

(No Model.)

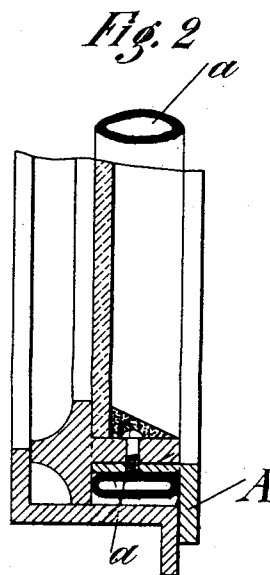
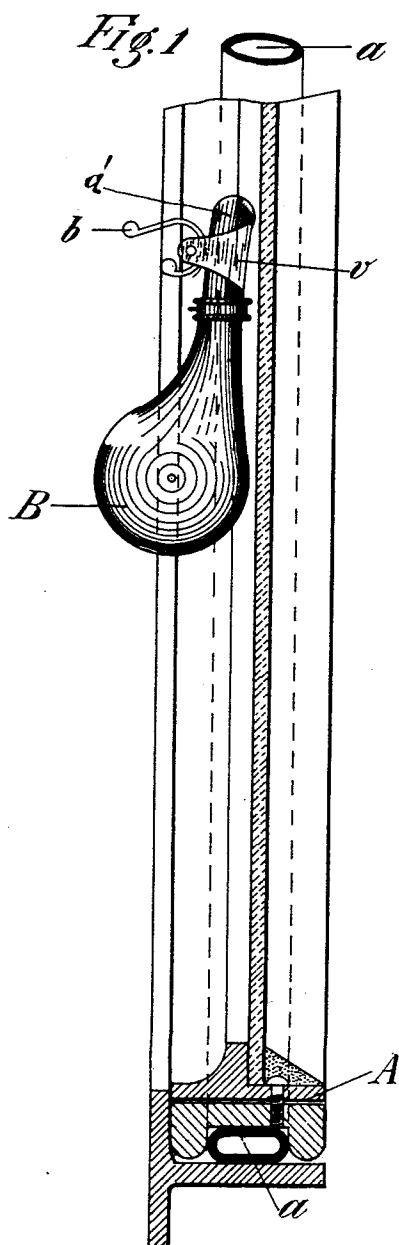
2 Sheets—Sheet 1.

H. C. W. WEYHE.

PACKING OR SOUND DEADENING DEVICE FOR WINDOWS OR DOORS.

No. 520,226.

Patented May 22, 1894.



Witnesses.

Chas W. Thomas.

J. J. Malle,

Inventor.

Hermann C. W. Weyhe.

By *Attaberdt*

Attorney.

(No Model.)

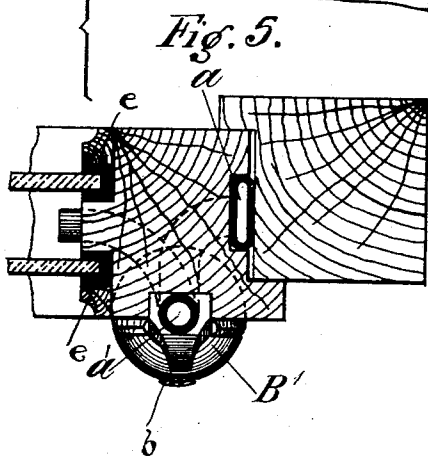
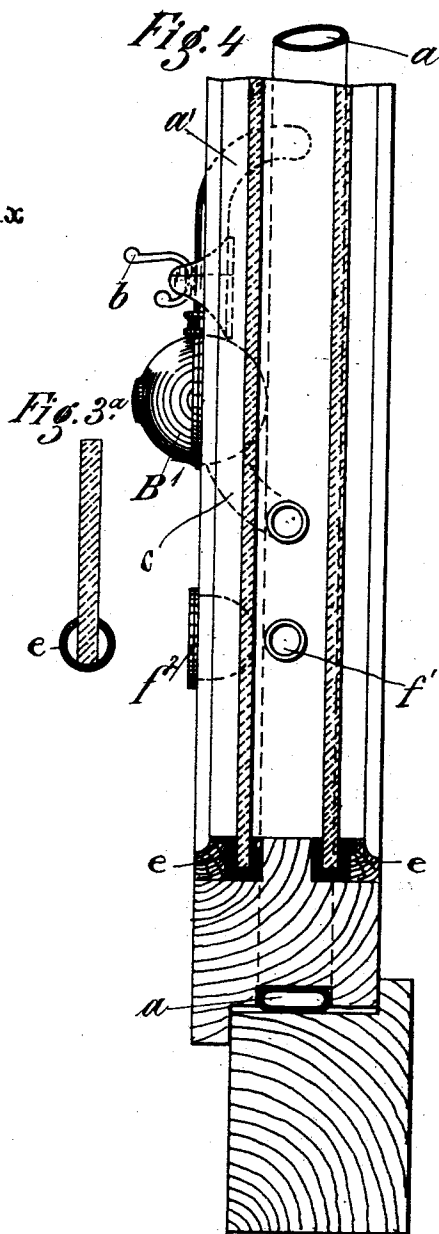
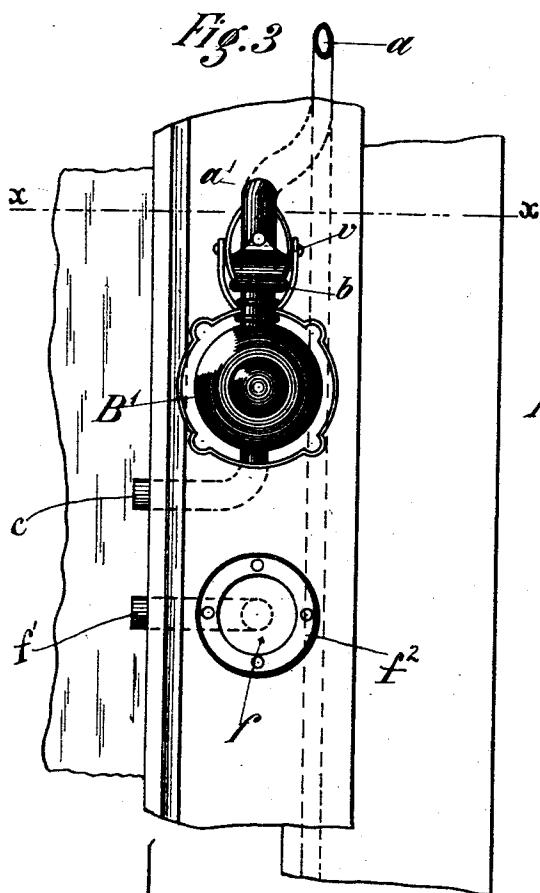
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No. 520,226.

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Witnesses.

Chas. W. Thomas.

J. J. Waller.

Inventor

Herman C. W. Weyhe.

By *Arthur duRoi*.

Attorney

UNITED STATES PATENT OFFICE.

HERMANN CHRISTIAN WILHELM WEYHE, OF BREMEN, GERMANY, ASSIGNOR
TO ERNST ABRAHAM PILGRAM, OF SAME PLACE.

PACKING OR SOUND-DEADENING DEVICE FOR WINDOWS OR DOORS.

SPECIFICATION forming part of Letters Patent No. 520,226, dated May 22, 1894.

Application filed August 29, 1893. Serial No. 484,323. (No model.)

To all whom it may concern:

Be it known that I, HERMANN CHRISTIAN WILHELM WEYHE, a subject of the German Emperor, residing at Bremen, German Empire, have invented new and useful Improvements in Packing or Sound-Deadening Devices for Windows or Doors, of which the following is a specification.

My invention has reference to improvements in pneumatic weather strips, and has for its object to insure a perfect air and watertight closure of the sash, casement or door to which the strip is applied, while at the same time the sash, casement or door can readily be opened and closed.

The nature of my said invention will best be understood when described in connection with the accompanying drawings, in which—

Figure I represents a longitudinal section of an iron window provided with my improved strip, showing the tube inflated, part being broken away. Fig. II is a similar view showing the strip applied to a window of different construction. Fig. III is a face view of a portion of a wooden window with double panes containing my invention. Fig. III^a is a detail view showing means for securing the panes airtight into the sash. Fig. IV is a vertical section of Fig. III. Fig. V is a transverse section in the plane $x-x$ Fig. III.

Similar letters of reference indicate corresponding parts throughout the several views of the drawings.

Referring at present to Figs. I and II, the letter A designates a sash having formed all around its edges, or meeting faces, a groove in which is fitted a flat tube a of flexible airtight material such as rubber. The tube is secured preferably by the use of a suitable waterproof cement. One part, or end, a' , of the tube a extends through a transverse hole on the inside of the sash or rail, connecting with the groove, while the other end of the tube is closed and sealed at the point where it meets the first named part. To the external end a' of the tube is connected a bulb B. By compressing this bulb the tube is inflated so as to fit tightly between the sash and the surrounding portion of the window frame. v is a check valve of any suitable construction for retaining the air pressure within the tube

a after compression of the bulb B. In the example illustrated it consists of a cam lever b , which can be turned about its pivot to compress the tube a , thus shutting off communication between the tube and the bulb after inflation of the tube.

When the window is to be opened, the lever b is thrown out of contact with the tube a , thereby permitting the air confined in the tube to escape into the bulb, with the consequent collapse of the tube. The window can then be safely opened. A separate discharge cock could be applied to the tube for effecting the discharge of air from the same.

In the modification illustrated in Figs. III, IV and V the sash is provided with double panes as a substitute for double windows. To render the space between the panes airtight they are secured, instead of by putty as usual, by means of split caoutchouc tubes c fitted on the edges of the panes as shown in Fig. III^a. When the pane is placed into the sash these tubes are pressed flat by the fillets or moldings held by screws (Figs. IV and V). The tube a is placed around the sash substantially as before, but the bulb B' is provided with a suction tube c communicating with the space inclosed between the panes so as to draw air from the same and force it into the tube a for inflating the latter, and at the same time for forming a partial vacuum between the panes for lessening the transmission of sound.

To prevent the panes from being shivered by atmospheric pressure, in case of too great an exhaustion of air in the space inclosed by the panes, I make use of a safety device which is here shown to consist of a flexible diaphragm f stretched over a cup f^2 which is in communication by a tube f' with said space. On decreased pressure in said space the diaphragm bulges inwardly and serves to indicate the degree of exhaustion.

It is evident that the means for introducing air into the tube and for retaining the same in an inflated condition and for discharging the air therefrom can be accomplished by different devices, therefore I do not wish to restrict myself to the particular forms shown. It is also evident that the tube can be equally well applied to swinging windows, or case-

ments, and sliding sashes of any other known construction as well as to doors, whether swinging, sliding or rolling.

What I claim as new, and desire to secure
5 by Letters Patent, is—

1. A sash or door provided with a flexible tube fitted around the same, and means affixed to said tube for inflating said tube and for retaining the tube in an inflated condition and
10 for discharging the air therefrom, substantially as described.

2. The combination with a sash or door, of a tube extending around the same, a bulb affixed to said tube, and a valve for opening
15 and closing communication between the tube and bulb, substantially as described.

3. The combination with a sash or door having double panes, of a flexible tube extending

around the same, and a bulb, for inflating said tube and connected with the space between
20 the panes for producing a partial vacuum, substantially as described.

4. The combination with a sash or door having double panes, of a flexible tube extending around the same, and a bulb, for inflating said
25 tube and connected with the space between the panes for producing a partial vacuum, and a safety device, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of
30 two subscribing witnesses.

HERMANN CHRISTIAN WILHELM WEYHE.

Witnesses:

D. RAMKE,

M. ROTHKIRCH.