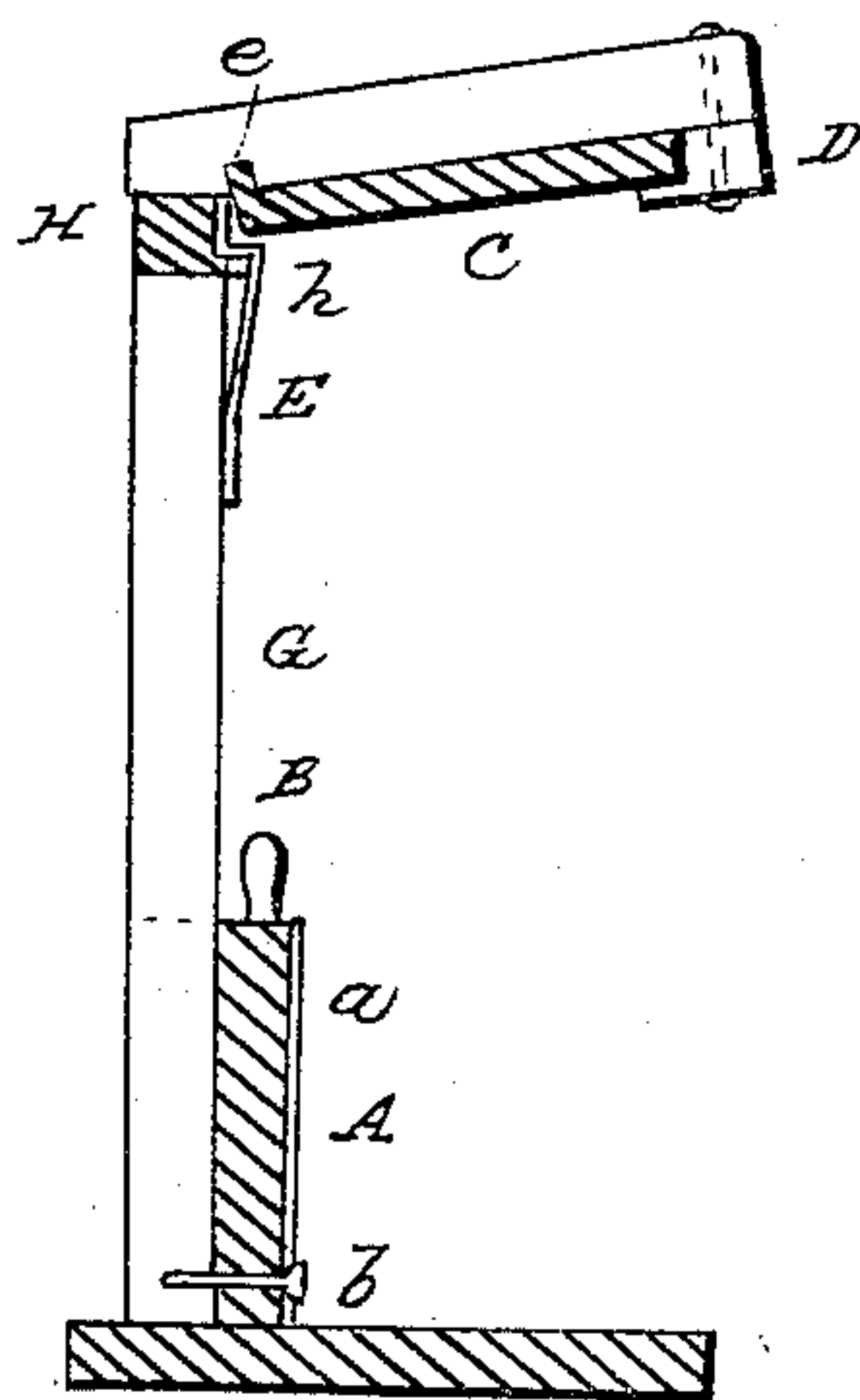
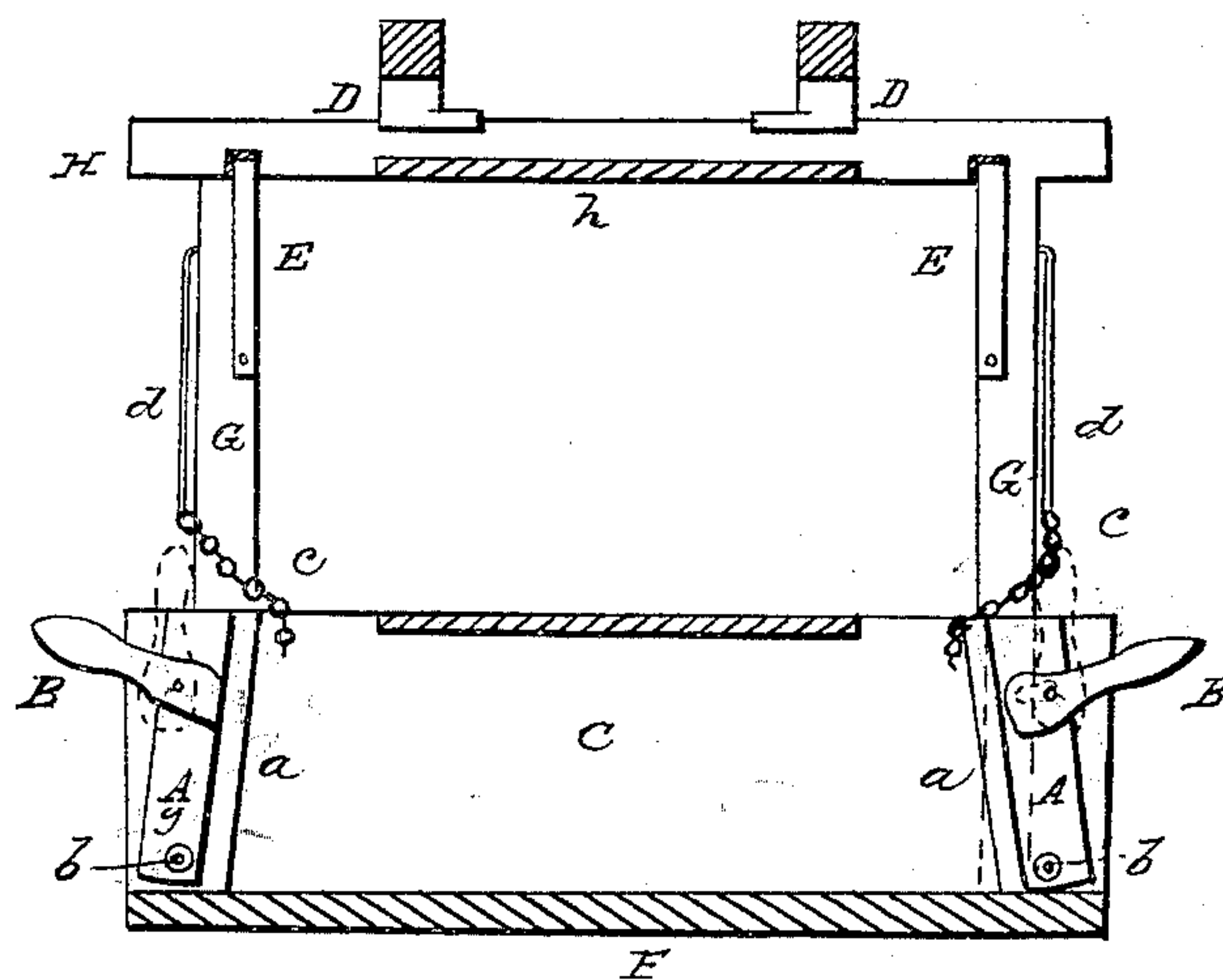


S. E. KNOTT.
Door for Grain Cars.

No. 90,560.

Patented May 25, 1869.



WITNESSES:

H. S. Sprague
E. M. Higgins

INVENTOR:

Stephen E. Knott
per Attorney
Thos. S. Sprague

United States Patent Office.

STEPHEN E. KNOTT, OF CHICAGO, ILLINOIS.

Letters Patent No. 90,560, dated May 25, 1869.

IMPROVED DOOR FOR GRAIN-CARS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, STEPHEN E. KNOTT, of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful Improvement in Grain-Doors; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

Figure 1 is an elevation of the inside of a car-door, with the door closed.

Figure 2 is a vertical section, with the door removed from the frame, and secured to the roof, out of the way of the men employed in discharging the grain.

Like letters indicate like parts in each figure.

The nature of this invention relates to the construction of a door for railway-cars employed in carrying grain, in such a manner that no grain can pass between the door and frame, and be lost in transit.

F, in the drawings, is a section of the floor of a grain-car;

G, the posts of its door; and

H, the string-piece, upon which the roof rests, and is secured.

C is the door of the car, sliding down into place between the guides *a* of the plate A, which are pivoted to the door-frame at *b*, near their lower ends.

These plates have a lateral motion on their pivots, and are caused to advance and firmly embrace the bevelled edge of the door, by the cams B, pivoted to the door-frame, and acting against the guides *a*, a slot in the plate around the pivot, allowing it to

move in the proper direction. To prevent the door from being removed from the car and lost, I attach a small chain, *c*, to each upper corner of the door, secured to a ring sliding on the bar *d*, attached to the sides of the door-frame, and allowing the door to be moved up to the ceiling of the car.

E are spring-brackets, upon which the upper edge of the door rests, when it is desired to open it, as shown in fig. 2. In its place, may be used a wooden cleat, *h*, fig. 1. The door being folded up against the ceiling, is held in place by the latches D, pivoted to the rafters of the car. To prevent the door from sliding backwards or forwards, while in this position, I place a cleat, *e*, fig. 1, on its upper inner side, which is of the length of the space between two of the rafters. When the door is folded up, it enters the space between them, and secures the door in place.

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

1. The plates A, having flanged guides *a*, pivoted to the frame of the car-door, the cams B, and the trapezoidal door C, substantially as and for the purposes set forth.

2. In combination with the above, the chains *c*, rods *d*, brackets E, and latches D, or their equivalents, when constructed, arranged, and operating substantially as described and for the purposes specified.

S. E. KNOTT.

Witnesses:

H. S. SPRAGUE,
R. M. HIGGINSON.