

(No Model.)

A. C. FERGUSON.  
CAR PLATFORM.

No. 302,550.

Patented July 29, 1884.

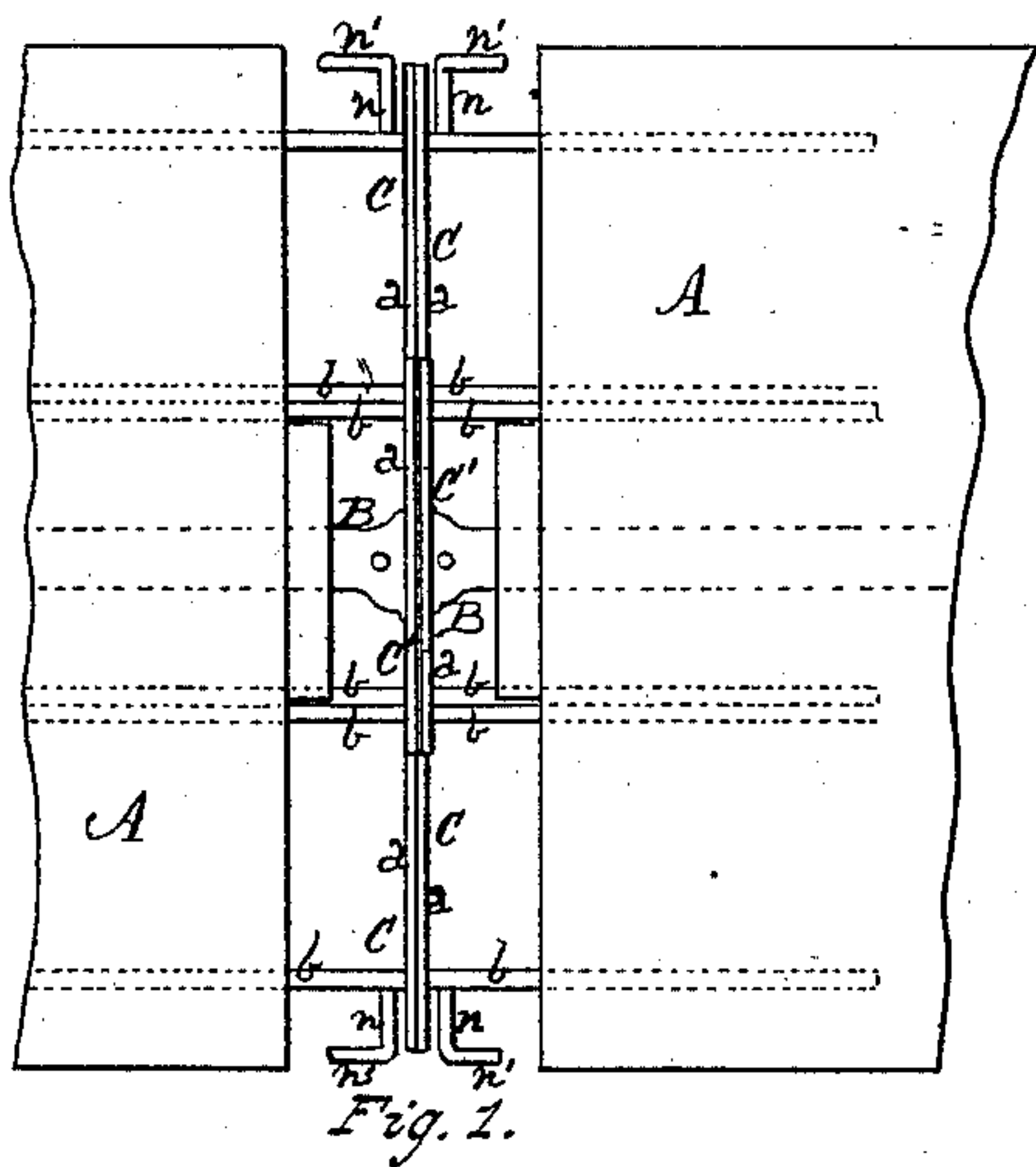


Fig. 2.

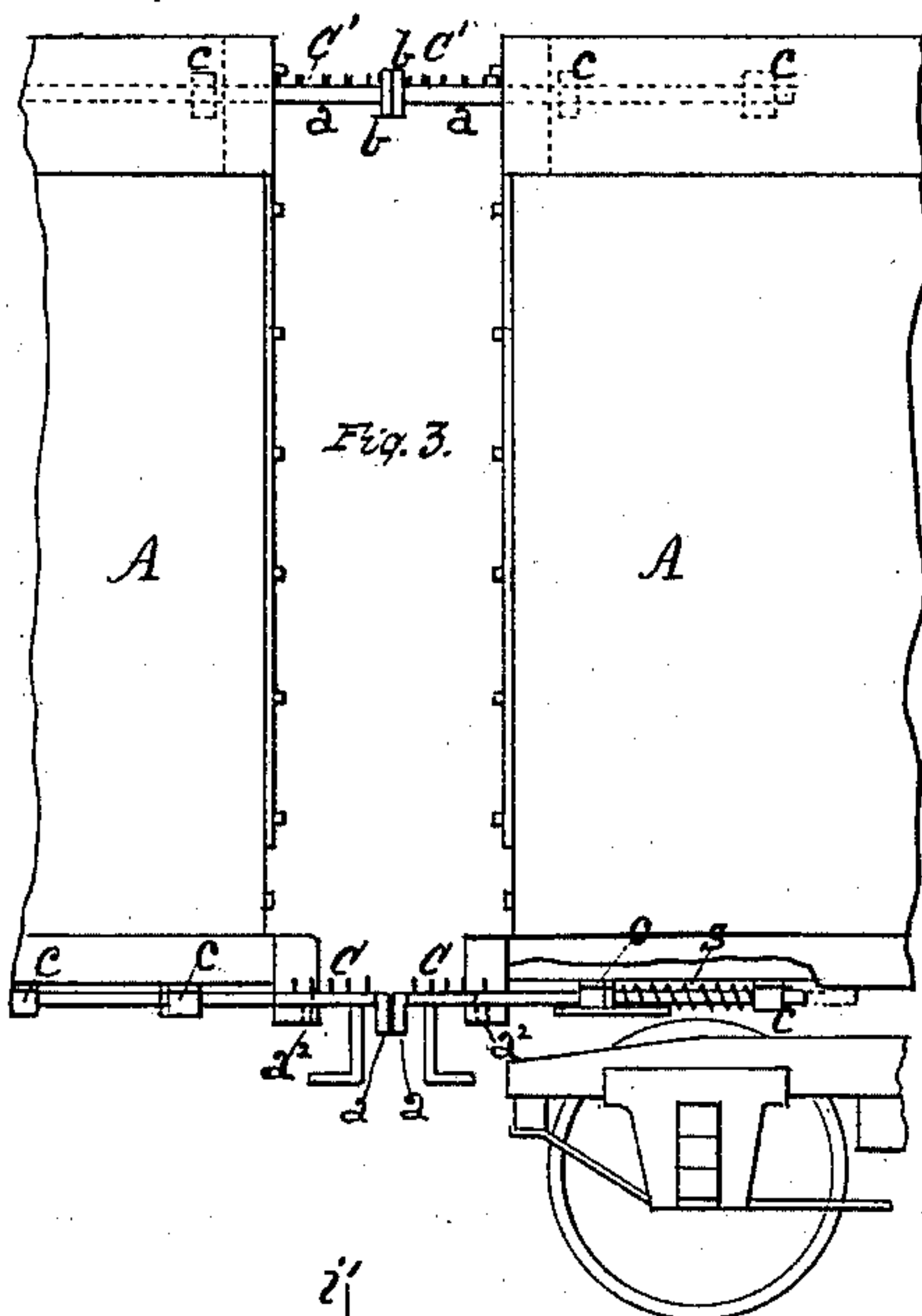
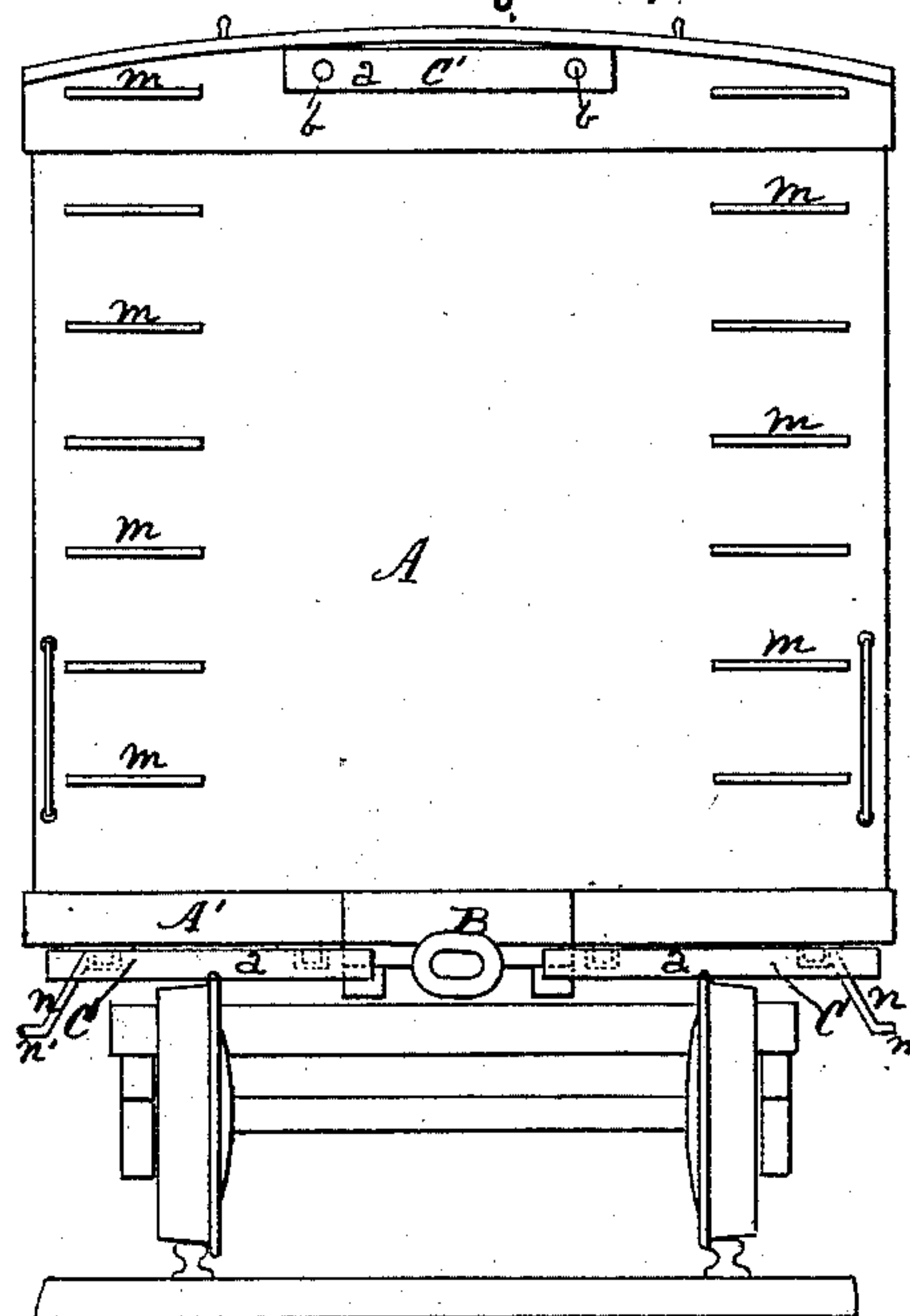


Fig. 3.

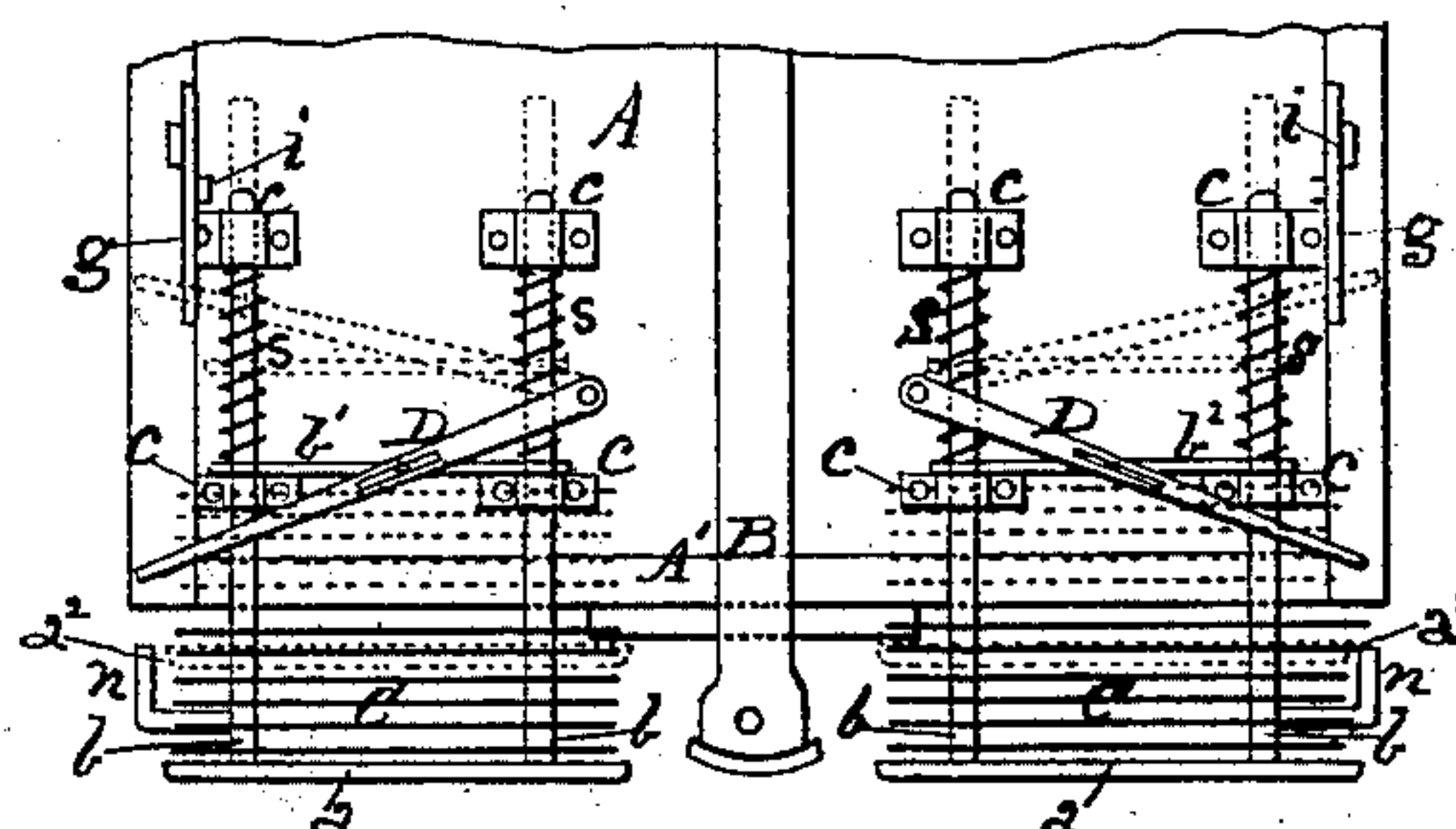


Fig. 5.

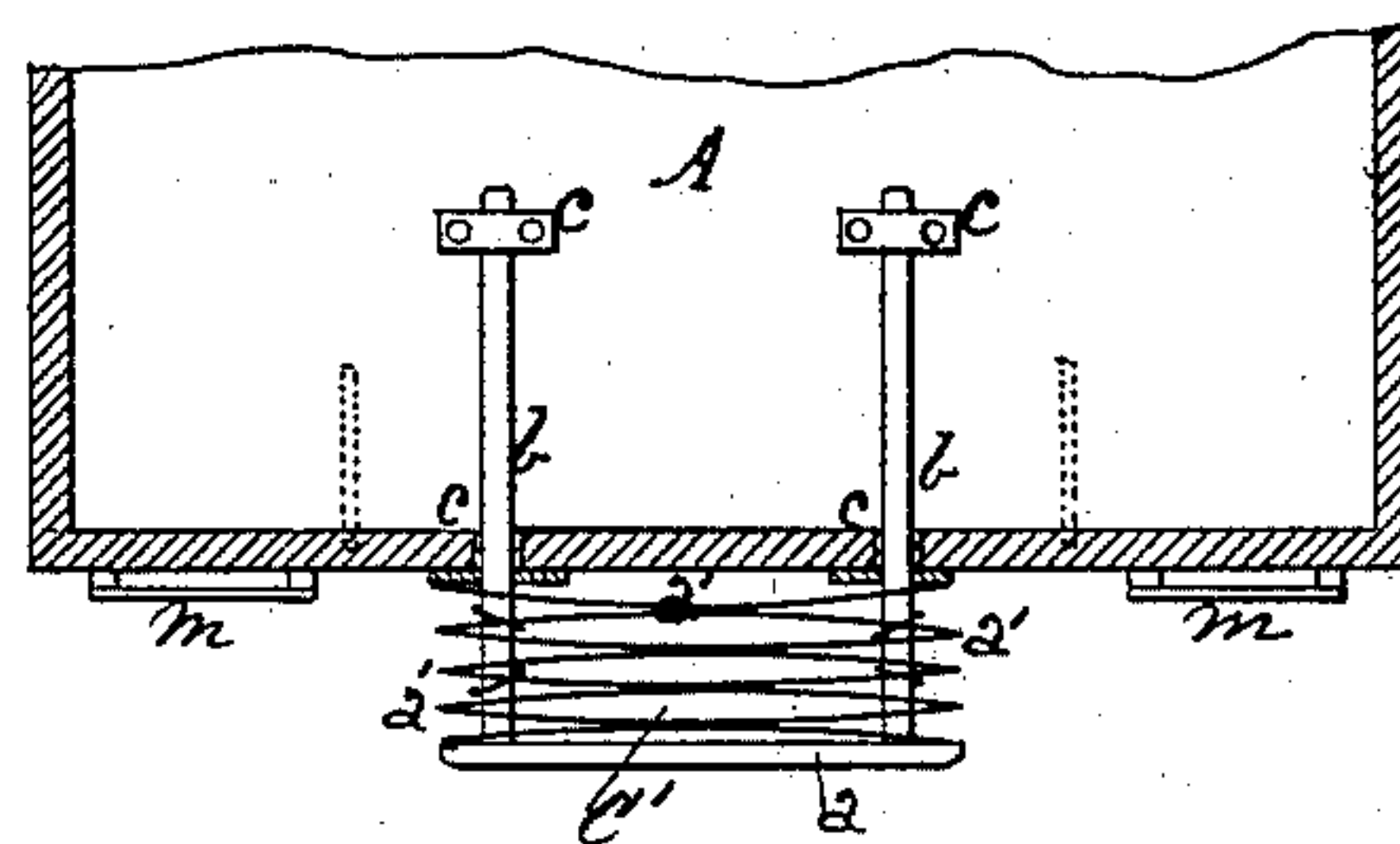
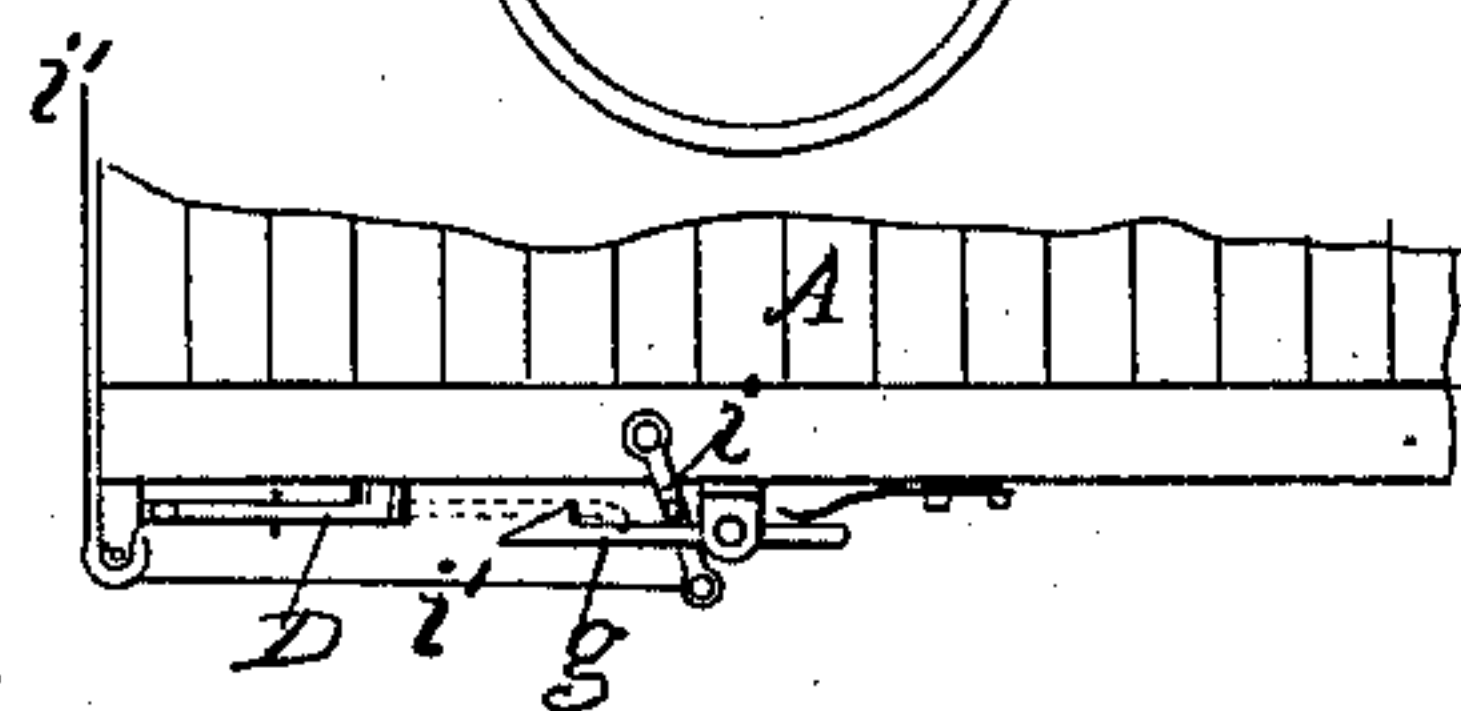


Fig. 6.



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# UNITED STATES PATENT OFFICE.

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TO GEORGE W. MORTON, CHARLES E. CREAL, HENRY VAN DEUSEN, AND  
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## CAR-PLATFORM.

SPECIFICATION forming part of Letters Patent No. 302,550, dated July 29, 1884.

Application filed February 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR C. FERGUSON, a citizen of the United States, residing at Saratoga, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Flexible Platforms for Freight-Cars, of which the following is a specification.

My invention relates to improvements in flexible or elastic platforms for freight-cars, in which the ends of the cars are provided with sectional platforms at each side of the draw-bars and at the roof, midway between the sides thereof, which platforms are adapted to form each a half of a whole platform between the neighboring fronts of two connected cars provided each with similar platforms.

The objects of my invention are to provide sectional elastic or flexible platforms, which will be in situations on a plane with the lower sill or the draw-bar of the car, with their supporting parts and mechanism operating the same below the lower side of the car; and also to provide a sectional elastic or flexible platform at or near the plane of the roof, and at the front end of the car, for co-operation with a similar platform, to produce a bridging from one car to another, that a safe passage may be had from one car to the other; and, further, to provide devices and combinations of devices, which will be hereinafter fully described and set forth, whereby the operations and purposes of these upper and lower platforms will be better effected and made more advantageous than heretofore in this class of platforms. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a plan view of two connected cars having my invention applied thereto, with floors of platforms removed. Fig. 2 is a front end of a car provided with my improvements. Fig. 3 is a side elevation illustrating two connected cars provided with my improvements. Fig. 4 is a view of the lower side of a car, with the lower platforms and their adjunctive parts connected therewith. Fig. 5 is a plan view from above of the upper platform in its arrangement of parts and connection with car, the roof being removed; and Fig. 6 is a side elevation illustrating the mech-

anism for holding the lower platform locked back and for releasing the same.

Similar letters of reference refer to similar parts throughout the several views.

In the drawings, A A are freight-cars (or opposite ends of a freight-car) having my improvements applied at both ends thereof.

B B are the draw-bars or coupling devices.

Arranged at the lower front sill, A', of the freight-car, and at each side of draw-bar B, are the lower or ground platforms, C C, and arranged at or near a line with the horizontal plane of the roof, and midway between the sides of the car, so as to occupy about one-third of the width of the car, is the upper or roof platform, C'. Each of these platforms C C and C' is composed of face-bar *a*, secured to the outer ends of the movable supporting-arms *b b*, held in connection with the car by sleeves *c c*. The sleeves *c c*, supporting arms *b b* of the lower platforms, C C, are secured to the lower side of the car, and those receiving and supporting the arms of the upper platform are secured to the roof (from its lower side) or to pieces connected therewith. Both the lower and the upper platforms are made to have an extension from the vertical plane of the front of the car outward to a distance about equal to one-half of the distance between the neighboring fronts or ends of two connected freight-cars, and each forms, substantially, a section or half of a whole platform between two cars having each similar platforms and connected together by draw-bars B B. The lower platforms have each a slat-form of floor, as shown, preferably formed of strips of iron of sufficient stiffness to sustain the weight of a man without bending; and the sleeves *c c* of these platforms are set back to a distance sufficient to permit the platform to be moved beneath the car to dotted lines *a''*, Figs. 3 and 4. These lower platforms are made flexible or yielding by means of springs *s*, working on arms *b b* between rear sleeves, *c c*, and a shoulder made or attached to said arms. Secured to arms *b b*, and yoking them together, is bar *b'*.

D is a lever pivoted horizontally beneath the car in direction across that in which arms *b b* move. This lever is connected to said bars by bar *b'* in any proper manner, so that when



the lever is moved from position shown in full lines to that of dotted lines in Figs. 3 and 4 the platform will be moved from position shown by full lines to that of dotted lines in the same figures, when the major portion of the platform will be beneath the car. A hook or latch, *g*, is also provided for holding lever *D* when in position, holding the platform back, and a tripping device, *i*, operated by a cord, *i'*, chain, or jointed draw-rod, operates to throw this latch or hook out of engagement with said lever. The latch or hook is held in position for engaging with lever *D* by a spring, and the tripping device I prefer to make in the form of a short lever pivoted to the lower side of the car, and provided with a pin bearing on the hook side of latch or hook *g*, as shown in Fig. 6. The cord *i'*, or its equivalent, may be extended up to the front of the car, if preferred, and by it the tripping device may be operated from either the side of the car or the front of the same.

By means of the levers *D* the lower platforms, *C*, may be moved back or rearward, each independently of the other, and be held back by hook *g*, so that a passage-way will be had between two connected cars.

Made with or secured to the outer arm, *b*, of each platform *C* is step-bracket *n*, having step *n'* made with its lower end. When the platform is thrown forward, this step will be in position to admit an operator to readily have a convenient passage from the ground to the floor of the platform.

The front of the car is provided with the usual ladder-cleats, *m m*, by which an operator may readily have passage to the roof of the car from platforms *C*.

*C' C'* are the roof-platforms, arranged about on a plane with the roofs, or as near as practical, in view of the curvature or incline of the same. These platforms are each arranged to be within or between the vertical lines of ladder-cleats *m m*, as shown in Fig. 2, and extend from the front of the respective ends of the car to a distance about equal to one-half of the whole distance between the fronts of two connected neighboring freight-cars, when they are at greatest distance apart, as when under a pulling strain, and together form a whole platform between the cars, over which the brakeman may walk with safety from one car-roof to the other. Each of these roof-platforms by itself forms a sectional or half platform, which is adapted to yield and contract in its floor-surface when its face-bar *a* is pressed back by the face-bar of the other and similar platform. The arms *b b* of each of these roof-platforms are supported at the front of the car from the roof-timbers by sleeves *c c*, or proper bearing-pieces. (Shown in Fig. 5.) The floor of this roof-platform is shown in Fig. 5 to be composed of a series of slightly-curved steel bars or strips, *a'*, arranged across the outwardly-projecting portions of supporting-arms *b b*, so as to produce a series of elliptic springs, having narrow interstices between

the bars, and thereby producing a yielding or elastic floor on which a person may safely walk. The use of this series of curved bars obviates the use of springs between the supporting-bars and rearward sleeves, as are shown to be employed with the ground-platforms *C*. These bars *a'* are held in place with arms *b b* by clips or ties, which will permit these curved bars to move on said arms when the floor of the platform is being contracted or extended.

In a former invention made by myself the ground-platforms are arranged on a plane above the draw-bars of the cars, and the moving supporting-bars worked in sleeves attached to the outer sides of the car, and the lever mechanism operating these platforms was also arranged at the sides of the car. In some cases—as when the cars run close to the sides of other cars, posts, or other objects—this mode of arrangement is objectionable, as the sleeves and the other mechanism might become injured thereby.

By my above-described improvements I secure the following advantageous results: The ground-platforms may each be separately moved back to beneath the car-floor, at the will of the operator, for opening a passage-way between the cars from one side to the other. The brakeman, by means of step *n*, may readily pass up from the ground to the ground-platform to have access to the coupling devices between the cars, and he may readily pass from the ground-platforms to the roof by means of ladder-cleats *m m*, the same as heretofore, as the roof-platforms *C'* are arranged horizontally between the vertical lines of said ladder-cleats, and do not obstruct the passage of a person either to the car-roof or from the same by the way of the series of ladder-cleats provided as above described. The brakeman, after reaching the roof by the way of the ladder-cleats, may have passage from one car-roof to the other, by walking on and over platforms *C' C'*, with as much safety as when walking on the car-roofs themselves. By constituting these platforms walking platforms or floors between the cars and on about a plane with car-roofs, as above described, I provide means by which is obviated the necessity of the brakeman jumping over the space between the cars to pass from one car-roof to the other, as heretofore required to be done with cars having a platform between them, but at a distance considerably below the plane of the car-roofs, for catching the brakeman when he falls. It will therefore be readily seen that by my improvement I provide means to prevent the brakeman from falling, which is of greater advantage for use than those platforms which will not prevent a person from falling, but only catch him after he has fallen.

My improvements are applicable to old freight-cars, and do not require any alterations to be made in construction when added thereto.

Having described my invention, what I



claim, and desire to secure by Letters Patent, is—

1. The combination and arrangement, with a front of a freight-car provided with ladder-cleats *m m*, of the yielding platform *C'*, supported horizontally on a line with the plane of the roof by arms *b b*, working in sleeves *c c*, secured to the roof, and situated between the vertical lines of said ladder-cleats, whereby the said platform will permit passage from the ground to the roof, and serve as a section of a whole bridge between a neighboring connected car provided with a similar platform, for the safe passage of a brakeman from one car to another, whether the platform is distended or contracted, substantially as set forth.

2. The combination and arrangement, with two connected neighboring freight-cars, of the separate and independent platforms *C' C'*, supported each at near the horizontal plane of the respective car-roofs, and between the vertical lines of ladder-cleats *m m*, by arms *b b*, working in sleeves *c c*, secured to the roof, with the face-plates of each platform having bearing against that of the other, substantially as and for the purposes and operation set forth.

3. The combination, with elastic or flexible platform *C*, arranged in situation about on a plane with the lower front sill of a freight-car, and adapted to be moved toward or from the front of the same, of step *n'*, attached to the outer supporting-arm of the platform, substantially as and for the purposes set forth.

4. The combination, with sectional elastic or

flexible platform *C*, having its supporting-arms *b*, working in sleeves secured to the lower side of the freight-car, of lever *D*, pivoted to the lower side of the car and connected with said supporting-arms, and hook *g*, and mechanism for releasing said hook from engagement with said lever at will of the operator, substantially as and for the purposes set forth.

5. An elastic or flexible platform, which forms a section or half of a whole bridge or platform between the neighboring ends of two connected cars, composed of a face-bar, *a*, supporting-arms *b b*, working loosely in sleeves connected with the lower side of the car-roof, and a floor composed of a series of curved steel bars, *a'*, set edgewise across the supporting-bars, substantially as and for operations and purposes set forth.

6. The combination, with an end of a freight-car provided with ladder-cleats *m*, of two lower elastic or flexible platforms, *C C*, and upper elastic or flexible platform, *C'*, the former being situated on a plane substantially about with that of the lower front sill of the car, and the latter on about the plane with the roof of the car, and each platform forming, substantially, a section or half of a whole bridge between two connected cars, substantially as and for operations set forth.

ARTHUR C. FERGUSON.

Witnesses:

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