the outer sides of the knuckles
 50 35, flush with the face of the door and with the face of the support 32. The knuckles 33 and 35 of the plates or butts 31 and 36 are connected by a link 38, similar to the link 21 already described, and this link is provided
 55 with side lugs 39 and 39^a which interlock with the knuckles 35 and 33 and are pivoted thereto by means of pintles in the usual way. The lugs 39^a are nearly straight at their outer ends, so that when the hinge is closed they
 60 will lie flush with the support 32 and the face of the link 38 is arranged to lie flush with the support and door when the hinge is closed, as shown in Figs. 5 and 6, while the plate 31 rests on the knuckles 35. The lugs 39 and 39^a are enlarged and rounded at their outer ends,
 65 as shown at 40, to afford a good bearing for the hinge pintles, and the lugs 39 have, at

their outer ends, projecting bosses 41 which are adapted to engage a flange 42 on the butt
 36 when the door 37 is closed, and thus the strain is taken off the hinge pintle and a
 70 solid bearing provided for the swinging parts. When the hinge is opened, the door swings outward in the usual way, carrying with it the butt 36 and link 38, the latter swinging
 75 until its end portions strike the knuckles 33, after which the knuckles 35 continue to turn until they and the door 37 are substantially parallel with the support 32. It will be seen that in either form of hinge, no chance is left
 80 for water to collect and, by freezing, interfere with the action of the hinge.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the door frame
 85 having a gutter in its upper face around the door opening, of the hinged doors one of which is provided at its free edge with a gutter discharging into the first named gutter; the free edge of the other door being adapted
 90 to overlap the said guttered edge of the first named door, substantially as described.

2. The combination with the door frame having recesses in its upper face at opposite
 95 sides of its door opening, of the hinged doors flush with the outer face of the frame and each provided with slotted hinge butts having inclined or undercut end walls 19, links
 100 pivoted in the butt slots and having said ends inclined or shaped to engage the correspondingly shaped portions 19, and the stationary slotted butts secured to the outer walls of said frame recesses and to which the opposite or outer ends of the links are pivoted,
 105 substantially as described.

3. The combination, with the door frame having recesses therein and bearing blocks in the bottoms of the recesses, of the swinging
 110 door, the slotted butts secured to the door, the slotted blocks in the recesses of the frame, and the links connecting the blocks and butts and adapted to lie upon the bearing blocks, substantially as described.

4. The herein-described hinge, comprising a pair of butts having projecting knuckles,
 115 a flange on one of the butts, a link arranged between the knuckles and having side lugs interlocking with the knuckles and pivoted thereto, and bosses on one set of lugs to overlie the upper side of the flange of the butt,
 120 substantially as described.

5. The herein-described hinge, comprising a butt having end flanges and knuckles arranged between the flanges, a second butt
 125 having projecting knuckles thereon and a flange at right angles to the knuckles, and a link connecting the two sets of knuckles, the link having side lugs projecting between the knuckles with bosses on one set of the lugs to engage the flange on the second butt, sub-
 130 stantially as described.

6. The herein described hinge, comprising

a butt having end flanges, knuckles projecting from the back part of the butt between said flanges, a second butt having projecting knuckles and a flange at right angles to the knuckles, and a link connecting the knuckles of the two butts, the link having side lugs to interlock with the butts, the lugs on one side being flat ended and the other set of lugs having end bosses to engage the flange of the second butt, substantially as described.

WILLIAM VAUGHAN, JR.

Witnesses:

WARREN B. HUTCHINSON,
C. SEDGWICK.