

No. 780,285.

PATENTED JAN. 17, 1905.

E. D. HAMMOND.
GRAIN CAR DOOR.

APPLICATION FILED AUG. 2, 1904.

FIG. 1.

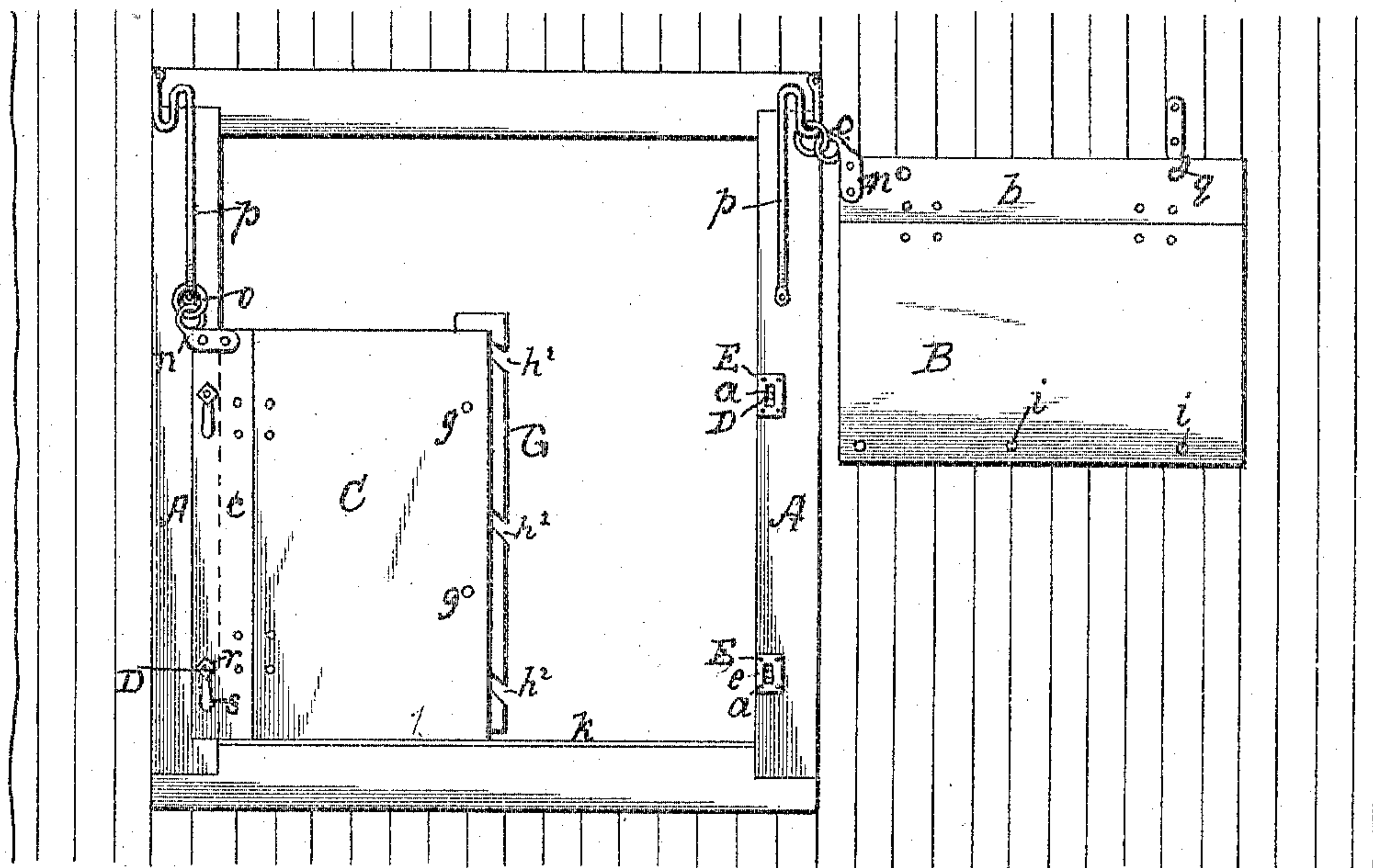


FIG. 2.

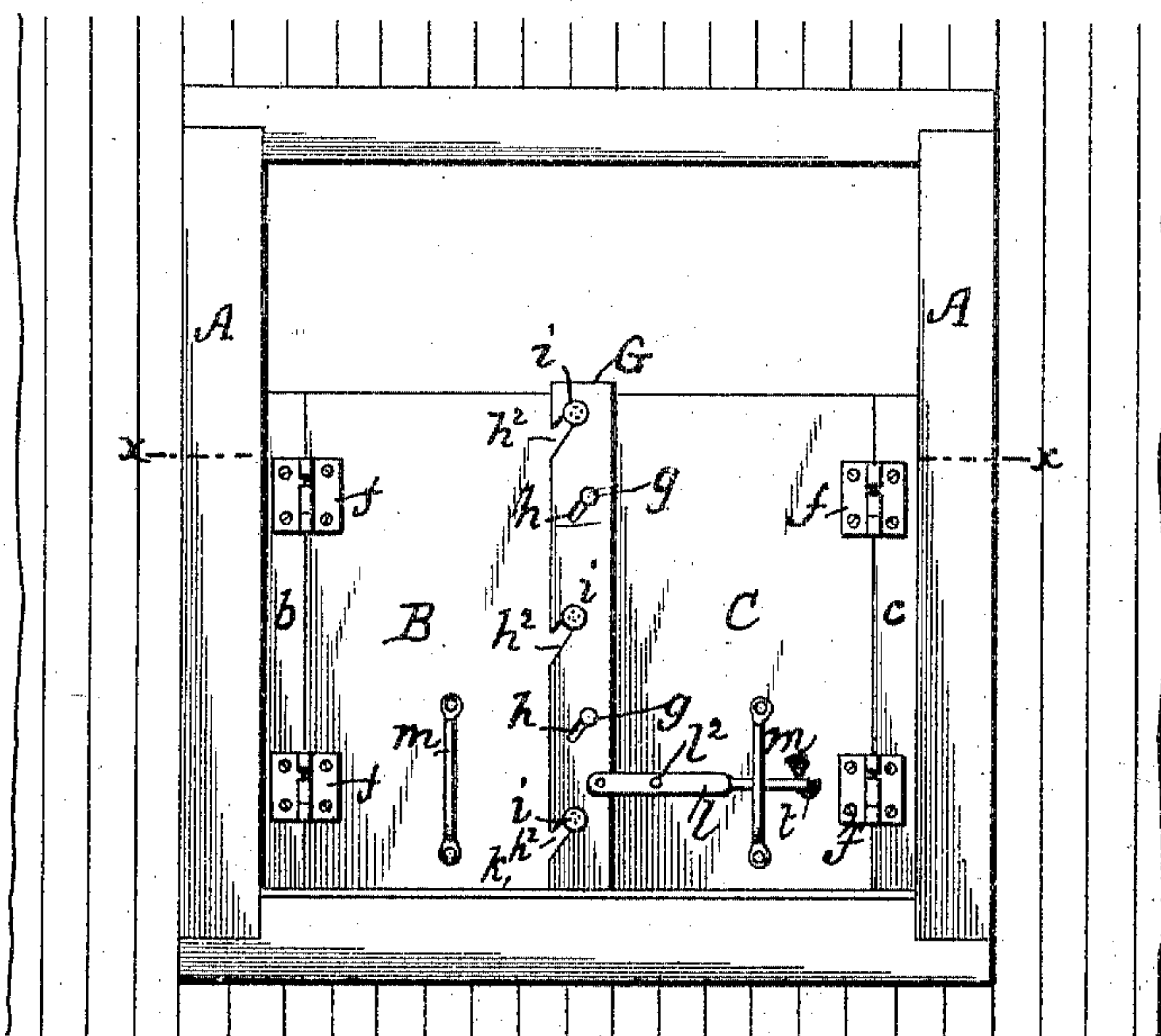


FIG. 3.

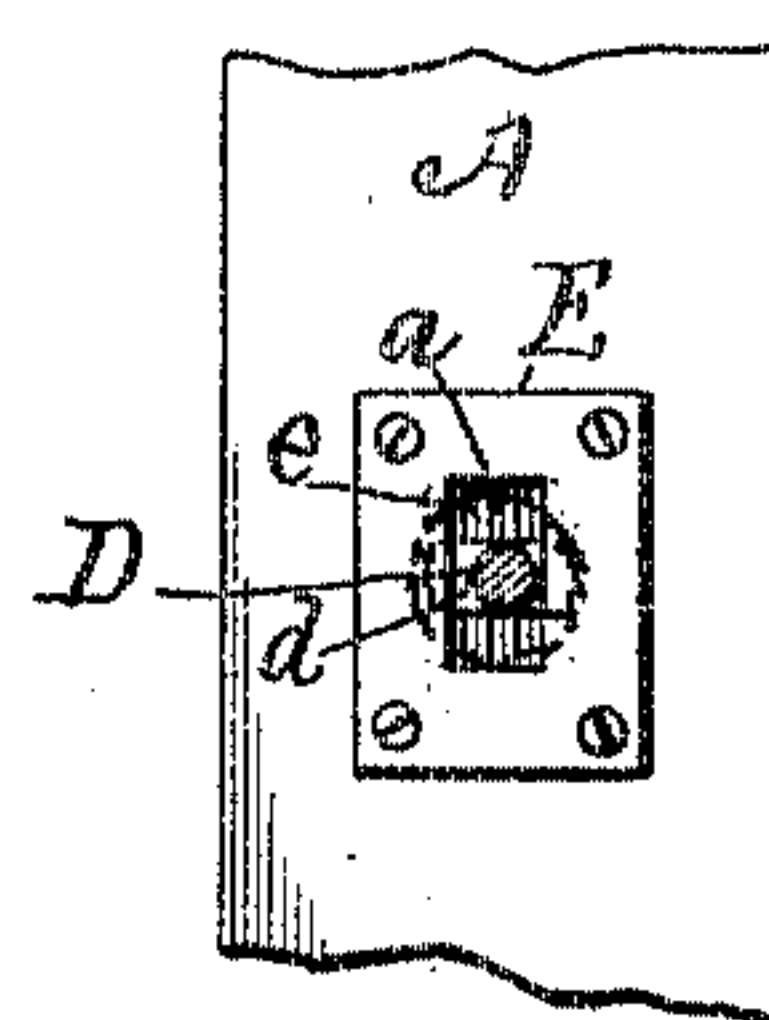


FIG. 4.

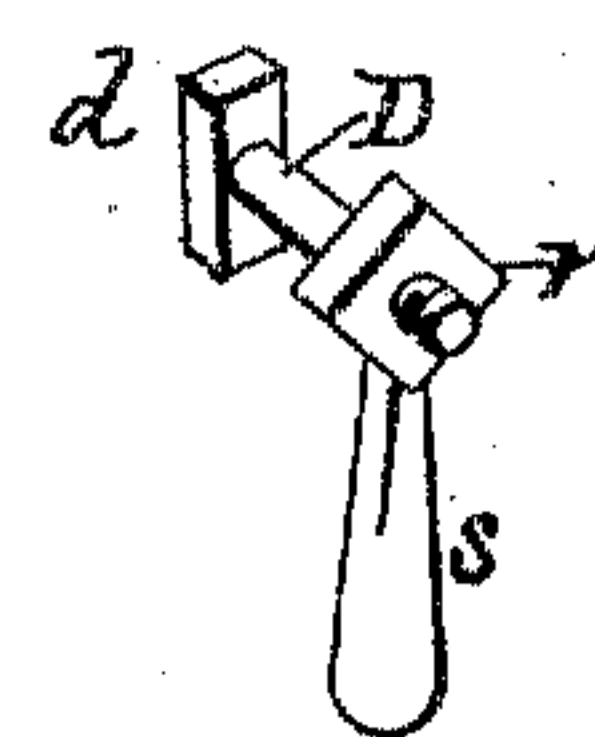


FIG. 5.



Witnesses

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GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 780,285, dated January 17, 1905.

Application filed August 2, 1904. Serial No. 219,194.

To all whom it may concern:

Be it known that I, EDWARD D. HAMMOND, a citizen of the United States, residing at St. Cloud, in the county of Stearns and State of Minnesota, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a specification.

The objects of this invention are to obtain grain-car doors of strong but relatively inexpensive construction that will be tight-fitting and securely close the door-opening, so as to prevent the grain from falling out of the car when the latter is on the road. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the inside of a pair of car-doors constructed in accordance with my invention, one of the doors being represented down and the other removed and suspended out of the way in the interior of the car. Fig. 2 is a front view of the outside of the car, showing both doors down, closed, and interlocked. Fig. 3 represents, on a larger scale, a portion of the door-frame with the perforated plate attached thereto and a T-headed bolt within the perforation. Fig. 4 is a perspective view of a headed bolt having a nut provided with a handle for use as a fastener for the doors. Fig. 5 is a horizontal section on line *x x* of Fig. 2 through the door-frame and a plan of the doors.

In said drawings, A represents a rectangular door-frame secured in any suitable manner to the side of a car. In the vertical sides of said frame are formed cylindrical pockets *a* of such size that the oblong rectangular T-shaped head *d* of a bolt D can be rotated therein. Each bolt D carries a nut *r*, preferably provided with a handle *s*. Each pocket *a* is covered over by a plate E, which is secured to the door-frame by screws. Each plate has in its center a rectangular hole *e* in the form of an oblong parallelogram, corresponding in form, but slightly larger, than the head *d* of the bolt D.

Each door B or C consists of two vertical parts united together by hinges *f*, the door B having a vertical strip *b*, which is to be secured to the door-frame by clamping-fastenings consisting of two bolts D, above de-

scribed, and nuts thereon, and the door C having a vertical strip *c*, which is to be secured similarly to the door-frame. To interlock the vertical edges of the doors B C to one of the doors, as shown on the door C, is slidably secured in a vertical position a narrow plate G by means of headed pins *g*, secured to said door C. Said pins pass through slightly-inclined slots *h* in the plate G, and the head of each pin prevents the plate G from being separated from the door C. The plate G has also some inclined grooves *h*² in its outer edge, which are made to engage and interlock with headed pins *i*, projecting from the outer face of the door B. The inclination of the slots *h* and grooves *h*² when interlocked with the pins *g i* of the door B causes the doors B and C to be rigid together, and they are prevented from bulging in the center by causing the lower end of the plate G to engage in a suitable recess in the iron sill *k* of the door-frame. To permit the door to be lifted the thickness of the sill *k*, about a quarter of an inch, the middle strap of each hinge *f* has a vertical play of about a quarter of an inch upon its spindle.

To lift the plate G from engagement with the sill and the groove *g* from engagement with the pins *i* to open the doors, a lever *l*, fulcrumed to the door C at *l*², has one end pivoted to the plate G, and its opposite end is provided with a handle, which is normally supported upon a hook *t*, pivoted to the door; but when released the handle is to be pressed down. The doors are then released and pushed open outwardly by the pressure of the grain within the car or by a person grasping the handles *m* and pulling outwardly upon them. Said handles *m* are also used to lift the doors B and C and also the strips *b* and *c*, forming part thereof. To guide the doors vertically while lifting them after their bolts D have been removed from the pockets *a* in the door-frame, each door has secured thereto adjacent to its upper hinge an iron strap *n*, the outer end of which carries a ring *o*, which surrounds a vertical rod *p*, which is secured to the door-frame and has a stirrup-like bend in its upper end on which the ring *o* can be suspended, and with the ring, the door to which it is attached. To permit the door to occupy a horizontal po-

sition when suspended within the car, the lower portion of the door is additionally lifted and tilted by the car attendant and made to engage with a hook *q* pendent from the side or roof of the car.

The ordinary sliding car-door can be used in connection with the above-described metal car-doors.

Having now fully described my invention, I claim—

1. A grain-car closure consisting of two sheet-metal doors, each door provided with a metal strip hinged thereto, and having perforations to receive clamping-fastenings to secure them to the door-frame, plates having rectangular perforations over pockets in said frame to receive the heads of the clamping-fastenings, with T-headed bolts and nuts thereon, substantially as described.

2. In a grain-car closure, the combination of two sheet-metal doors, a metal strip hinged to each door and having perforations to receive clamping-fastenings, the door-frame having pockets in its vertical sides, plates covering said pockets and having rectangular perfora-

tions to receive the heads of the clamping-fastenings, with T-headed bolts and nuts thereon, a plate G slidingly secured vertically to the edge of one of the doors and having inclined grooves in its outer edge to engage with headed pins in the other door, substantially as described.

3. In a grain-car closure the combination of two sheet-metal doors, a metal strip hinged to each door alongside of the door-frame and having perforations to receive clamping-fastenings to secure said strips to the door-frame, with a plate G laterally movable and slidingly secured to the edge of one of the doors, having inclined grooves in its outer edge, and a lever *l* fulcrumed to the door and pivoted to the plate G, the other door having headed pins, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD D. HAMMOND.

Witnesses:

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GEO. S. SPENCER.