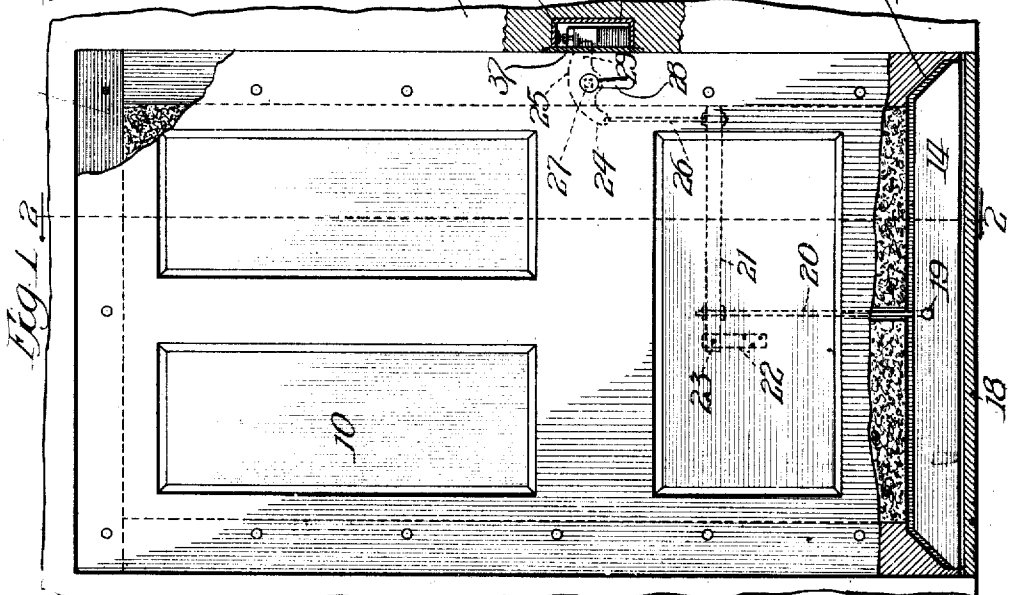
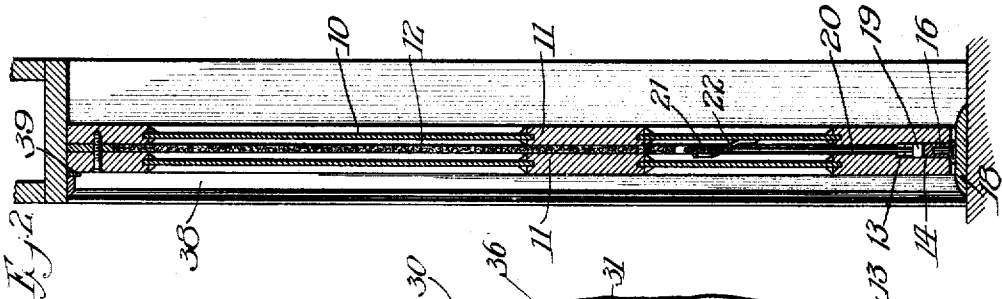
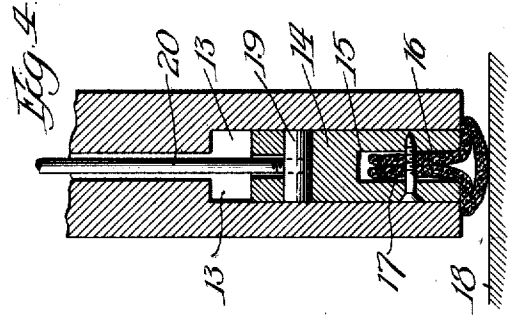
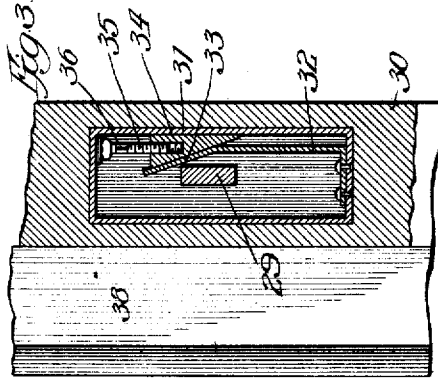


I. HAMLIN.
SOUND PROOF DOOR.
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1,005,114.

Patented Oct. 3, 1911.



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UNITED STATES PATENT OFFICE.

IRVING HAMLIN, OF CHICAGO, ILLINOIS.

SOUND-PROOF DOOR.

1,005,114

Specification of Letters Patent.

Patented Oct. 3, 1911.

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To all whom it may concern:

Be it known that I, IRVING HAMLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sound-Proof Doors, of which the following is a specification.

My invention relates to doors and similar closing means, and is concerned particularly with means for rendering such closing means sound-proof, and also for preventing drafts of air from penetrating therethrough.

I am aware that doors have previously been constructed in which movable means have been used for forming a tight joint between the door and the frame. Such closing means may be effective on a single side of the door, but the difficulty of simultaneously operating closing means for all sides of the door renders such a device inefficient and cumbersome in operation.

In my improved device I have provided means for simultaneously operating a closing member by which a tight joint is formed between the bottom of the door and the threshold and at the same time tightly forcing the top and side faces of the door against strips of felt or other suitable material mounted on the door jamb. The mechanism for accomplishing this purpose is operated entirely by turning the handle of the door, thus giving the advantage of simplicity of operation while at the same time the door presents its usual appearance and is not marred by the presence of disfiguring mechanism. These and other advantages of my invention will be more apparent by reference to the accompanying drawings, which show a preferred embodiment of my improvements, and in which—

Figure 1 is a side elevation of a door and its frame, showing my closing mechanism in position; Fig. 2 is a vertical transverse section on the line 2—2 of Fig. 1; Fig. 3 is an enlarged fragmentary vertical transverse section through the metallic box contained in the door frame and in connection with which the door-catch operates; and Fig. 4 is an enlarged fragmentary transverse section through the lower portion of the door, showing the movable closing member in position.

The door 10 of my invention may be of any well-known type, but in order to prevent more efficiently the penetration of sound, I prefer to make it in two parallel portions 11, 11, between which felt or other

similar material 12 may be mounted. The lower portion of the door has the recess 13, in which the closing member 14 is adapted to reciprocate in a vertical plane. The bottom of this closing member 14 has the recess 15, in which felt or other similar material 16 is fastened by means of the screw 17. As clearly shown in Figs. 2 and 4, the felt 16 projects in folds below the lower edge of the closing member 14, and when the latter is depressed the felt 16 is adapted to form a tight closure with the threshold 18.

Near the center of the closing member 14 is the transverse rod 19, to which is connected the link 20. This link, in turn, is suitably connected to the lever 21, which is pivoted to the bracket 22 at the point 23. Extending from the opposite end of the lever 21 to the arm 24 of the cam 25 is the link 26.

The cam 25 is rigidly mounted on the spindle 27, which is provided with a suitable handle 28 preferably in the form of a lever, so that a strong pressure may be exerted with little effort. The cam 25 has an extension 29 which forms the door-catch.

Mounted within the door-frame 30 is the metallic box 31, to the bottom of which is riveted, or otherwise suitably attached, the metal strip 32 having the obliquely-disposed portion 33. Between one side of the box 31 and the oblique portion 33 of the strip 32 is placed the wedge 34. This wedge may be moved in a vertical plane by means of the screw 35, the upper end of which is mounted in the top of the box 31, this screw being turned by engagement of its rectangular portion 36 with a wrench or other similar tool. The front of the box 31 is provided with a plate 37, which has suitable openings for the admission of the portion 29 of the cam 25, and also the wrench, by means of which the screw 35 is rotated.

As best shown in Fig. 2, the door-jamb 38 on the sides and top of the door-frame 30 are provided with strips of felt 39, with which the face of the door is adapted to form engagement.

Having thus described the construction of the various parts used in my invention the operation of the same may now be readily understood.

When it is desired to open the door, the handle 28, shown in Fig. 1, is moved in a clockwise direction, thereby elevating the portion 24 of the cam 25 and correspond-

ingly depressing the portion 29 until the latter is removed from the plane of the front plate 37. The portion 24 of the cam 25 being raised, the closing member 14 is similarly raised through the instrumentality of the link 26, the lever 21 and the link 20. The felt 16 being thus removed from the threshold 18, the door may readily be opened. After the door is closed, on the other hand, the handle 28 is moved in a counter-clockwise direction, thereby depressing the portion 24 of the cam 25 and correspondingly forcing the movable closing member 14 downwardly, thus bringing the felt 16 into close contact with the threshold 18. As the portion 29 of the cam 25 is raised it comes in contact with the obliquely-disposed portion 33 of the strip 32, and the face of the door is thus forced inwardly against the felt strips 39 on the door-jamb 38. In this way a tight contact is formed between the door and the door-frame on all sides, and the door is effectually rendered sound- and draft-proof.

As the felt 16 on the bottom of the movable member 14 is gradually flattened by use, it will be apparent that the portion 24 of the cam 25 must be moved farther in a downward direction in order to form a tight closure on the bottom of the door. At the same time the portion 29 of the cam 25 will be moved farther upwardly, and in order to provide for this additional movement the wedge 34 is raised the desired distance to enable the oblique portion 33 of the strip 32 to occupy the proper position.

It will be apparent to those skilled in the art that many changes could be made in the detailed construction of the various parts which I have described without departing from the spirit or scope of my invention.

What I claim is:

1. In combination with a frame inclosing an aperture, a shutter for said aperture, movable joint-closing means on said shutter, and common means for simultaneously forcing said shutter into contact with said frame and actuating said movable closing means, substantially as described.

2. In combination with a door-frame, a door within said frame, movable joint-closing means carried by said door, and common means for simultaneously forcing said door into contact with said frame and actuating said movable closing means, substantially as described.

3. In combination with a door-frame having a jamb thereon, a door within said frame and adapted to engage said jamb, movable closing means between said door and said frame, said closing means being carried by said door, and common means for simultaneously forcing said door against said jamb and actuating said movable closing means, substantially as described.

4. In combination with a door-frame having a jamb thereon, a door within said frame and adapted to engage said jamb, movable joint-closing means carried on the bottom of said door and adapted to engage the threshold of said frame, and common means for simultaneously forcing said door against said jamb and moving said closing means into contact with said threshold, substantially as described.

5. In combination with a door-frame having a jamb thereon, a door within said frame, said door having a recess in its bottom, movable means for closing the joint between the bottom of the door and the threshold of the frame, and common means for simultaneously actuating said closing means and forcing the door into contact with said jamb, substantially as described.

6. In combination with a door-frame having a jamb thereon, a door within said frame, a rotatable spindle in said door, means for closing the joint between the bottom of said door and the threshold of said frame, a cam mounted on said spindle, means connecting said cam with said movable closing means, and means for forcing said door into contact with said jamb when said cam is rotated, substantially as described.

7. In combination with a door-frame having a jamb thereon, an obliquely-disposed abutment member mounted in said frame, a door within said frame and adapted to engage said jamb, movable means for closing the joint between the bottom of said door and the threshold of the frame, and common means for simultaneously actuating said movable closing means and forming engagement with said abutment member, whereby the door is forced against said jamb and the joint between the bottom of the door and the threshold is closed, substantially as described.

8. In combination with a door-frame having a jamb thereon, an obliquely-disposed abutment member mounted in said frame, means for moving the oblique engaging surface of said abutment member, a door within said frame, a movable closing member carried on the bottom of said door for closing the joint between said door and the threshold of said frame, a spindle in said door, a cam mounted on said spindle, and adapted to engage the obliquely-disposed surface of said abutment member, and means connecting said cam with said closing member whereby rotation of said spindle moves said closing member into contact with said threshold and forces the door into tight engagement with said jamb, substantially as described.

9. In combination with a frame inclosing an aperture, a shutter for said aperture, movable joint-closing means on said shutter, means for forcing said shutter into contact

with said frame, and means connecting said forcing means with said joint-closing means, substantially as described.

10. In combination with a door frame
5 having a jamb thereon, a door within said frame, means for closing the joint between the bottom of said door and the threshold of said frame, means for forcing said door into contact with said jamb, and means

connecting said forcing means with said joint-closing means, thereby rendering their operation simultaneous, substantially as described. 10

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Witnesses:

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