(No Model.)

E. L. PHIPPS.

CAR DOOR.

No. 411,298. Patented Sept. 17, 1889.

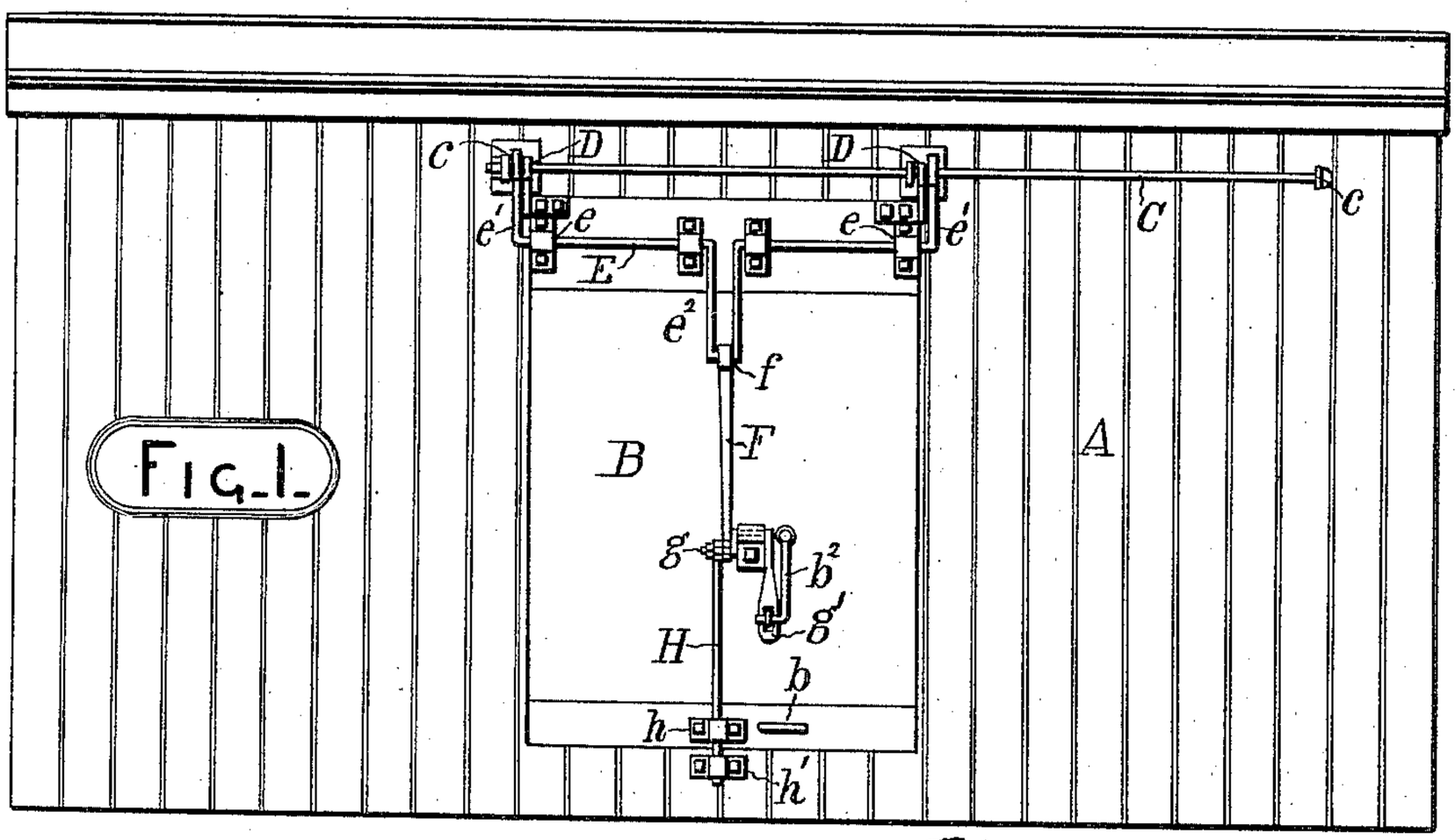

FIG. 1.

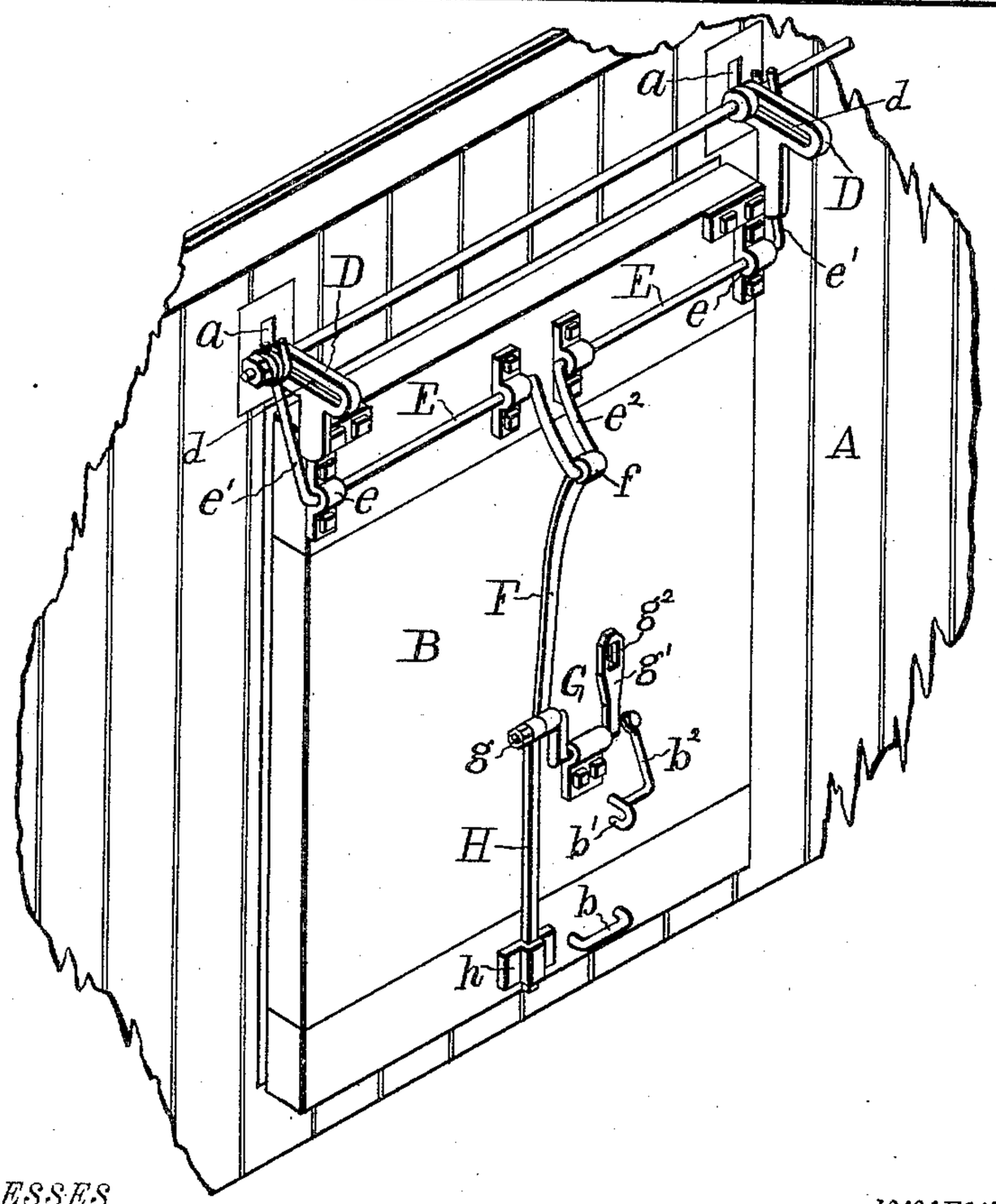

FIG. 2.

WITNESSES
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UNITED STATES PATENT OFFICE.

EDWARD L. PHIPPS, OF MILFORD, MICHIGAN, ASSIGNOR OF TWO-THIRDS TO SOLON H. WILHELM AND ALMON D. WEBB, OF SAME PLACE.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 411,298, dated September 17, 1889.

Application filed May 4, 1889. Serial No. 309,647. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. PHIPPS, a citizen of the United States, residing at Milford, county of Oakland, State of Michigan, have invented a certain new and useful Improvement in Car-Doors; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a side elevation of a car with my improved door thereon. Fig. 2 is a perspective view showing the door thrown out from the frame.

My invention is designed to produce a car-door and mechanism for operating the same, whereby the door may be easily opened and closed and when closed may be easily locked in position; and it consists of a combination of devices and appliances hereinafter described and claimed.

In carrying out my invention, A represents the side or frame of a car, and B the door.

C is a rod which extends along the frame above the door and suitably supported, as at *c*. This rod may be any shape in cross-section; but I prefer to make it round, as shown.

D are hangers attached to the upper edge of the door and provided with elongated slots *d*, which embrace the rod.

By providing openings in the frame at *a*, the door can be thrown in flush with the side of the car, the ends of the hangers entering the openings *a*. The door being thus supported by the hangers with the elongated slots embracing the rod, the upper edge of the door can be thrown from or toward the frame of the car, the hangers sliding horizontally on the rod, and after being thrown out from the car the lower edge can be pulled out by grasping the handle *b* and the door slid along longitudinally of the rod.

I will now describe the mechanism for throwing the upper edge of the door in or out.

E is a rod or lever pivoted to the door at *e*, its ends *e'* being bent up and embracing the rod C, while the middle e^2 is bent downward in a U shape, as shown.

F is a rod, one end *f* of which is pivotally attached to the U-shaped portion of the lever E, while the other end extends down to the crank *g* of an axially-rotating lever G, journaled to the door and having a crank-handle *g'*. Thus by throwing the handle *g'* of the lever G up, as shown in Fig. 2, the rod F will cause the portion e^2 of the lever E to be thrown outward and upward, thus causing the ends *e'* to bear against the rod C and throw the door out. Thus by throwing the handle *g'* of the lever G either up or down the upper edge of the door is thrown either flush with or out from the frame of the car. Of course the ends *e'* need not necessarily embrace the rod C, since they might extend up between the rod and the side of the car and bear on the face of the rod and a suitable strip on the side of the car. Such a change would of course be contemplated by my invention.

If desired, a rod H may be extended from the end *g* of the lever G down through a clip *h*, and when the rod is forced downward by the movement of the handle *g'* may be made to engage in the clip *h'*, thus preventing the lower edge of the door from being pulled out until after the upper edge has been thrown out.

By providing the eye *b'*, adapted to enter the slot g^2 in the handle *g'*, a hook, pin, or other device b^2 may be inserted and the car sealed with the usual seal.

If desired, the edges of the opening in the car-frame may be beveled, and the edges of the door being correspondingly beveled a tight joint be obtained between the door and the frame and yet the door be easily opened because of its direct in-and-out movement.

What I claim is—

1. The combination, with the car-frame and car-door, of a supporting-rod extending along the frame above the door, hangers attached to the upper edge of the door having elongated slots through which the rod is passed, whereby the upper edge of the door may be thrown toward or from the car-frame, and suitable mechanism for throwing the upper edge of the door either toward or from the car-frame, substantially as described.

2. The combination, with the car-frame

having a supporting-rod located above the door and the car-door provided with hangers having elongated slots which embrace the supporting-rod, of the lever E, shaped substantially as shown and pivoted to the door, whereby when the portion e^2 of the lever E is thrown upward the door is thrown out from the frame, and vice versa, substantially as described.

3. The combination, with a car-frame and a car-door, of a supporting-rod C, slotted hangers D, lever E, connected with the rod, a rod F, extending from the lever, the rotating lever G, having a handle g', and a crank g, connected to the rod extending from the lever, a rod H, connected to said crank, and a clip h', substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

EDWARD L. PHIPPS.

Witnesses:
ALMON D. WEBB,
E. B. WILHELM.