

(No Model.)

B. J. CLOES.

DOOR HANGER.

No. 285,575.

Patented Sept. 25, 1883.

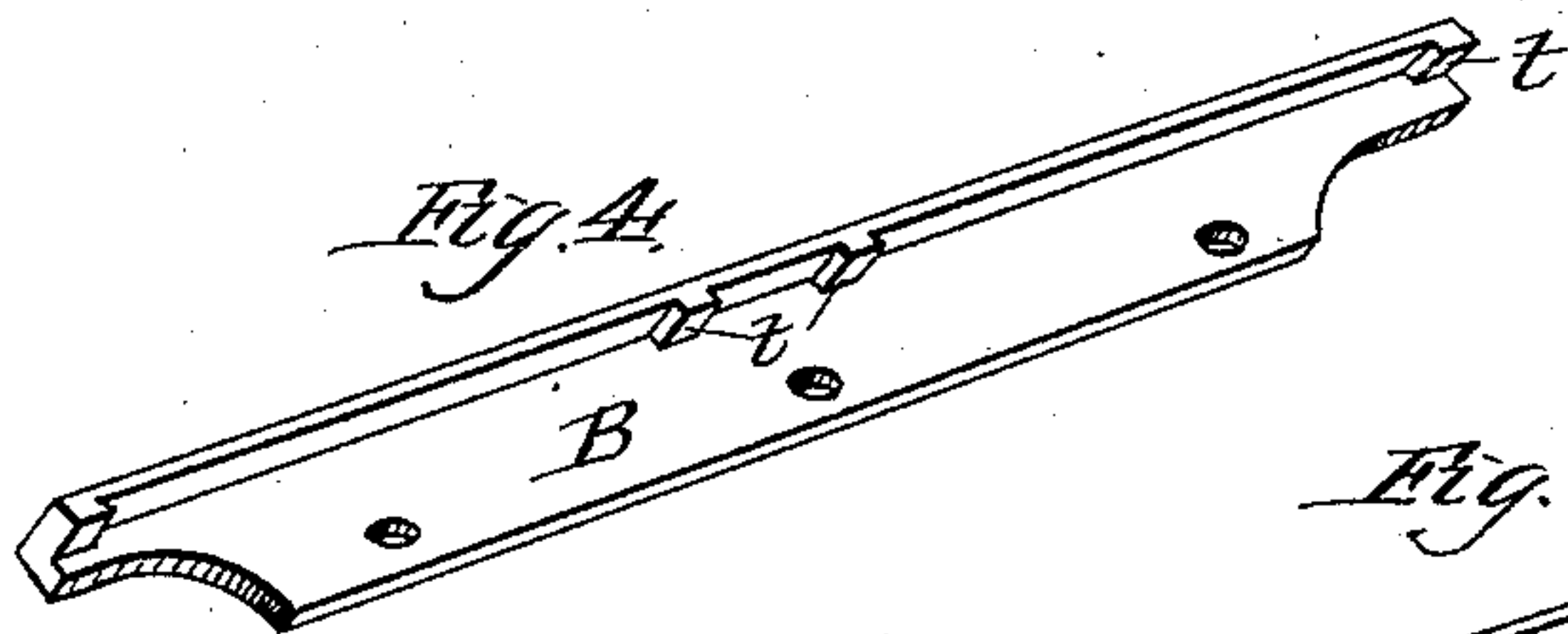
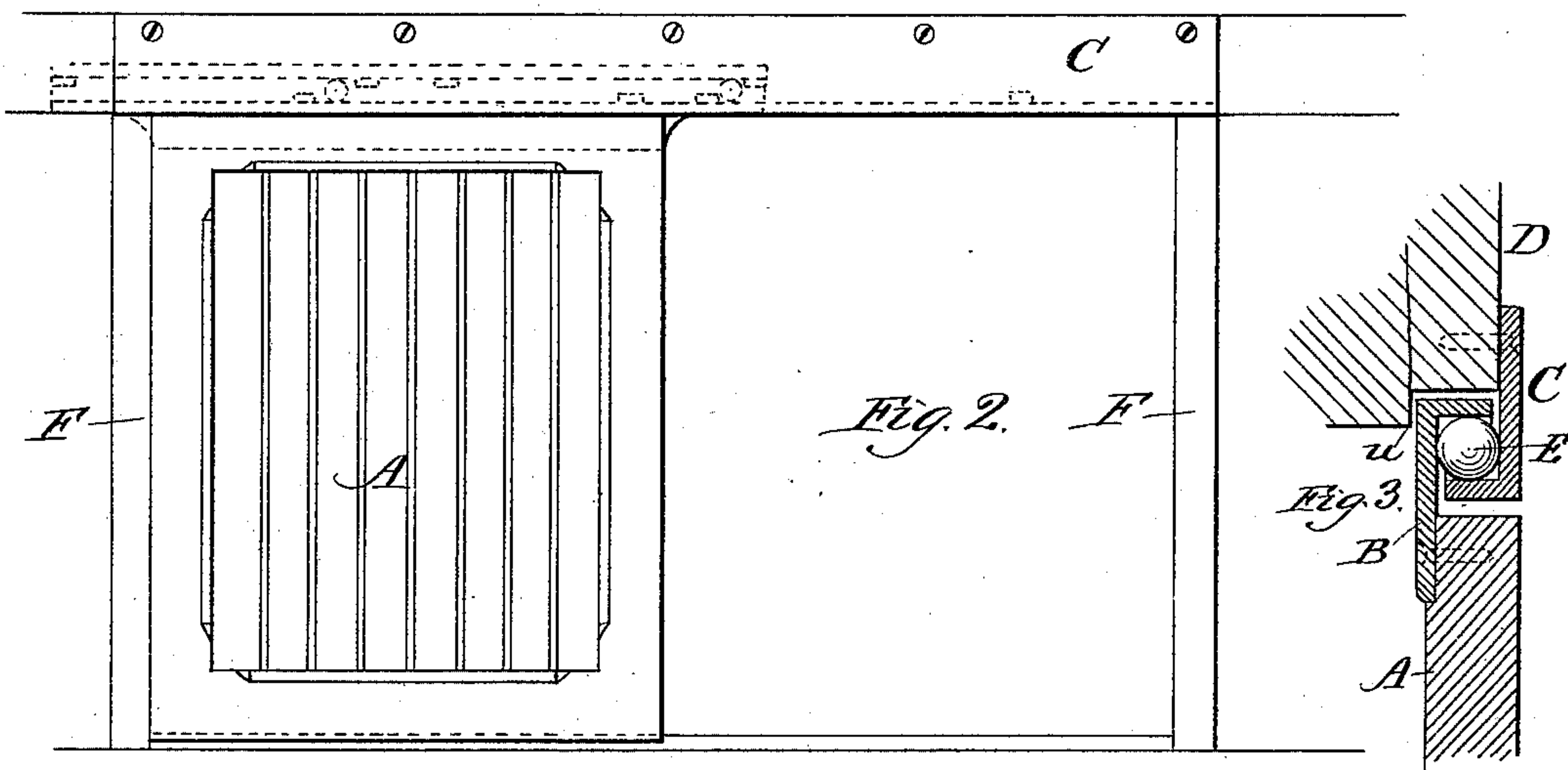
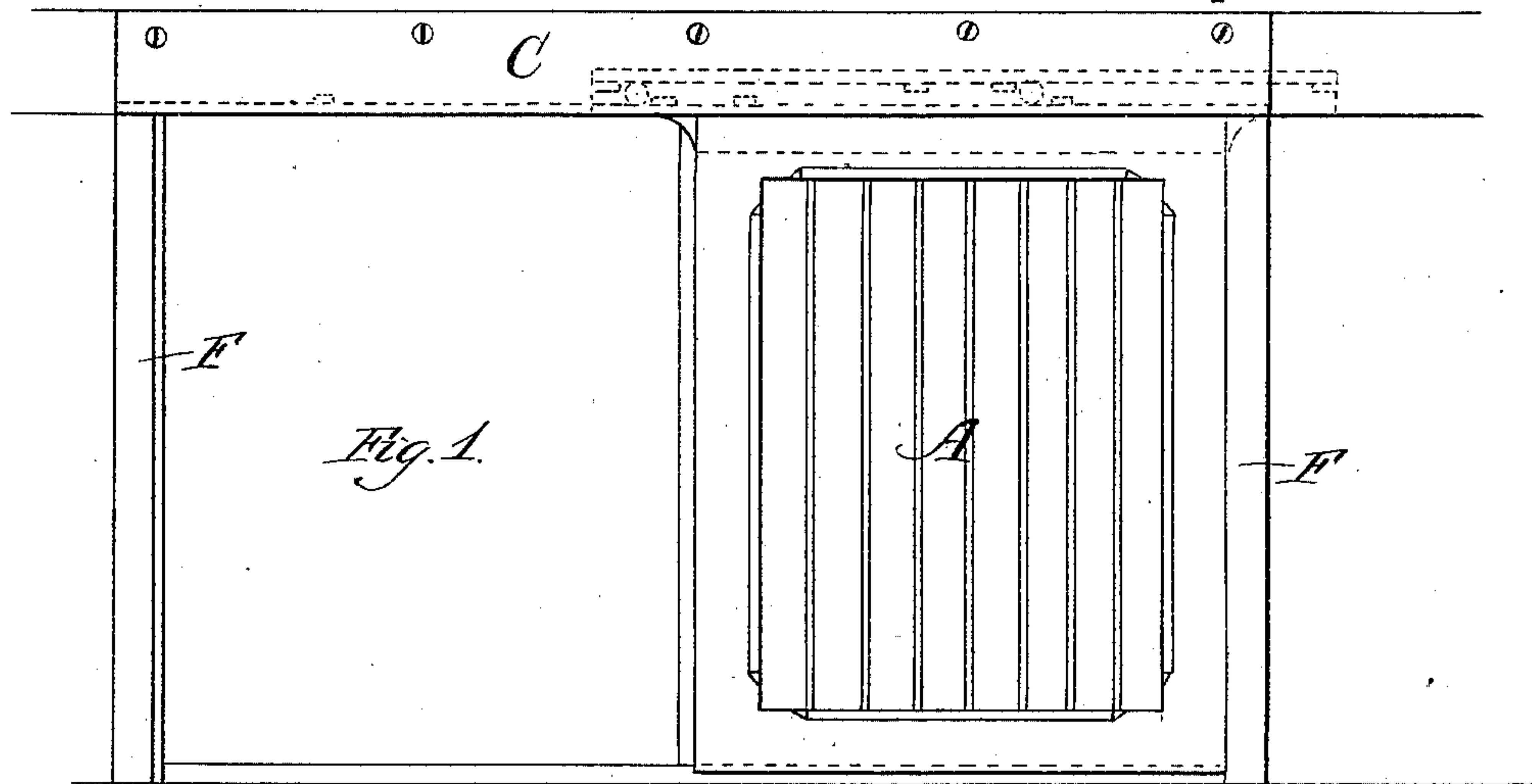
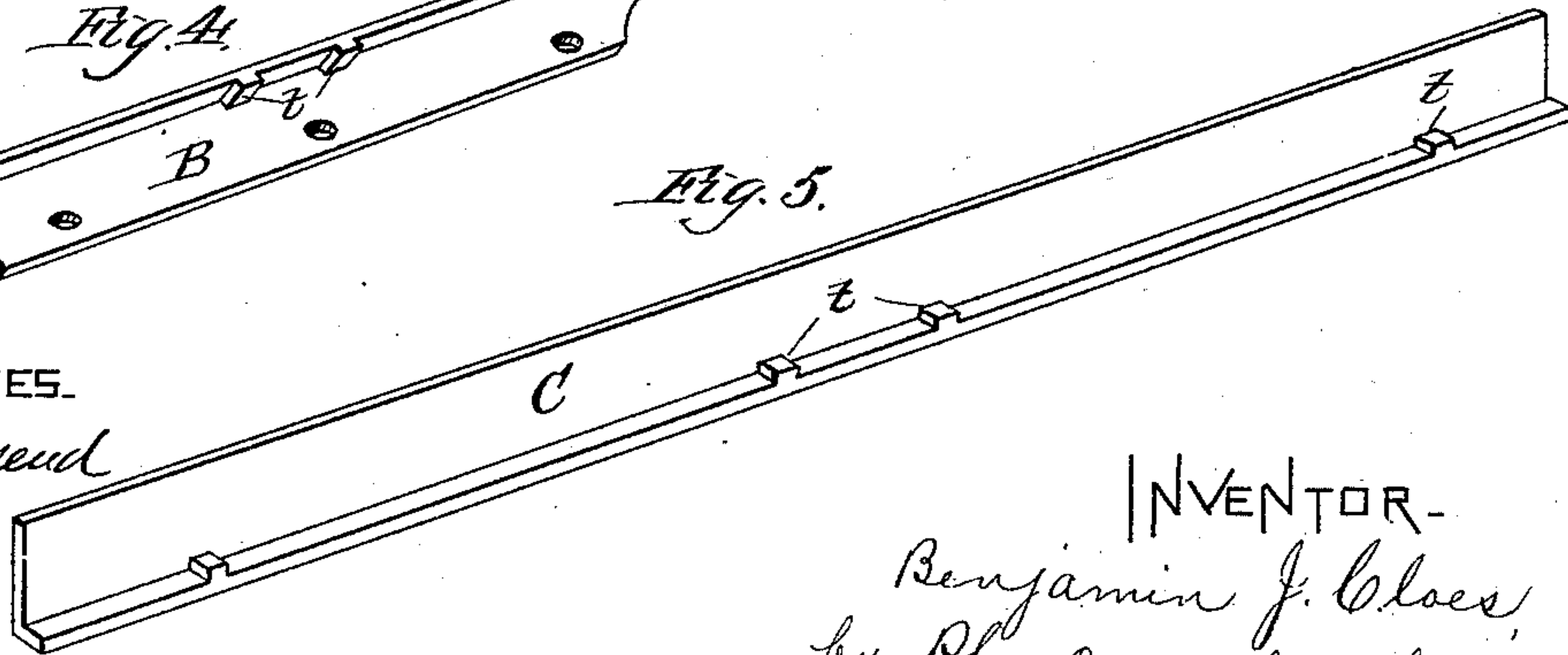


Fig. 5.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 285,575, dated September 25, 1882.

Application filed June 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN J. CLOES, a citizen of the United States, residing at Lake Bluff, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Hangers for Sliding Doors; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates especially to hangers for freight-car doors, and I shall confine my description chiefly to its application to that purpose, although all the essential features are equally applicable to barn-doors, and to sliding doors for all other purposes; and it consists in employing two angle-irons, one secured to the upper part of the door and the other to the wall of the structure above the door, the two being arranged in reverse order and overlapping each other, whereby the horizontal portion of the lower one lies above the horizontal portion of the upper, and operates in conjunction with loose balls or rollers resting on the horizontal portion of the upper angle-iron and supporting that of the lower one. It consists, also, in employing, in connection with the angle-irons and balls, constructed and arranged as above, stops or projections on the inner face of the horizontal portion of each angle-iron to limit the movement of the balls or rollers; and it consists, furthermore, in the specific construction which I prefer to adopt for carrying my invention into effect on freight-cars—to wit, in combining with the sliding door two angle-irons, the first projecting vertically upward from the inner upper face of the door, and thence horizontally forward above the door, and the second and longer one extending downward from the lower outer face of the wall above the door, and thence horizontally backward, and carrying balls or rollers on which the said horizontal portion of the first angle-iron hangs, the horizontal portion of each angle-iron being provided with internal projections or stops—two on each side of its center—to limit the movement of the balls or rollers, all as hereinafter more fully set forth.

In the drawings, Figure 1 is a front elevation of my device, showing the door open; Fig.

2, a similar view, showing the door closed; Fig. 3, a vertical cross-section through the door and fascia-board, giving a sectional end view of my device; and Figs. 4 and 5 detail views.

A is the door, having its lower end restrained from moving outward by any suitable guiding device.

B is the angle-iron, secured to the door at its inner upper face, and C the angle-iron, secured to the lower outer face of the fascia-board D. It will be seen that the horizontal portion of the plate B projects forward, while that of the plate C projects backward, whereby when the door is placed in position they lie the one above the other. The side of the car restrains the inward movement of the upper end of the door when it is closed. The horizontal portion of each angle-iron is provided with four projections or stops, *t*, on its inner face—two near the center, but on opposite sides of the same, and one toward each end—these stops being arranged at corresponding distances apart in both angle-irons. This arrangement of course brings the outer stops nearer the ends in the shorter angle-iron than in the longer one.

E represents loose balls or rollers, two of which are ordinarily to be employed, as shown by the dotted lines in Figs. 1 and 2, one being placed between each pair of stops on opposite sides of the center of the horizontal portion of the angle-iron C. The diameter of the said balls or rollers is greater than the combined height of the stops on the opposite angle-irons, whereby the stops may move past each other as the door slides from side to side. When the door is placed in position, the angle-iron B hangs on these balls, as clearly represented in Fig. 3 of the drawings, and its movement from side to side is limited by suitable open and closed door-stops, F.

From the foregoing description it will be seen that as the door is moved from side to side to open and close it the two central stops on the angle-iron B pass back and forth across the two central stops on the angle-iron C, and that when the door reaches its right-hand limit the right-hand ball or roller is confined between the right extreme stop of the angle-

iron C and the right mean stop of the angle-iron B, while the left-hand ball is similarly confined between the left extreme stop of the angle-iron B and the left mean stop of the angle-iron C, all as clearly indicated by the dotted lines in Fig. 1. When the door is moved to its left-hand limit, the relations of the balls and stops are reversed, as indicated by the dotted lines in Fig. 2. If either of the balls or rollers is displaced from its proper relative position, it slides, instead of rolling, for one movement of the door, (producing of course moderately increased friction,) after which it will be found to have assumed its proper position and to work with its natural smoothness and regularity. The same is true if both the balls or rollers are displaced; and I deem this capability of self-adjustment to be a very important feature of my device, as it enables the parts to be put together without difficulty. After the device has adjusted itself in the first instance a displacement of the balls or rollers can only occur under unusual conditions—as, for example, the tipping or overturning of the car.

Of course in constructing the device the positions of the stops must be arranged according to the width of the door and opening.

In using the terms "angle-irons" I do not wish to be understood as limiting myself to any material, for although iron is generally to be preferred, and will in a majority of cases be employed, still the same results would follow if wood, for example, were used instead.

If the door is found to roll too easily, a slide

may be substituted for one of the rollers or balls.

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

1. In a hanger for sliding doors, the combination of two angle-irons, secured one to the upper part of the door and the other to the wall of the structure above the door, in reverse order, and overlapping each other, whereby the horizontal portion of the one attached to the door lies above the horizontal portion of the one attached to the wall, and loose balls or rollers E between the horizontal portions of said angle-irons and in frictional contact with each of them, substantially as described.

2. A hanger for sliding doors, comprising the angle-irons B and C, the one secured to the upper part of the door and the other to the wall of the structure above the door, in reverse order, and overlapping each other, in combination with the loose balls or rollers E, resting on the angle-iron C and supporting the angle-iron B, said angle-irons being provided with stops to limit the movement of the balls or rollers, substantially as described.

3. The combination, with a wall and sliding door, of the ball or balls confined in sockets equal or essentially equal in length to the distance traveled by the balls in the operation of the door, substantially as described.

BENJAMIN J. CLOES.

In presence of—

P. C. DYRENFORTH,
WM. H. DYRENFORTH.