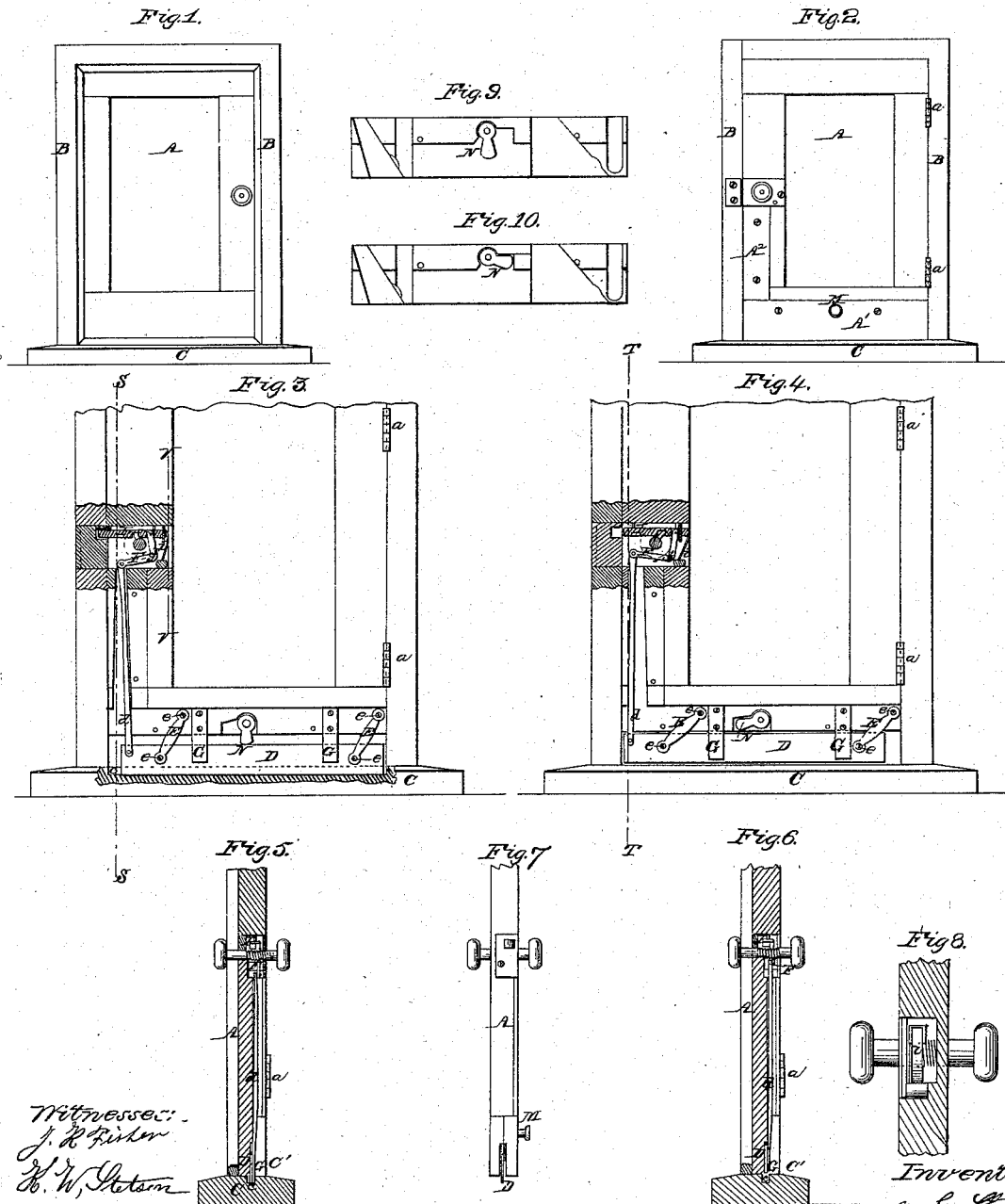


A. E. Strobel.

Weather Strip.

No 54,793.

Patented May 15, 1866.



UNITED STATES PATENT OFFICE.

A. E. STROBEL, OF NEW YORK, N. Y.

IMPROVED WEATHER-STRIP FOR DOORS.

Specification forming part of Letters Patent No. 54,793, dated May 15, 1896.

To all whom it may concern:

Be it known that I, ANN E. STROBEL, of New York, in the county and State of New York, have invented certain new and useful Improvements in Doors for Buildings. The following is a full and complete description of my invention, in which reference is had to the accompanying drawings, which form a part of this specification.

Figure 1 represents the outside of a closed door and connected framing containing my invention. Fig. 2 is a corresponding view of the inside of the door. Fig. 3 represents the inside of a door and framing, with the door closed and a portion of the door and the front of the latch removed. It shows the plate D with the door locked and the connection of the plate with the latch. Fig. 4 is a corresponding view with the plate raised ready for the door to open. Fig. 5 is a vertical section on the line S S in Fig. 3. Fig. 6 is a vertical section on the line T T in Fig. 4. Fig. 7 is an edge view of the door detached from the casing with the plate down as when locked. Fig. 8 is a section of a portion on the line V V in Fig. 3. Fig. 9 is a view of the part A' detached, as seen from within the body of the door, with the plate locked down; and Fig. 10 is a similar view with the plate unlocked.

My invention relates to the outside doors of dwellings, stores, &c., and is designed to serve both as a fastening to the door and as a weather-strip, to prevent snow, rain, or wind from driving under it.

To effect this I place a plate or strip, which I prefer to make of metal, longitudinally along the bottom of the door and within the body thereof, and hinge it so that it may be raised or lowered by the motion of the bolt of the latch as it moves out or is withdrawn in the act of latching or unlatching the door. I also form a groove in the threshold beneath the door, into which, when the door is closed, the plate projects, thereby closing the space beneath the door against driving storms and wind, and, by turning a knob or button placed just above the plate, which is only accessible from the inside, the door is securely locked against entrance from without.

To enable others skilled in the art to make and use my invention, I will proceed to describe it by the aid of the drawings and the letters of reference marked thereon, in which

similar letters of reference indicate like parts in all the figures.

A is the door, hinged to the framing B by the hinges *a*, on which it swings in the ordinary manner. C is the threshold or sill of the door, and contains a longitudinal groove, *c*, in its upper surface, extending the whole distance from one side of the framing to the other.

The portions A' and A² of the door are removable upon the inside, and disclose the interior mechanism, as shown in Figs. 3 and 4.

D is a metal plate suspended by the links E E, and when the door is closed is brought directly above the groove *c*, into which it is projected by its own weight and by a spring, to be described hereinafter. The plate D fits closely within the groove *c*, and serves both as a secure fastening for the door and as a weather-strip, to protect the interior of the building against the passage beneath the door of storm, dust, and wind.

Each of the two links E E is pinned at one end to the plate D and at the other to the door A by the pin *e*, upon which they hinge. The plate D extends nearly the whole width of the door A, and the links E E are connected to the plate near each end, as shown.

The hinging of the plate by the two links provides that, as it is raised from or depressed into the groove *c*, its lower edge shall be kept parallel, or nearly so, with the top of the threshold, and that although the power by which it is raised is applied only at one end, yet the other end will rise at the same time.

A rod, *d*, connects one end of the plate D to the horizontal arm of the bell-crank lever F in the latch of the door, and the opposite or perpendicular arm of the lever fits into a notch formed in the bolt I.

The lever F is pinned to the plate of the latch at its angle by the pin *f*, so that as the bolt moves backward to unlatch the door the lever, acting through the rod *d*, raises the plate entirely out of the groove *c* and leaves the door free to open, as shown in Fig. 4. As the door is closed the plate D slides up the inclined face or top C' of the threshold C until it arrives at its proper position above the groove *c*, when the spring *i*, pressing against the end of the bolt I, acting through the lever F and rod *d*, together with the weight of the plate, project downward the plate D snugly into the groove *c*, as shown in Fig. 3.

The guides G steady the plate D and keep it in a proper vertical position without bringing any strain upon the removable part A', which may be quite light. The guides may be omitted and the part A' depended upon to keep the plate in place; but I prefer the guides.

A knob, M, is inserted in the part A', which is free to turn upon the application of a reasonable force by the hand. The shank of this knob passes entirely through A' and carries an arm, N, within the door. This arm N lies directly above the plate D, and when the knob is turned so that the arm projects to one side, as shown in Figs. 4 and 10, the plate is free to rise out of the groove. When the arm is turned downward upon the top of the plate, as in Figs. 3 and 9, it bears upon and locks the plate securely down, so that it cannot rise out of the groove *c*, and the door cannot be opened until the knob M is turned back again. The knob being upon the inside of the door, and having no connection whatever through to the outside of the door, a person within the house can, by turning the knob, securely prevent the entrance of any one from the outside.

The plate D may be made to operate entirely independent of the latch. To do this I disconnect the plate from the bolt I and insert a spring to keep the plate raised out of the groove *c*, when, by turning the knob M, the spring is compressed by the arm N and the plate D is forced into the groove *c* and held there until released by turning back the knob; or the spring may be dispensed with and the plate D linked to the arm N, so as to rise or be depressed with it; but I prefer the method represented.

I place a metal slide or bearing-piece (not represented) on the inclined surface C' of the threshold, for the lower edge of the plate D to press upon as it is forced upward in closing the door. Small friction-wheels may be attached transversely to the edge of the plate D, upon which the plate rides as the door is closed or open; but I do not consider such wheels necessary.

The plate D may be made of wood, if desired, but metal is preferable, on account of its greater strength, and because it will not shrink and swell like wood with the variations of moisture in the atmosphere.

I propose to place plates of metal upon the top of the threshold along the side of the groove *c*, to prevent the threshold from bruising or crumbling away by the action of the plate as it slides into and out of the groove.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

The plate D, attached to the door and operating as a weather-strip by projecting into and receding from the groove *c* with the movement of the bolt I in the act of latching or unlatching the door, in combination with suitable means for locking the plate within the groove, substantially in the manner and for the purpose herein set forth.

A. E. STROBEL.

Witnesses:

J. R. FISHER,
K. W. STETSON.