

No. 723,034.

PATENTED MAR. 17, 1903.

M. C. ROWCLIFF.

GRAIN DOOR.

APPLICATION FILED JULY 8, 1902.

NO MODEL.

Fig. 1.

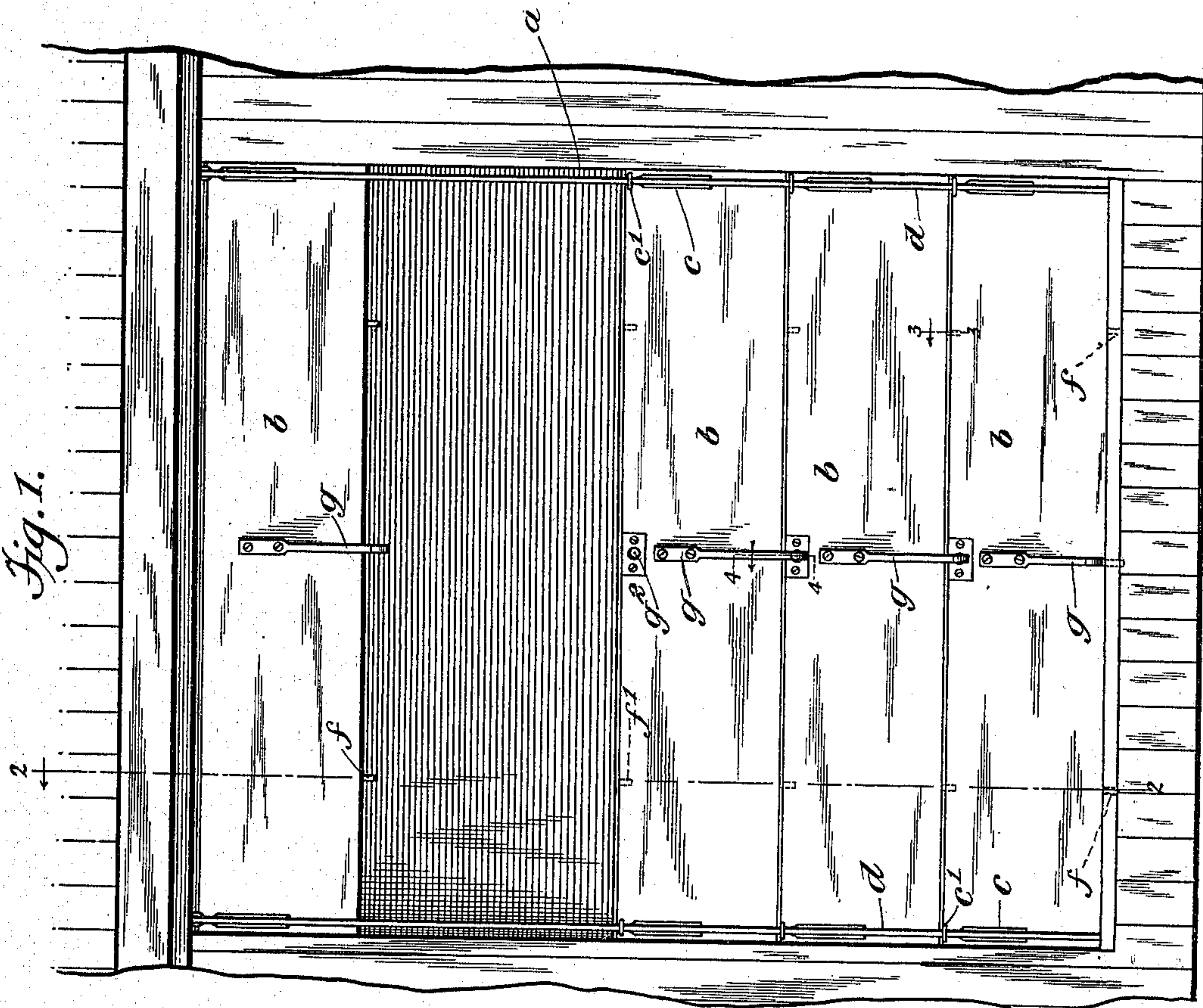
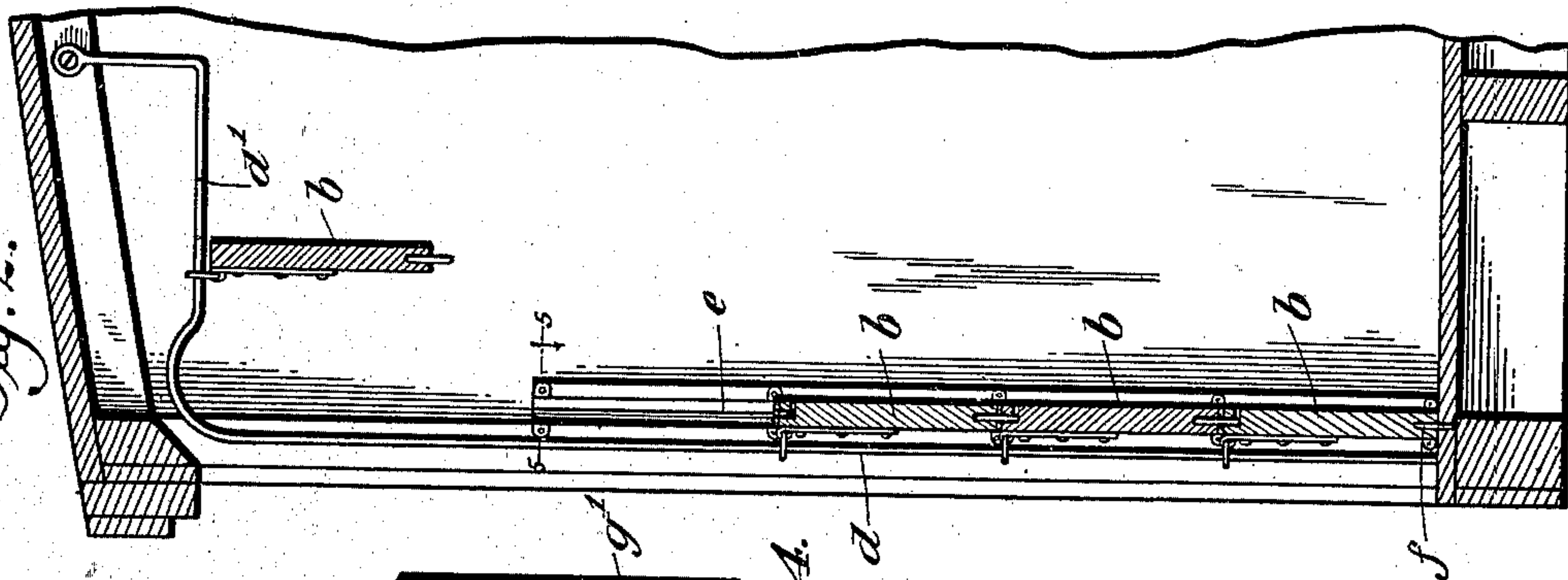


Fig. 2.



WITNESSES:

A. R. Appelman

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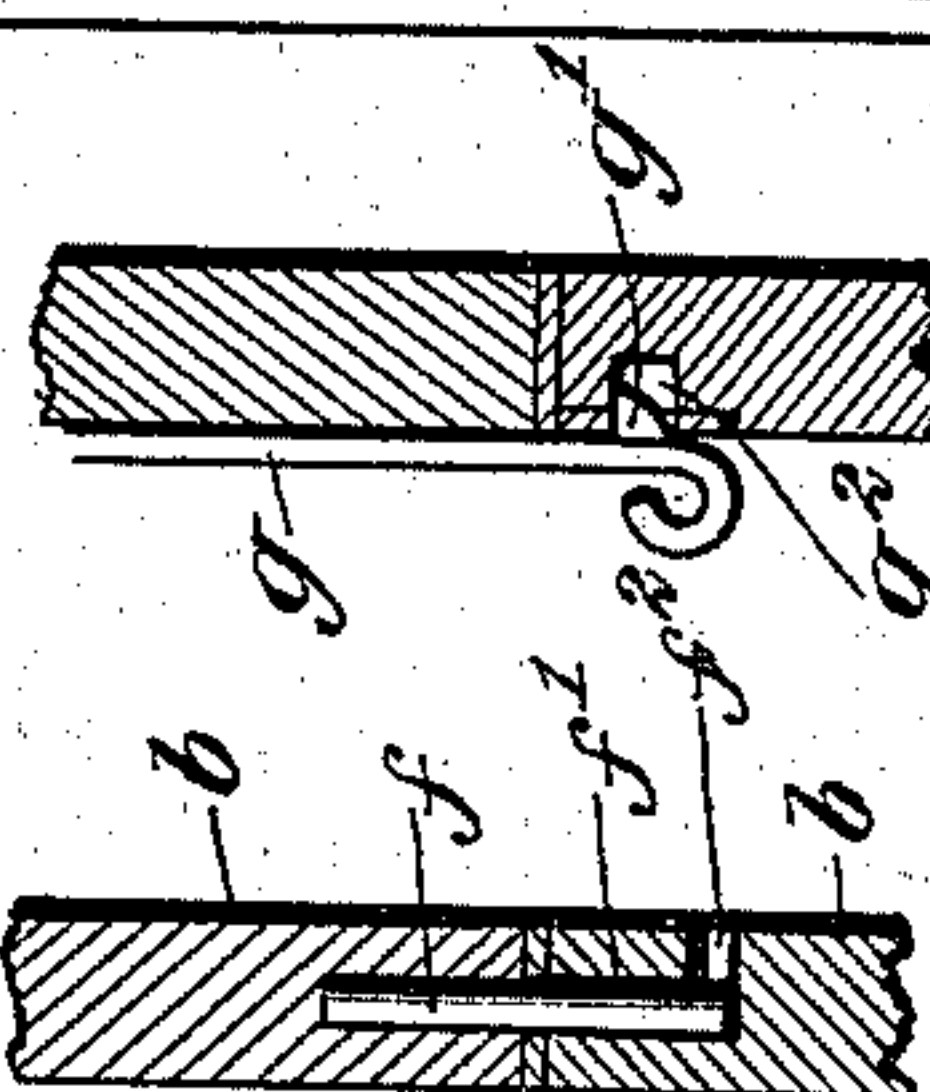


Fig. 3.

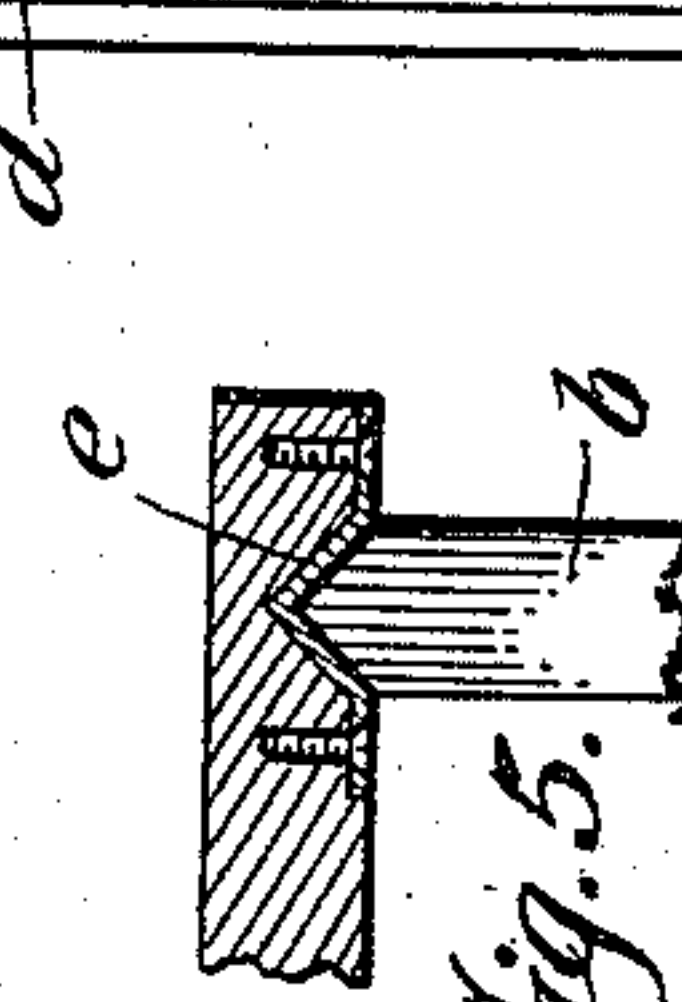


Fig. 4.



Fig. 5.

INVENTOR

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UNITED STATES PATENT OFFICE.

MONTAGUE CHARLES ROWCLIFF, OF OSCEOLA, WISCONSIN, ASSIGNOR TO HIMSELF AND GEORGE B. CORYELL, OF OSCEOLA, WISCONSIN.

GRAIN-DOOR.

SPECIFICATION forming part of Letters Patent No. 723,034, dated March 17, 1903.

Application filed July 8, 1902. Serial No. 114,736. (No model.)

To all whom it may concern:

Be it known that I, MONTAGUE CHARLES ROWCLIFF, a citizen of the United States, and a resident of Osceola, in the county of Polk and State of Wisconsin, have invented a new and Improved Grain-Door, of which the following is a full, clear, and exact description.

This invention relates to a sectional door adapted to be placed in a railway "box-car" when the car is loaded with grain, so as to keep the grain from leaking through the crevices in the main door of the car. It involves certain novel features of construction and relative arrangement of parts, which constitute improvements over the doors heretofore constructed for this purpose.

This specification is an exact description of one example of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a front view showing one section of the door raised. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 1, and Fig. 5 is a section on the line 5 5 in Fig. 2.

α indicates the door-opening ordinarily constructed in the car.

The main or ordinary door is not shown in the drawings, but will of course be used as heretofore.

The grain-door is made up of a number of horizontally-disposed sections b , which when in operative position stand edge to edge one above the other, thus forming the closure. These sections may be of any number desired. The drawings show four, and this is thought to be an effective arrangement. Each section b has at each end, near its upper edge, a strap c , fastened thereto, and said straps carry rings c' , which slide loosely on guide-bars d , placed at each side of the door-opening α and extending from the threshold of the door up to the top parallel with the side edges of the door-opening and then inward. As the bars extend inward they dip slightly, as indicated at d' , and thence turn upward and are fastened to the roof of the car. These

bars constitute rigid guides, on which the sections of the door are movable into and out of active position. When the door-sections are in active position, they lie as shown in the lower part of Figs. 1 and 2, and when all of the sections are raised to open the door completely they lie side by side and hang pendent from the dipped horizontal portions d' of the guide-bars d , as shown in respect to one section in the upper part of Fig. 2. At each side of the door-opening is placed a vertically-extending channel-shaped or grooved guide e , this guide being formed, preferably, of stout sheet metal, as shown best in Fig. 5, and the end edges of the door-sections b being fitted to lie snugly in the guide when said sections are dropped into lowered position. These guides e extend up to the top of the grain-door, and their length will of course be subject to the number of sections employed and the width of these sections. As the door-sections are raised into folded position they move out of engagement with the guide, and as the door-sections are lowered they drop between the guides, which hold them firmly, thereby supplementing the action of the guide-bars d . The door-sections are caused to engage true with each other and are held from moving out of such engagement by means of pins f , which are carried by the lower rear portion of each section and are adapted to enter cavities f' in the upper edge portions of the section immediately below. These cavities f' , as best shown in Fig. 3, have openings f^2 , leading from the bottom of the cavities to the sides of the door-sections and serving to prevent said cavities from filling with dust and grit. Any number of these pins may be employed, as desired. The pins of the lowermost section of the door are adapted to enter cavities formed in the floor of the car, as shown in Fig. 2.

Latches are provided for holding the door-sections engaged when in operative position. These latches may be placed either on the inner or outer side of the door. The drawings show them on the outer side. They comprise spring-tongues g , the upper ends of which are fastened to the respective door-sections and the lower ends of which have lugs g' formed thereon, which are arranged to en-

gage in cavities g^2 , formed in the door-section immediately below said spring-tongues, projecting from the door-sections to which they are fastened downward to the door-section immediately adjacent. The spring-tongue g of the lowermost section engages its lug in an undercut cavity in the floor of the car, as indicated by the dotted lines in Fig. 1.

It will be observed that by this apparatus the car may be thoroughly sealed to prevent the loss of the grain and the height of the door may be increased or diminished at will according to the load to be carried and to the other conditions which must be met. When the door is in inactive position, the sections are held raised out of the way of persons walking in the car and in such position as will not interfere with the carrying of freight of any kind.

Various changes in the form and details of my invention may be resorted to at will without departing from the spirit of my invention. Hence I consider myself entitled to all forms of the invention as may lie within the intent of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A grain-door, comprising a guide-bar extending up through the door-opening and turned laterally and inwardly under the roof of the car, a door-section, a ring mounted to swing freely on the same whereby slidably to

mount the door-section on said guide-bar, and a guide located at each side of the door-opening in position to receive the end edges of the door-section when said section is lowered into operative position.

2. A grain-door, comprising a plurality of separate door-sections, a guide on which said sections are carried to move into and out of operative position, and pins carried on the edges of the door-sections and adapted to enter cavities formed in the edges of the adjacent section, said cavities being located in the upper edges of the door-sections, and the door-sections having passages extending from the bottom of the cavities outward to the outer surfaces of the door-sections, for the purpose specified.

3. A grain-door, comprising a guide bar or rail extending vertically along the door-opening, channel-shaped or grooved guides mounted respectively at the sides of the door-opening, a door-section having its ends removably engaged in said grooved guides, and means fastened to the door-section intermediate its ends and mounted slidably on said guide bar or rail, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MONTAGUE CHARLES ROWCLIFF.

Witnesses:

M. J. O'REILLY,
C. E. MEARS.