

No. 663,463.

Patented Dec. 11, 1900.

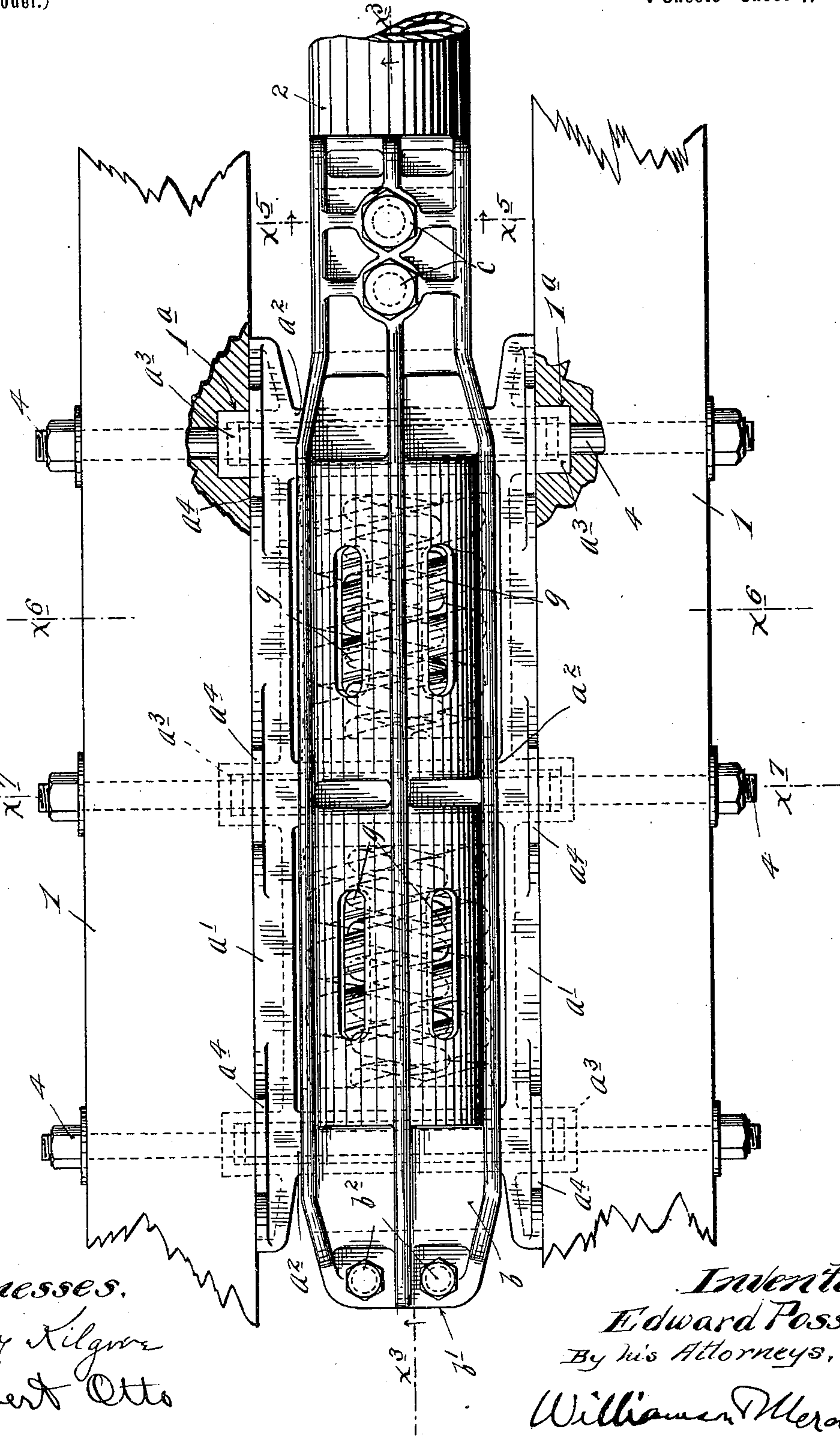
E. POSSON.  
DRAFT RIGGING FOR CARS.

(Application filed June 21, 1900.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.



Witnesses.  
Harry Kilgore  
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By his Attorneys,  
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Fig. 2.

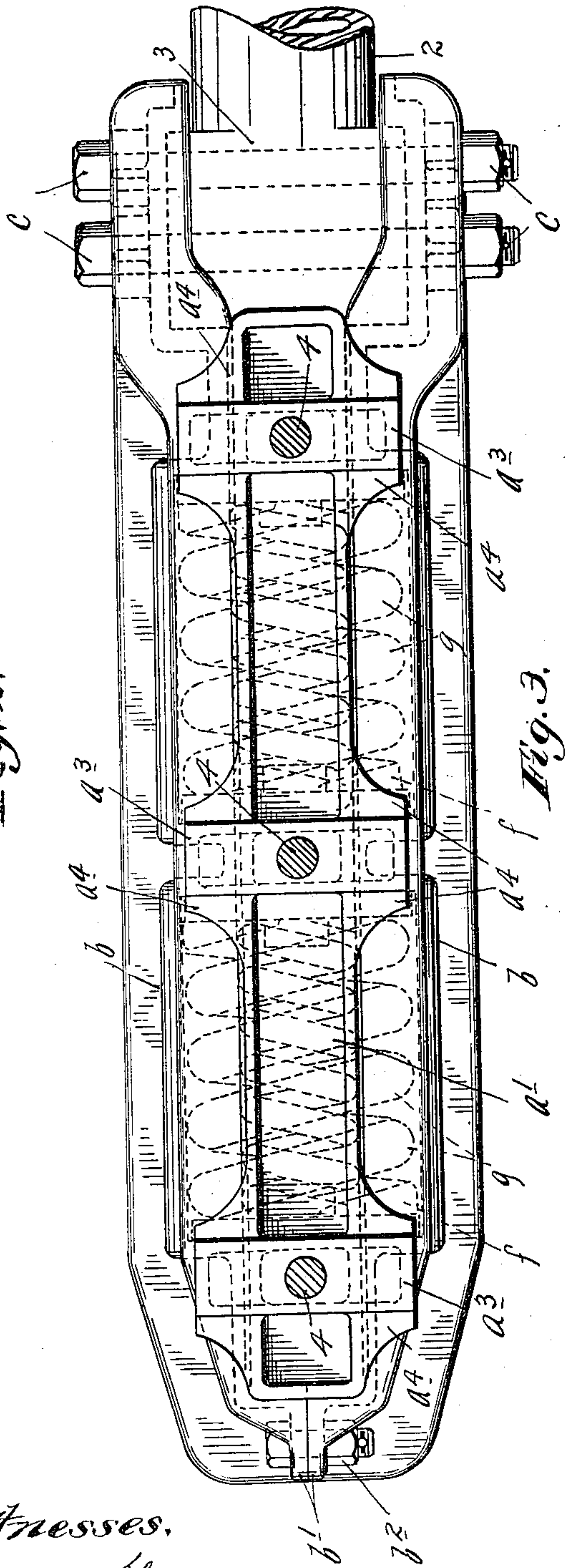
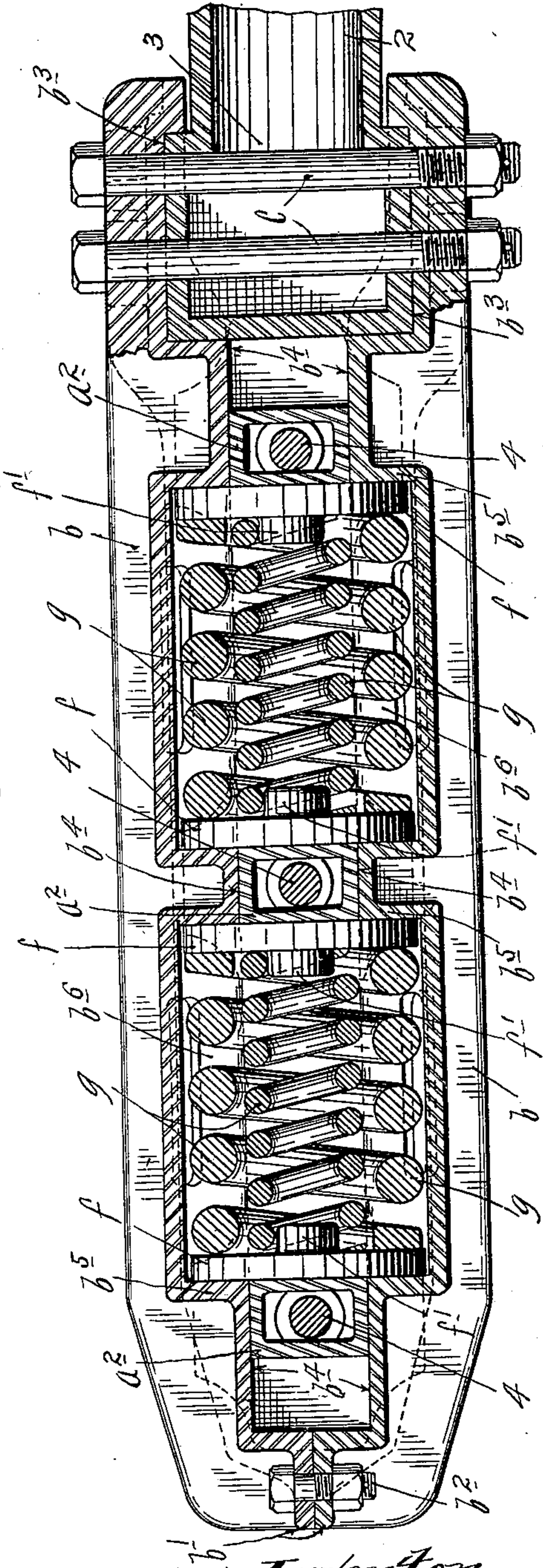


Fig. 3.



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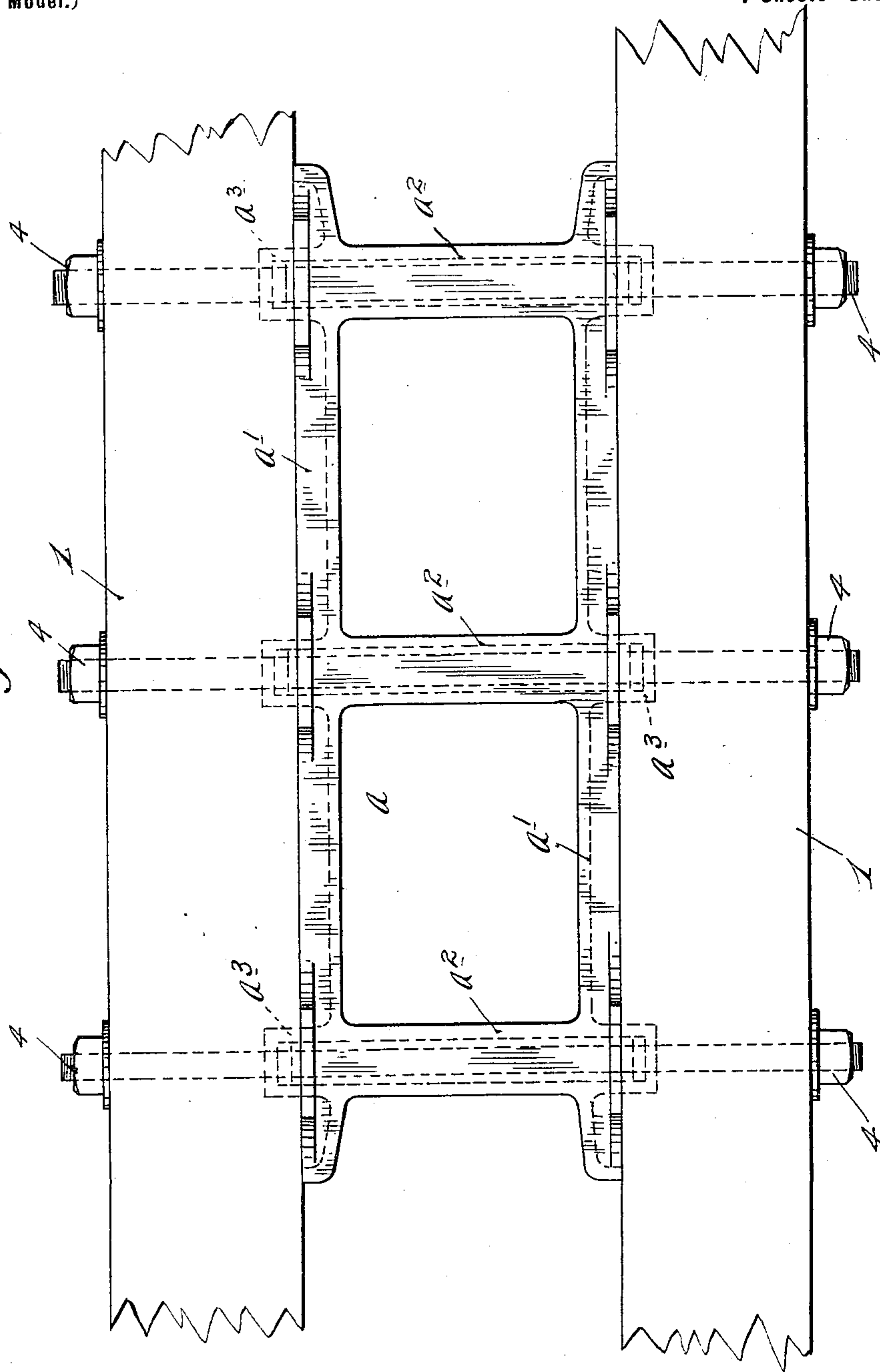
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Fig. 4.



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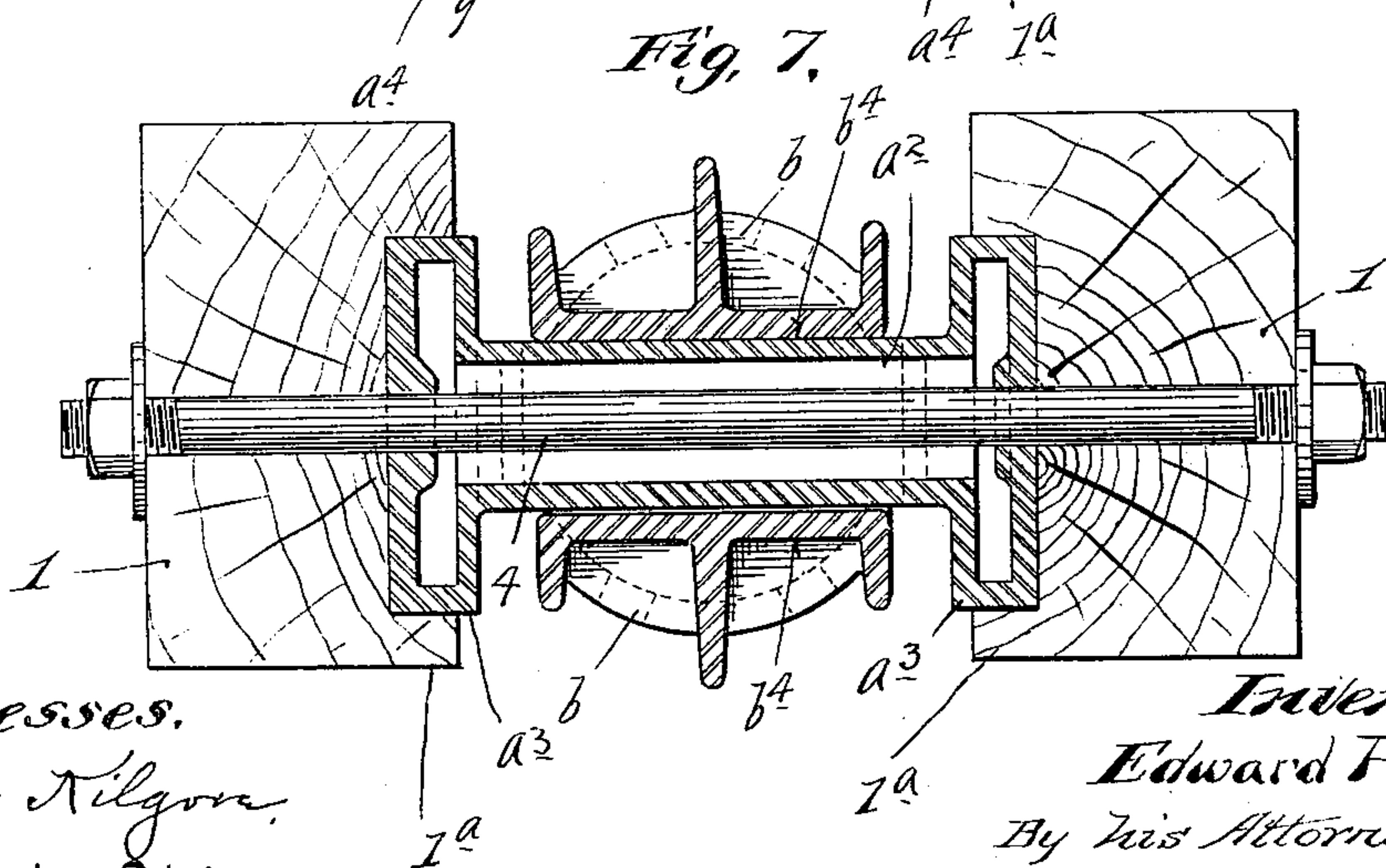
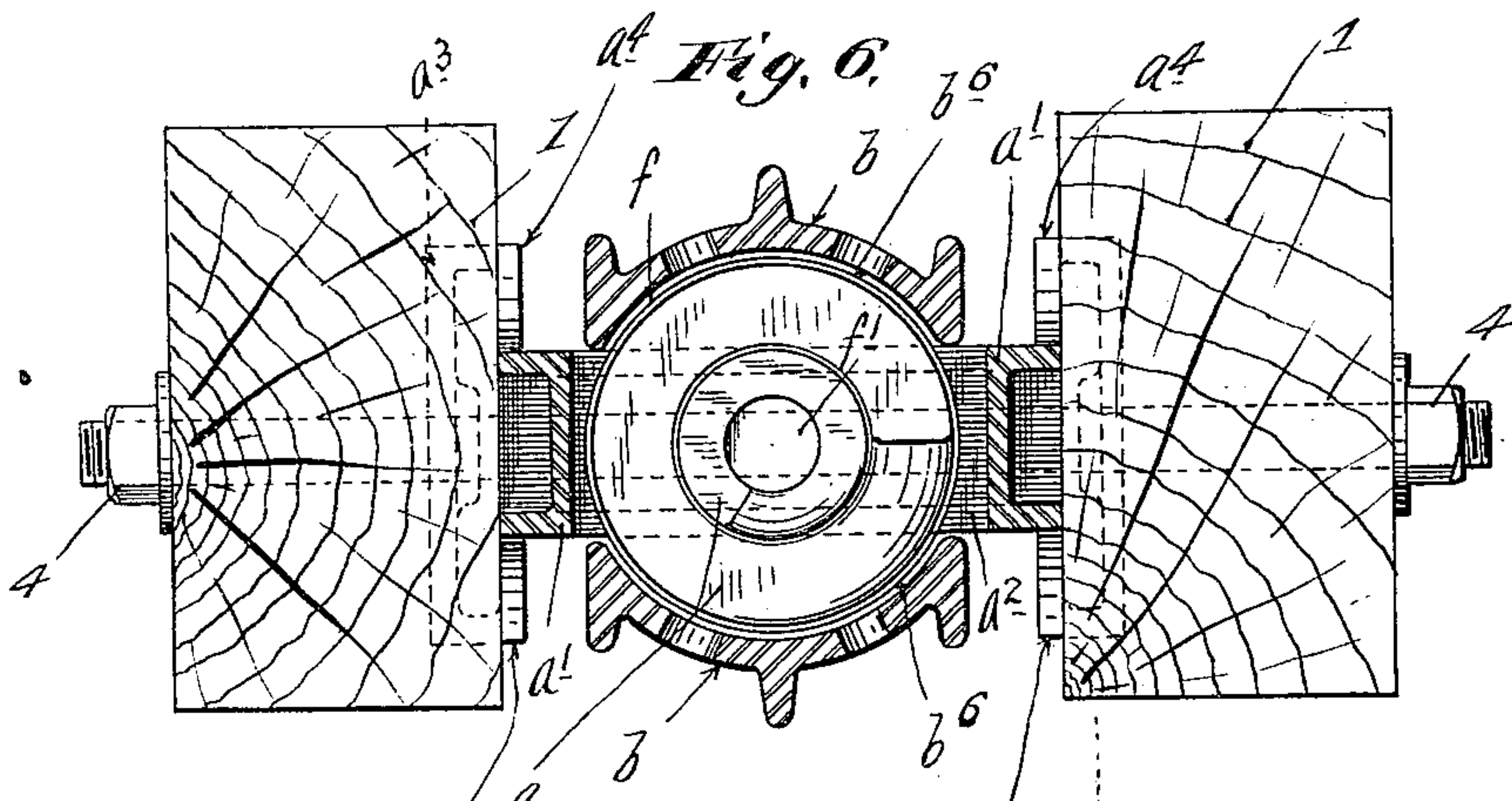
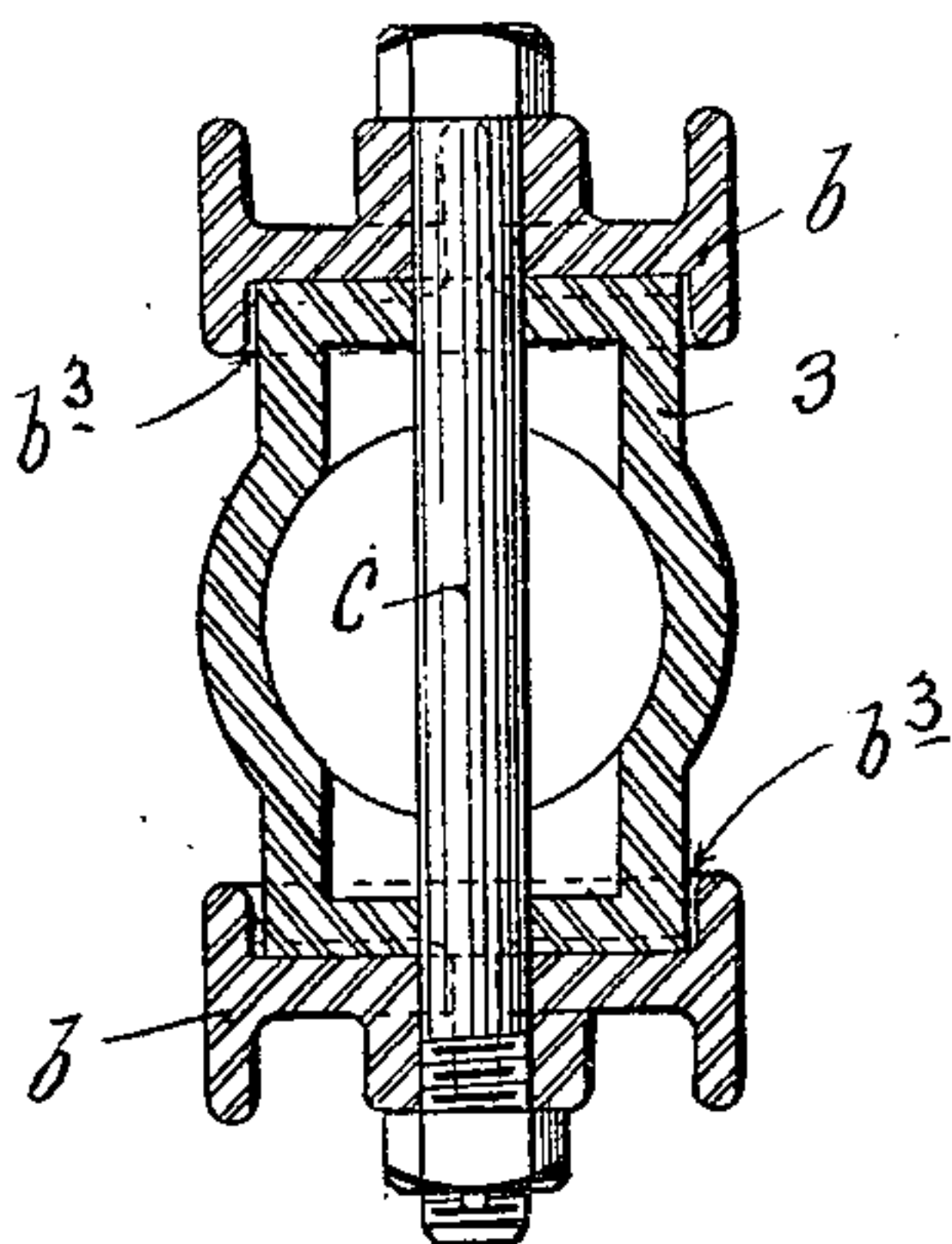
E. POSSON.  
DRAFT RIGGING FOR CARS.

(Application filed June 21, 1900.)

(No Model.)

4 Sheets—Sheet 4.

*Fig. 5.*



*Witnesses.*  
*Harry Tilgner.*  
*Robert Otto*

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*By his Attorneys.*  
*William M. Merchants*



# UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF ST. PAUL, MINNESOTA, ASSIGNOR OF ONE-HALF TO  
ALFRED LOVELL, OF SAME PLACE.

## DRAFT-RIGGING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 663,463, dated December 11, 1900.

Application filed June 21, 1900. Serial No. 21,080. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD POSSON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Draft-Rigging for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its object to provide an improved draft-rigging for cars; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view of the improved draft-rigging, some parts being broken away. Fig. 2 is a side elevation of the draft-rigging with one of the draft-timbers removed and some of the parts sectioned. Fig. 3 is a vertical longitudinal section taken approximately on the line  $x^3 x^3$  of Fig. 1. Fig. 4 is a plan view showing the draft-timbers and the so-called "draft bridge or frame," other parts of the draft-rigging being removed. Fig. 5 is a vertical section on the line  $x^5 x^5$  of Fig. 1. Fig. 6 is a transverse section on the line  $x^6 x^6$  of Fig. 1, and Fig. 7 is a transverse vertical section on the line  $x^7 x^7$  of Fig. 1.

The numeral 1 indicates the draft-timbers of the car-body, and the numeral 2 indicates the draft-bar of the coupler, which draft-bar is shown as terminated at its inner end in an approximately cubical head 3. In this construction I employ what I term a "draft bridge or bridges draft-frame" in lieu of the ordinary draft-box. This draft-bridge is in the drawings illustrated as designed for a tandem arrangement of springs and followers and is indicated as an entirety by the letter  $a$ , the same being made up principally of longitudinally-extended parallel side bars  $a'$ , connected by transversely-extended and integrally-formed hollow beams  $a^2$ , against which the strains communicated to the followers are thrown, as hereinafter described. On their outer faces and in line with the ends

of the bridge-beams  $a^2$  the side plates or bars  $a'$  are formed with vertically-elongated lugs or projections  $a^3$ , that fit countersunk seats  $1^a$  in the form of vertical grooves cut in the inner faces of the draft-timbers 1 and opening at the lower edges thereof, so as to permit the draft-bridge to be placed in working position by forcing the same upward between the draft-timbers. Flanges  $a^4$  preferably run from the tops of the upper and bottoms of the lower portions of the lugs  $a^3$  to the adjacent edges of the draft-plates  $a'$ . Heavy nutted bolts 4 are passed transversely and horizontally through the draft-timbers 1 and through the aligned lugs  $a^3$  and beams  $a^2$  of the draft-bridge  $a$ . These bolts, however, receive but little of the draft and bumping strains, as such strains are taken principally by the countersunk or embedded lugs  $a^3$ .

The draft-yoke or stirrup extension of the draft-bar 2 is made up of two sections  $b$ , united at their inner ends at  $b'$  by means of short nutted bolts  $b^2$  or other suitable devices, and at their forward ends they are formed with pockets  $b^3$ , that receive and closely fit the upper and lower portions of the cubical head 3 of the draft-bar 2. Vertically-disposed and nutted bolts  $c$  are passed through the outer ends of the stirrup-sections  $b$  and through the head  $b^3$  of the draft-bar 2 to detachably but rigidly secure said parts together. Again, at this point the draft and bumping strains are taken principally between the head 3 and the pockets  $b^3$  of the stirrup-sections  $b$ , and thus the bolts  $c$  are relieved to a very considerable extent from the sheering strains that would otherwise be put upon them.

When the stirrup or draft-yoke  $b$  is applied in working position, it completely embraces longitudinally and in a vertical plane the so-called "draft-bridge"  $a$ , and it is provided in the vicinities of the transverse beams  $a^2$  of said draft-bridge with upper and lower bearing-surfaces  $b^4$ , that closely engage the said beams  $b^2$  and guide the draft-bar and its stirrup for longitudinal movements in a horizontal plane, while permitting the same slight oscillations in a horizontal plane. The guide-surfaces  $b^4$  terminate in outwardly-extended shoulders  $b^5$ , against which the followers  $f$  are pressed by coiled springs  $g$ . The followers  $f$



are preferably circular in form, and to form pockets to receive and guide the said followers  $f$  and the springs  $g$  the yoke-sections  $b$  are formed between the opposing shoulders  $b^5$  with segmental seats  $b^6$ . Advisably the followers  $f$  are formed with hubs  $f'$ , which engage and hold in place the inner coils of the cooperating springs  $g$ .

The inner shoulders  $b^5$  are spaced apart the length of the central guide-surfaces  $b^4$ , so that the two intermediate followers  $f$  are normally held against or close to the opposite sides of the central beam  $a^2$  of the draft-bridge  $a$ . The outer guide-surfaces  $b^4$  of the stirrup-sections  $b$  are much longer than the outer bridge-beams  $a^2$  are wide, so that these movements of the draft-bar and its yoke which are necessary under the bumping and draft strains are permitted and the shocks are all taken upon or cushioned by the springs  $g$ . The distance between the shoulders  $b^5$  at the terminals of the segmental seats  $b^6$  is equal to the distance between adjacent bridge-beams  $a^2$ , so that normally the outer followers  $f$  are pressed against or stand close to the inner sides of the outer bridge-beams  $a^2$ .

With the above construction it will be obvious that both the bumping and draft strains will be thrown simultaneously onto both of the springs and that all of such strains will be transmitted through the said springs and the followers  $f$  to the transversely-extended beams  $a^2$  of the draft bridge or frame  $a$ .

The above-described draft-rigging is applicable either to a car having draft-timbers or to a car in which no draft-timbers are provided, in which latter case the draft-bracket would be directly secured to the center sills of the car.

In the preferred construction above described both the draft bridge or frame and the draft yoke or stirrup are illustrated as of malleable iron, and they are consequently ribbed and cored out so that all parts thereof are comparatively thin, as is required for malleable-iron construction. The said parts might, however, as well be of cast-steel.

The draft-rigging above described may be removed from the car as an entirety by withdrawing the bolts 4 and forcing the bridge or frame  $a$  downward. It may be applied in working position after the parts are put together by reverse action. The draft-bar may be removed from working position without removing the bridge or frame  $a$  simply by separating the sections  $b$  of the yoke or stirrup.

It will of course be understood that the draft-rigging above described is capable of considerable modification within the scope of

my invention and that it is not limited to the tandem arrangement of the springs and followers.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with an integrally-formed skeleton draft bridge or frame anchored between timbers of the car, of a draft-bar having a yoke or stirrup embracing said draft-bridge in a vertical plane, and draft-springs and followers cooperating with said bridge and stirrup and held in working positions thereby, substantially as described.

2. The combination with the integrally-formed skeleton draft-bridge having integrally-formed transverse beams  $a^2$ , of a draft-bar having a yoke or stirrup embracing the said bridge-beams  $a^2$ , bolts passed through said bridge-beams  $a^2$  and the car-beams to which said bridge is secured, and draft-springs and followers compressed between said bridge-beams  $a^2$  and shoulders on the said yoke or stirrup, substantially as described.

3. The combination with a horizontally-extended draft bridge or frame having transverse beams  $a^2$ , of a draft-bar provided with a separable draft yoke or stirrup embracing said bridge-beams  $a^2$  and formed with segmental follower-seats, circular followers within said seats cooperating with said bridge-beams and shoulders of said stirrup, and a spring or springs compressed between said followers, substantially as described.

4. The combination with the integrally-formed draft-bridge  $a$  having the transverse beams  $a^2$ , of the draft-bar provided with the separable yoke or stirrup  $b$  having the bearing-surfaces  $b^4$ , shoulders  $b^5$  and spring-seats  $b^6$ , the followers  $f$  within said seats  $b^6$ , and the springs  $g$  pressing said followers against said shoulders  $b^5$ , substantially as described.

5. The combination with the horizontally-extended and integrally-formed skeleton draft bridge or frame  $a$  having the transverse beams  $a^2$  and vertically-extended lugs  $a^3$ , of bolts passed through said beams  $a^2$  and lugs  $a^3$ , for the purpose set forth, the draft-bar 2 having a separable yoke embracing said bridge-beams  $a^2$  and supported thereby, and springs and followers seated in said draft-yoke and cooperating with said bridge-beams  $a^2$ , substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD POSSON.

Witnesses:

M. M. McGRARY,  
F. D. MERCHANT.