

(No Model.)

A. W. ALEXANDER.  
GRAIN DOOR FOR FREIGHT CARS.

No. 296,907.

Fig. 1.

Patented Apr. 15, 1884.

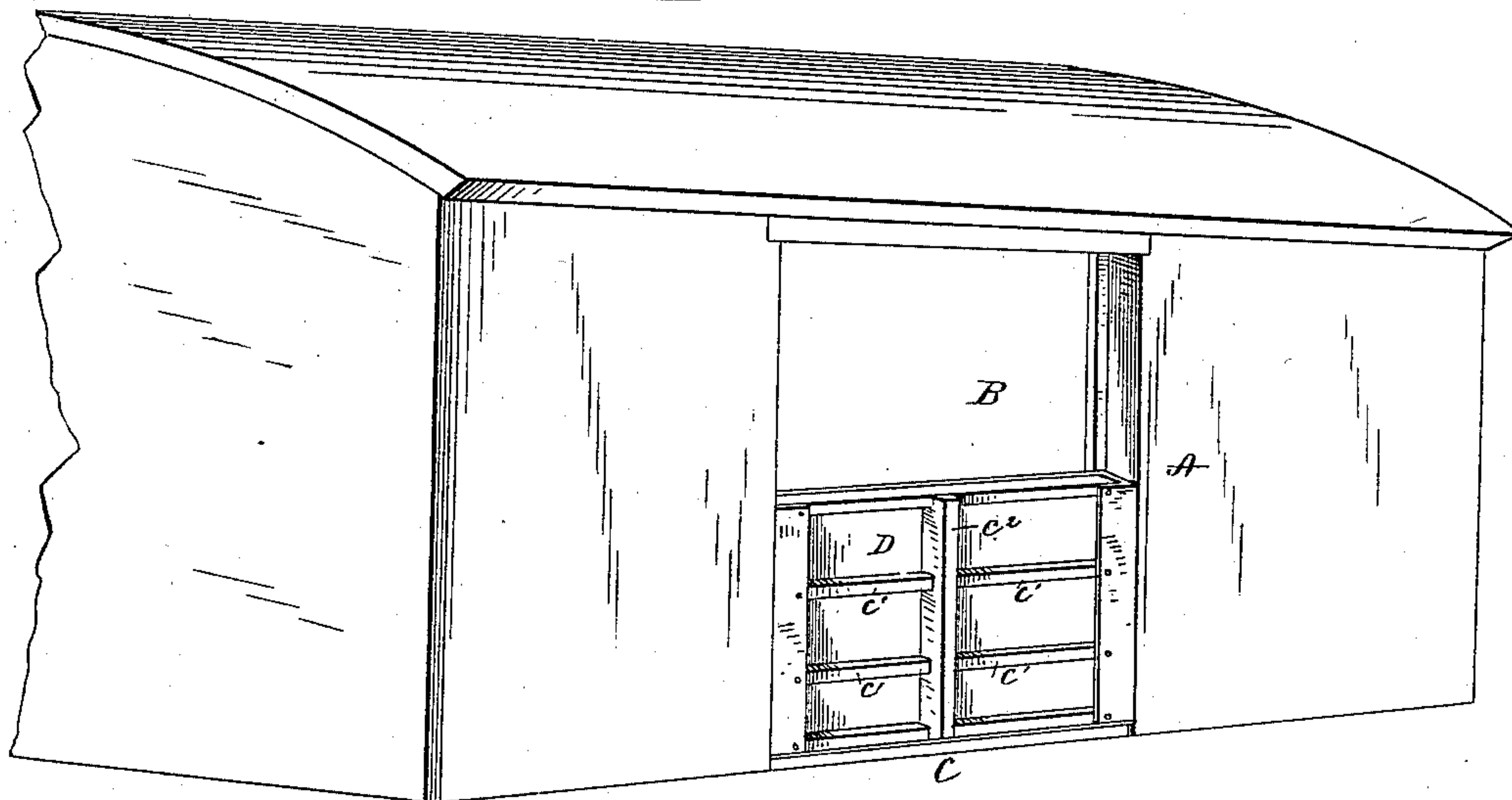


Fig. 2.

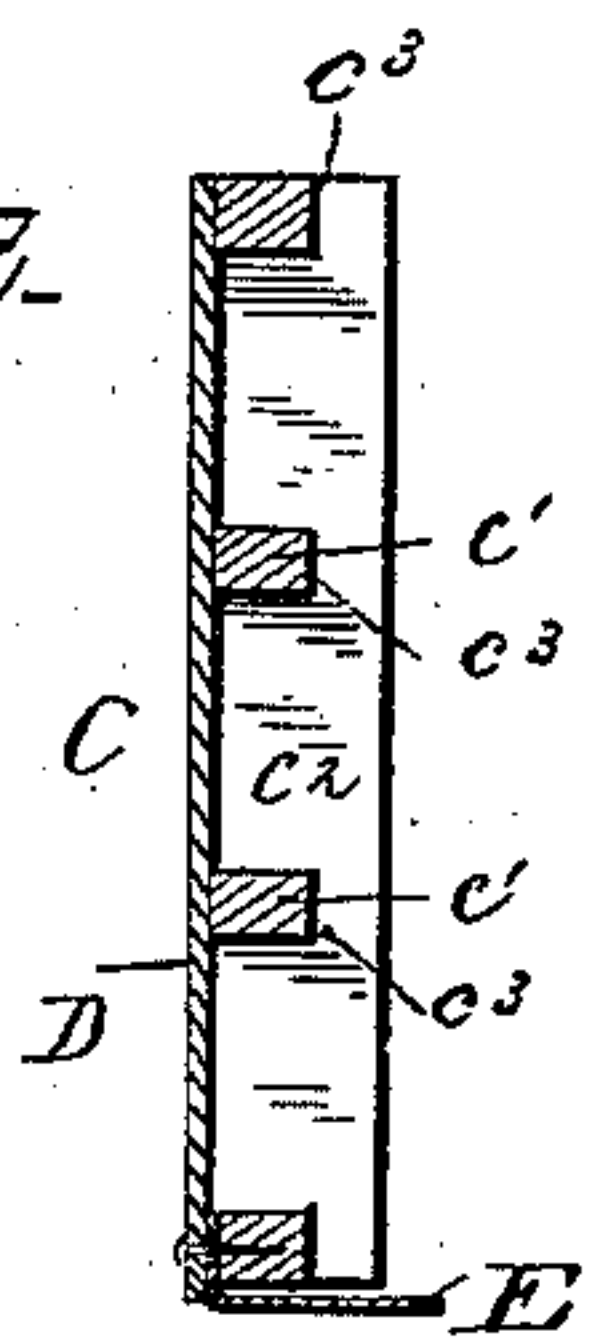
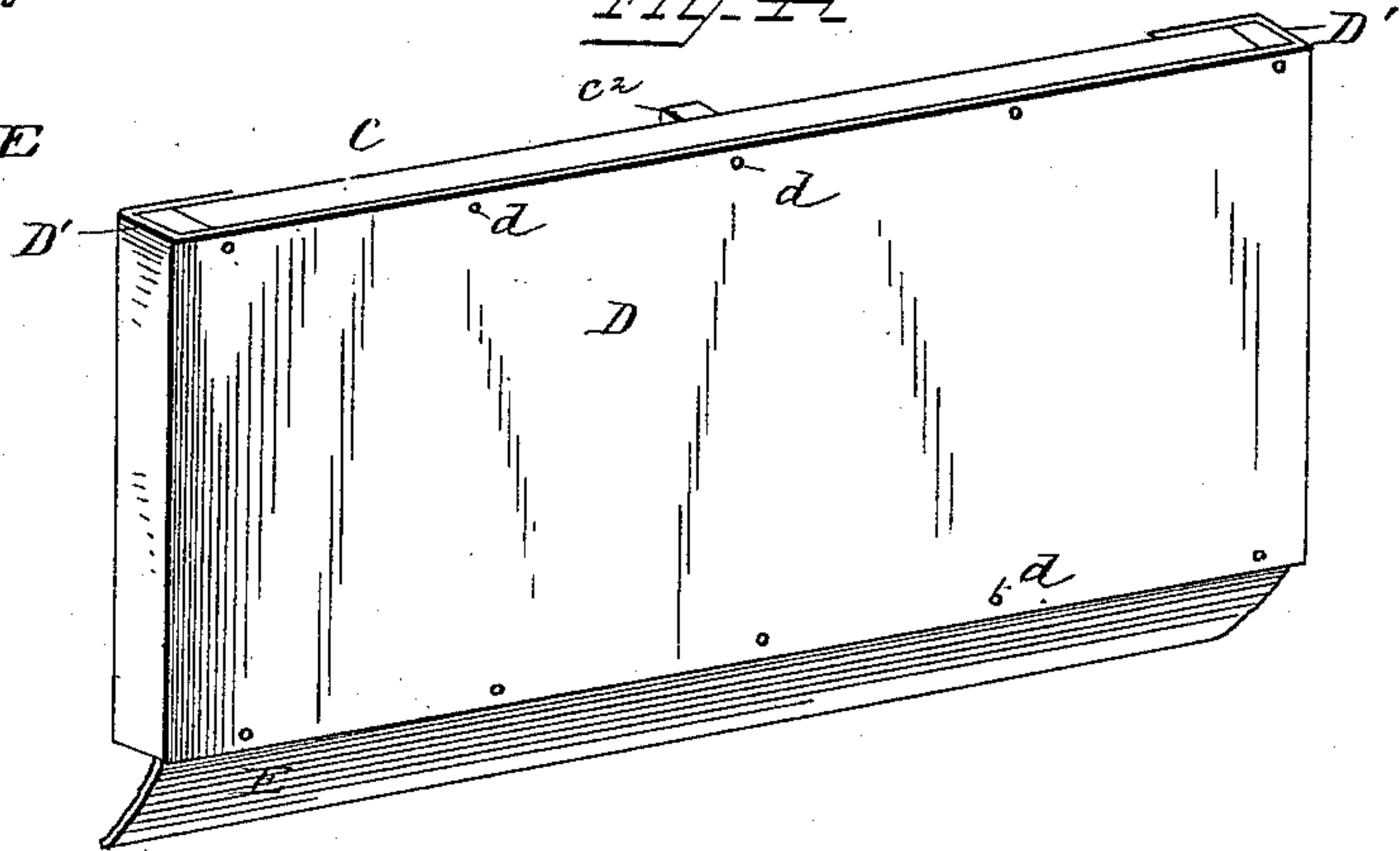


Fig. 3.



Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## GRAIN-DOOR FOR FREIGHT-CARS.

SPECIFICATION forming part of Letters Patent No. 296,907, dated April 15, 1884.

Application filed March 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER W. ALEXANDER, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Grain-Doors for Freight-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of grain-doors which are adapted to be temporarily set in the door-openings of freight or grain cars; and its object is to provide a simple and improved door which will provide a positively safe and grain-tight bearing at the sides and bottom of the openings of the car, and which will possess advantages in point of simplicity, inexpensiveness, durability, and general efficiency.

In the drawings, Figure 1 is a perspective view, showing a grain-car with my improved grain-door in position. Fig. 2 is a vertical transverse sectional view, in detail, taken through the grain-door and side of the car. Fig. 3 is a similar detail sectional view taken on a horizontal plane. Fig. 4 is a detail perspective view of my improved grain-door, showing its inner face.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the body of the car, in which is provided the usual rectangular door-opening, B.

C designates the frame of my improved grain-door, which is of rectangular form, and is adapted to fit the lower portion of the door-opening of the car. This frame C may be constructed of wood or metal, in any suitable manner; but it preferably comprises upright end pieces, *c c*, which are united by a series of horizontal bars, *c' c'*, these bars being braced by a central vertical strip, *c<sup>2</sup>*, having recesses or mortises *c<sup>3</sup>*, which receive the said bars.

D designates the surface of the door, which is formed of wood, metal, cloth, or other suitable material, and is secured over the inner face of the frame C by nails *d*, or any other suitable means. This surface is, however,

preferably constructed of substantial waterproof straw-board or pasteboard. The ends *D' D'* are extended, as shown, around the ends of the frame C, and over the outer face of the said ends, and are secured to this outer face in any suitable manner. By thus extending the surface or covering of the frame around the ends, a neat and safe joint is formed between the ends of the grain-door and the side edges of the opening of the car when the door is set in position. A flexible strip, E, is secured between the frame C and the surface D at the bottom of the door, and projects from the same preferably from three to four inches. This strip extends longitudinally along the bottom of the door, and comes under the lower edge of the same when the door is in position, thus forming a tight and safe joint at the bottom. By this general construction the grain-door will tightly fit the opening in the car, and it is secured from accidental displacement by staples, or any other suitable devices.

It will be understood that I reserve to myself the right to make all such modifications in the construction of my improved grain-door as properly fall within the spirit and scope of my invention—as, for instance, the surface or covering may be formed of a combination of suitable materials.

I claim as my invention—

1. The combination, in a grain-door, with the frame, of a surface or covering secured over the face of the same, and having its ends extended around the ends of the frame and secured to the opposite face thereof, substantially as and for the purpose set forth.

2. The combination, in a grain-door, of the frame, a surface or covering secured over the face of the frame and having its ends extended around the ends thereof, and a longitudinal flexible strip projecting from the bottom, substantially as and for the purpose set forth.

3. The combination, in a grain-door, of the frame, a surface or covering secured over the face of the same, and a longitudinal flexible strip secured between the frame and surface and projecting from the bottom of the door, substantially as set forth.

4. As an improvement in grain-doors, the combination of the frame, the surface or cov-



ering secured over the face of the same, and having its ends extended around the ends of the frame and secured to the opposite face thereof, and a longitudinal flexible strip secured between the frame and surface and projecting from the bottom of the door, substantially as set forth.

5 5. As an improved article of manufacture, a grain-door comprising a frame, and a water-

proof pasteboard surface or covering secured to the face of the same, substantially as set forth.

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

ALEXANDER W. ALEXANDER.

Witnesses:

M. H. JONES,

JAMES ALEXANDER.