

No. 682,402.

Patented Sept. 10, 1901.

F. H. CLARK.  
DRAFT RIGGING FOR RAILWAY CARS.

(Application filed Aug. 20, 1900.)

(No Model.)

2 Sheets—Sheet 1.

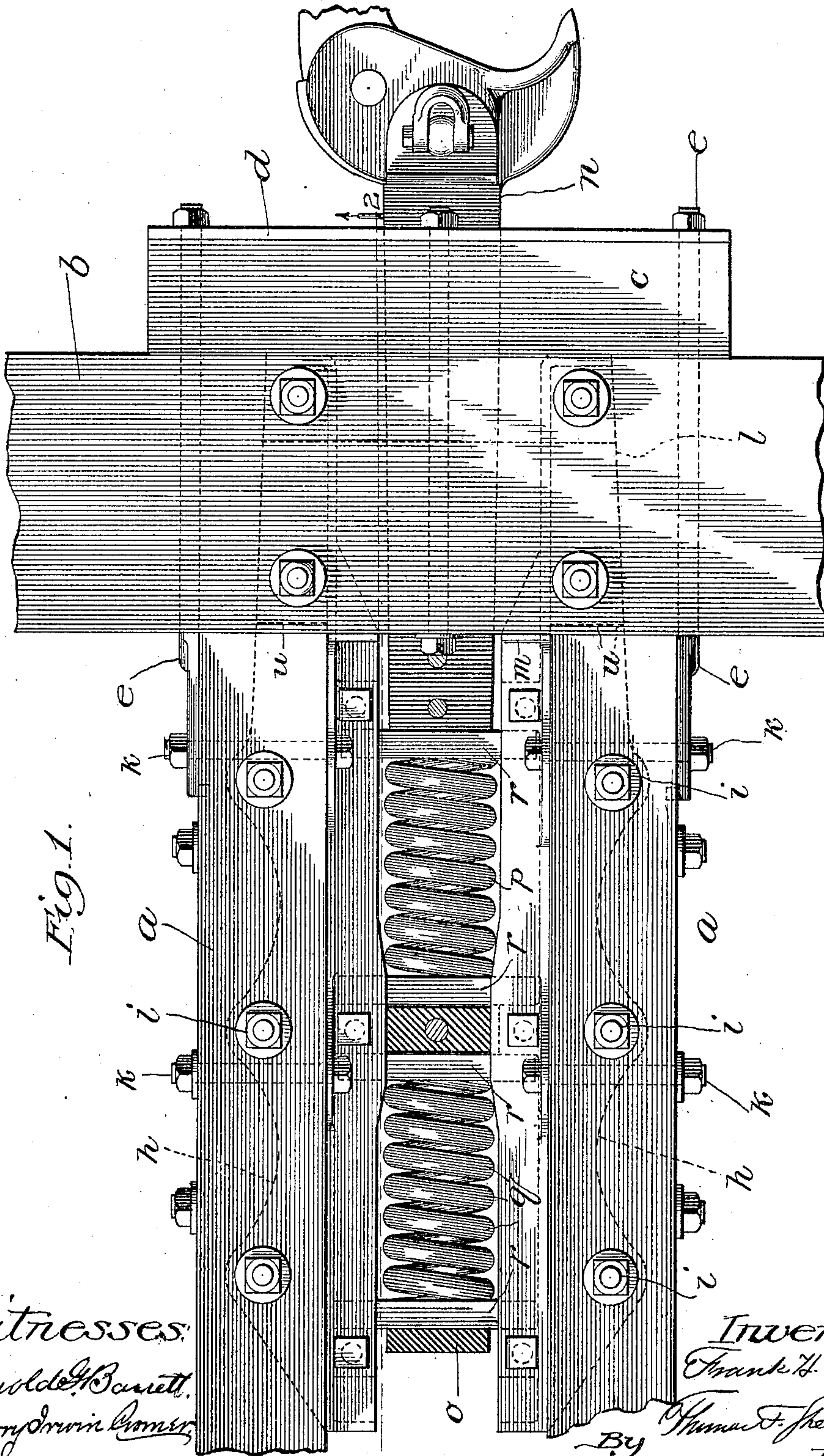


Fig. 1.

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Carroll H. Bassett.  
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Inventor  
Frank H. Clark  
By Thomas F. Sheldahl  
Att'y.



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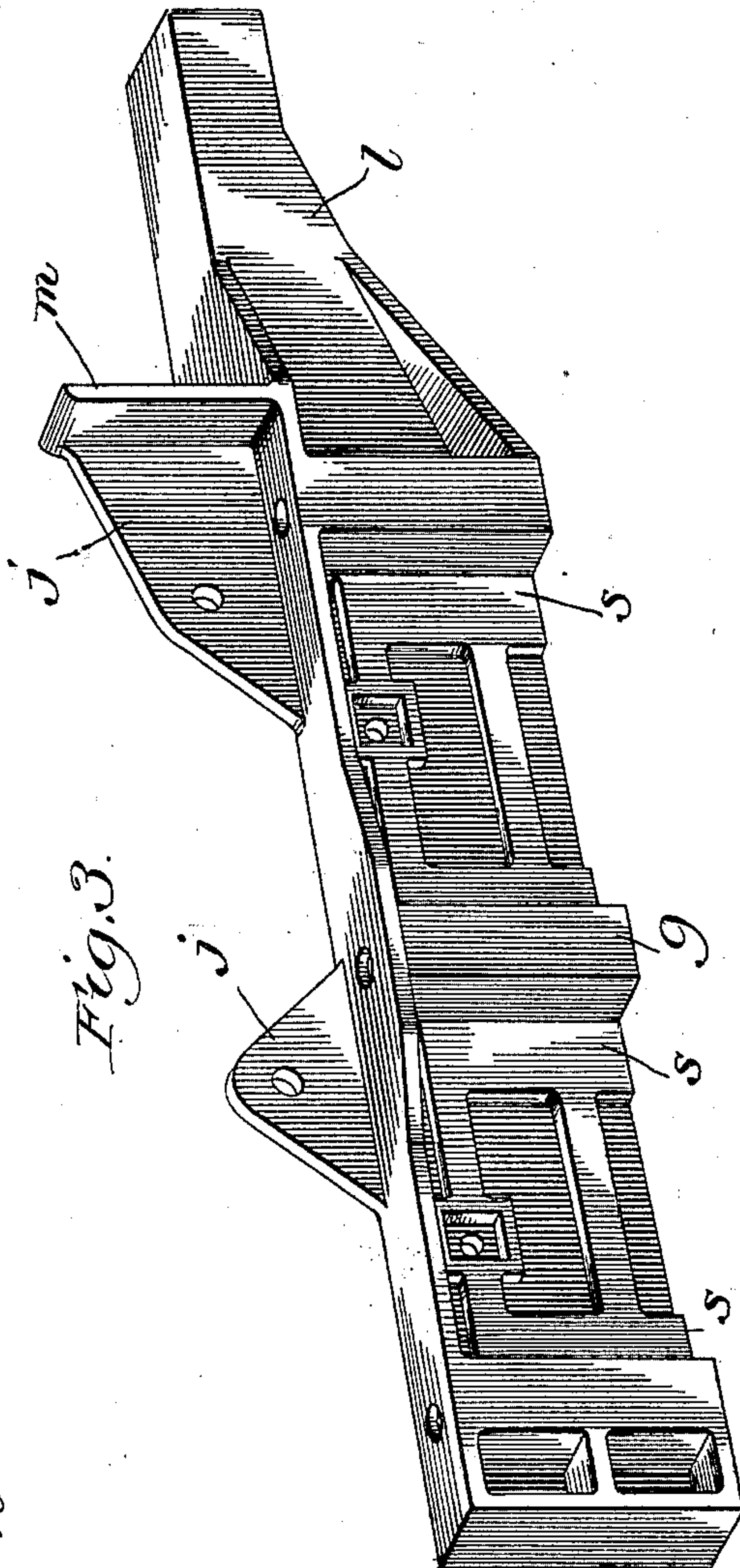
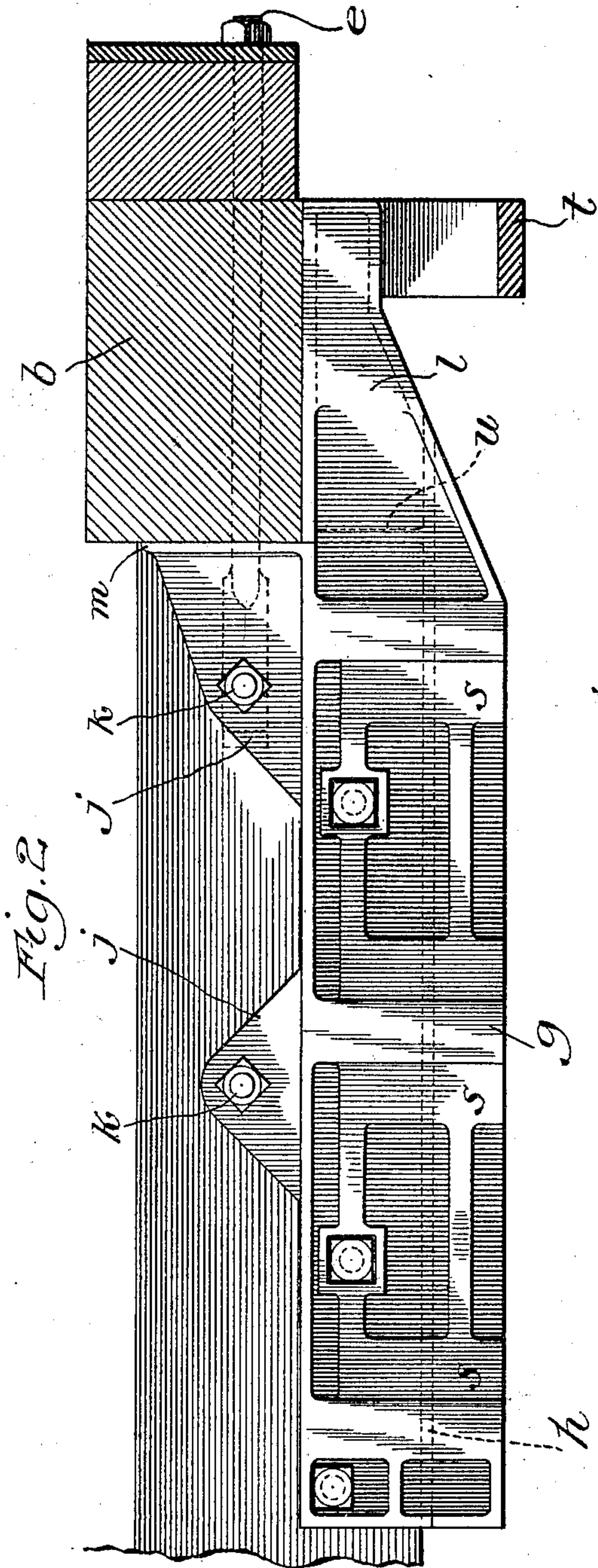
**F. H. CLARK.**

# DRAFT RIGGING FOR RAILWAY CARS.

(Application filed Aug. 20, 1900.)

(No Model.)

**2 Sheets—Sheet 2.**



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# UNITED STATES PATENT OFFICE.

FRANK H. CLARK, OF CHICAGO, ILLINOIS.

## DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 682,402, dated September 10, 1901.

Application filed August 20, 1900. Serial No. 27,408. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK H. CLARK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft-Rigging for Railway-Cars, of which the following is a specification.

The invention relates particularly to the means by which the draw-bar, follower-plates, and spring mechanism are held in position, and especially to the construction and arrangement of the sill-plate or draft-arm by which the end sill is supported and the follower-plates, springs, &c., are held and guided in position, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a draft-rigging with a simple, economical, and efficient sill-plate that will obviate the necessity of cutting and which is arranged to support the end sill in position; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a draft-rigging known as the "Miner" draft-rigging, constructed and arranged in accordance with my improvements, looking at it from the top; Fig. 2, a longitudinal sectional elevation, taken on line 2 of Fig. 1, looking in the direction of the arrow and showing the sill-plate and carry-iron in position, with all the other parts removed; and Fig. 3, a perspective view of the sill-plate removed from its connection with the end and longitudinal sills looking at it from the front or inner side.

In the art to which this invention relates it is well known that the usual end sills are mortised to receive the ends of the longitudinal sills and that in the case of "low-hung" cars the draw-bar cuts through the end sill, which is also bored for the purpose of passing the truss-rod through the same, all of which very much weakens the end sill. The weakest dimension of such sill as usually arranged is horizontal, although its greatest required strength, in order to distribute the shocks of buffing and pulling and take the strains of the truss-rods, is horizontal.

The principal object, therefore, of this invention is to provide a draft-rigging which

will dispense with the necessity of mortising the end sills and which will support such end sills efficiently in position and in line to give the horizontal the greatest strength and at the same time permit the draw-bar or draft-rigging to be used in low-hung cars without cutting through the same, all of which will more fully hereinafter appear.

In illustrating and describing my improvements I have only illustrated and described that which I consider to be new, taken in connection with so much that is old as will properly disclose the invention and enable those skilled in the art to practice the same, leaving out of consideration other and well-known mechanisms which if described here would only tend to confusion, prolixity, and ambiguity. It will also appear from an examination of the drawings and the following description that I have shown my improvements in connection with but one type of draft-rigging; but it will be understood that it is applicable to almost any draft-gear with very slight changes in construction and arrangement, such as may be made with the use of ordinary mechanical skill and without departing from the spirit of the invention.

In constructing my improvements I use the ordinary longitudinal center sills *a a*, arranged, as suggested, at or near and in line with the longitudinal center of the car. These longitudinal sills abut against the end sills *b*, one only of which is shown, and which may be arranged so that its major diameter in cross-section is in a horizontal plane, as clearly shown in Fig. 2. The upper portion of this end sill is arranged, preferably, in the same horizontal plane with the upper surface of the longitudinal sills, and outside of the end sill is arranged the ordinary buffing-timber *c*, provided with a wear-plate *d*. The buffing-timber is held in position by means of bolts *e*, which are secured to and embedded in the longitudinal sills and pass through the end sill and buffing-timbers. Truss-rods of the usual construction and arrangement (not shown) are used and passed through each from end sill to end sill, with nuts on the outside, so as to tie such end sills together, and thus assist in distributing the stress and strains incident to use throughout the car.

In order to hold the end sill in position as



above outlined and to carry the draft-rigging in a simple, economical, and efficient manner, two sill-plates or draft-arms *g* are provided, one on each longitudinal sill, having  
 5 flanges *h*, which are passed underneath the longitudinal sill and secured in position by means of bolts *i*, and having flanges *j* extending upwardly therefrom and secured to the sides of the longitudinal sills by means of bolts *k*.  
 10 These sill-plates are provided with forwardly-extending portions *l*, having shoulder-flanges *m* extending upwardly at right angles therefrom at a desired distance back of the front end of the extending portion. This front extending portion, with its shoulder-flange,  
 15 forms a bracket or seat, in which the end sill *b* may be placed and on which it may be supported, which acts to keep it from tipping over or pointing downward, and thus materially assists in presenting the strongest cross-section of the end sill to resist the shocks of buffing and pulling and in taking up the major portion of the strains of the truss-rods.

A draw-bar *n* of the usual construction is  
 25 provided and rests upon the usual carry-iron *t*. It is also provided with a strap *o*, passed backwardly and around the springs *p* and *q*, while its follower-plates *r* are movably held in position in seats or pockets *s* of the sill-plate, all of which is old, well known, and  
 30 thoroughly understood by those skilled in the art, and therefore needs no further detailed description here. The back side of the sill-plate, Fig. 2, is provided with the horizontal  
 35 flange *h*, above referred to, by which it is secured to the under side of the longitudinal sill, and in addition to this flange is provided with a vertical flange *u*, arranged to abut against the end of the longitudinal sill, so  
 40 that the longitudinal sill in a measure absorbs part of the buffing strains.

The principal advantages incident to the use of my improvements are, first, the sill-plates or draft-arms are extended under-  
 45 neath, so as to carry the end sill on a bracket, thus performing the office of a sill-pocket and avoiding the necessity of mortising the center sills into the end sill; second, all pulling strains are directly against the end sills, as  
 50 well as the center sills, and through the end sill are distributed to all the sills in the car; third, the strains of buffing are transmitted through the end sill by the horn-block of the coupler directly to the center and all of the  
 55 sills; fourth, the buffing is, however, also carried by the sill-plates directly against the ends of the center sills; fifth, the construction permits the use of a shallow but wide and deep sill, thus avoiding on low-hung cars  
 60 cutting through or notching and weakening the end sill for the draw-bar, and, sixth, the usual end sill of seven by eight to eleven inches in cross-section can be used with its major diameter horizontal and in the line of  
 65 greatest required strength.

I claim—

1. The combination with a longitudinal sill,

and an end sill the major diameter of the cross-section of which is arranged in a horizontal plane and the bottom face of which  
 70 lies in a plane above the bottom face of the longitudinal sill, of a sill-plate secured to said longitudinal sill and a part of the body of which extends up beside said longitudinal  
 75 sill, said plate having a part extending forwardly above the plane of the bottom of the longitudinal sill and beneath and supporting said end sill, substantially as described.

2. The combination with longitudinal sills, and an end sill the bottom face of which lies  
 80 in a plane above the bottom faces of the longitudinal sills, of opposite sill-plates a part of the bodies of which plates extend up between and are secured to said longitudinal sills, said  
 85 plates having parts extending forwardly above the plane of the bottoms of the longitudinal sills and beneath and supporting said end sill, substantially as described.

3. In mechanisms of the class described, the combination of longitudinal sills, an end sill  
 90 arranged so as to abut against the end thereof and with its major diameter arranged in a horizontal plane, whereby the bottom face of the end sill lies in a horizontal plane above the  
 95 bottoms of the longitudinal sills, and a cheek-piece secured to each longitudinal sill provided with a body portion secured to and extending up between the longitudinal sill and  
 100 a forwardly-projecting portion supporting the end sill to prevent it from tipping and provided with longitudinal and vertical flanges on the rear sides thereof engaging with the  
 105 lower surface and ends of the longitudinal sill to transmit the buffing strains to such sill, substantially as described.

4. In mechanisms of the class described, the combination of longitudinal sills, an end sill  
 110 having the major diameter of its cross-section arranged in a horizontal plane and abutting against the ends of the longitudinal sills, whereby the bottom face of the end sill lies  
 115 in a horizontal plane above the bottoms of the longitudinal sills, and metal pieces secured to and extending up between the longitudinal sills and forming sill-pockets secured to the longitudinal sills and provided  
 120 with forwardly-projecting portions passed underneath to support the end sill and prevent tipping or drooping of the same and to transmit strains of buffing and pulling to the longitudinal sills, substantially as described.

5. The combination with an end sill and longitudinal sills abutting thereagainst at their  
 125 ends and having their bottom faces extended downwardly below the bottom face of the end sill, of sill-plates or draft-arms located between said longitudinal sills and secured thereto, said sill-plates or draft-arms having  
 130 forwardly-extending portions extending beneath and supporting said end sill, substantially as described.

6. The combination with an end sill and longitudinal sills abutting thereagainst at their ends and having their bottom faces extended



downwardly below the bottom face of the end sill, of sill-plates or draft-arms having body portions extending up between and secured to said longitudinal sills, said sill-plates or  
5 draft-arms having forwardly-extending portions lying beneath and supporting said end sill, substantially as described.

7. The combination with an end sill and longitudinal sills abutting thereagainst at their  
10 ends and having their bottom faces extended downwardly below the bottom face of the end sill, of sill-plates or draft-arms having hori-

zontal flanges *h* below their tops adapted to engage the under faces of said longitudinal sills and also having substantially vertical  
15 flanges *u* adapted to engage the lower portions of the ends of the longitudinal sills, said sill-plates or draft-arms having portions extending forwardly beneath and supporting said end sill, substantially as described.

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Witnesses:

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