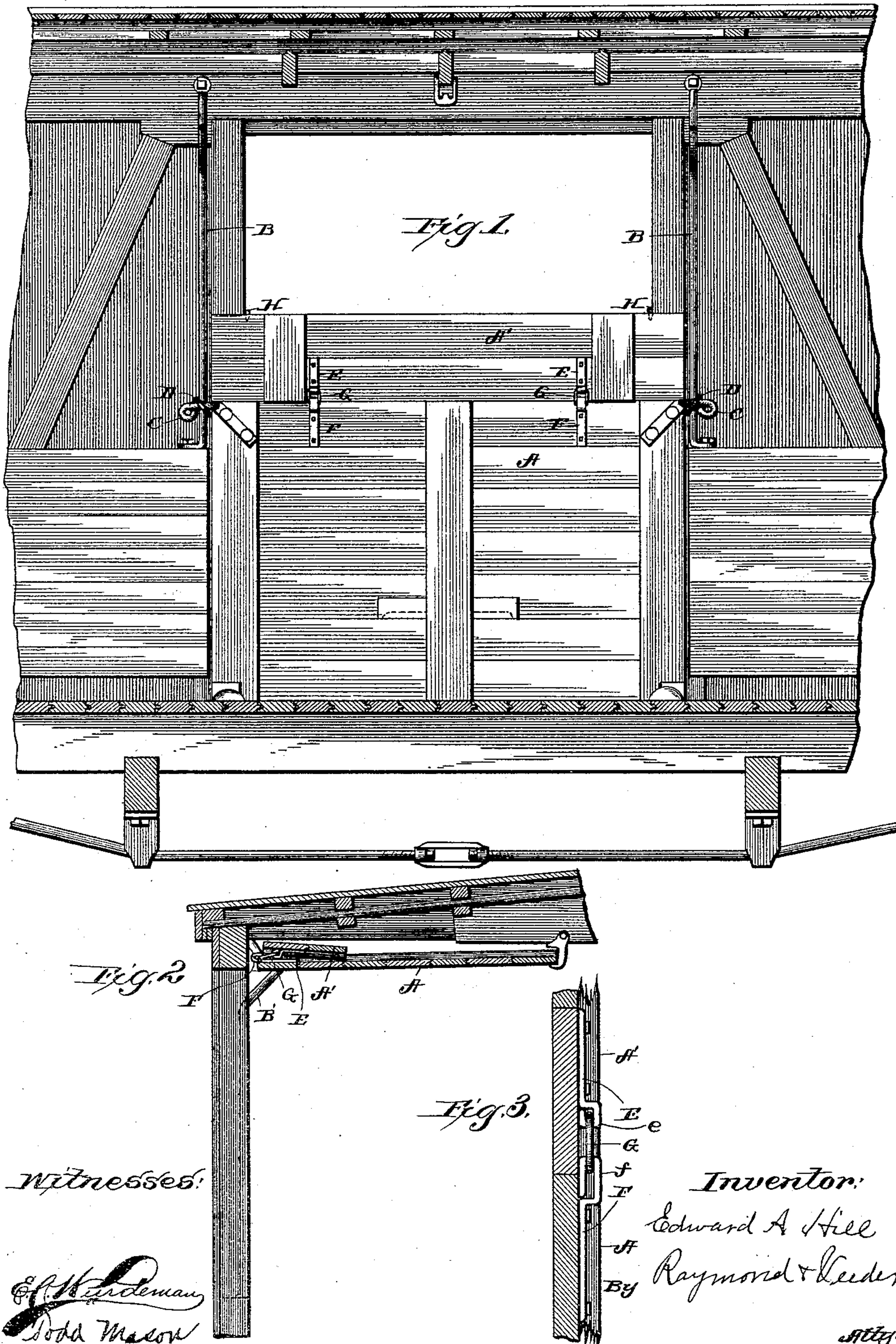


(No Model.)

E. A. HILL.  
GRAIN CAR DOOR.

No. 454,212.

Patented June 16, 1891.



Witnesses:

*E. A. Hill*  
*Dodd Mason*

Inventor:

*Edward A. Hill*  
*Raymond & Leeder*

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# UNITED STATES PATENT OFFICE.

EDWARD A. HILL, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES L. MALLORY AND EDGAR A. HILL, OF SAME PLACE.

## GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 454,212, dated June 16, 1891.

Application filed December 8, 1890. Serial No. 373,893. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD A. HILL, a citizen of the United States, residing in Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a specification.

My improvement relates to grain-doors for cars in which there is an auxiliary door which adds to the height of the main door, so as to provide for the retention of the lighter and bulkier grains.

My improvement relates especially to the devices for connecting and supporting the auxiliary door upon the main door.

In the accompanying drawings, Figure 1 is a side elevation of the end door and its appurtenances and a portion of the side of the car as seen from within. Fig. 2 is a vertical cross-section of the door. Fig. 3 is a cross-section on a large scale, showing the hinge connection between the main and the auxiliary doors.

The main door A is attached at its upper edge to vertical rods B B by means of pivots C C, attached to the door, and rings D D, encircling said pivots and rods, as described in a prior patent granted to me July 2, 1889, and numbered 406,399. The door when not in use is swung up beneath the roof of the car, as shown in Fig. 2, and as described in the patent just referred to.

The auxiliary door A' is attached to the door A by means of a hinge. (Best seen in Fig. 3.) The hinge consists of two straps or leaves E F, attached to the auxiliary and main doors, respectively, said leaves being connected by the link G, which is rectangular in shape, or approximately so, two opposite sides of the rectangular link being surrounded by eyes e f, formed upon the leaves E F. The eye f is made of an oblong shape, so as to allow the link G considerable play, and the upper end of the leaf F projects slightly above the edge of the door A, so as to form a stop, by which the lower edge of the door A' will be held in contact with the side posts of the car-door. The upper edge of the door A' is held in the ordinary manner by hooks H H,

Fig. 1. As shown in the drawings, the eye e is also somewhat elongated; but it is only necessary to have it sufficiently large to allow the link G to play freely. The object of elongating the eye f is not only to allow freedom to the link G, but to allow the door A' to be slid back when folded, as shown in Fig. 2, away from the edge of the door A, so as not to interfere with the turning up of the door, as shown. The link G allows the doors to separate somewhat when folded back, so as to give room for the pivots C or other device by which the main door is hung. The connecting device formed by the leaves E and F and the link G allows such freedom between the doors A and A' as to prevent the wrenching or twisting of the fastenings from the door, and no special accuracy in alignment of the fastenings is needed when fastening it upon the door.

I have shown the rods B set beside the door-posts and flush with the inner faces thereof, thereby protecting said rods and affording additional room in the car in practically the same manner that I secured these results by grooving out the posts and setting the rods within said grooves, as shown in my patent, No. 426,183, of April 22, 1890.

I claim—

1. The combination, with the main and auxiliary grain-doors, of a hinge consisting of two leaves secured to the main and auxiliary doors, respectively, and having eyes surrounding a link by which the two leaves are connected, the eye of the leaf upon the main door being elongated, substantially as and for the purpose set forth.

2. The combination, with the main and auxiliary grain-doors, of a hinge consisting of two leaves secured to the main and auxiliary doors, respectively, and connected by a link fitting into eyes in the two leaves, the leaf upon the main door projecting beyond the line of juncture of the two doors, substantially as and for the purpose set forth.

3. The combination, with the main and auxiliary grain-doors, of a hinge device consisting of two leaves secured to the main and auxiliary doors, respectively, and connected by a

link fitting into eyes in the two leaves, the  
leaf upon the main door projecting beyond  
the line of juncture of the two doors and hav-  
ing an elongated eye, and vertical rods affixed  
5 to the sides of the doorway, to which the main  
door is attached by pivots and rings, upon  
which rods and pivots the door is supported

when swung up beneath the car-roof, sub-  
stantially as and for the purpose set forth.

EDWARD A. HILL.

Witnesses:

IRWIN VEEDER,  
TODD MASON.