

(No Model.)

T. BUTTERWORTH.
Grain Car Door.

No. 237,482.

Patented Feb. 8, 1881.

Fig. 1.

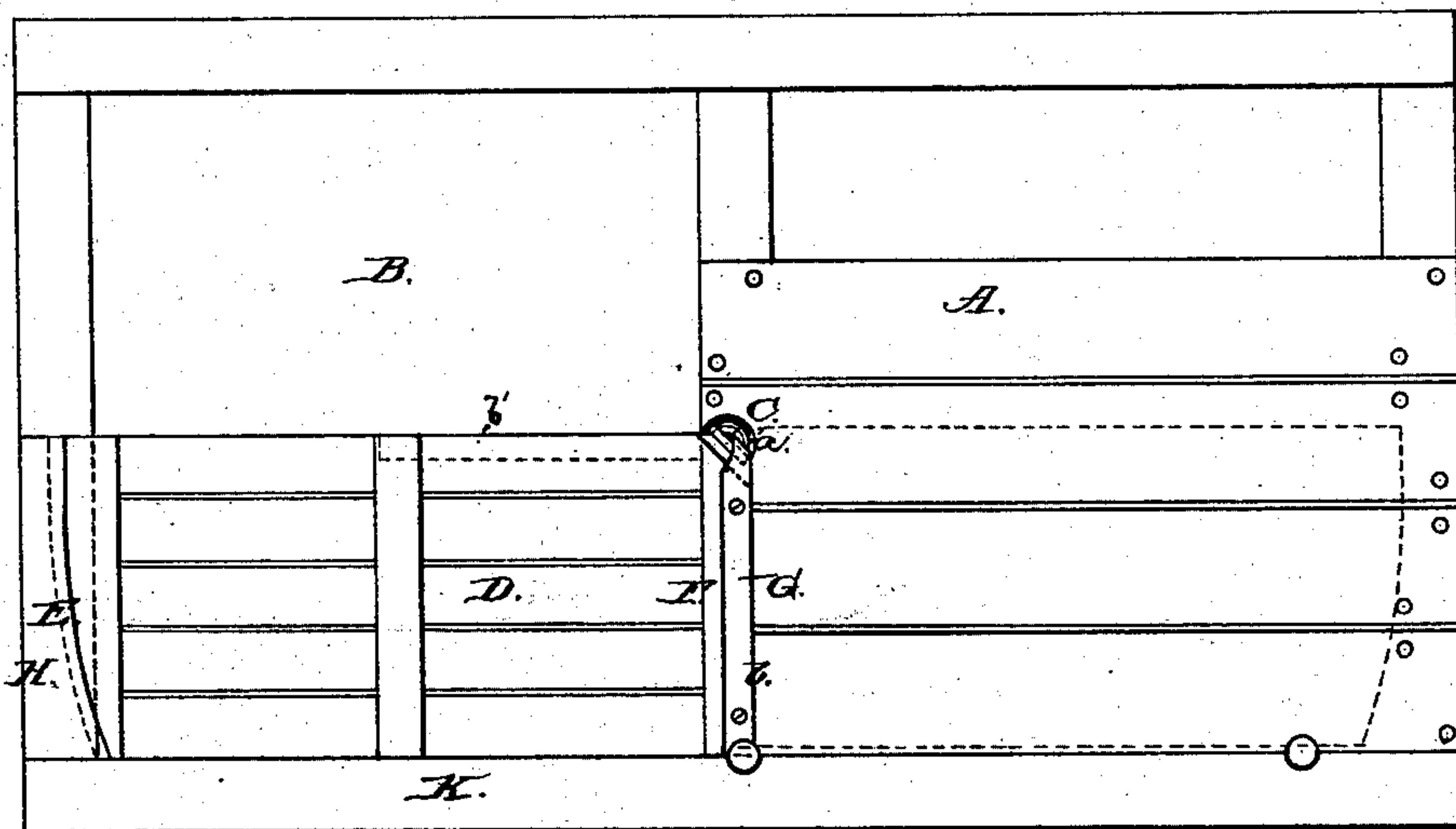


Fig. 2.

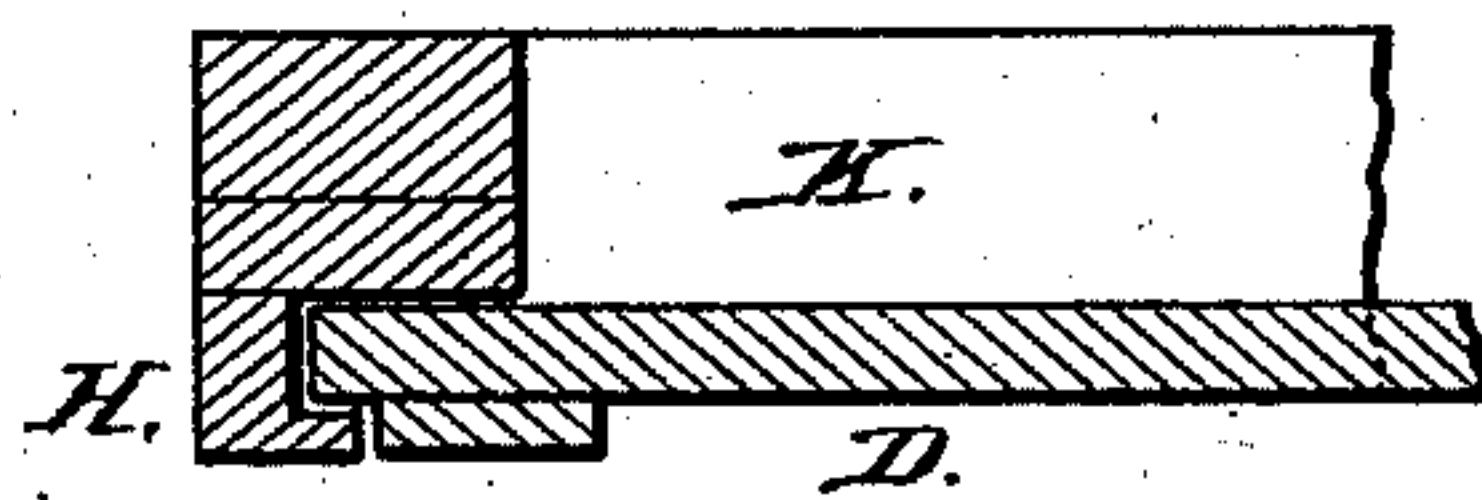


Fig. 3.

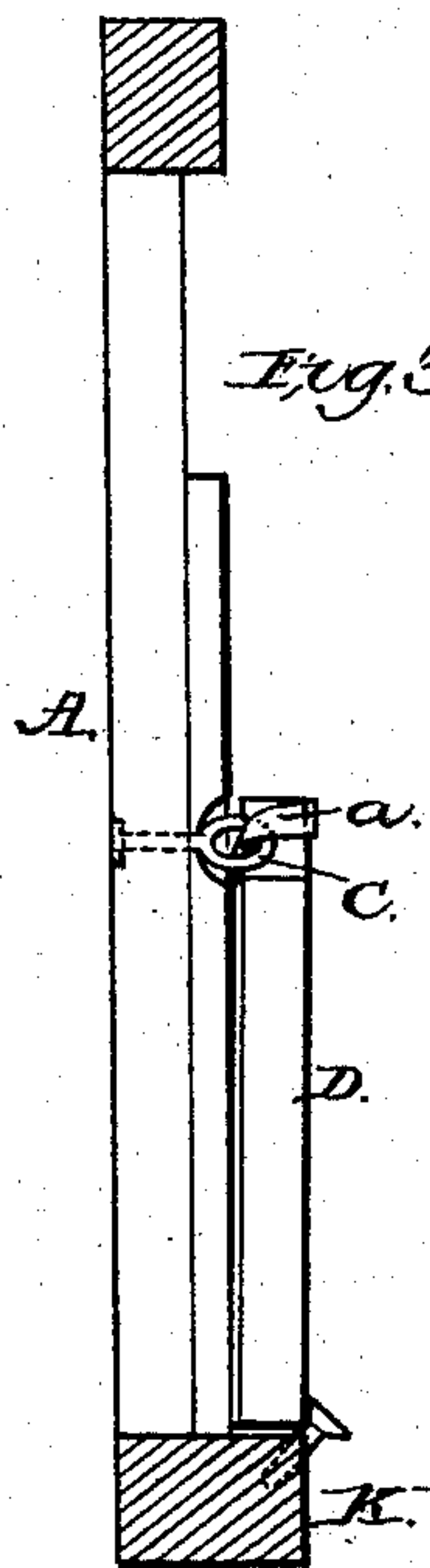


Fig. 4.

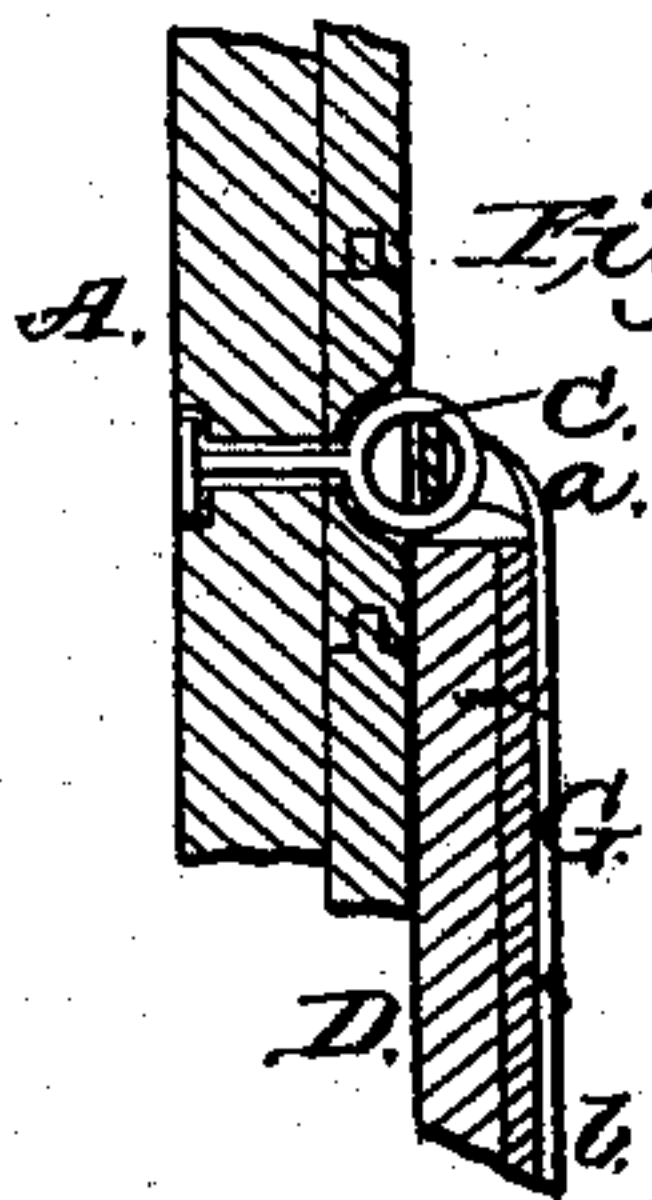
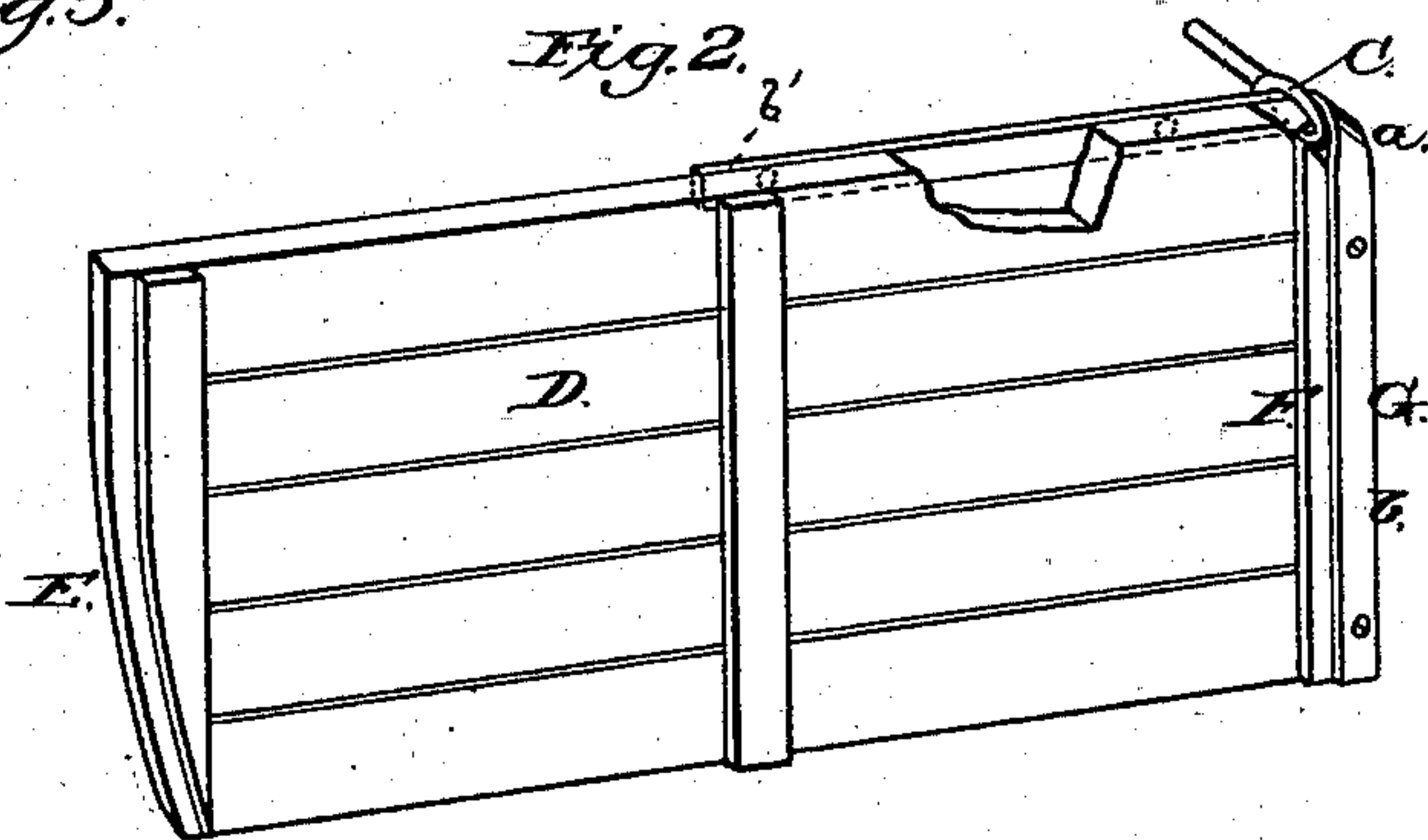


Fig. 5.



WITNESSES

Villeo Anderson.
Philip Levasi.

INVENTOR

Theodor Butterworth
by Anderson & Smith
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UNITED STATES PATENT OFFICE.

THEODORE BUTTERWORTH, OF QUINCY, ILLINOIS.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 237,482, dated February 8, 1881.

Application filed December 4, 1880. (No model.)

To all whom it may concern:

Be it known that I, THEODORE BUTTERWORTH, of Quincy, in the county of Adams and State of Illinois, have invented a new and
5 valuable Improvement in Grain-Car Doors; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a
10 part of this specification, and to the letters and figures of reference marked thereon.

This invention relates to doors for grain-cars; and it consists in the construction hereinafter described.

15 In the drawings hereto annexed, Figure 1 is an elevation of the door closed. Fig. 2 is a perspective of the door detached. Fig. 3 is an end view, partly in section. Figs. 4 and 5 are details.

20 A represents the side of the car, and B the door-opening. To one side of said opening there is attached to the side of the car a loop, C. D represents the door.

To the straight end E is attached the staple-loop G. This staple-loop G is formed by taking a metal bar or strip narrower at its middle
25 portion, *a*, than the remaining portions *b b'*, and twisting said bar or strip until the arms or portions *b b'* are at right angles to each other and their faces parallel. One arm, *b*, is
30 then secured to the outer face of the batten or door at the straight end F, the other arm, *b'*, passed through the eye or loop C and secured to the inner face of the door, near its upper
35 horizontal edge, as shown in Fig. 2.

By this construction a loop is formed calculated to resist strain, since, the ends being at

right angles, any tendency to wrench one end off would be counteracted by the resistance of the other.

H is a shoe corresponding in size and shape to the edge E of the door.

In use the door fits down on sill K, with its edge E held in shoe H. To open the door it is lifted up clear of the shoe H, then turned
45 around loop C as a pivot backward, and rested upon the car-floor again. To produce such action the loop C is made swiveled, so that it may turn with the door, and is fastened with a nut-lock through the door-post. By these
50 two loops, as described, a species of universal joint is formed, which permits a free movement of the door, as has been described, and holds the same firm to its place and prevents
55 it from being torn off.

A swivel or universal joint at the upper rear corner of a grain-car door is not broadly new, and is claimed herein only as specially constructed.

What I claim is—

In a grain-car door, the combination of the loop C, swiveled in the side of the car, with the metal bar, twisted at *a*, and having its arms *b b'* at right angles to each other and their faces
65 parallel, secured to the door D, substantially as and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

T. BUTTERWORTH.

Witnesses:

A. GATCHELL,
P. A. MARKS.