

(No Model.)

2 Sheets—Sheet 1.

I. F. FIELD & S. BYERS.
WEATHER STRIP.

No. 433,460.

Patented Aug. 5, 1890.

Fig. 1.

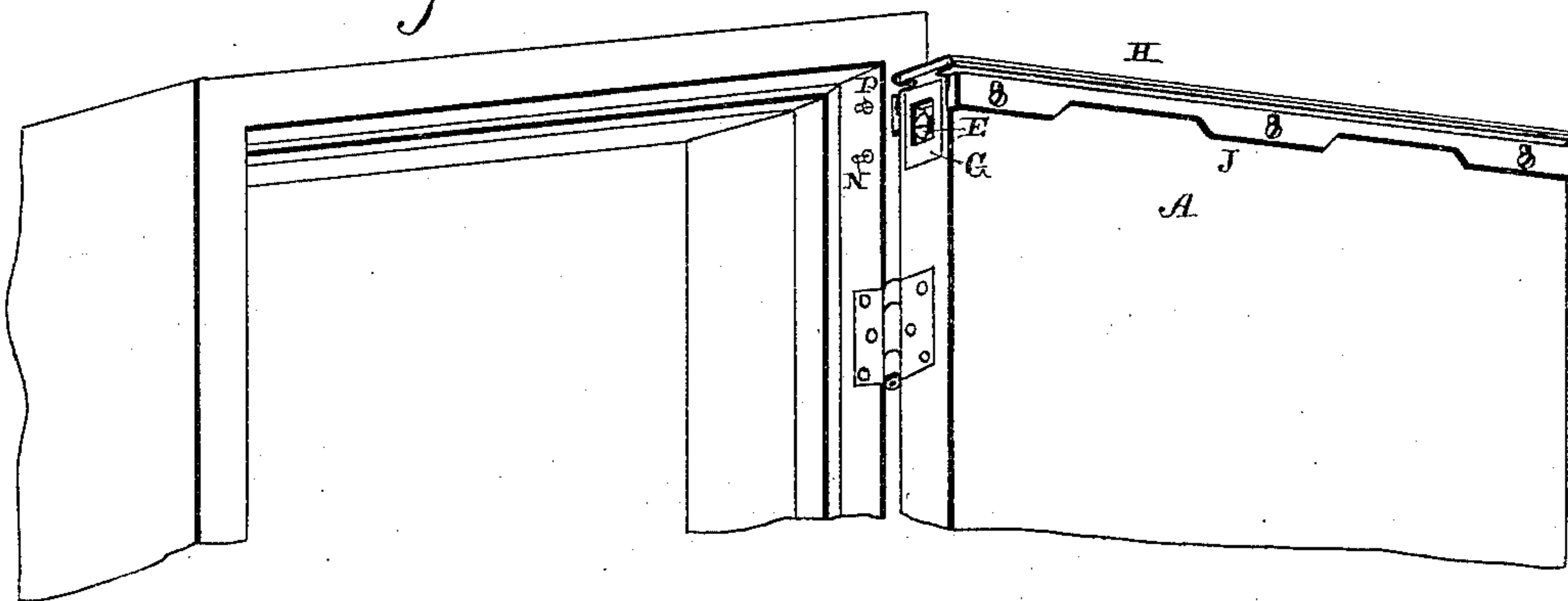


Fig. 2.

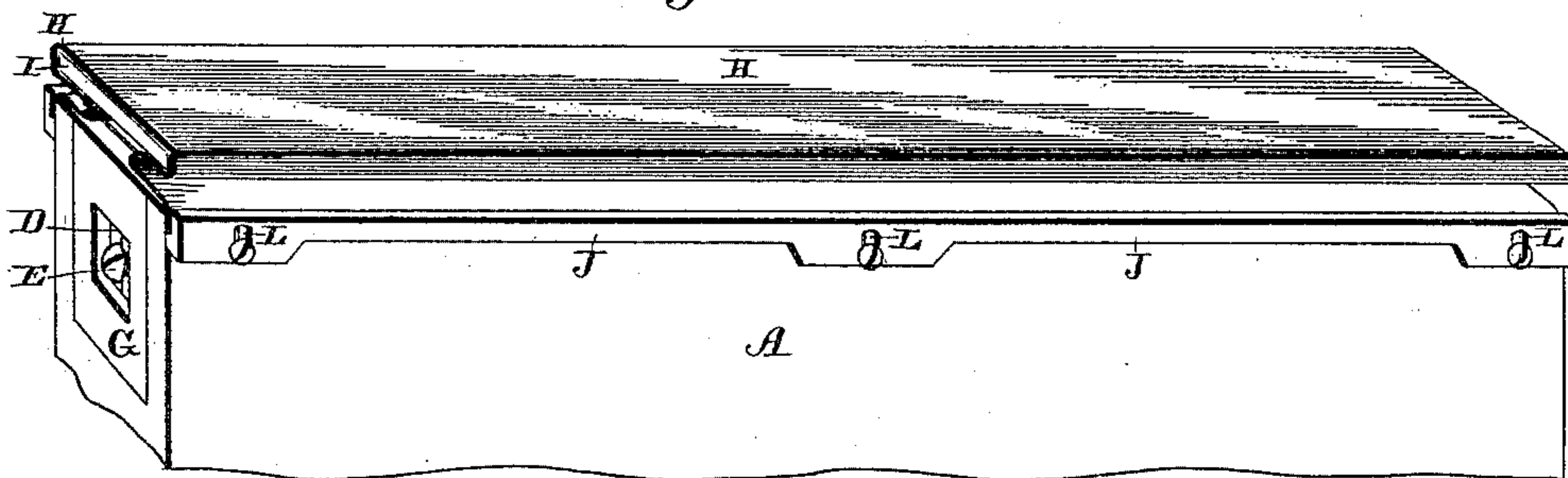
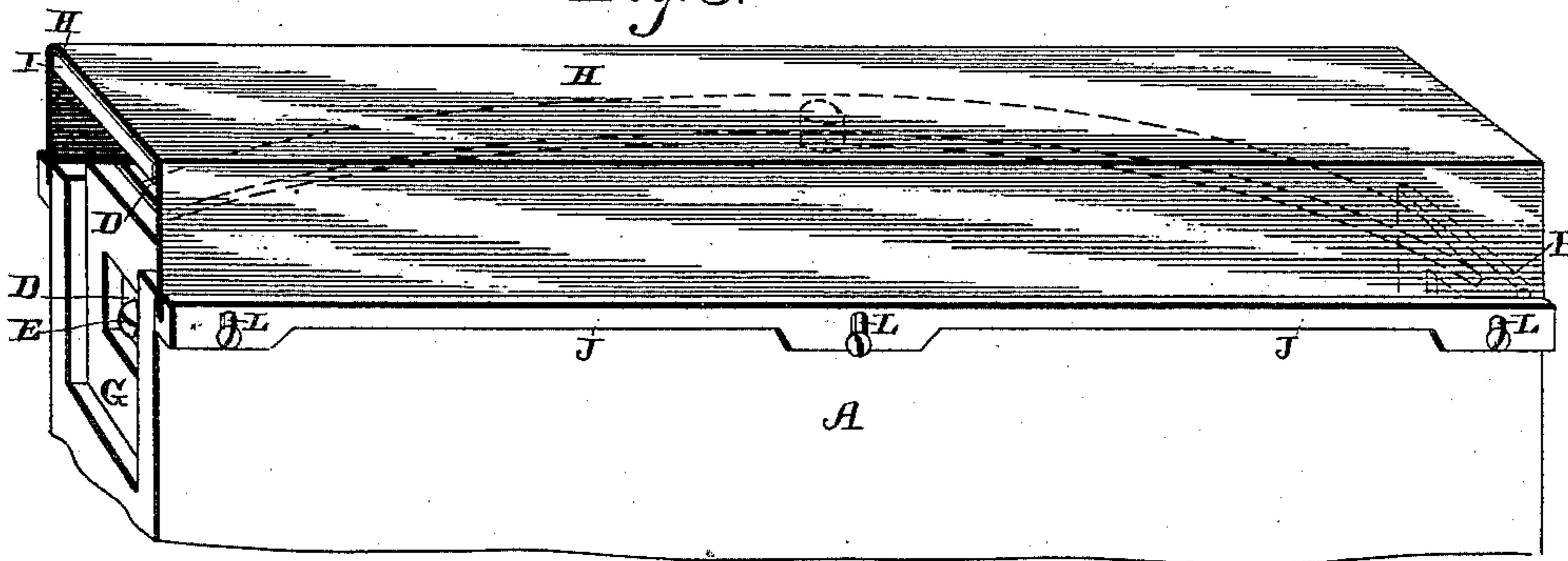


Fig. 3.



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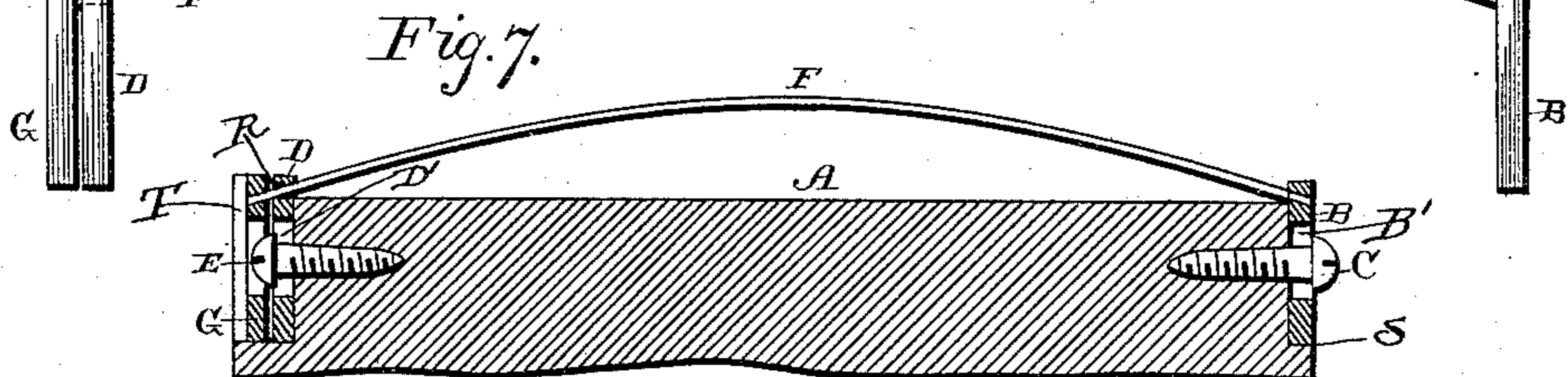
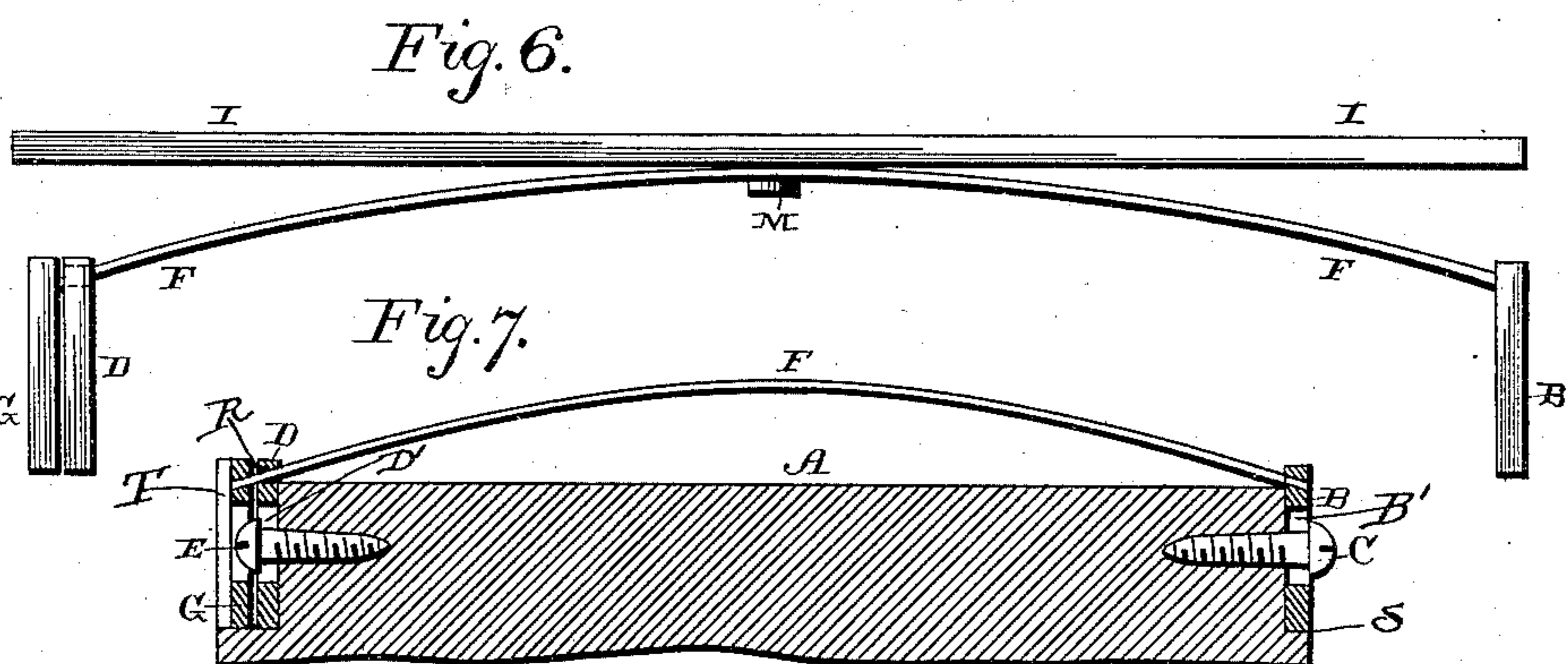
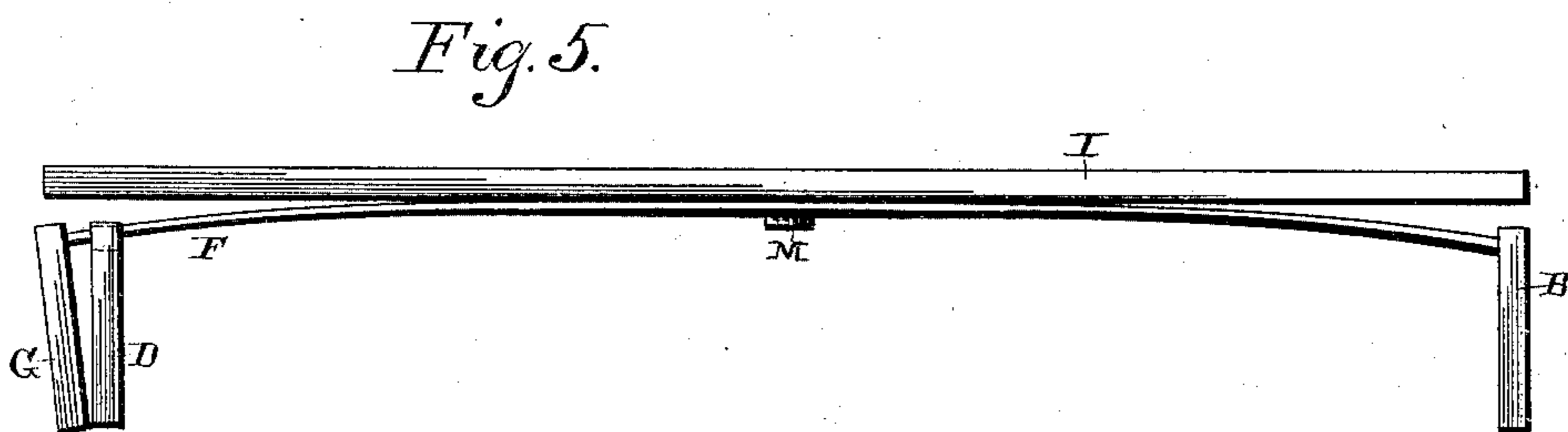
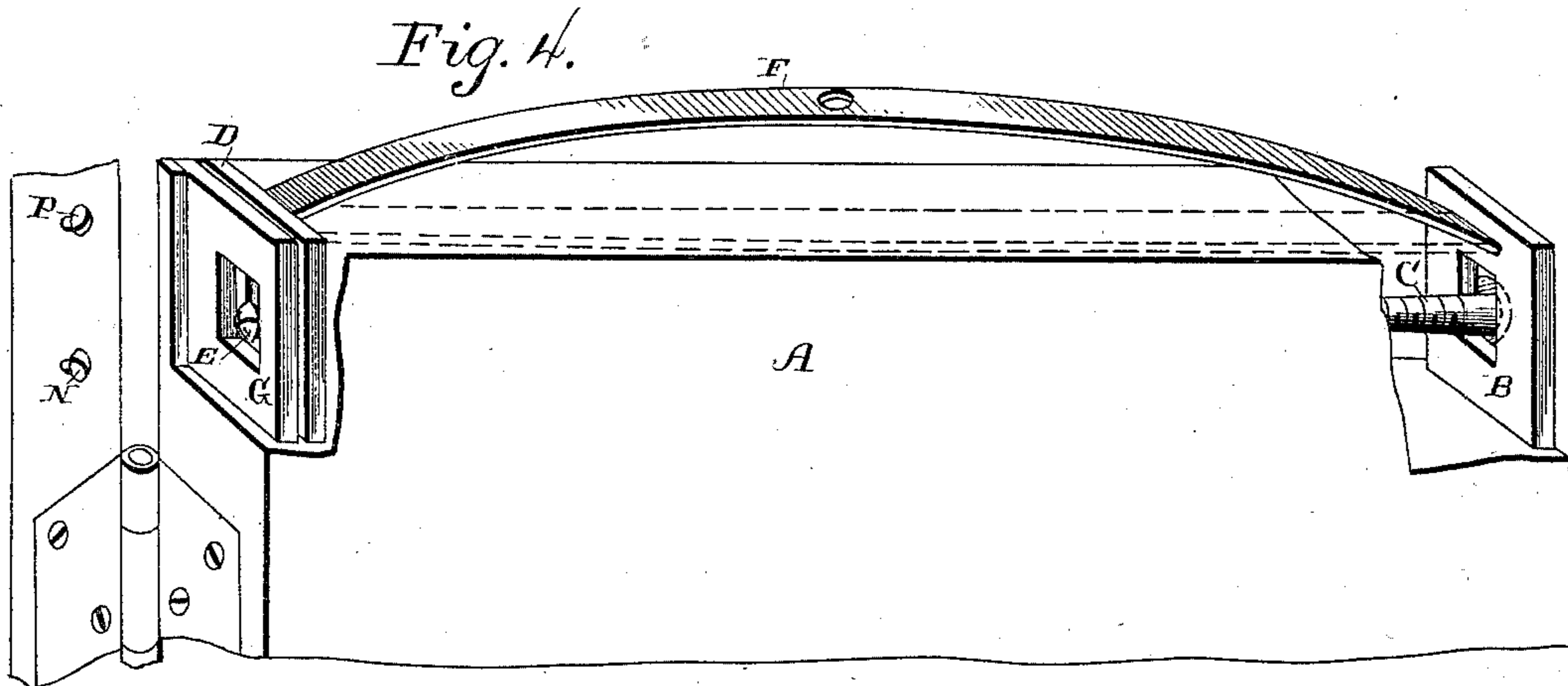
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2 Sheets—Sheet 2.

I. F. FIELD & S. BYERS.
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No. 433,460.

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A. Stevens Pattison

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UNITED STATES PATENT OFFICE.

ISAAC FIRMEN FIELD, OF SANDY LAKE, AND SYLVESTER BYERS, OF BUTLER,
PENNSYLVANIA.

WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 433,460, dated August 5, 1890.

Application filed October 7, 1887. Serial No. 251,784½. (No model.)

To all whom it may concern:

Be it known that we, ISAAC FIRMEN FIELD, a citizen of the United States, residing at Sandy Lake, in the county of Mercer and State of Pennsylvania, and SYLVESTER BYERS, a citizen of the United States, residing at Butler, in the county of Butler and State of Pennsylvania, have invented new and useful Improvements in Doors, of which the following is a specification.

Our invention relates to an improvement in weather-strips; and it consists in the particular arrangement and combination of parts more fully described hereinafter, and particularly pointed out in the claims.

The object of our invention is to provide a weather-strip that is forced outward from the door and made to fit the door-frame tightly when the door is closed and which closes inward when the door is opened, and is so constructed that it is adapted to be applied to either the upper or lower edge of the door.

In the accompanying drawings, Figure 1 represents a perspective of a door and door-frame having my invention applied thereto. Fig. 2 is an enlarged perspective of the upper edge of a door, showing my invention applied thereto, the strip being shown lowered. Fig. 3 is a similar view showing the strip raised. Fig. 4 is a similar view, the flexible material being removed, exposing the interior construction. Fig. 5 is a detached side view of the operating-spring and the plates which are applied thereto, showing the spring partially raised. Fig. 6 is a similar view showing the spring raised to the fullest extent. Fig. 7 is a longitudinal vertical section through the top of the door.

In the construction and application of our invention the door A has a plate B, which is provided with a vertical slot B', applied to its outer upper corner by means of a screw C, which construction enables said plate to be raised or lowered, as may be desired. Also applied to the upper inner corner of said door is a second plate D, which is also provided with a vertical slot D', similar to the one B, and which is in like manner held in position by means of a screw E. By means of this construction the plates B D are normally stationary plates, but can be adjusted up or down the length of

their respective slots. The object of this vertical adjustment is to limit the upward movement of the flexible material, which will hereinafter be more fully described, and thus adapt it to properly fill either a wide or a narrow space above the door. Placed adjacent to the rigid plate D is a movable plate G, to which the inner end of the operating-strip is secured, for the purpose hereinafter described.

Extending longitudinally along the upper edge of the door and normally resting thereon is a flexible strip F, of leather, rubber, or any suitable material. This strip F has its outer end secured to the plate B, its inner end passed loosely through an opening R made in the upper end of the inner plate D, and secured to the plate G, which has a free movement. The outer upper corner of the door is preferably provided with a recess S, for the reception of the plate B, which is secured thereto, and the inner upper corner provided with a recess T, for the reception of the two plates D G, and which recess is made sufficiently deep to allow the plate G to be separated a suitable distance from the stationary plate D for the purpose hereinafter described.

The weather-strip proper consists of the flexible material H, which is U-shaped in cross-section, having a wooden strip I secured to the inner surface of its upper side, and its lower edges fastened to the door by means of the plates J, applied to opposite sides of the upper end thereof. These plates are provided with a suitable number of vertical slots L, through which are passed screws which secure them to the door, the slots allowing them to be adjusted vertically and the strip thus raised or lowered, as may be found necessary. The flexible strip F is secured to the inner side of the wooden strip I by means of a clip or other suitable fastening M, Figs. 5 and 6.

N P represent two adjustable screws that are screwed into the door frame or jamb Q, opposite the plate G, the screw N engaging the lower end of the plate and the screw P the upper end thereof when the door is closed. The lower screw N is longer than the upper one P, so that as the door is being closed the lower end of the movable plate G is first en-

gaged and forced inward, as shown in Fig. 5, and then when the door is farther closed the upper end is pushed in by the upper and shorter screw P. This construction obviates forcing the strip upward its entire distance suddenly, which would tend to wedge the door and make it hard to close.

The operation of our invention is as follows: As shown in Fig. 2, the door is open and the strip closed. When the door is closed, the screw N (which is preferably longer than the one P) engages the lower end of the plate G, pushing it inward toward the plate D, which causes the flexible strip F to bulge upward, as shown in Fig. 5, and as the door is being farther closed the screw P engages the upper end of the plate G, pushing it inward, thus throwing the flexible strip upward at its center to its fullest extent, carrying with it the flexible material H, and throwing the said material which passes over the strip I upward tightly against the upper portion of the door-frame. The amount of upward movement given the strip I is regulated by screwing in or out the screws N P, thus causing them to throw the plate G inward any desired distance. While we here show the screws N P screwed into the door-frame it will be readily understood that they can be screwed into the plate G and made to engage the door-frame, thus pushing the said plate inward in the same manner as when applied as here shown, and we do not therefore limit ourselves to placing them in the said frame.

While we here show and describe our strip as applied to the upper end of the door, it will be seen that it can as readily be applied to the lower end thereof, and in which case the carpet-strip which is now ordinarily used dispensed with. So, if desired, a strip may be applied to both the upper and lower ends of the door.

If the flexible material H is composed of rubber, it will be preferably molded of such a form that it will automatically fold inward at the center, as shown in Fig. 2.

Having thus described our invention we claim—

1. In a weather-strip, the combination, with the door, of a rigid plate secured to one corner thereof, a movable plate applied to the opposite corner thereof, a flexible strip extending along and normally resting upon the edge of the door, the ends of the strip being secured to the said plates, projections engaging the said movable plate and door-frame, a longitudinal supporting-bar secured to the said strip, and flexible material secured to the supporting-bar, and door substantially as shown.

2. In a weather-strip, the combination, with the door, of rigid plates secured to opposite corners thereof, a movable plate, a flexible strip secured to the outer plate at one end, its

opposite end passed loosely through the inner plate and secured to the movable plate, projections engaging the movable plate and the door-frame, a longitudinal supporting-bar secured to the said strip, and flexible material secured to the door and the supporting-bar, substantially as described.

3. In a weather-strip, the combination, with the door, of vertically-slotted plates adjustably secured to opposite corners thereof, a movable plate adjacent to the inner one of said plates, a flexible strip secured at its outer end to the outer plate, its opposite end passed loosely through an opening made in the upper end of the inner adjustable plate and secured at its inner end to the movable plate, projections engaging the movable plate and the door-frame, a longitudinal supporting-bar secured to the said strip, and flexible material secured to the door and the supporting-bar, whereby the said slotted plates are vertically adjustable for the purpose of regulating the vertical movement of the strip, substantially as set forth.

4. In a weather-strip, the combination, with the door, of the plates secured to opposite corners thereof, the inner plate provided with an opening at its upper end, a flexible strip having its outer end secured to the outer plate, its inner end passed through the opening in the said inner plate, a movable plate adjacent to the inner plate and secured to the inner end of the flexible strip, a longitudinal supporting-bar secured to the said strip, the flexible material secured to the said supporting-bar and to the door, and adjustable projections engaging the movable plate and door-frame, whereby the upward movement of the strip is regulated, substantially as specified.

5. The combination, with the door, of the plates secured to opposite corners thereof, the flexible strip passing through the inner plate and secured at its outer end to the outer plate, a movable plate secured to the inner end of said flexible strip, projections engaging the movable plate and the door-frame, a longitudinal bar secured to the center of the flexible strip, the flexible material secured to the longitudinal bar and to the door, substantially as shown.

6. The combination, with the door, of the plates secured to opposite corners thereof, the movable plate, the flexible strip, the projections, the longitudinal supporting-bar, the flexible material secured to the supporting-bar, and vertically-adjustable longitudinal plates which secure the material to the door, whereby the material can be raised and lowered, substantially as shown and described.

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