No. 799,475. PATENTED SEPT. 12, 1905.

A. T. LEARNED.

DOOR STOP.

APPLICATION FILED FEB. 17, 1905.

Fig. 1.

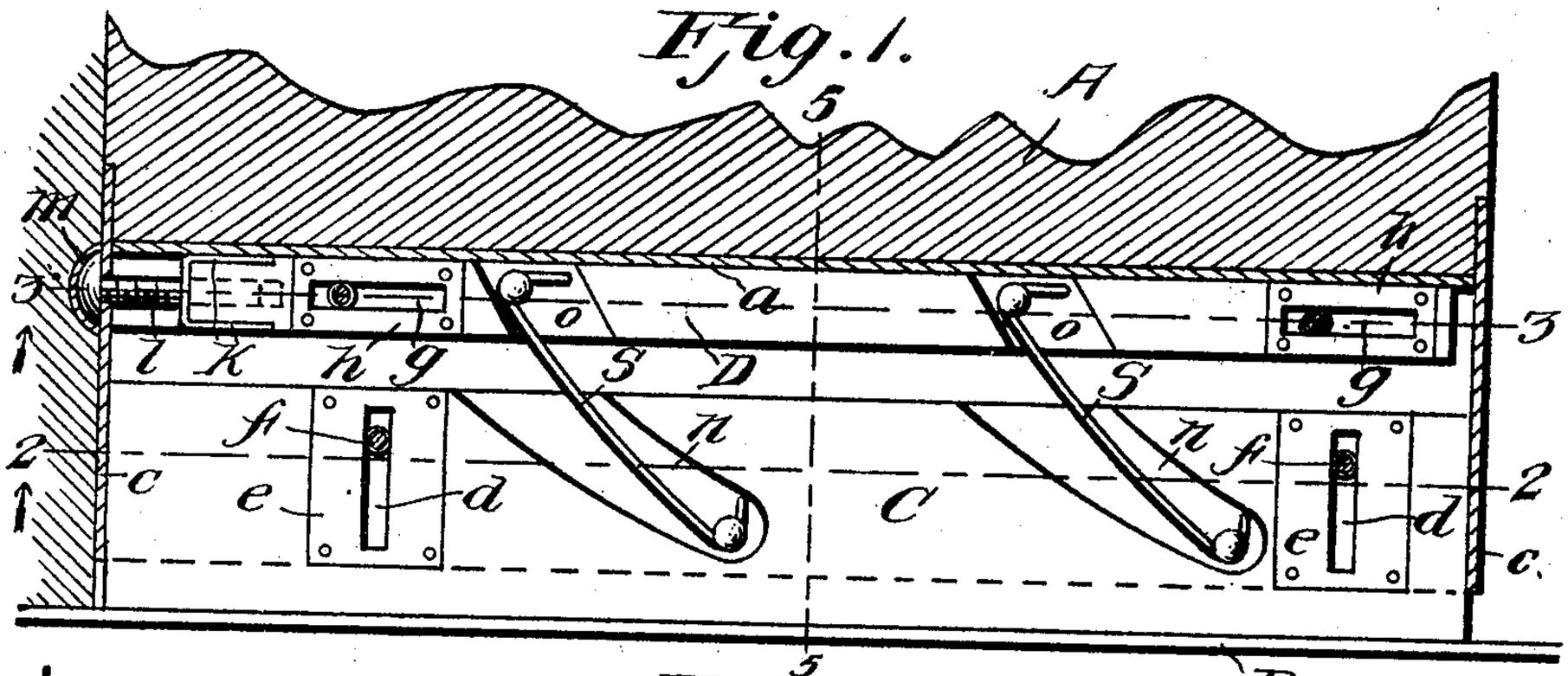


Fig. 4.

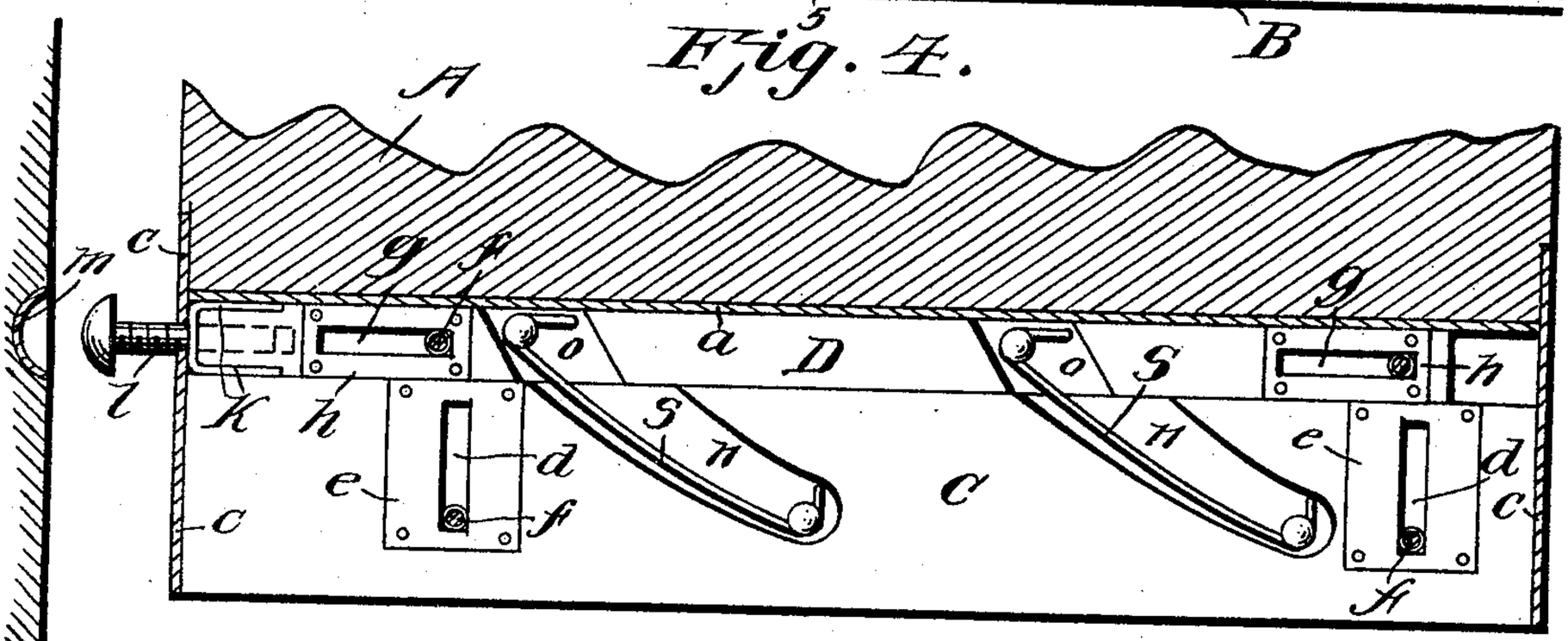


Fig. 3.

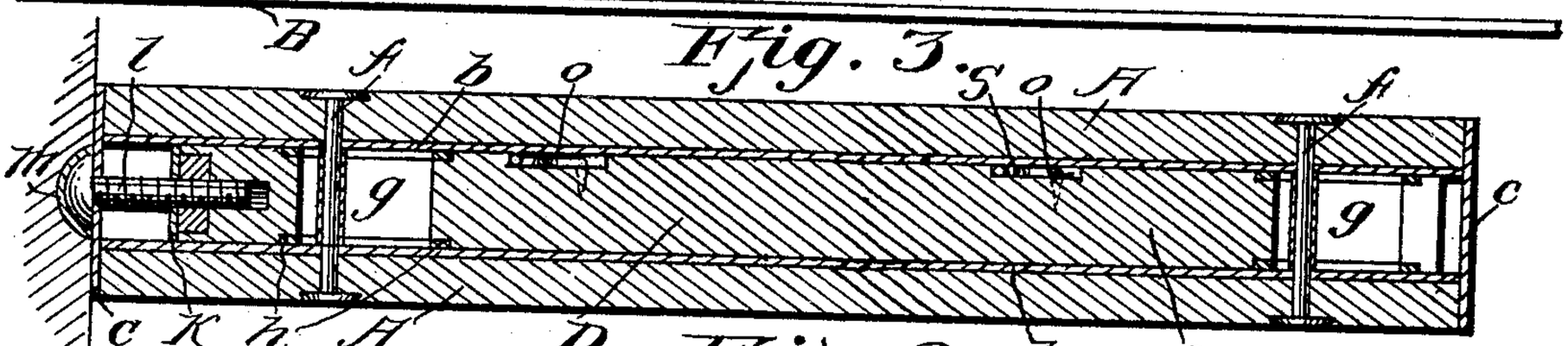


Fig. 2.

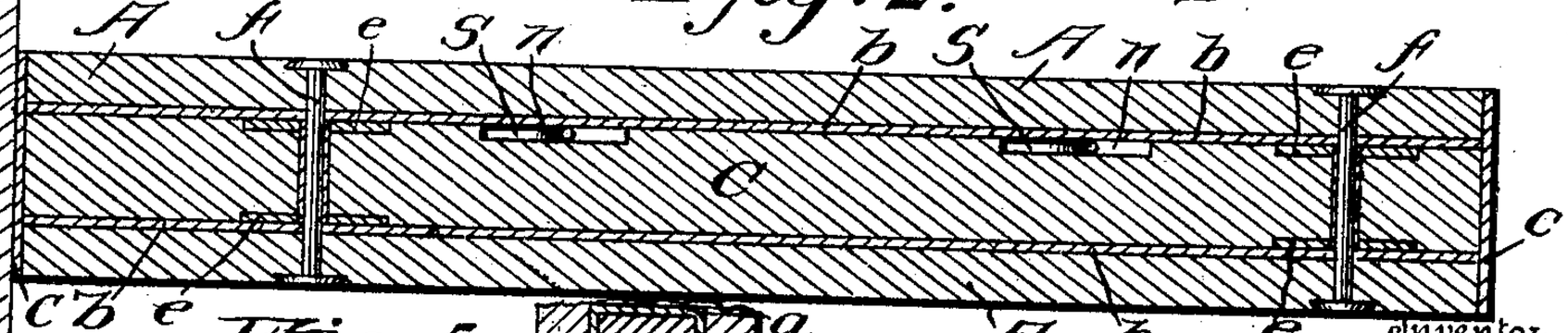
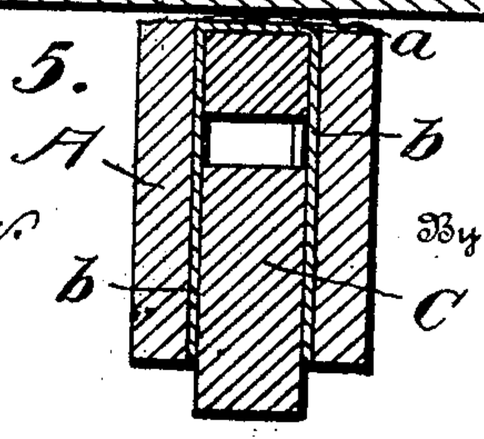


Fig. 5.



Witnesses

Frank B. Hoffman.

K. Allen.

Inventor

A. T. Learned

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

ABEL T. LEARNED, OF PORTLAND, MAINE.

DOOR-STOP.

No. 799,475. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed February 17, 1905. Serial No. 246,170.

To all whom it may concern:

Be it known that I, ABEL T. LEARNED, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented new and useful Improvements in Door-Stops, of which the following is a specification.

This invention relates to weather-strips adapted for use with a door for the purpose of closing or bridging any space that may normally exist between the lower edge of the door and the door-sill. It may also be employed to close a space between the upper edge of the door and the top rail of the door-frame. When the door is open, the strip will lie within the door substantially flush with the lower or upper edge of the door, as the case may be; but when the door is closed the strip will be automatically projected out from the door to engage the opposing fixed surface. Means are also provided for varying the extent of the outward movement of the strip to suit varying conditions.

The invention will be fully described hereinafter, reference being had to the accompanying drawings, in which a preferred form of the invention is illustrated as applied to the lower end of a door, and in which—

Figure 1 is a side view of a portion of a door in closed position, partly broken away to show my improved strip applied thereto and projected therefrom. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3 of Fig. 1. Fig. 4 is a view similar to Fig. 1, showing the door open and the strip at its upward position. Fig. 5 is a section on the line 5 5 of Fig. 1.

A represents a door—in the present case a sliding door—and B the sill or floor opposing its lower edge. The bottom of the door is grooved, as indicated at *a*, said groove extending the entire width of the door, and a metal casing *b* is fitted therein, which casing is open at its lower end and contains the weather-strip and its actuating mechanism. Preferably the ends of the casing will be closed by thin metal plates *c*, fastened to the side edges of the door.

C is the weather-strip, fitted snugly in the casing *b* to move vertically therein with its ends close to the plates *c*. This strip is provided with vertical slots *d*, and preferably wear-plates *e*, also slotted, will be let into the strip on each side. Pins *f*, secured in the door, pass through the slots *d* and form guides upon which the strip may move vertically, and they also prevent any endwise movement thereof.

Above the strip C is a bar D within the casing, such bar being shorter than the strip C in order that it may have free longitudinal movement within the casing. This bar is provided with horizontal slots *g*, and preferably slotted wear-plates *h* will be secured to the bar on each side around the said slots. Pins *i*, secured in the door, pass through the slots *g* and support the bar against vertical movement, but permit it to move longitudinally. The bar D is provided with a metal shoe *k* at one end through the outer end of which a hole is bored and extends some distance into the bar lengthwise thereof. The hole in the shoe is threaded, and a screw *l* is fitted into the hole and is adjustable therein. The screw also passes freely through the adjacent plate *c* and is preferably provided with a head at its outer end. The head of the screw is adapted to contact with a plate *m* on the door-frame when the door is closing, and thereby move the bar D longitudinally.

In one face of the strip C diagonally-extending recesses *n* are formed between the slots *d*, and similar recesses *o* are formed in the bar D, such recesses being of sufficient depth to receive the diagonally-disposed curved springs S, secured at their upper ends in the recesses *o* and at their lower ends in the recesses *n* at or near the lower end of the latter. The normal tendency of these springs is to lift the strip up into engagement with the bar D and to hold the bar D in its extreme position toward the left-hand edge of the door, with the head of the screw *l* projecting beyond the plate *c*, as clearly shown in Fig. 4. When, however, by the closing of the door the head of the screw *l* engages with the plate *m*, the bar D will be moved to the right and the curvature of the springs increased, which will result in forcing the strip C downwardly until its lower edge engages the opposing surface. In the event the opposing surface should be somewhat inclined with respect to the lower edge of the door or the strip the latter will adjust itself to such inclination within reasonable limits, and to permit this in practice there may be a slight play between the ends of the strip and the plates *c* and between the slots *d* and the pins.

By adjusting the screw *l* the extent of movement of the strip C can be adjusted. The de-

vice will work just as well on a hinged door as on a sliding door, the screw *l* of course being in the hinge edge of the door.

The casing may be made of different widths and constructions to suit different widths of doors, and the strip may be made of metal for application to fire-doors. The invention may also be used on sliding and swinging windows.

Having thus described the invention, what is claimed as new is—

1. The combination with a door having a groove in its end, of a weather-strip supported within the groove to have vertical movement only, a bar supported within the groove to have horizontal movement only, diagonally-disposed curved springs connecting the bar and strip and a projection extending from one end of the bar beyond a side edge of the door to engage a fixed stop when the door is being closed and move the bar longitudinally and the strip vertically, substantially as described.

2. The combination with a door having a groove in its end, of a weather-strip in the groove having vertical slots, pins secured in the door and extending through said slots, a bar within the groove parallel to the strip and having horizontal slots, pins secured in the door and extending through these latter slots, diagonally-disposed curved springs connecting the bar and strip, and an adjustable screw in one end of the bar and projecting therefrom beyond the adjacent edge of the door to engage a fixed stop when the door is being closed, substantially as and for the purpose specified.

3. The combination with a door having a groove in its end, of a casing fitted in said groove, and its outer longitudinal side being open, plates secured to the door to close the ends of the casing, a weather-strip within the casing having vertical slots, pins secured in the door and casing and extending through said slots, a bar within the casing parallel to said strip and having horizontal slots, pins secured in the door and casing and extending through these latter slots, diagonally-disposed curved springs connecting the bar and strip, an adjustable screw in one end of the bar projecting loosely through the adjacent end plate beyond the edge of the door, and a plate on the door-frame to be engaged by said screw when the door is closed, substantially as and for the purpose described.

4. The combination with a door having a groove in its end, of a weather-strip supported within the groove to have vertical movement only and having diagonally-inclined recesses in one side, a bar supported within the groove parallel to the strip to have horizontal movement only, and having also diagonally-inclined recesses in one side, curved springs connecting the bar and strip and lying in said recesses, an adjustable screw secured in one end of the bar and extending therefrom beyond the adjacent edge of the door, and a fixed stop to be engaged by the outer end of said screw when the door is closed, substantially as and for the purpose described.

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

ABEL T. LEARNED.

Witnesses:
S. H. SLEEPER,
JESSIE A. BELL.