

No. 731,524.

PATENTED JUNE 23, 1903.

T. C. THOMAS.  
GRAIN DOOR FOR RAILWAY CARS.

APPLICATION FILED AUG. 1, 1901.

NO MODEL.

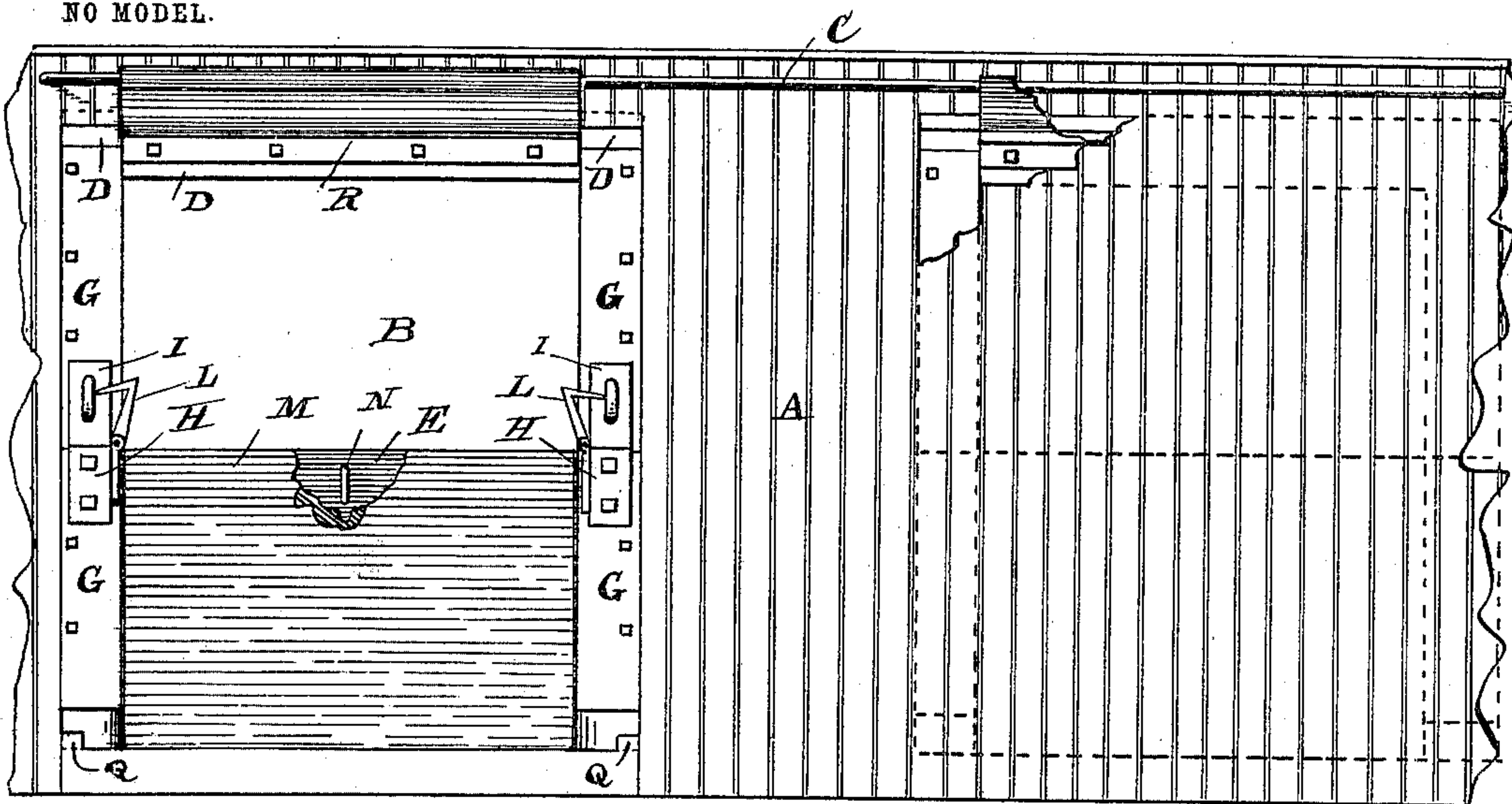


Fig. 1.

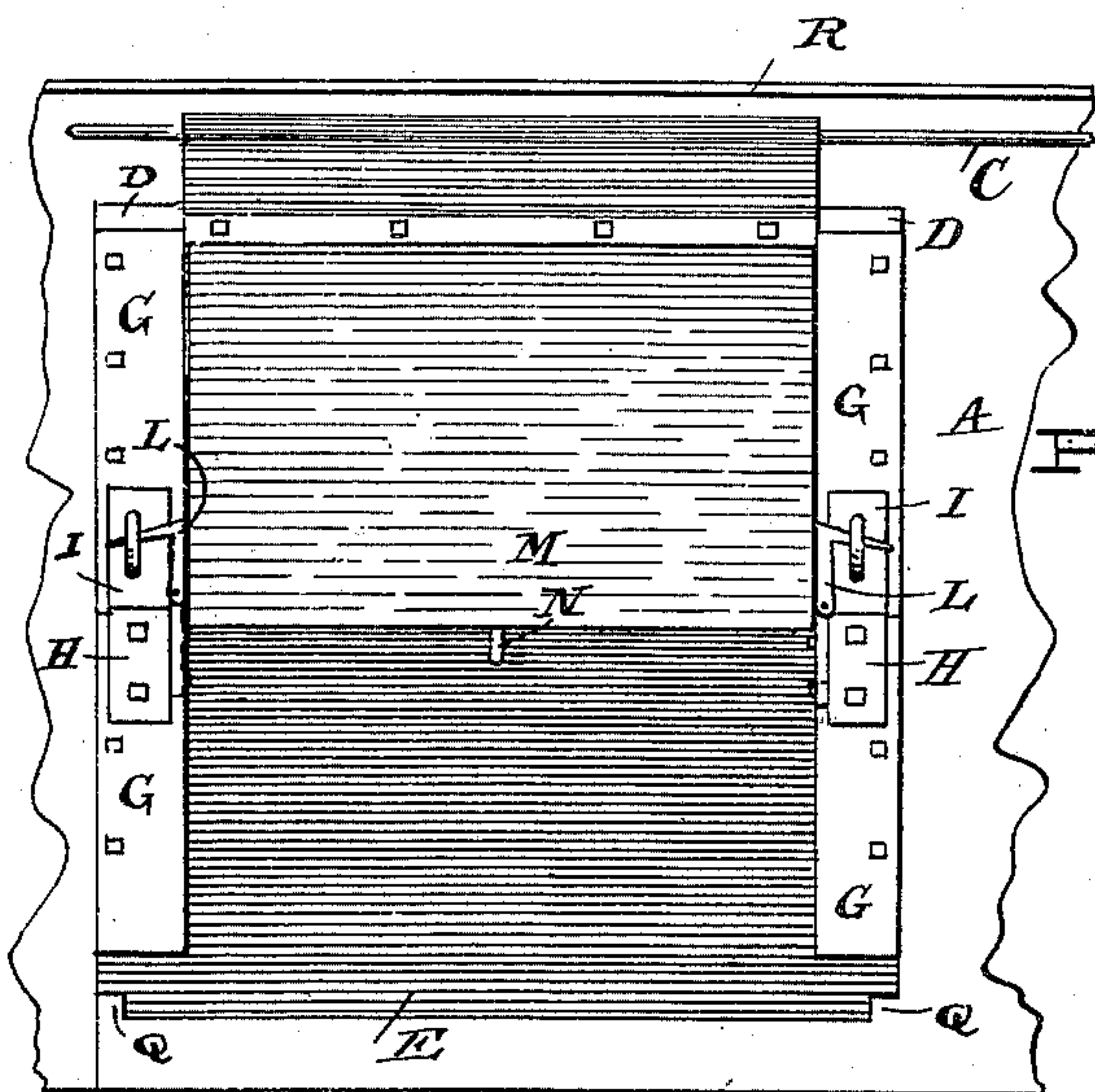


Fig. 2.

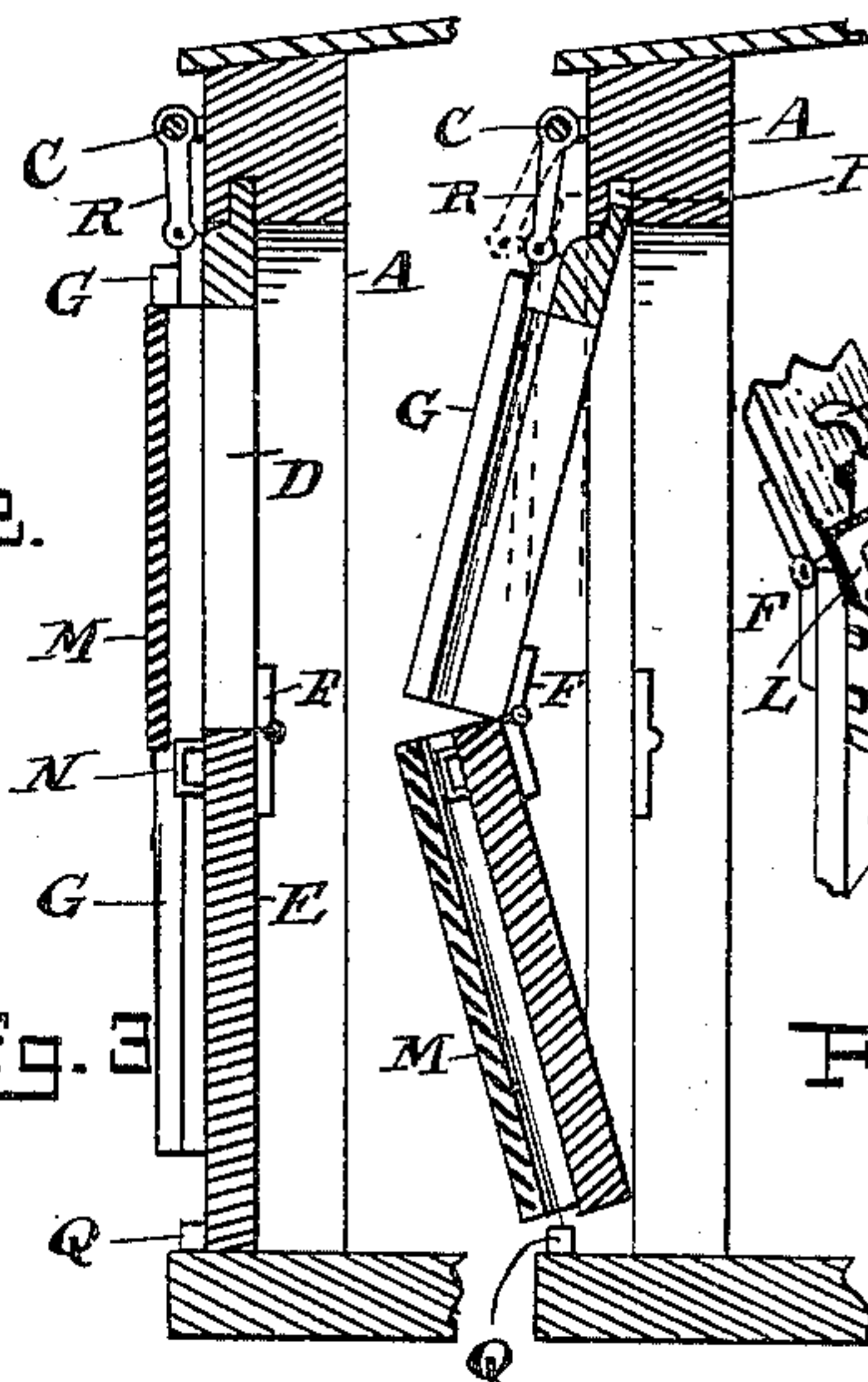


Fig. 3.

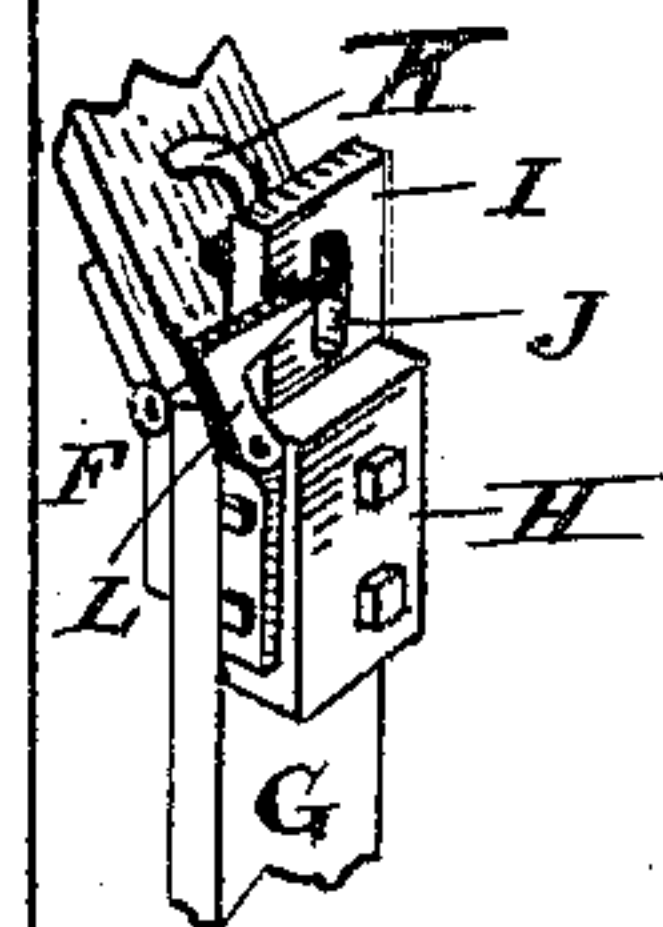


Fig. 4.

Fig. 5.

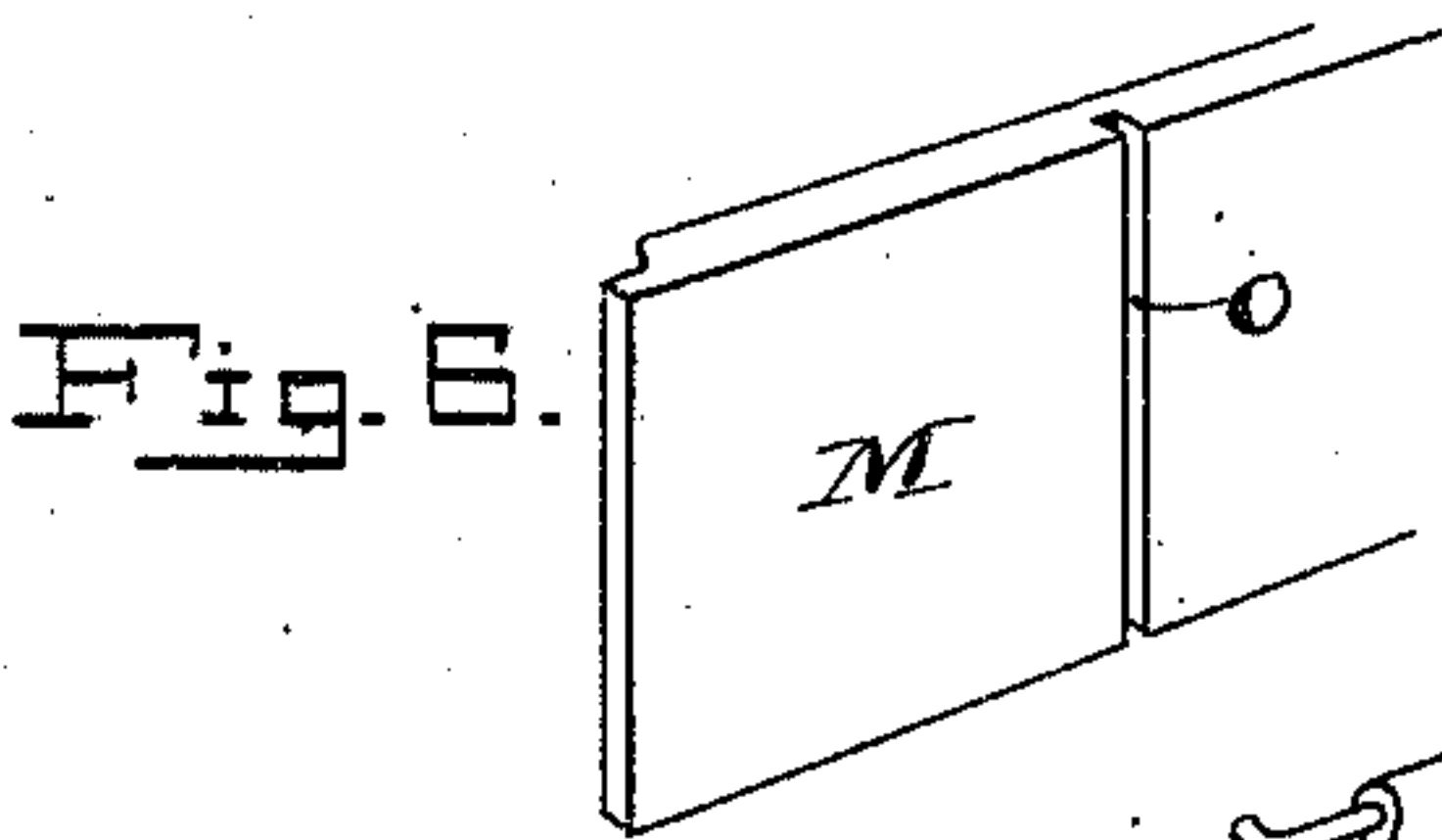


Fig. 6.

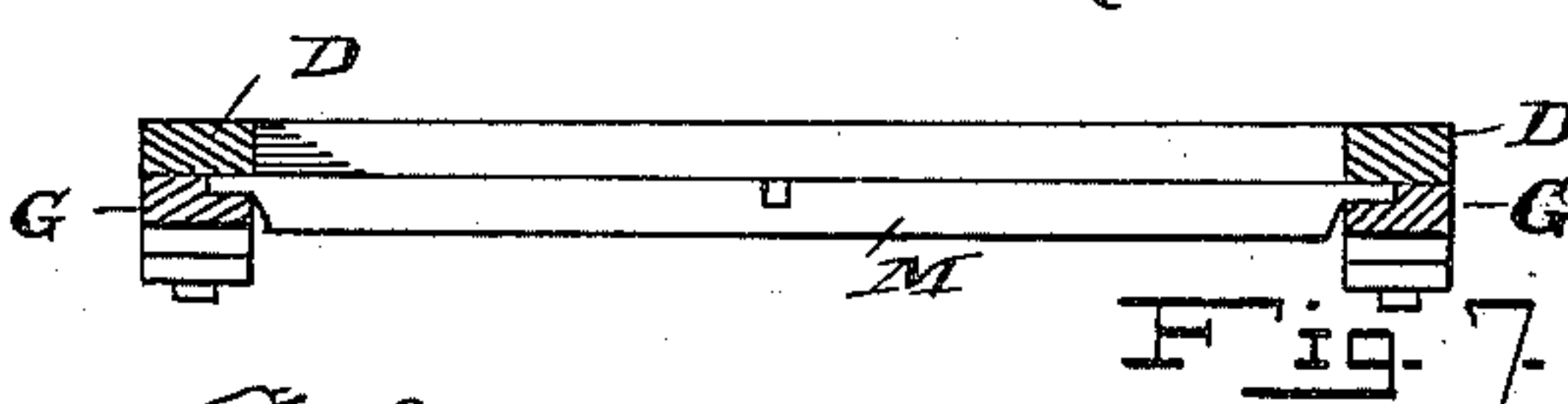


Fig. 7.

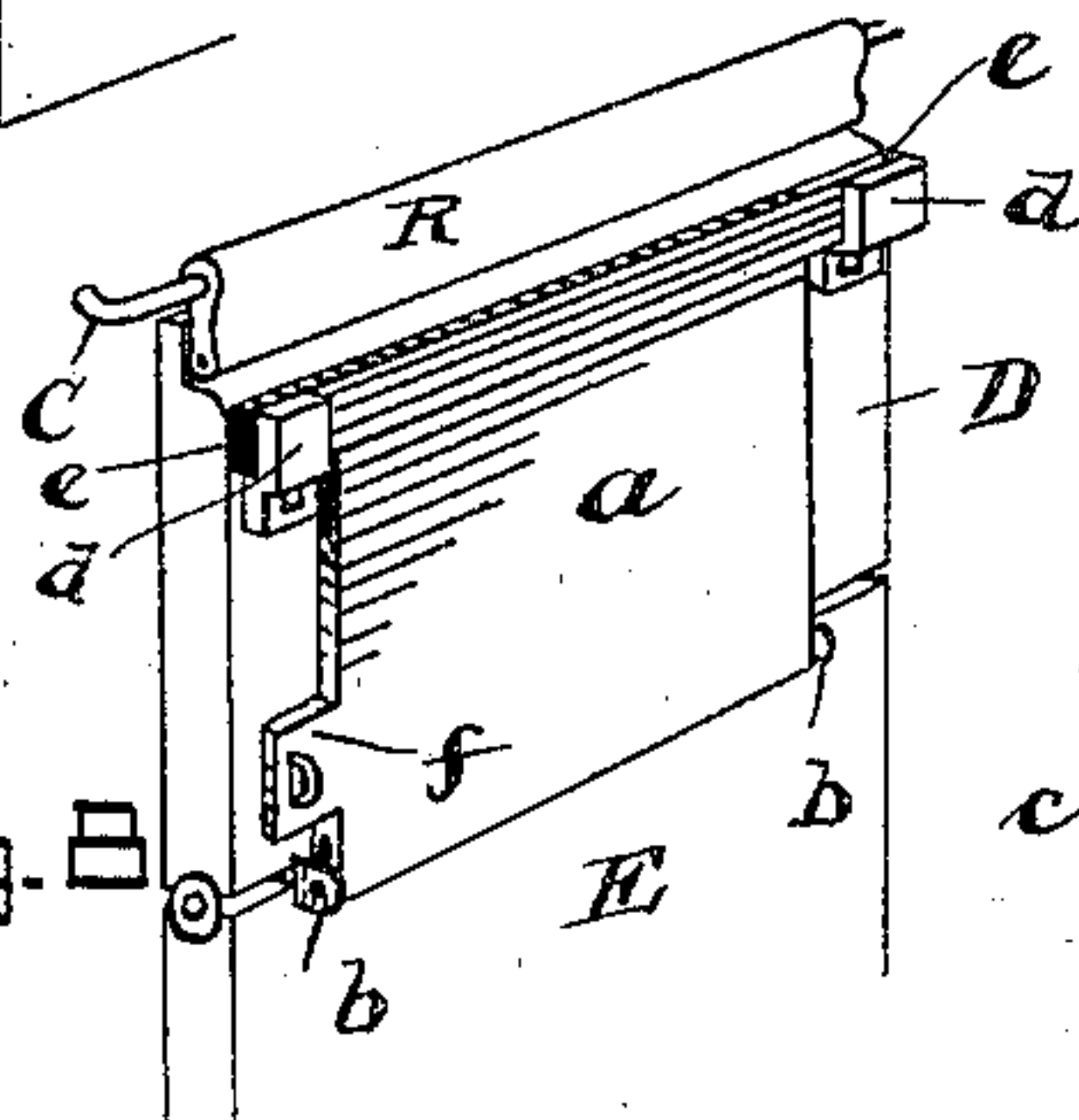
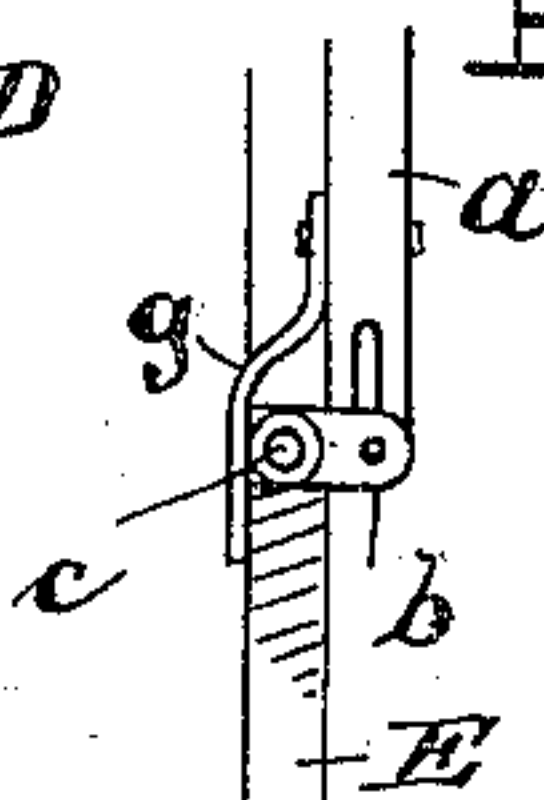


Fig. 8.

Fig. 9.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## GRAIN-DOOR FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 731,524, dated June 23, 1903.

Application filed August 1, 1901. Serial No. 70,457. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS C. THOMAS, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Grain-Doors for Railway-Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in grain-doors for railway-cars.

The object of the invention is to provide a grain-door which can be used to fill the entire opening or doorway from top to bottom or only a portion thereof.

A further and more important object is to not only provide a "grain-door," as that term is ordinarily understood, but to employ a door for cars that will close the opening in a grain-tight manner and also keep the weather out and furnish protection against marauders.

Still another object of my invention is to place a door of this class wholly outside of the car, so that it can be conveniently reached and operated and, further, that it cannot be held fast by reason of a part of the cargo resting against it from the inside.

Another object is to keep the doorway free when unloading or loading the car by providing a door that can be moved entirely away from the opening.

Various other advantages will present themselves as the description of the invention proceeds.

In the appended drawings, Figure 1 represents a view of a portion of the side of a car, showing my improved door attached thereto. Fig. 2 is also a portion of a car, showing the door entirely closing the opening for the door. Fig. 3 is a sectional view of the side of a car, showing the door in place. Fig. 4 is the same view showing the door swung out on its hinges. Fig. 5 is a perspective view of a locking arrangement for the door. Fig. 6 is a perspective view of the rear side of a sliding portion or supplemental part of the door. Fig. 7 is a cross-section of the door, showing guides for the portion just described. Fig. 8 is a perspective view of a modified form of door. Fig. 9 is a detail view thereof in part section.

In the figures, A represents the car, having the usual opening or doorway B, above which is a supporting rod or track C, secured to the side of the car and from which the grain-door is hung. Said door consists of an upper and a lower section (represented, respectively, by the letters D and E) which are loosely connected by the hinges F. The upper section is merely an inverted - U - shaped portion, which, as before stated, is hinged to the lower section by its extremities, as shown in Fig. 2, the said lower section being a solid member. To each limb or extremity of the said upper section is secured a guide G, which extends down across the lower section at its edges, being divided at the joint of the two portions, as will be understood. Upon the lower guide-pieces, so as to overlap the hinge-joint, is a block H, whose projection I forms a hasp which lies upon the extremities of the upper section D. Said hasp has a slot J, through which passes a staple K on said upper portion. When the door is closed, as shown in Figs. 1, 2, and 3, the staples protrude through the slots, and a latch L on the block is adapted to enter the staple and lock the two door portions firmly together.

The purpose of the guides G is to carry a slide M, whose ends are cut down to enter the same, as shown in Fig. 7. The shoulders formed by thus reducing the edges serve to insert and lock the latches in the staples when the slide is pushed up. As already stated, the door may either be used, as shown in Fig. 1, for closing the lower half of the doorway or, as in Fig. 2, where the doorway is entirely filled, and it will be seen that when pushed up said slide M keeps the latches in their locked position. A staple N is secured in the outer surface of the portion E, and the slide is grooved at O on its inner surface to pass said staple. When raised, as in Fig. 2, the staple is exposed, and through this a padlock or the usual seal may be passed, thus serving to lock the car, since the slide must be pulled down in order to release the catches. When the latter are withdrawn, the door can be pulled outward, as shown in Fig. 4, and the rabbeted upper edge of the section D withdrawn from its seat P in the top of the doorway and the bottom of the door from behind the lugs Q at the bottom of the door-



way. When thus released, the door may be swung out on its supporting rod or track C by means of a hanger R, which surrounds said track and is hinged in suitable manner to the door. When swung outside of the doorway, as indicated in dotted lines in Fig. 4, the door may slide along to the position shown in broken and unbroken lines.

By the construction shown and described the door is kept entirely outside the car, and the pressure of grain or other freight may lie against it and yet not prevent its being opened and at the same time will aid in the act of opening it; but the construction is also such that the door is sufficiently braced to withstand any pressure likely to be exerted against it and will not give way.

I have shown a modified form of my device in Figs. 8 and 9. In this case instead of moving the slide M in the guides the flap *a*, which corresponds with M in the other figures, is hinged at its lower edge to ears *b* on a hinge-rod *c*. The guides G are eliminated from this form of door, and the brackets *d* are provided at the top of the door. A pin passes through the ears *b* and the flap *a*, and the latter is slotted to permit it to rise and fall, so that the projections *e* can be placed behind or removed from the said portion *d*. A projection *f* on the flap is slotted to receive a staple in the main door portion by which to lock the flap in the position shown. When closed, as shown, a strip *g*, Fig. 9, may be attached to the inside of the flap to pass down over the lower door-section to prevent grain getting between the portions, as will be readily understood.

If constructed of sheet metal, as I shall probably prefer to do, the temptation to use the door for fire-wood by marauders will be done away with. Even a wooden door covered with metal would not be likely to suffer destruction from this cause.

My grain-door is designed to take the place of the cheap wooden sections usually built within the car to hold the grain and by taking the place thereof lessens the cost of shipping to a considerable extent, since those who are called upon to furnish said wooden sections will now be saved that cost.

While I have described and shown a door that is hinged in two sections having the joint thereof arranged horizontally, I can use a solid door, which can be slid along the wall of the car and dropped into a socket, and accomplish the same end as the one described. Furthermore, I may provide a door which can be hinged vertically instead of horizontally, whereby it can be locked in sockets in the sides of the doorway, all of which will accomplish the desired end. By this it will be seen that I do not wish to confine myself to any particular construction in carrying out my invention.

In addition to the methods that could be employed, as above laid out, I could also carry the slide M on the same track with the

main door instead of sliding it upon the door itself and in this way could arrange to close the door into its opening by itself and so use it or could follow it by the said supplemental slide and use them in conjunction.

Having thus described my invention, I claim—

1. A door for railway-cars consisting of sections hinged together and provided with means to retain its sections rigidly in one plane when seated in the doorway and arranged to move along the outside wall of the car for the purposes set forth.

2. A grain-door for railway-cars consisting of sections hinged together and hung from above the doorway of the car, a track or support for said door by which the latter may be moved away from the doorway, retaining means above the doorway and at the bottom behind which the door is set when in locked position, said sections being arranged to swing outward on their hinges to shorten the height of the door in order to place the same behind said retaining means, and catches for locking the sections together at the hinged point to prevent the door moving on said hinges as set forth.

3. A grain-door composed of an upper and a lower section hinged together to form a complete door, a hinged support at the top of the upper section, a supporting rod or track for said hinged support, a socket in the top of the doorway to permit the entrance of the upper section thereinto, lugs on the door-sill behind which the door is designed to be placed, the hinges of the sections arranged whereby the door may be swung outward at its joint so that it may be placed in the socket and behind the lugs, and means for locking the sections together in a rigid manner when entered as described.

4. A grain-door consisting of an upper and a lower section hinged together as set forth, a supporting rod or track above the top of the doorway, a hinged support for the top section, the same attached to the rod and arranged to slide thereon, means for locking the sections together when in the closed position, guides at each edge of the sections, the same adapted to meet at the joint of said sections when the door is in said closed position, and a slide adapted to move within such guides the same adapted to be raised or lowered therein for the purposes set forth and described.

5. In a grain-door, an upper section and a lower section hinged together, the upper one forming an open frame, the lower one being a solid member as described, means for loosely supporting the door at its top, a track for said means and by which the door may be moved to one side as set forth, a socket in the top of the doorway and lugs at the bottom of said doorway for receiving the door, locking means at the joint of the sections for rigidly holding the door in place, guides on each edge of the sections and a slide within the guides,



said slide adapted to rise and fall in the guides for closing or opening the upper open door-section all arranged substantially as and for the purposes described and shown.

5 6. In a grain-door, the combination of the sections D and E, hinged together, the support R secured to the top section D, the track C for the support R, the socket P in the top of the doorway and the lugs Q at the bottom  
10 for holding the door, and the latches L for locking the sections together as set forth.

7. In a grain-door, the combination of the sections D and E hinged together, the support R secured to the top of the section D,  
15 the track C for the support R, the guides G on the said sections, the slide M to rise and fall in said guides for the purposes set forth and the latches L for locking the sections together to form a rigid door as set forth.

20 8. A grain-door consisting of an upper and a lower section hinged together and adapted to swing on their hinges, a socket P in the top of the doorway, lugs Q at the bottom, the upper section adapted to enter said socket,  
25 the bottom section adapted to pass behind the lugs, said sections being hinged as described so that the door can be shortened by

swinging the sections whereby they may be placed in position as described, means for locking the sections rigidly together to form  
30 a complete door, a hanger R hinged to the top of the upper section in a manner whereby the door may be swung freely thereon, and a supporting-track for such support arranged substantially as and for the purposes set forth. 35

9. A grain-door for railway-cars consisting of sections hinged together by their horizontal edges, a recess in the top of the doorway of the car, a retaining means in the bottom thereof  
40 into which the door is adapted to enter and whereby the door is locked in place when the sections are held in one plane, means for locking the sections rigidly in one plane, and an overhead track on the outside of the car for  
45 carrying the door whereby it can be removed bodily from the doorway when unlocked and removed from the recesses in the doorway.

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

THOMAS C. THOMAS.

Witnesses:

FRANK T. MILLER,  
J. H. BLUSCH.