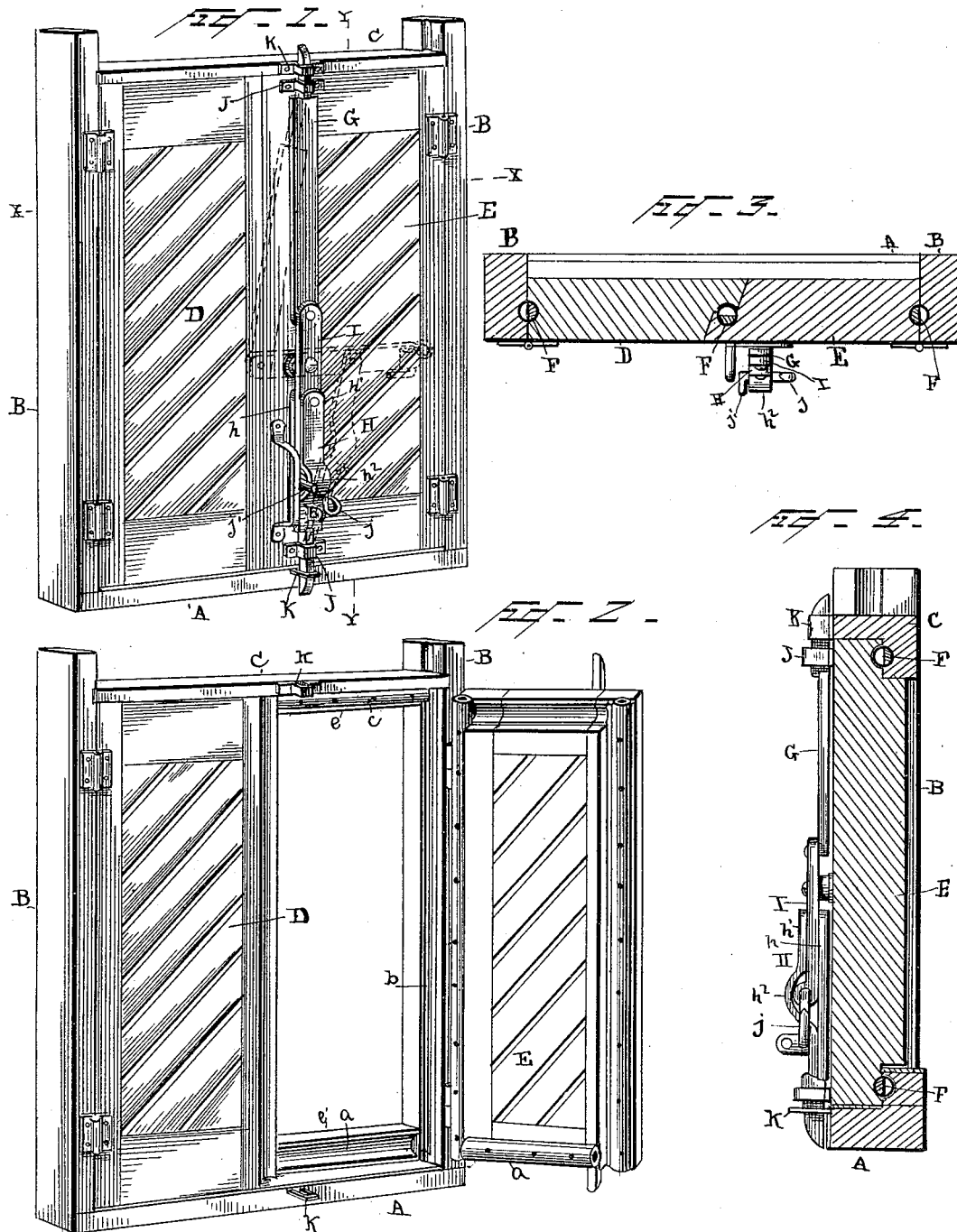


(No Model.)

D. O. SETTLEMIRE.  
AIR TIGHT DOOR.

No. 386,221.

Patented July 17, 1888.



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# UNITED STATES PATENT OFFICE.

DAVID O. SETTLEMIRE, OF LITCHFIELD, ILLINOIS.

## AIR-TIGHT DOOR.

SPECIFICATION forming part of Letters Patent No. 386,221, dated July 17, 1888.

Application filed April 3, 1888. Serial No. 269,474. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID O. SETTLEMIRE, a citizen of the United States, residing at Litchfield, in the county of Montgomery and State of Illinois, have invented certain new and useful Improvements in Air-Tight Doors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to doors, and has for its object the construction of a door that will be simple and compact in arrangement, and which can be conveniently and readily operated, and which will be air-tight.

The improvement consists in having the top, bottom, and free edge of the door rabbeted, and in having a groove or channel in the rabbeted portions and in the hinged edge of the door, and in having the door-frame provided with corresponding and coinciding grooves, and in having packing fitted in the grooves and secured to the frame, or the door, or to both. This packing is compressed between the door and the frame, and the door forced shut by two bars which have their inner ends attached to an operating and locking lever and their outer ends tapering and adapted to be projected through apertured plates secured to the frame above and below the door. The operating-lever is provided with a catch to lock the said bars and it together when the three are in alignment. The packing, which may be of any desired shape and construction, is circular and tubular, and is held in place by a half-round strip passed through it and nailed to the frame or door, as desired.

The improvement further consists in the novel features, which hereinafter will be more fully described, claimed, and shown in the annexed drawings, in which—

Figure 1 is a perspective view of a door, showing the closing and locking devices projected by full lines and retracted by dotted lines; Fig. 2, a perspective view, showing one of the doors thrown open; Fig. 3, a horizon-

tal section on the line X X of Fig. 1, and Fig. 4 a vertical section on the line Y Y of Fig. 1.

The door-frame composed of the sill A, the jambs B, and the cross-beam C is provided with the upper and the lower cross-strips *c* and *a*, respectively, which may be formed by rabbeting the sill and the cross-beam, and has grooves or channels *b* formed in the jambs, and grooves or channels *c'* and *a'* formed in the face of the cross-strips *c* and *a*.

The doors D and E have their upper and lower ends rabbeted to fit against the cross-strips *c* and *a*, and these rabbeted portions have grooves or channels that correspond with the grooves or channels in the cross-strips. The meeting edges of the doors are rabbeted in the usual manner, and have corresponding grooves or channels, and the rear edges are grooved to correspond with the grooves in the jambs. The packing is interposed between the doors and the door-frame, and is fitted in the grooves aforesaid, and is secured in the grooves in the door-frame or the door, whichever is found most convenient. It is circular and tubular, and is secured in place in the grooves by a half-round strip, F, which is passed within the packing and is nailed to the door or frame, clamping one side of the packing between the bottom of the groove and the strip. The packing is sufficiently large to be slightly compressed when the doors are closed. To obtain the necessary force for conveniently closing and locking the doors, the two bars G and H are provided, and are attached at their inner ends to the operating-lever I at points equidistant from the fulcrum of the said lever, and have their outer ends, which are tapering, working through guides J at the ends of the door and adapted to be projected through the keepers K, fastened to the door-frame. The keepers, the guides, and the fulcrum of the lever I are in line, and when the lever I is turned down, as shown by full lines in Fig. 1, the bars G and H are projected through the keepers, the tapering ends of the bars riding on the keepers, and force the door shut and compress the packing in the grooves. The catch *j*, carried by the lever I, is adapted to be turned down and engage with the bar H and lock the bars and lever when in alignment, as shown by full lines in Fig. 1. The bar H is composed

of two bars or plates, *h* and *h'*, which are brought together at one end and embrace the lever *I* at their other or upper ends. The bar *h'* is arched at *h''* to permit the catch *j* to pass between the 5 two plates. The ends of the catch are set at right angles to each other, the outer end, *j*, being bent to form a handle, and the inner end, *j'*, forming the catch proper. When the end *j'* of the catch is turned so as to be in the plane 10 of the bar *H*, the end *j* stands at right angles to said bar and forms a stop to limit the downward movement of the lever, as will be readily appreciated.

Having thus described my invention, what I 15 claim, and desire to secure by Letters Patent, is—

1. The combination, with the door-frame having upper and lower cross-strips, and having grooves or channels in the said strips and 20 in the jambs, of the door having its upper and lower ends rabbeted and provided with grooves coinciding with the grooves in the cross-pieces, and having its free and its hinged edge grooved and the packing fitted in the said grooves and 25 adapted to be compressed therein, substantially as and for the purpose described.

2. The combination, with the door-frame having upper and lower cross-strips and having grooves in the cross-strips and in the jambs, of the two doors having their meeting 30 edges rabbeted and provided with corresponding grooves, and having their upper and lower ends rabbeted and provided with grooves coinciding with the grooves in the cross-strips, and having their rear or hinged edges grooved 35 and the packing seated in the said grooves and adapted to be compressed therein between the opposing parts, substantially as described.

3. The combination, with the door-frame and the door having a groove formed between 40 the opposing parts, of the tubular packing fitted in the groove and the strip located within the packing and secured to the bottom of the said groove, substantially as and for the purpose described. 45

In testimony whereof I affix my signature in presence of two witnesses.

DAVID O. SETTLEMIRE.

Witnesses:

R. J. WHITNEY,

WALTER C. ARTHURS.