

No. 728,736.

PATENTED MAY 19, 1903.

J. A. DE MACEDO.  
ADJUSTABLE HOUSING FOR CARS.

APPLICATION FILED OCT. 30, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 2.

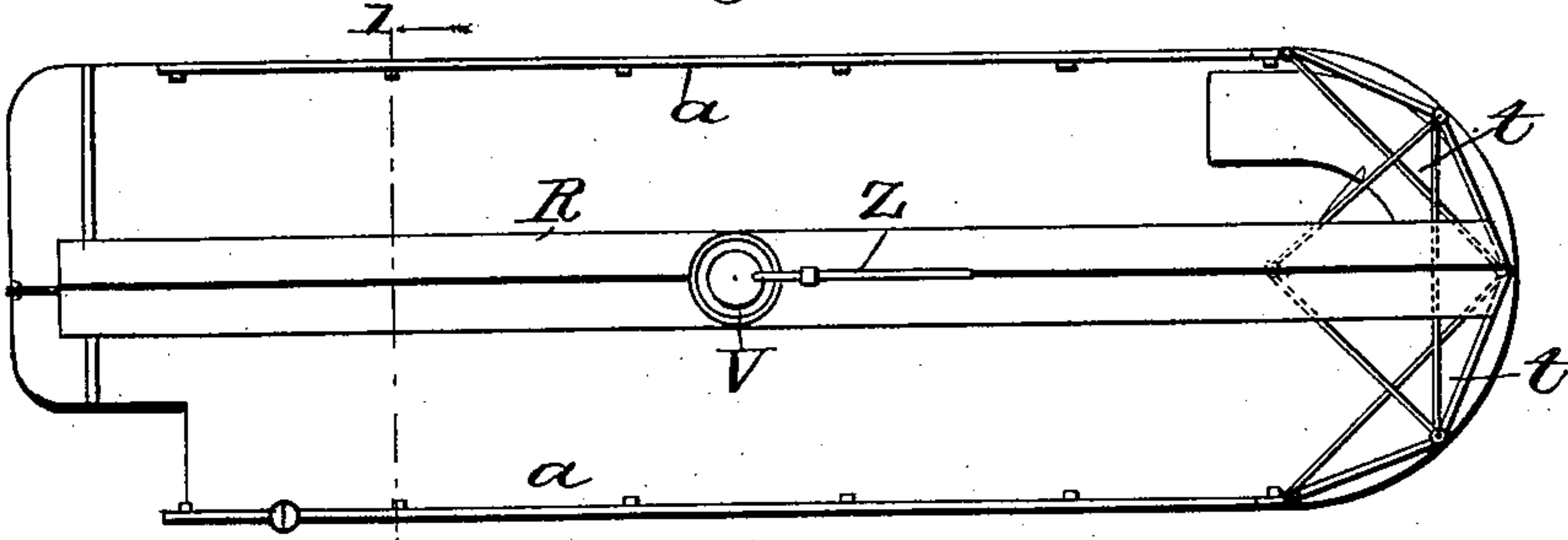


Fig. 3.

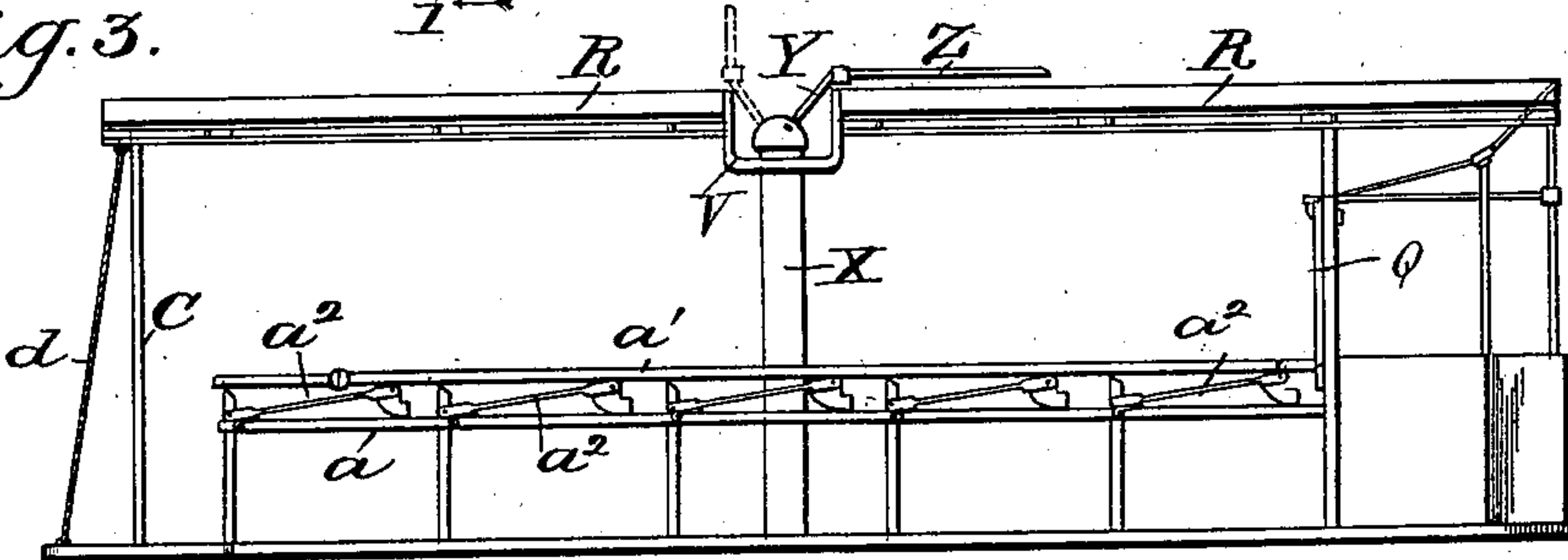


Fig. 1.

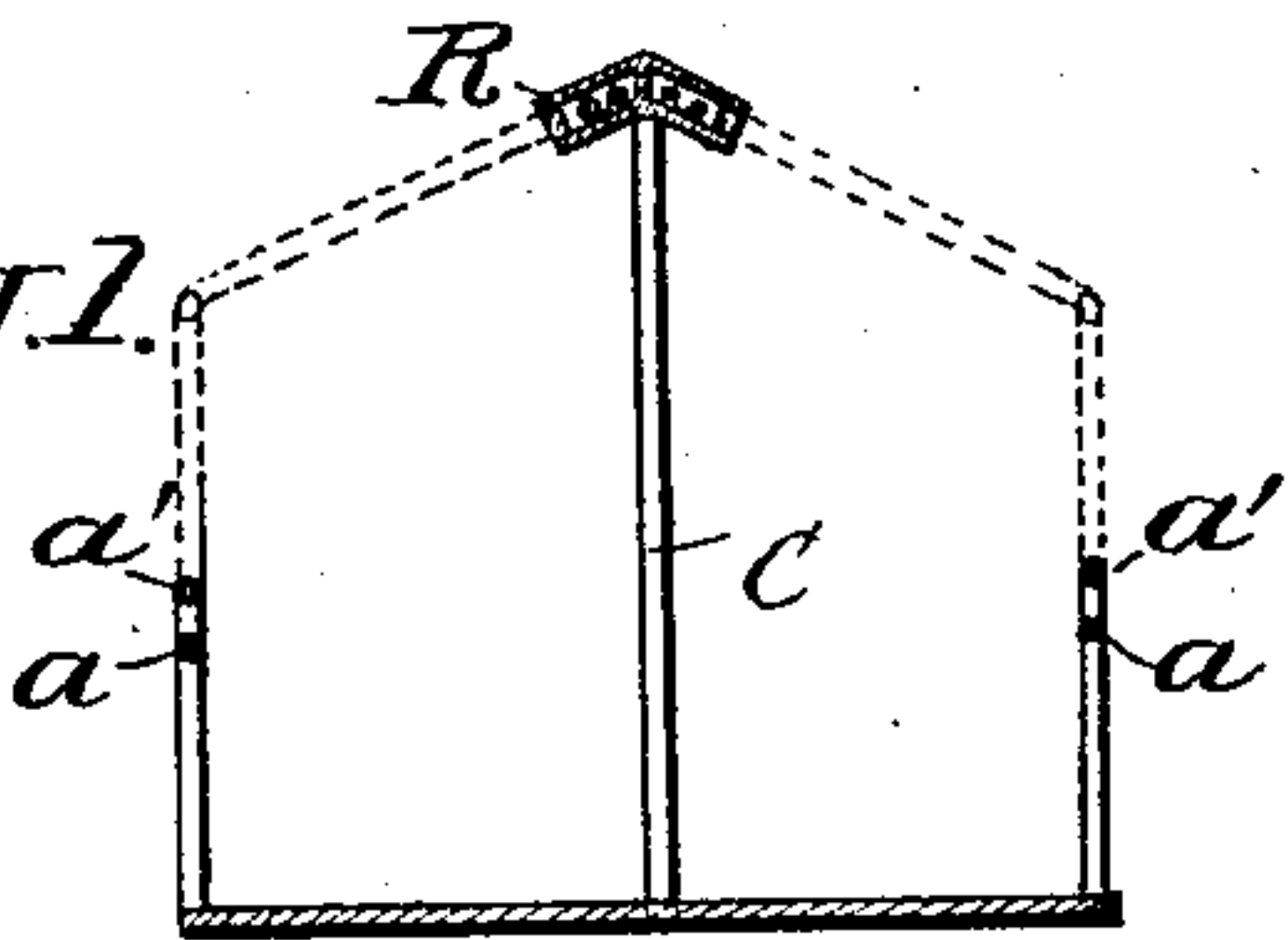


Fig. 4.

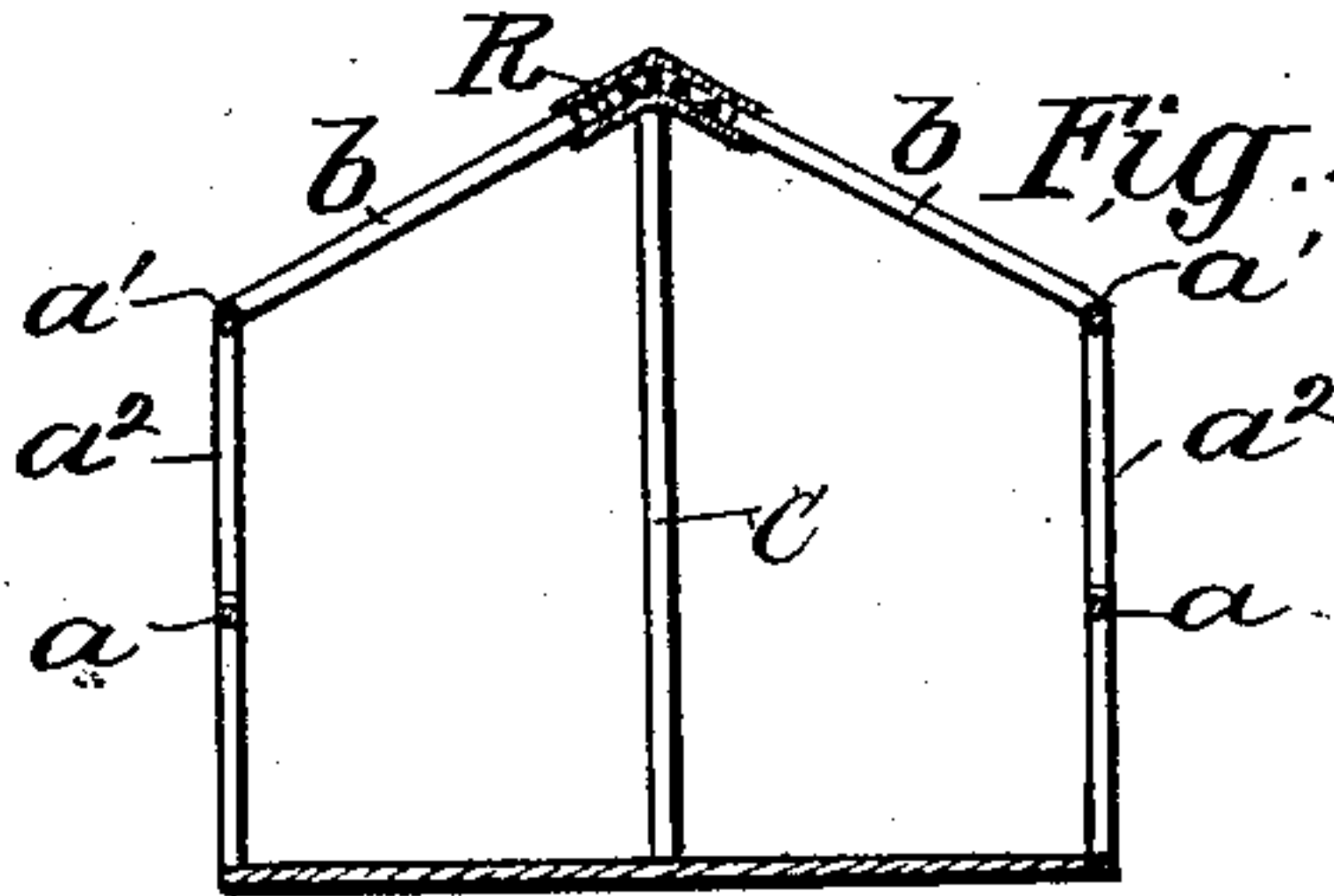


Fig. 5.

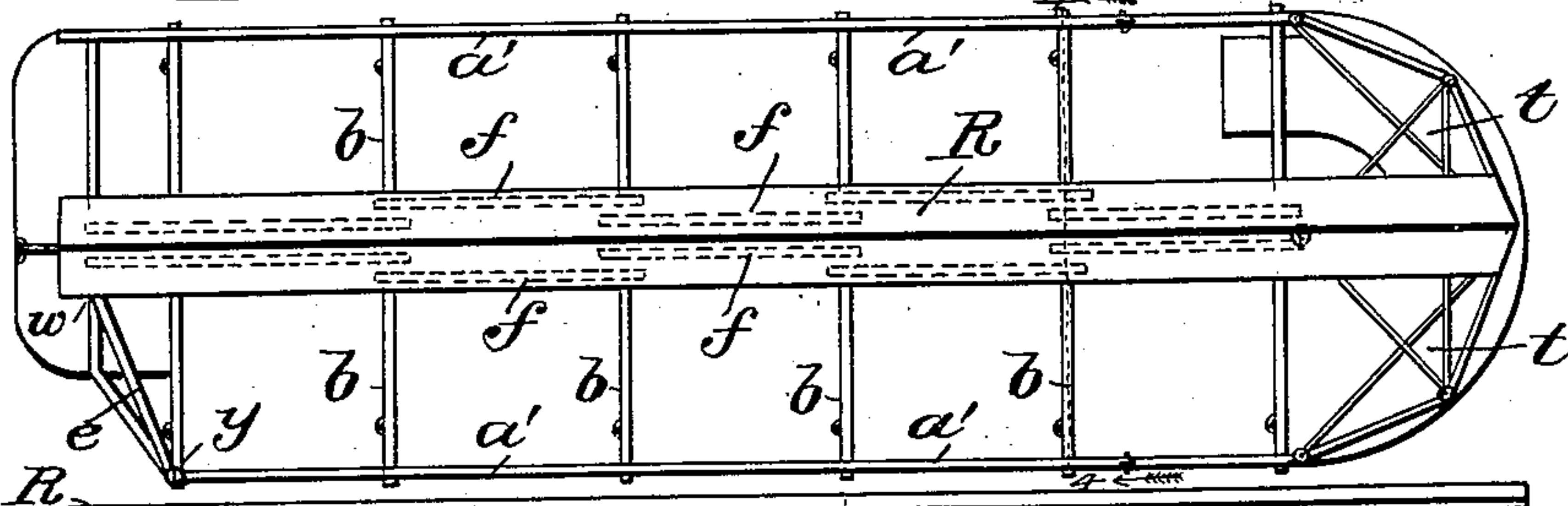
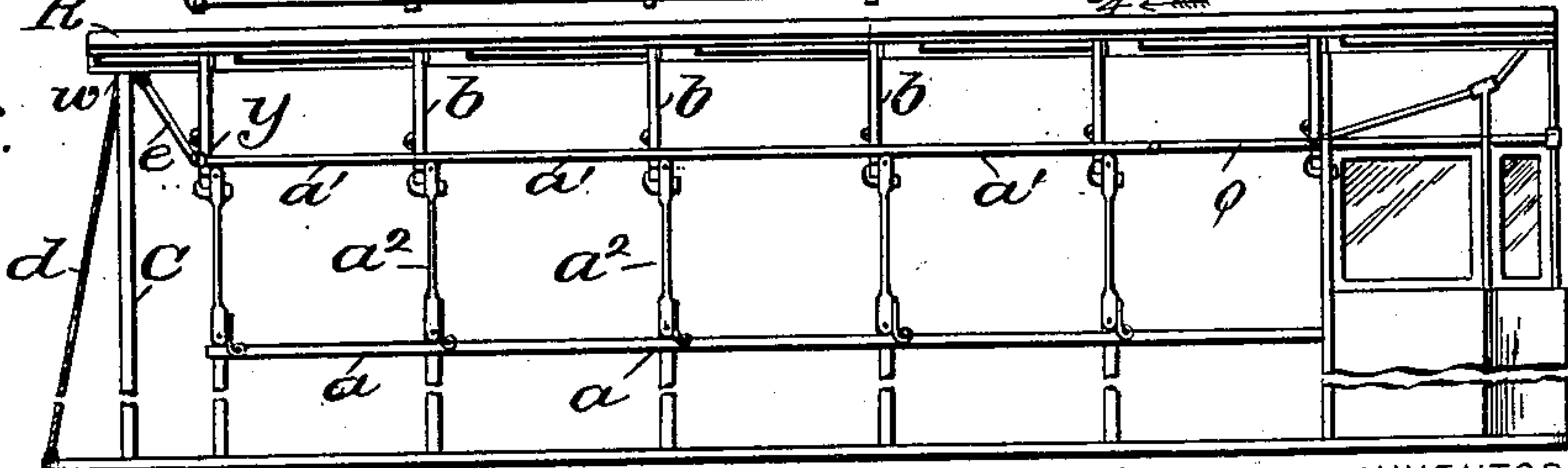


Fig. 6.



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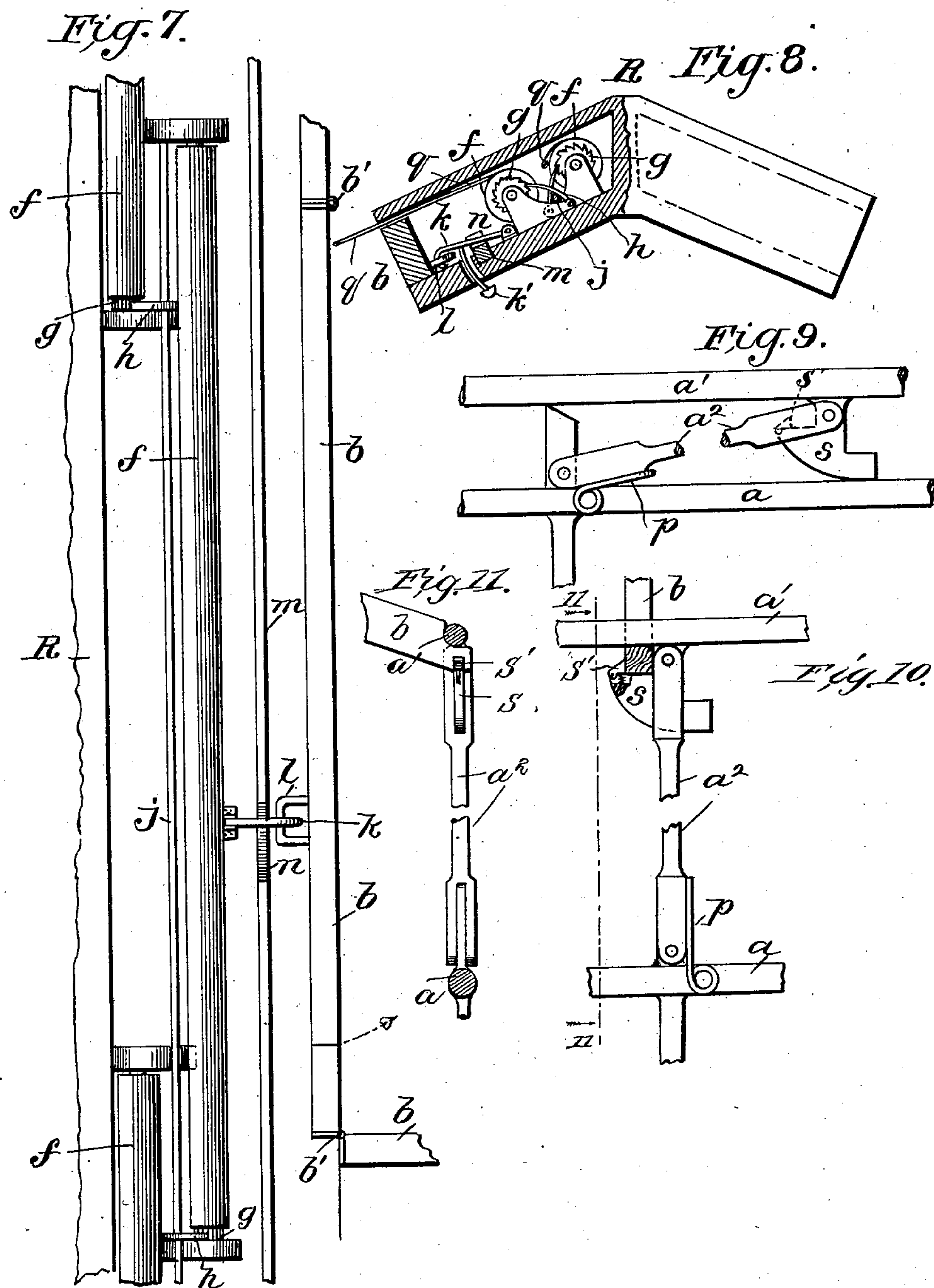
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WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JOAQUIM ANTONIO DE MACEDO, OF LEVENTHORPE HALL, COUNTY OF YORK, ENGLAND.

## ADJUSTABLE HOUSING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 728,736, dated May 19, 1903.

Application filed October 30, 1902. Serial No. 129,411. (No model.)

*To all whom it may concern:*

Be it known that I, JOAQUIM ANTONIO DE MACEDO, a subject of the King of England, residing at Leventhorpe Hall, in the parish of Swillington, in the county of York, England, have invented a new and useful Improvement in Adjustable Housings for Cars, of which the following is a specification.

The object of my invention is to protect the outside passengers on cars from the rain and from the rays of the sun; and it consists in the novel construction and arrangement of a quickly-adjustable housing adapted to wholly or partially inclose the upper portion of the car and to be conveniently and quickly extended for protection or withdrawn as the changing conditions of the weather may render desirable.

Figure 1 is a vertical transverse section on line 1 1 of Fig. 2, showing the housing folded and out of use. Fig. 2 is a plan, and Fig. 3 a side elevation, of the same. Fig. 4 is a vertical cross-section on line 4 4 of Fig. 5, showing the housing extended to form the inclosure. Fig. 5 is a plan view, and Fig. 6 a side elevation, showing the housing extended. Fig. 7 is an enlarged detail plan view of a part of the ridge-box of the housing and its contained rollers and folded rafters. Fig. 8 is an end view of the ridge-box with one-half of it in cross-section. Figs. 9 and 10 are enlarged details showing the two positions of the vertically-adjustable side rails and the folding stanchions, and Fig. 11 is a section on line 11 11 of Fig. 10.

$a$  represents horizontal stationary and longitudinally-arranged side rails, to each of which is hinged a corresponding vertically-adjustable side rail  $a'$ , located above the lower rail  $a$  and connected to it at regular intervals by folding stanchions  $a^2$ , which are adapted to fold down and lie in a nearly horizontal position, as seen in Figs. 3 and 9, or be elevated to a vertical position, as seen in Figs. 4, 5, 6, and 10. The details of the joints and connections of these rails and stanchions are shown in Figs. 9, 10, and 11, in which the joint at the lower end of some of the stanchions  $a^2$  is provided with a spring  $p$ , that tends to lift the stanchion to its vertical position, thus aiding in the lifting of the ad-

justable rail  $a'$  and breaking the concussion of its descent. At the top of the stanchion where it is hinged to the top rail is located a block  $S$ , rigidly fixed to the upper rail  $a'$  and adapted to strike against the lower rail and stop the descent of the upper rail when folded down, as seen in Fig. 9. These blocks are notched on their upper sides to form seats to receive the folding rafters  $b$  and have spring-catches  $S'$  to keep them in place, as seen in Fig. 10. The lower side rail  $a$  is of the usual height, or about thirty inches, while the upper one,  $a'$ , is capable of being raised to a height of sixty or sixty-five inches, and when so raised it forms a distending frame for a series of curtains which are let down from a middle elevated ridge-box.  $R R$  represent this ridge-box, supported at each end about six feet six inches above the car-top by hollow steel posts  $C$ , steadied by guy-ropes  $d$ , as shown on the left hand of Figs. 3 and 6, or by a framework forming the end, as shown on the right-hand side of said figures. This latter framework is very strong and light, and the upper ends of the uprights are joined together by steel tubes  $t$ , arranged in triangular relation to form a trussed frame.

The ridge-box  $R$  (see Figs. 4 and 8) is made of two longitudinally-arranged hollow compartments each containing a double row of spring-rollers  $f f$ , arranged to lap past each other, as shown in Figs. 5 and 7. It may have, however, only a single continuous roller on each side. These rollers  $f$  are preferably spring-rollers, and on them are wound curtains  $q$ , Fig. 8, which are adapted to be pulled down from the ridge-box to the top rail  $a'$  when elevated, and thence down along the sides of the stanchions  $a^2$  to form both a temporary roof and side for the car. The rollers when more than one on a side are used are arranged alternately out of alinement and of such length as to lap past each other, as seen in Fig. 7, so as to allow the adjacent edges of these curtains to overlap three or four inches and also to obviate any sticking or binding of the edge of the curtains if rolled up more on one side than the other. In front of these rollers and hinged to the ridge-box are a number of wooden arms  $b$ , which when closed lie in the lower edges of the ridge-box parallel



to the same, as seen in Figs. 7 and 8, and act as doors to the ridge-box to fully inclose the curtains and rollers, but are capable of being turned out on their hinges  $b'$ , so as to occupy a position at right angles to the ridge, as seen in Fig. 5, in which position they form rafters to support the curtains. When so disposed, the outer ends of these rafter-arms  $b$  drop into the notched seats of the blocks  $S$  on the under side of the top rail  $a'$ , as seen in Fig. 10, and are secured by spring-catches  $S'$ , which lock them in place. These rafters are hinged to the edge of the ridge-box, which inclines downward at an angle of thirty degrees, and this allows the rafters to move outwardly from gravity and open themselves when released. When disposed within the box in folded position, they are retained by hook-shaped catches  $k$ , Figs. 7 and 8, which drop through an eye or loop  $l$  on the free end of the rafters. These catches may be released by pressing up a button  $k'$ , formed on the catches, or they may be all opened at once by means of a longitudinally-adjustable rod  $m$ , which extends the whole length of the ridge and has (see Fig. 7) cams or wedge-surfaces  $n$ , that simultaneously lift all the catches.

The adjustable rail  $a$  is made with an end section  $e$ , as seen in Fig. 6, which is hinged at  $y$  to the rail and is adapted to be returned to and secured to the ridge at  $W$ . The other end of the adjustable rail is secured by lifting up the arm  $Q$ , (see Figs. 3 and 6,) which is hinged to the upright, and fastening its extremity to the said end of the rail.

The ends of the car are made weather-tight by means of windows of glass or any other transparent material, which windows may be raised or lowered, like the windows in the doors of railway-carriages. The number of these windows varies, according to the shape and size of the vehicle, and in certain cases the doorway for exit and entry on the upper deck is more conveniently screened by means of a flap or apron hooked or buckled so as to exclude rain, snow, or dust.

In the case of double-decked electric cars it often happens that the standard of the trolley is not sufficiently high to admit of the ridge being placed high enough to allow good headway. To obviate this difficulty, I make the holder into which the trolley-pole fits at an angle of about one hundred and thirty-five degrees, as shown in Fig. 3, instead of straight, and a well-hole or chamber  $V$  is formed in the ridge to receive the trolley-holder. This trolley-pole is shown at  $Z$ , the trolley-holder at  $Y$ , and below this is the standard  $X$ . With this construction, although the standard be only five feet six inches, the ridge may be placed at an altitude of six feet six inches without interfering with the motion of the trolley-pole, which is still free to move to any position between the vertical and the horizontal. When the trolley-standard is at one side of the car instead of the middle, a hole is to be cut through one of the

curtains to accommodate it. The ridge-box may be made of steel, in which case the trolley-pole may spring from the top of the ridge, thus gaining two extra seats for passengers.

The curtains may be of any suitable width; but from four to five feet is most convenient for manipulation. There are from four to five of such curtains on each side of the ridge for an ordinary size of electric car. For small cars one curtain only on each side is sufficient. When the curtains have been drawn down to the required position, according to the direction of the wind or sun, then all the rollers are locked by means of a rod  $j$ , Figs. 7 and 8, sliding longitudinally inside the ridge and operating catches  $h$ , which are thus made to engage and hold the ratchet-wheels  $g$ , fixed on the ends of the rollers. The curtains may be wholly or partially drawn down as desired, for which purpose suitable hooks or fastenings are provided at different altitudes at each side of the car. When the side curtains have been drawn down and the rollers secured, the aprons or flaps (not shown nor claimed) are hooked on the ends and buckled, and the top of the car becomes a kind of tent in which the passengers are protected from the rain or sun, as the case may be. It is very seldom that the curtains on both sides will be required to be drawn completely down. In order that the passengers may be able to see in what locality they are, one or more of the curtains on each side may be made wholly or partially of xylonite or have transparent windows.

This housing may be very quickly adjusted by the operators of the car, from three to five minutes only being required.

The adjustable railing and rafters are intended for cases when the car is of usual form, with the exception of the ridge. This ridge constitutes no detriment, being only a few inches in width and in such position as to be quite out of the way. It also affords, furthermore, certain incidental advantages, for it is not only a protection against falling wires, but with its aid upright rods may be fixed at intervals at each side of the gangway for the passengers to steady themselves by on entering or leaving the car.

If desired, the vertically-adjustable rails  $a'$  and the movable rafter  $b$  may be replaced by a fixed framework of steel tubing or wire rope, or both.

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

1. An adjustable housing for a car, comprising standards having a middle fixed ridge, elevated side rails, and one or more rollers with curtains arranged longitudinally along the ridge on each side and adapted to be drawn down to form a temporary roof and sides to the car as described.

2. An adjustable housing for a car, comprising standards having a middle fixed ridge, elevated side rails, one or more rollers with



curtains arranged longitudinally along the ridge on each side and adapted to be drawn down to form a temporary roof and sides to the car, and rafters to support said curtains 5 hinged to the ridge and folding parallel to the same or adapted to be fixed transversely to the car as described.

3. A vertically-adjustable side rail for a car having hinged stanchions arranged to be 10 folded down or be erected, in combination with a supporting-ridge and transverse rafters connecting with the side rail as described.

4. A vertically-adjustable side rail for a car having hinged stanchions arranged to be 15 folded down or be erected, in combination with a supporting-ridge, rafters hinged to said ridge, and locking devices for connecting the hinged rafters to the side rail when elevated as described.

20 5. A vertically-adjustable side rail for a car having hinged stanchions arranged to be folded down or be erected, in combination with a supporting-ridge, rafters hinged to said ridge, locking devices for connecting the 25 rafters to the side rails, and rollers with curtains disposed along the ridge and adapted to be drawn down over the rafters and the sides of the car as described.

30 6. A housing for a car consisting of an elevated longitudinally-arranged ridge fixed in middle position above the car and bearing spring-rollers with two ratchet-wheels and

catches fixed thereon in a reversed position, so as to permit the rollers to wind up, but not unwind, said rollers being arranged in two 35 rows, back and front alternately and so that their extremities extend beyond each other, as shown for the purpose of allowing the blinds or curtains to overlap laterally and thus keep out the rain and wind, substan- 40 tially as shown and described.

7. A housing for a car having an elevated middle ridge with rollers and curtains, said rollers having wheels and locking devices for the same and a longitudinally-sliding rod act- 45 ing on said locking devices substantially as described.

8. A housing for a car having an elevated middle ridge bearing rollers with curtains, rafters hinged to the ridge and having catches 50 for holding them folded along the ridge, and a longitudinally - arranged releasing - bar adapted to act on all the catches at once to release the rafters as described.

9. A housing for a car having an elevated 55 middle ridge with a depression in the center, and a trolley-arm located in said depression and bent as described to lie flat along the top of the ridge substantially as described.

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Witnesses:

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