

(No Model.)

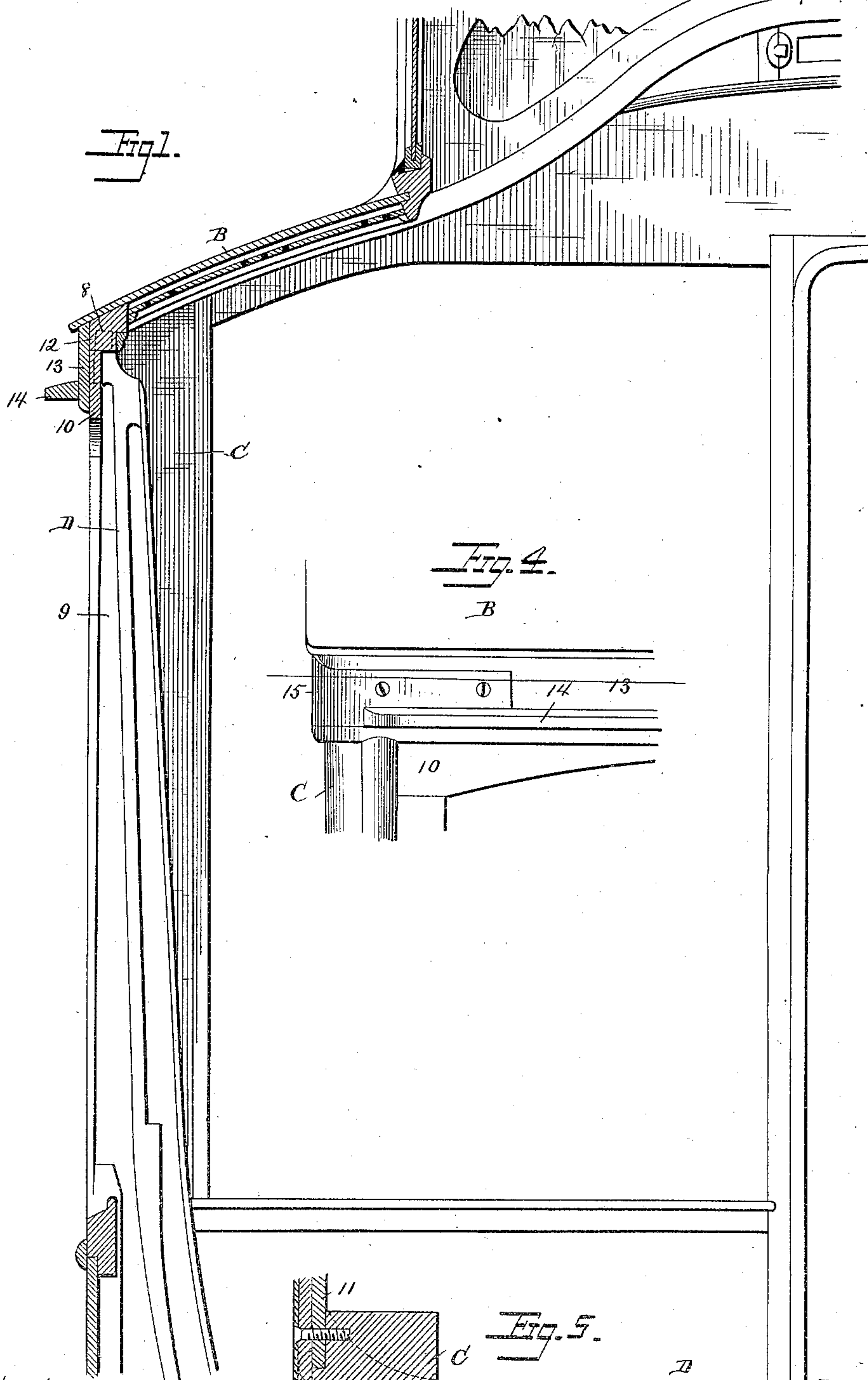
2 Sheets—Sheet 1

J. STEPHENSON.

TRAM CAR WINDOW.

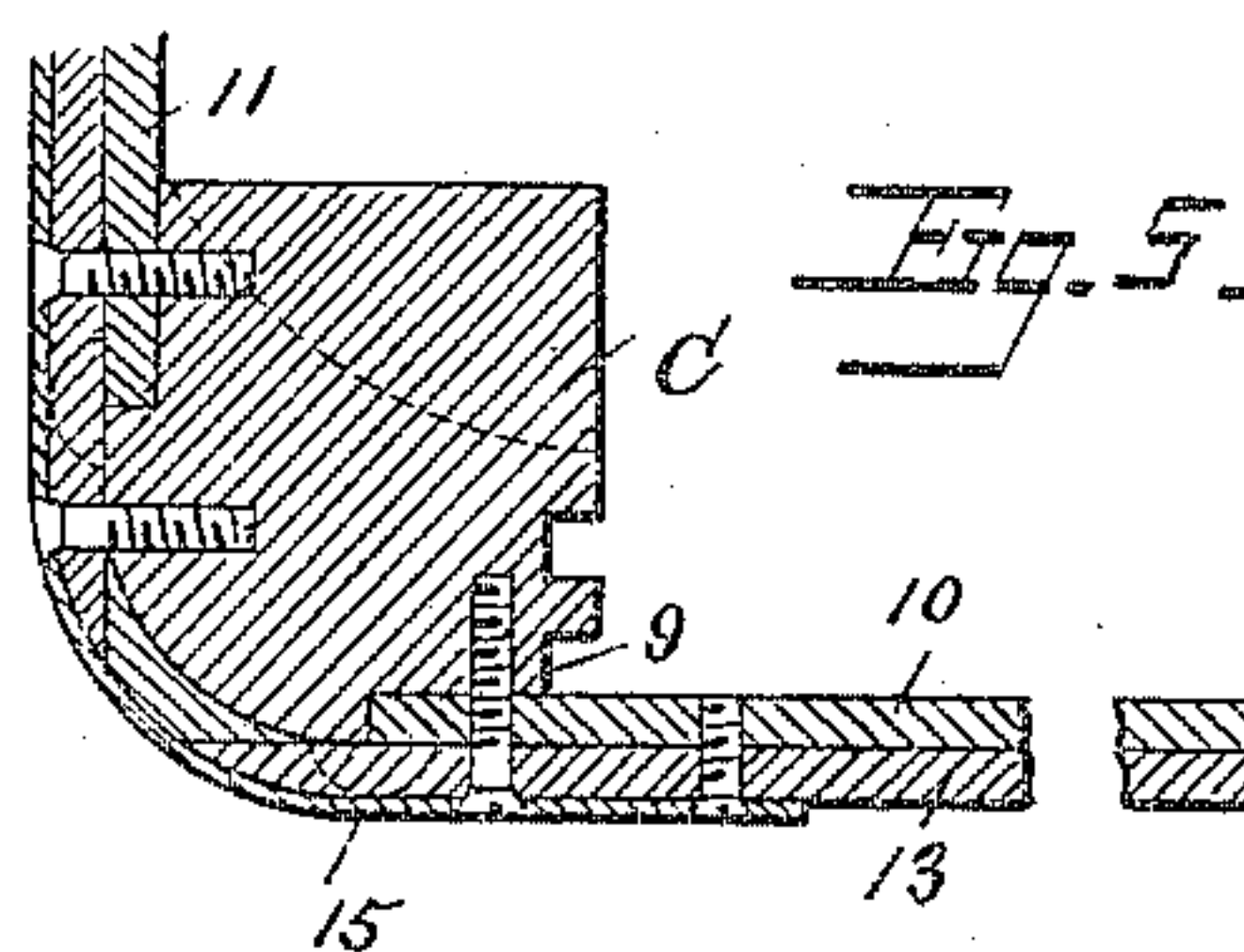
No. 378,473.

Patented Feb. 28, 1888.



Attest:

Geo. G. Hinkle, Jr.  
Sidney L. Johnson,



Inventor:

John Stephenson,

by J. H. & J. H. Mann  
attys.

(No Model.)

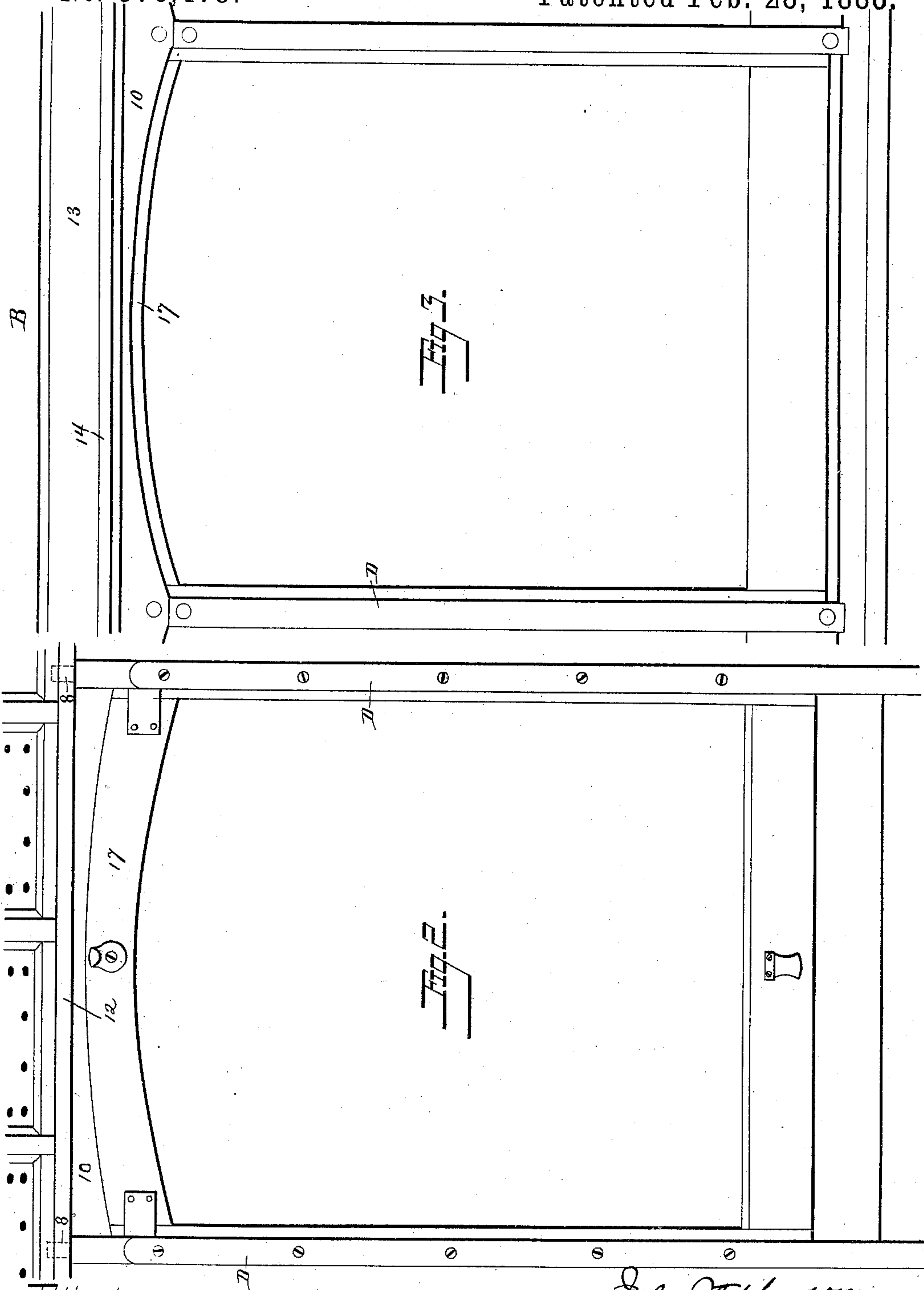
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# UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

## TRAM-CAR WINDOW.

SPECIFICATION forming part of Letters Patent No. 378,473, dated February 28, 1888.

Application filed June 9, 1887. Serial No. 240,842. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN STEPHENSON, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Tram-Car Windows, of which the following is a specification.

In the accompanying drawings, which illustrate so much of a tram-car as is necessary to an understanding of the present invention, Figure 1 is a vertical cross-section of a portion of a car. Fig. 2 is an elevation of two of the side pillars and one of the window-sashes therebetween, looking from the interior of the car. Fig. 3 is a similar view looking from the exterior of the car. Fig. 4 is an elevation of the upper portion of the corner pillar, the corner plate, roof, drip-rail, and sub top rail. Fig. 5 is a horizontal section of the same, taken on the line *x* of Fig. 4.

Tram-cars with sashes of extreme height are in demand, but as heretofore made practical working of such cars developed weakness of construction, indicating short-life service of the cars.

My invention herein described is intended to retain the strength and desirable qualities and make a superior construction.

Window-sashes of extreme height necessitate absence of the letter-board or head-panel. This deprives the upper part of the body of strength and stiffness in the joints, causing swaying of the upper portion, racking of joints, and destruction of timbers. I compensate for the absence of the usual head-panel by widening and raising the sub top rail 10 to contact with the top rail, 12, and gaining the side pillars, D, into the sub top rail and the sub top rail into the side pillars, (see Fig. 5,) thus mutually interlocking the pillars and sub top rail and covering the external joints with a panel, 13, receiving the roof molding or boards B and the drip-rail 14. I also secure the upper corners of the body with metal plates 15, fastened at the ends and sides of the body, each plate binding with each corner pillar, C, its side and end top rails, side and end sub top rails, 10 11, and side and end top panels, 13 16.

Extreme height of glass frames requires new form of side pillars, D, because the outside of the pillar is at its lower half a curved line and

the elongated sash requires a longer sash-frame run making a greater versed sine of the arc of the curve and consequently a pillar of more width.

Extremely high sashes carry their head-rails 17 up to the top rails, 12, of the car-body, the sash-runs 9, if thus extended, (as usual in car-bodies,) would destroy the strength of the body by nearly cutting off the top tenon, 8, of the side pillars, exposing the car-roof to liability to separate from the body. I therefore stop the sash-runs 9 at a point of safety below the tenons and arch the upper edge of the sash-head rail, (see Fig. 2,) usually straight, so as to shorten the stiles of the sash and consequently the sash-runs.

Tram-cars of extreme height of windows cause the head-rails of the end sashes at the pocket side of the door to contact with the door sheaves and rails and require a new arrangement of rails and sheaves, so as to permit the sash-head rail to accord in height of glass with the sides of the car.

Tram-cars with windows of extreme height cause the end sash below the lamp-house to contact with the lamp-house, and therefore require a new construction of the lamp-house to permit the sash to rise to the elevation corresponding with the side glass, both of which features are reserved for another application, and are not shown or claimed herein.

I claim—

1. A tram-car with its windows of extreme height and with its side pillars gained into the sub top rail, and the sub top rail gained into the side pillars, as and for the purpose described.

2. A tram-car with sashes of extreme height and the sub top rails contacting the top rails and gained into the side pillars, and the side pillars gained into the sub top rails, the sub top rails groove-molded on their inner faces, in which grooves are lodged out of contact with the sashes the heads of screws holding the drip rails or ledges, as and for the purpose described.

3. A tram-car with its sub top rail in contact with the top rail and gained into the side pillars, which are also gained into the sub top rail, and the sash-run extended up so near the head of the pillar that the arched head-rails

of the sashes may reach the top rail, the lower parts of the side pillars curved, and the sash-runs continued downward to the car-sill, so that the sashes when dropped are supported  
5 by the car-sill, as and for the purpose described.

4. A tram-car with sashes of extreme height and the sub top rails raised up to the top rails of the car-body, the sub top rails gained into  
10 the side pillars and the side pillars into the sub top rails, with the framing-joints covered externally by a panel and its ends secured by

metal plates reaching around the corners of the body, and with each corner plate combining the corner pillar with its side and end top rails, 15 side and end sub top rails, and side and end top panels, as and for the purpose described.

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

JOHN STEPHENSON.

Witnesses:

JOS. B. STEPHENSON,  
S. A. STEPHENSON.