

No. 697,288.

Patented Apr. 8, 1902.

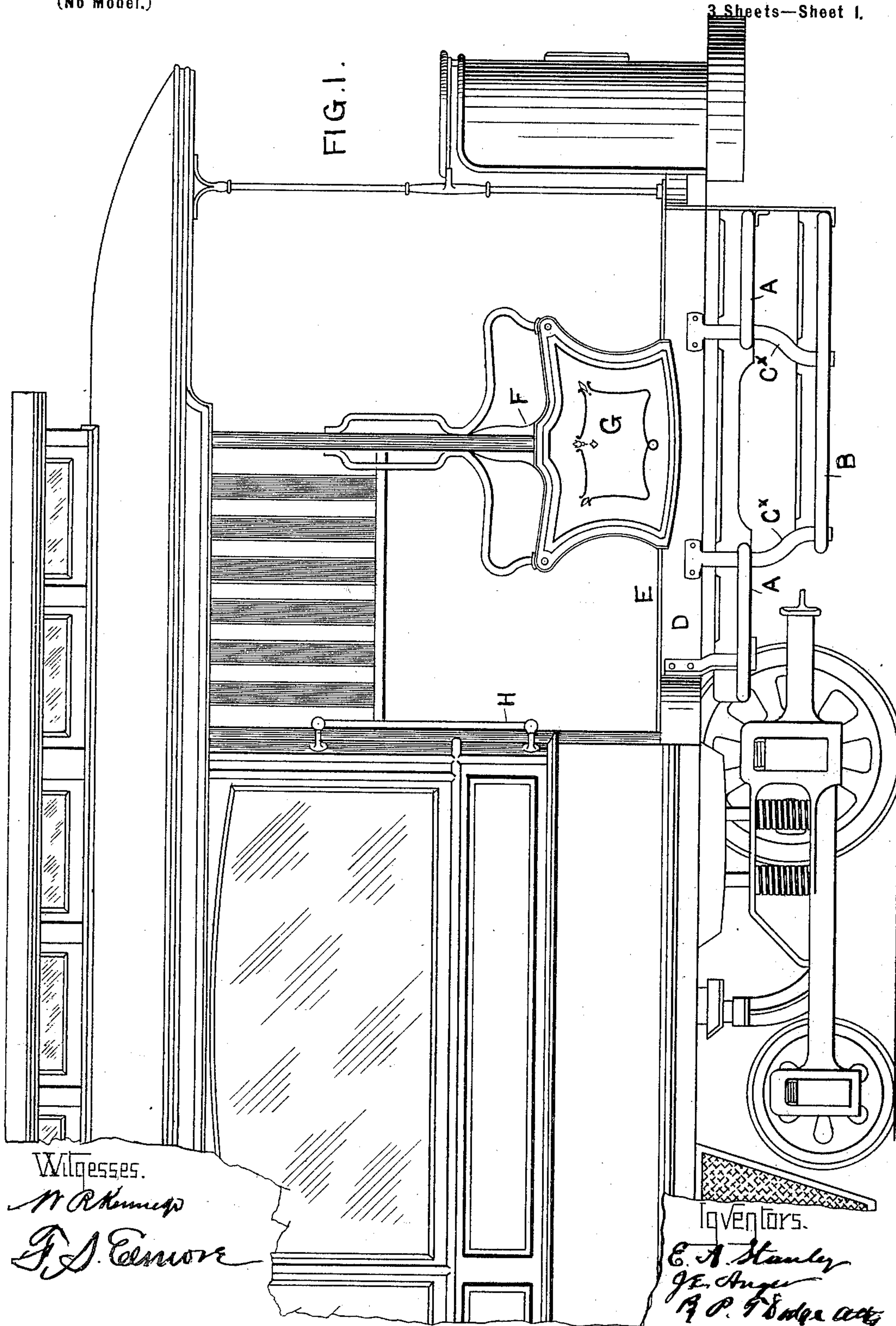
E. A. STANLEY & J. E. ANGER.

TRAM CAR.

(Application filed Feb. 6, 1902.)

(No Model.)

3 Sheets—Sheet 1.



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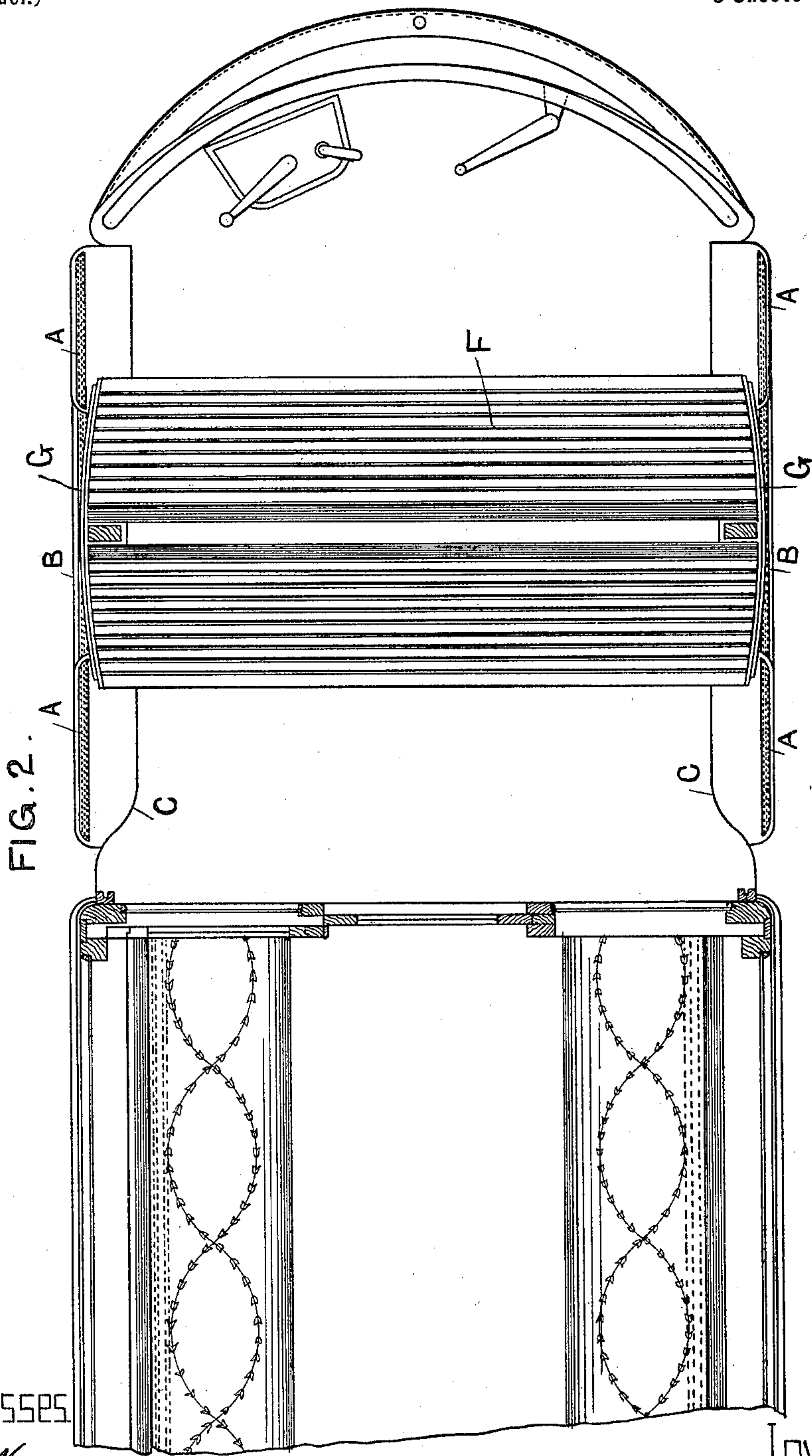
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(No Model.)

3 Sheets—Sheet 2.



Witnesses

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3 Sheets—Sheet 3.

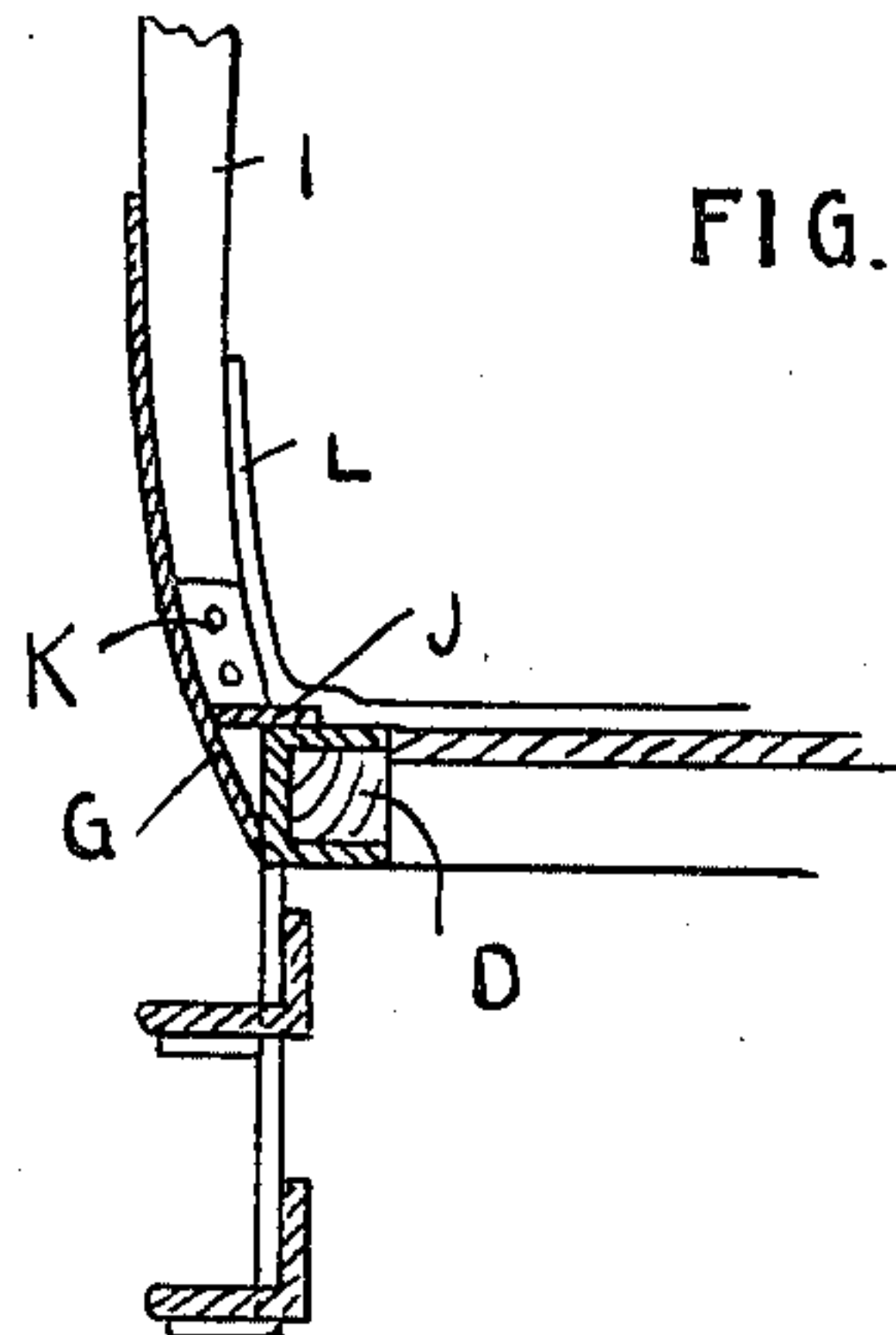


FIG. 3.

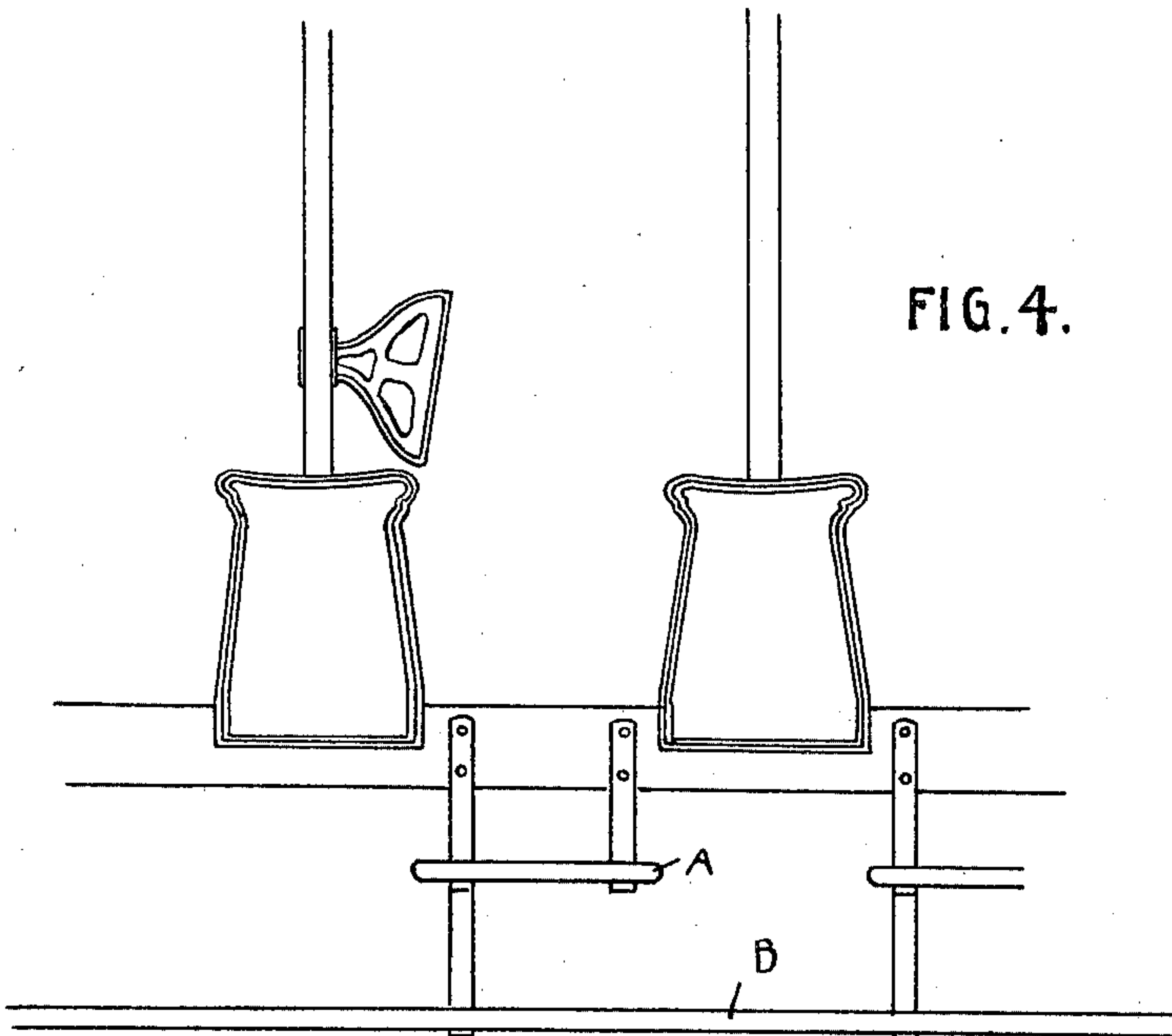


FIG. 4.

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UNITED STATES PATENT OFFICE.

ETHELBERT ADOLPHUS STANLEY, OF PRESTON, AND JOHN EDWARD ANGER,
OF SOUTHPORT, ENGLAND.

TRAM-CAR.

SPECIFICATION forming part of Letters Patent No. 697,288, dated April 8, 1902.

Application filed February 6, 1902. Serial No. 92,850. (No model.)

To all whom it may concern:

Be it known that we, ETHELBERT ADOLPHUS STANLEY, residing at Preston, and JOHN EDWARD ANGER, residing at Southport, in the county of Lancaster, England, citizens of the United States of America, (whose full postal addresses are respectively Electric Railway and Carriage Works, Strand road, Preston, England, and 6 Mornington road, Southport, England,) have invented certain new and useful Improvements in Tram-Cars, of which the following is a specification.

In tram-cars of the ordinary type the floor of the platforms at end or vestibules in the center have a width less than the width of the body of the car, thus giving plenty of room for the provision of steps to enable passengers to mount onto the platforms or vestibules without the steps projecting unduly beyond the line of the car-body. In certain descriptions of tramway-carriages, such as open-ended closed cars or cars that are open at sides throughout their entire length, the case is different, and if two steps or footboards are provided they have generally had to be placed directly one under the other, thus rendering it difficult for passengers to mount into the car from the ground. Now the present invention is designed to avoid this defect and yet provide a pair of steps or footboards at different levels which will not unduly project or project at all from the sides of the car.

In the accompanying drawings, Figure 1 is a front elevation of our invention applied to an open-ended closed car; Fig. 2, a plan; Fig. 3, a cross-section; Fig. 4, a front view of the invention applied to an open-sided car.

We place at each side of the open ends a step or footboard A A at a suitable height from the ground; but instead of this running the full length of the open ends we provide a break in the continuity, and underneath this break provide a step or footboard B at a lower level. The under step will project out beyond the upper one, or the outside edges of both are in the same vertical plane. A passenger therefore in entering the car will first place one foot on the lower step B, the other foot on the upper step, and so raise himself into the car. By this means he can enter the car with as much ease as a car of the ordinary

type, and, furthermore, the steps will not project unduly from the line of the car. They can even be prevented from projecting at all from the line of car by making an embayment C in the sides of the sole-bars D of the platform E. This embayment is the same length as the extreme length of the steps A and B, which admits of the latter being moved inward to an extent corresponding to the depth of the embayment. The cross-seats F, however, in order not to reduce their seating capacity are made to overhang the embayments a little and be about the same length as the width of the car-body.

G is a panel at the end of the seat F, which is curved inward at bottom, so as to join the sole-bar D, and it is also curved inward at each side. The lower step B is connected with the lower ends of two vertical depending brackets C^x, which have their upper ends fixed to the side of the under frame or sole-bar D, and thus bridges the space between the brackets. The upper steps A have their inner adjacent ends connected with and sustained by said brackets at a higher level than the lower step, and they extend horizontally outward in opposite directions and have their outer ends suitably sustained by supports connected with the frame of the car. The steps can be hinged, if desired, so that they will fold upward and be fastened in their up-turned position; but this is not usually necessary.

In mounting into the car the passenger first places one foot on the lower step B and catches hold of, say, the handle H. He then raises himself and places his other foot on one of the other steps A, finally raising himself onto the platform, the sloping inward of the panel facilitating his doing this, as there are no corners or sharp edges which are liable to obstruct his passage when mounting. By this means he can enter the car with as much ease as if the seat did not project beyond the sides of the platform.

In tram-cars that are open throughout their entire length we provide a step or footboard A, Fig. 4, at a suitable height from the ground at each side of car, with numerous breaks in its continuity from end to end, and below each of these breaks provide a step or foot-

board B on a lower level. Thus by this arrangement a passenger can enter the car at any required place throughout its length. These steps as applied to this type of car can also be hinged, if desired, so that they will fold upward.

In thus describing our invention we wish it to be understood that we do not confine ourselves to the exact details described, as these can be altered without departing from the nature of the invention; neither do we confine it to the two types of carriages herein mentioned by way of illustration. The invention can, in fact, be applied to almost any tramway or other vehicle which requires to have two steps at different levels to enable the passengers to ascend into the car.

I is the upright, supported on a ledge J, projecting from the inner face of the panel G, which rests on the sole-bar D. K represents cheeks, also projecting from the inner face of the panel, which form a pocket for receiving the upright I. Bolts are passed through the cheeks and upright. L is a knee-piece which further secures the upright in position.

We declare that what we claim is—

1. In a tram-car, the combination with a platform having the end frame D of the two vertical depending brackets C^x fixed at their upper ends to the side of the underframe a horizontal step B connected with the lower ends of the brackets and bridging the space between them, horizontal steps A connected

at their inner ends with the brackets at a higher level than step B and extending outward in opposite directions, and supports for the outer ends of said steps connected with the frame of the car.

2. In tram-cars having the combination of a platform formed with an embayment at its sides, steps A and B arranged as described, a cross-seat made to overhang the embayment a little so as not to reduce its seating capacity, and a panel G at the end of seat curved inward at the bottom so as to join the side of the platform, and curved inward at the sides so as not to obstruct the entry of the passenger when mounting, whereby a passenger can ascend into the car with as much ease as if the seat did not project from the sides of the platform, substantially as described.

3. In tram-cars, the combination of the upright I, the panel G with ledge J and cheeks K forming a pocket for the end of the upright, and a knee-piece for holding the panel and upright in position, substantially as described.

In witness whereof we have hereunto signed our names, this 14th day of December, 1901, and 8th day of January, 1902, respectively, in the presence of two subscribing witnesses.

ETHELBERT ADOLPHUS STANLEY.
JOHN EDWARD ANGER.

Witnesses:

G. C. DYMOND,
F. P. EVANS.