

No. 880,516.

R. D. GALLAGHER, JR.

PATENTED MAR. 3, 1908.

DRAFT AND BUFFING RIGGING FOR RAILWAY CARS.

APPLICATION FILED OCT. 1, 1906.

4 SHEETS—SHEET 1.

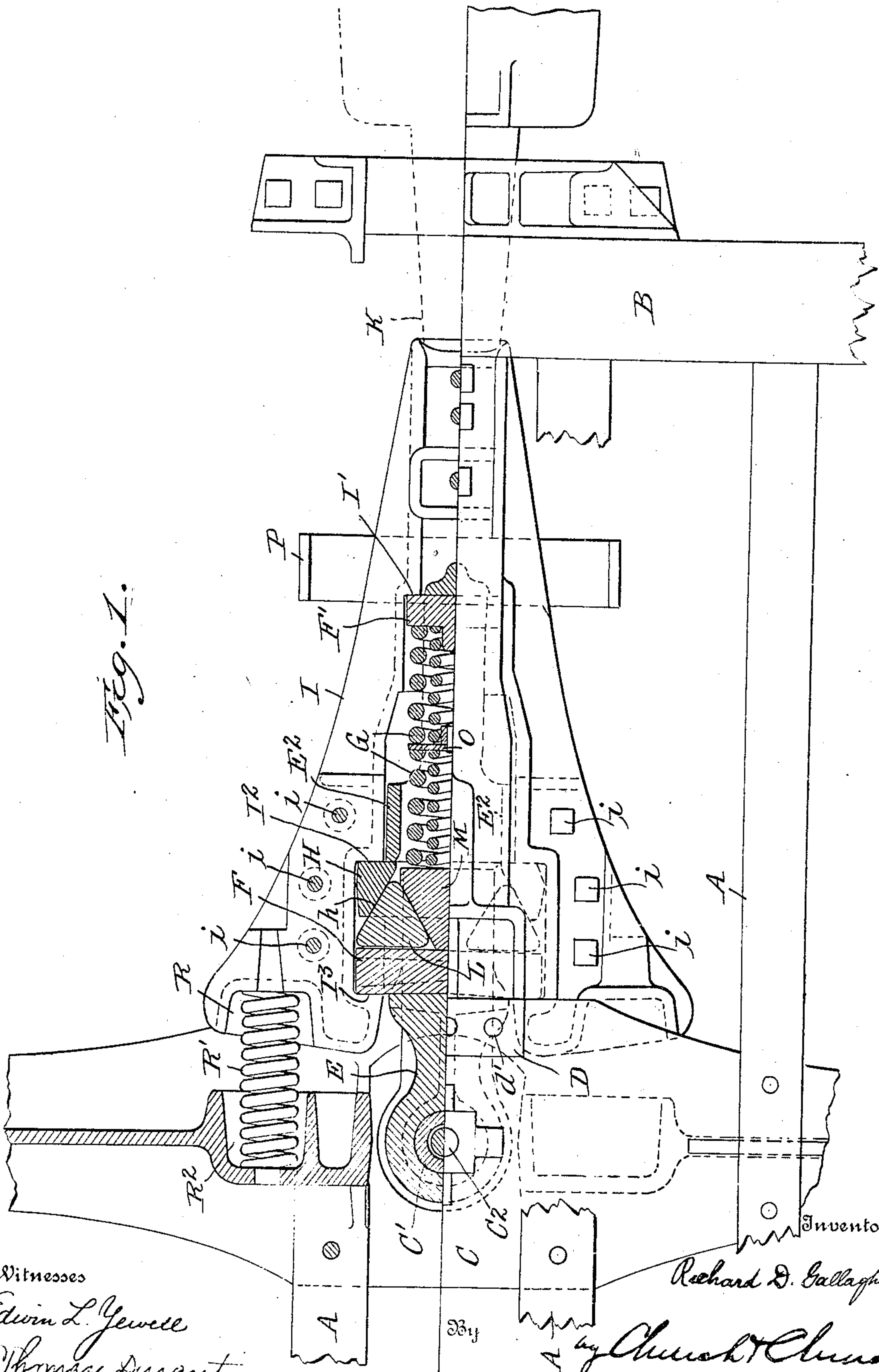


Fig. 1.

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4 SHEETS—SHEET 2.

Fig. 2.

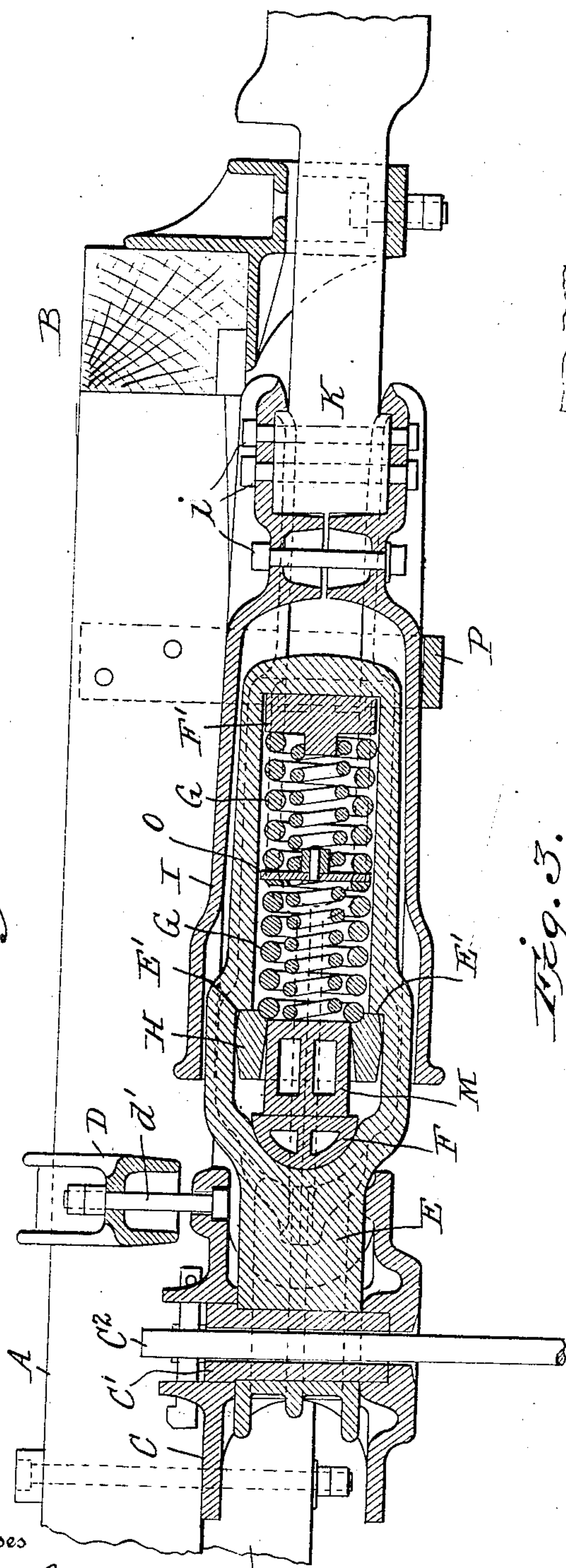
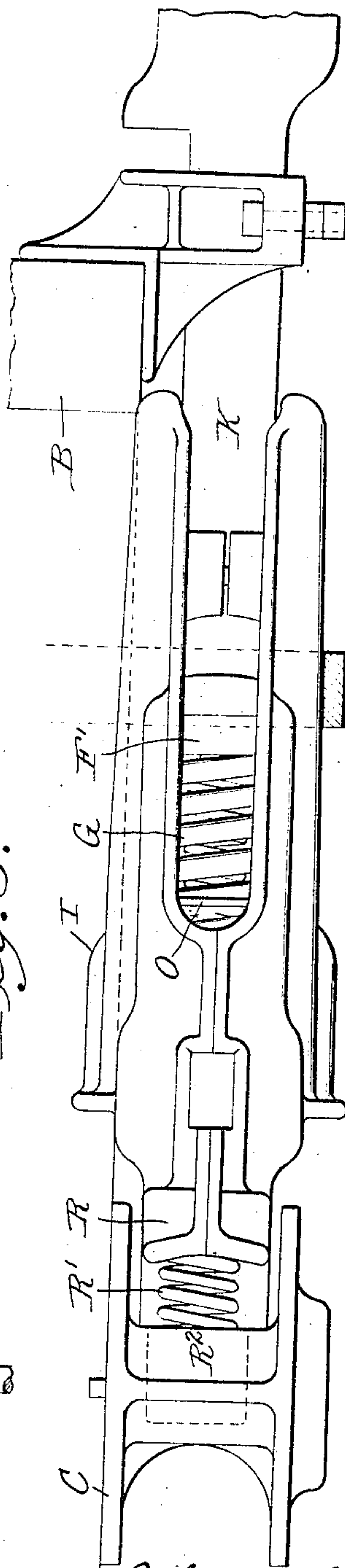


Fig. 3.



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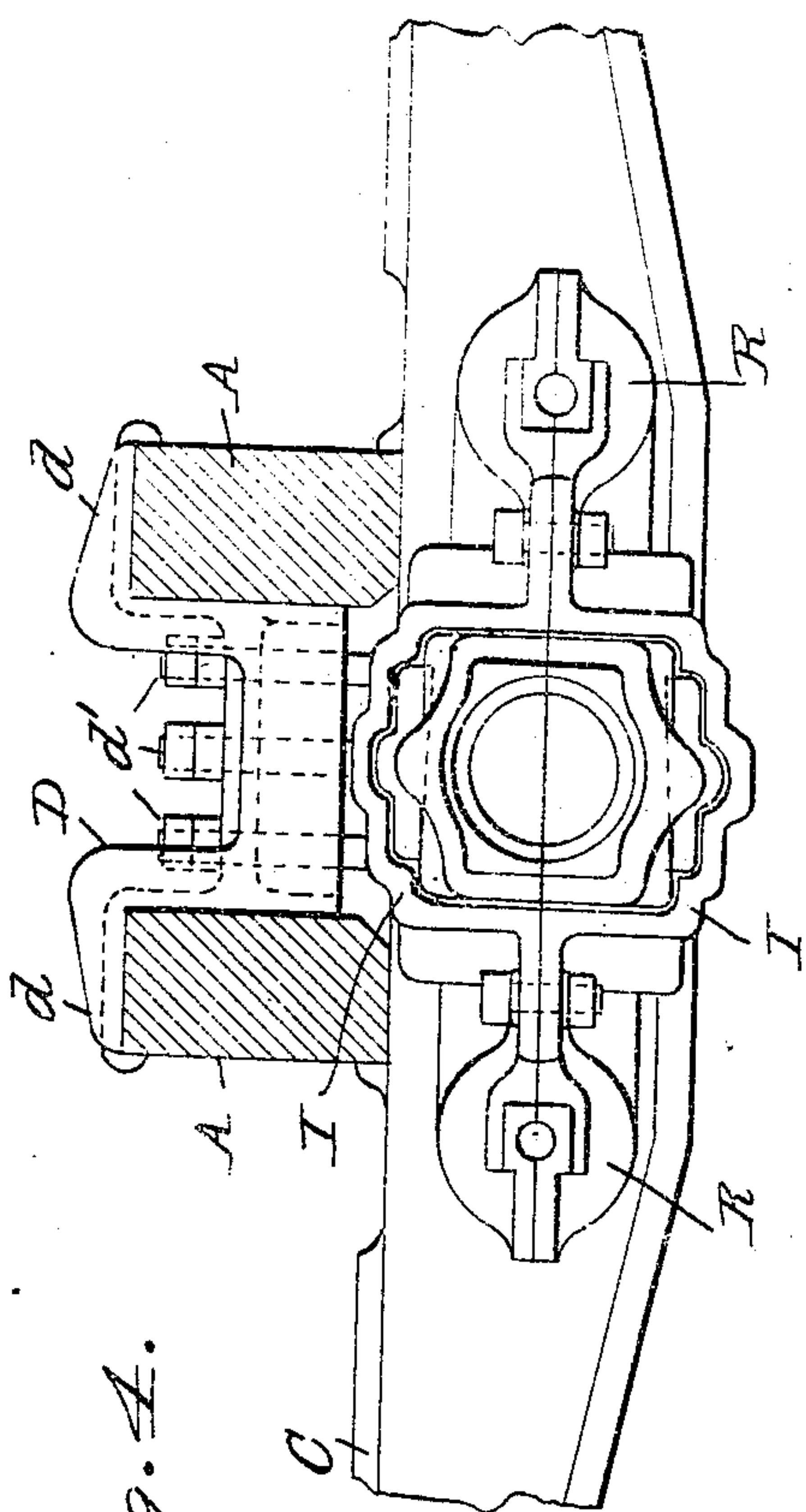
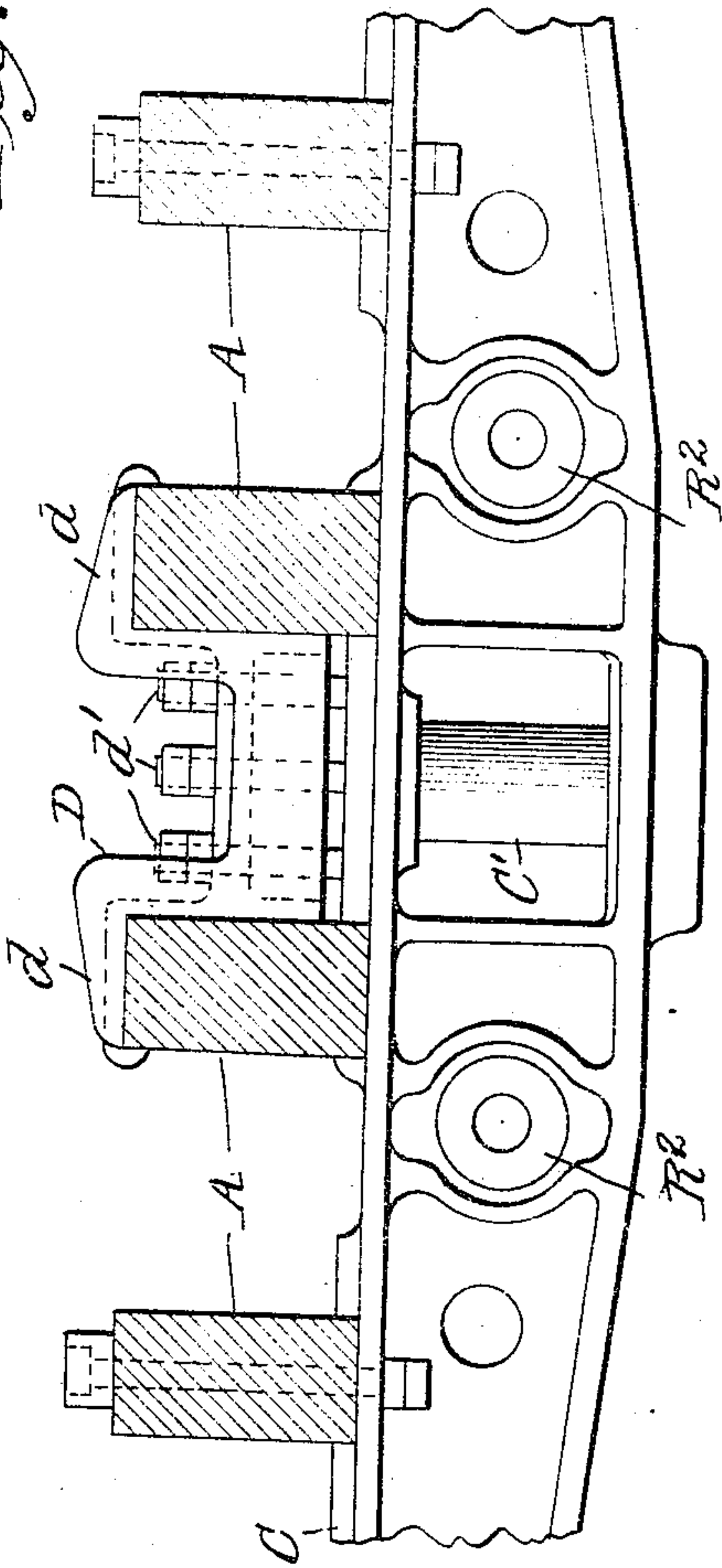


Fig. 5.



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4 SHEETS—SHEET 4.

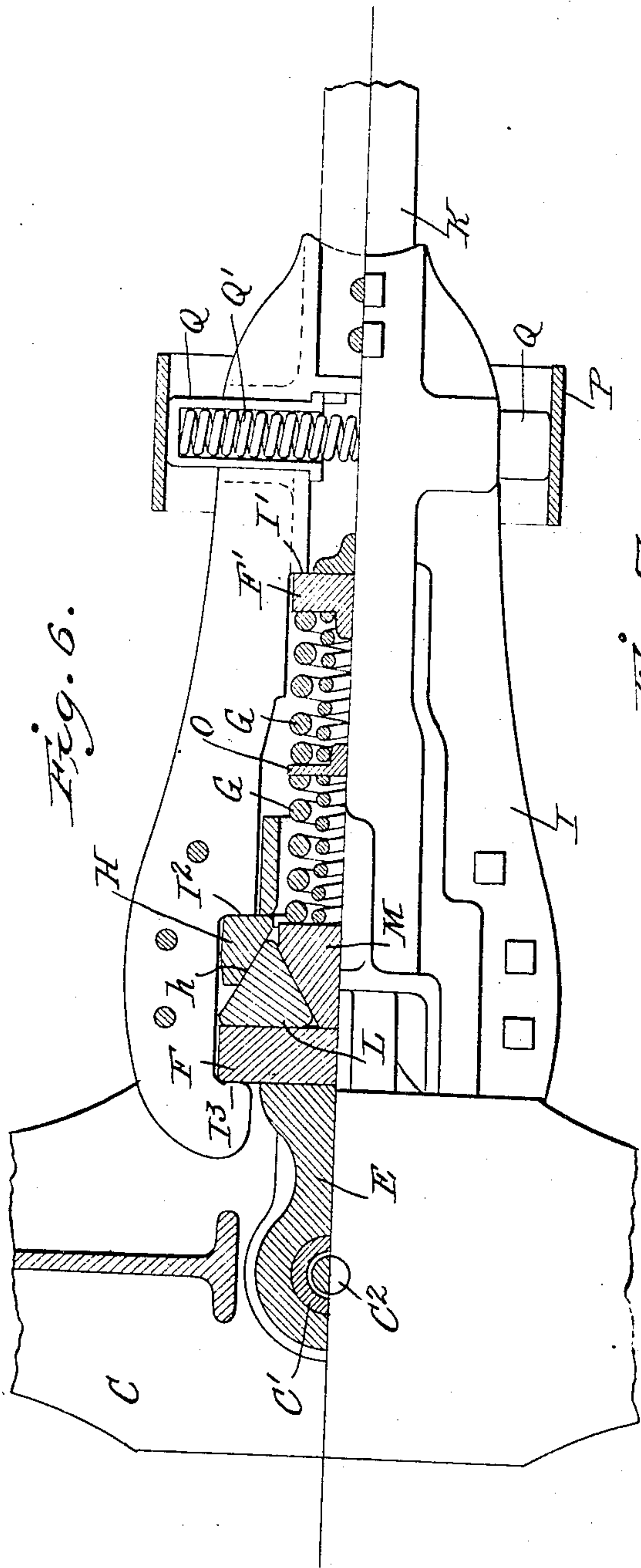
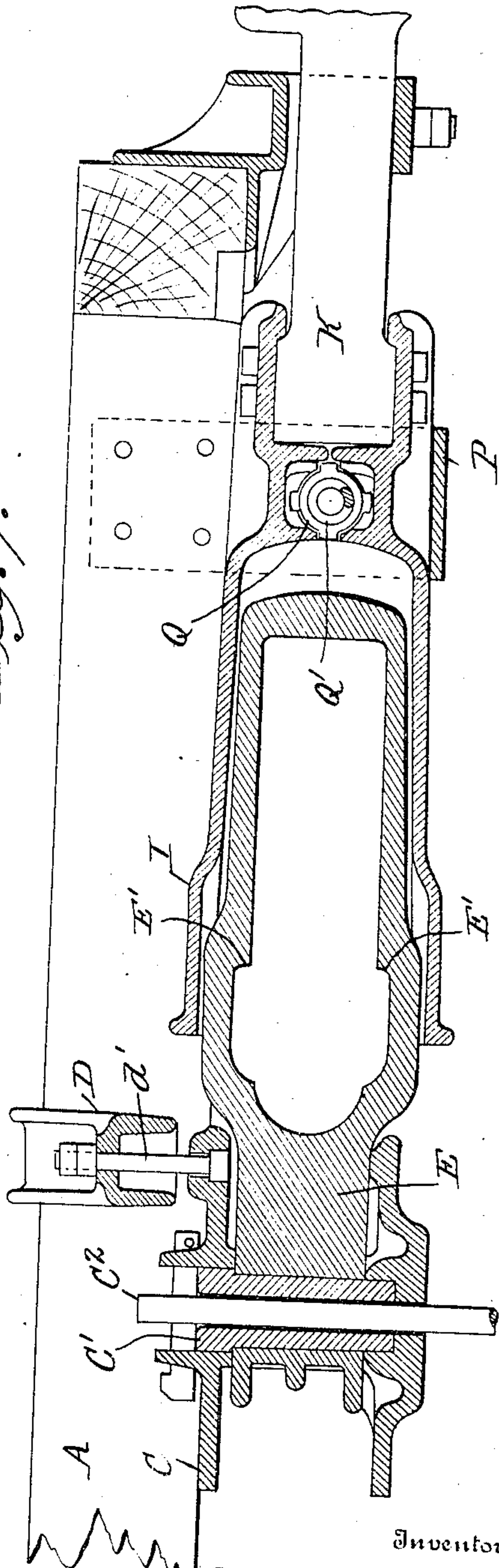


Fig. 7.



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UNITED STATES PATENT OFFICE.

RICHARD D. GALLAGHER, JR., OF NEW YORK, N. Y.

DRAFT AND BUFFING RIGGING FOR RAILWAY-CARS.

No. 880,516.

Specification of Letters Patent.

Patented March 3, 1908.

Application filed October 1, 1906. Serial No. 336,975.

To all whom it may concern:

Be it known that I, RICHARD D. GALLAGHER, Jr., a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Draft and Buffing Rigging for Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

The object of this invention is to provide a draft and buffing rigging for railway cars which will offer an effective yielding frictional resistance to draft and buffing strains and have a capacity for radial or horizontal angular movement about a center located some distance from the coupler heads and preferably coincident with the king pin or center about which the trucks turn in their horizontal plane.

A further object of the invention is to provide a draft and buffing rigging requiring no bolts or keys for attaching the same to the car sills.

The invention consists primarily in mounting the friction and yielding resistance members so as to move in unison angularly in a horizontal plane about the center of oscillation of the draft rigging and to maintain their alinement for resisting draft and buffing rigging when in any position of adjustment with relation to said center whereby the maximum efficiency is preserved at all angles and lateral strains in the rigging itself prevented.

The invention further consists in an angularly movable draft and buffing rigging embodying friction and yielding strain resisting elements mounted in the rigging intermediate the center of angular movement and draw bar or coupler head and finally the invention consists in certain novel details of construction and combinations and arrangements of parts all as will be hereinafter described and pointed out particularly in the appended claims.

Referring to the accompanying drawings—Figure 1 is a top plan and half sectional view showing a portion of the sills of a car, a portion of the body bolster and a draft rigging embodying the present improvements. Fig. 2 is a central longitudinal section of the parts shown in Fig. 1 with portions in elevation.

Fig. 3 is a side elevation of the parts shown in Fig. 1. Fig. 4 is a front elevation of the draft rigging with the draw bar and coupler removed and with the sills in section. Fig. 5 is a front elevation of the central portion of the body bolster with the saddle casting for supporting the same. Fig. 6 is a top plan, one-half in section, of a rigging embodying a modified arrangement of centering devices. Fig. 7 is a vertical section of the arrangement shown in Fig. 6 omitting the friction elements and springs.

Like letters of reference in the several figures indicate the same parts.

In the accompanying drawings, the sills A, buffer beam B, and other usual parts of the framing of the car illustrated, are shown in outline with a view to demonstrating more clearly the application of the mechanism forming the subject matter of the present invention to a car structure. It will be understood, however, that the invention is applicable in connection with any of the usual or preferred forms of car frame particularly as it is the intention to so construct the draft and buffing mechanism that it may be applied to a car as an independent and separate element requiring practically no modification, cutting or boring of the usual framework.

The body bolster is indicated in the accompanying drawings by the letter C, and where designed particularly for the application of the present invention it is preferably of a web and flange construction capable of being bolted firmly to the under side of the car sills and at its center provided with a king pin socket of somewhat enlarged diameter for the reception of a relatively heavy thimble C' surrounding the king pin C² so as to form a heavy center well calculated to withstand the buffing and draft strains to which the structure may be subjected. To prevent any possible tilting or rolling of the body bolster due to the increased strains to which it may be subjected in resisting draft and buffing strains, and particularly buffing strains which are more often in the nature of a heavy shock, the said body bolster is connected at a point or points forward of the king pin with a saddle casting D, the arms d of which project over the center sills of the car as best shown in Fig. 5, and the central depressed portion of which is connected with the front of the body bolster by one or more heavy bolts d'.

Pivotaly mounted in the body bolster and

with the king pin or thimble as a center is a forwardly extending member which may be conveniently termed a yoke E the rear portion of which, immediately forward of the body bolster, is formed for seating the rear follower F and the forward portion of which is in the form of a loop adapted to contain the springs G and to form a seat for the front follower F'. At an intermediate point said yoke is provided with shoulders E' and bridges E² Fig. 1 against which a friction box H is adapted to seat and whereby the forward movement of said friction box is prevented although sufficient play is permitted said box for a limited rearward movement in the yoke for a purpose to be hereinafter pointed out.

Surrounding the forward portion of the yoke is a housing or coupler extension I preferably formed in halves with the division in a horizontal plane and the two halves connected by bolts i. This housing or coupler extension is adapted at its forward end for connection with the rear end of the coupler shank or draw bar K, such connection preferably being a rigid connection and to this end the two halves of the housing or coupler extension may, at their forward ends, be suitably formed for the reception between them of the coupler shank of any of the well known or standard couplers now in use. To connect the parts it is only necessary to separate the two halves of the housing, insert the coupler shank and again bolt the two halves together, if desired, the usual bolt connections being also made between the coupler shank and housing in manner similar to the usual connections between such shanks and the ordinary strap which incloses the spring or other yielding strain resisting parts.

The housing or coupler extension telescopes with the yoke, but is provided with shoulders or abutments for cooperating with the two followers and friction box, thus the shoulders I' cooperate with the forward follower when the housing is moved rearwardly and at the same time the shoulders I² cooperate with the friction box, said front follower and friction box being as a consequence moved rearwardly in unison with the housing. On forward movement with relation to the yoke, the shoulders I³ of the housing cooperate with the rear follower and as a consequence said follower is advanced in unison with the housing while the friction box and forward follower are held against such movement by the yoke as heretofore explained.

The friction box is provided with internal inclined friction faces h with which transversely movable wedge blocks cooperate and the latter in turn cooperate with the rear follower F and a central wedge block or supplemental follower M yieldingly held toward the rear by the springs G which springs G are thus confined between the said central wedge block M and the forward follower F'. The

springs may be twin or tandem springs or both twin and tandem springs in accordance with well known practice in friction draft rigging. As shown, they are nested twin springs in tandem with a separator or evenner plate O held between them.

The forward portion of the rigging may be supported on the usual carry irons such as indicated at P and in order to center the rigging or bring it back to the center line of the car after angular deflection, suitable springs may be employed between the rigging and some fixed portion of the car body. As shown in Figs. 6 and 7 inwardly movable thimbles or loops Q are mounted in the housing in position to rest with their outer ends against the sides of one of the carry irons and a spring Q' is mounted, preferably with considerable initial tension between the said thimbles or loops and with a tendency to push the same outwardly to their limit. With this arrangement movement of the draft rigging angularly in either direction will force one of the thimbles or loops inwardly while the other thimble or loop will move bodily with the draft rigging thereby compressing the spring and upon release of the draft rigging the spring will at once assert itself and return the parts to normal central position.

In the arrangement shown in Figs. 1 to 5 inclusive, the housing is extended on each side to form sockets R for the forward ends of springs R' whose rear ends are confined in sockets R² in the body bolster. Said springs R' being located on opposite sides of the center about which the draft rigging moves angularly, will return said rigging to normal central position after angular deflection and, in addition, will supplement the yielding resistance of the main springs to buffing strain.

In operation it will be understood that the parts composing the draft rigging proper move angularly as a unit. In resisting draft strains, the rear follower F is moved forward and as the friction box is held against such movement, the wedge blocks L are moved transversely thereby advancing the center wedge block or supplemental follower against the tension of the main springs G and adding to the resistance of said main springs the friction and wedging action of the friction members. In resisting buffing strains, the forward follower and friction box are moved rearwardly, while the wedge blocks L being held against such rearward movement by the rear follower, are moved transversely through the cooperation of the inclined faces and in turn cooperate with the center wedge or supplemental follower and force the same forwardly against the tension of the main springs. In this action of the device it will be noted that the tension of the main springs is increased by reason of the fact that the forward follower is compressing them from

the front end at the same time that the center wedge or supplemental follower is compressing them from the rear end, and in addition, in the form shown in Figs. 1 to 5 the centering springs R' and their elastic resistance to the resistance offered by the main springs and friction members. The employment of friction members in draft rigging not only supplements the spring resistance but retards recoil thereby preventing surging and violent impact shocks to the rolling stock.

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

15 1. In a draft and buffing rigging, the combination with the telescoping members movable longitudinally with relation to each other and pivotally supported for angular movement in a horizontal plane, of a friction box with which both of said members co-
20 operate and friction members and draft and buffing springs interposed between said longitudinally movable members whereby when moved in one direction with relation to
25 each other the box will be held by one member, and when moved in the opposite direction with relation to each other said box will be moved by the other member; substantially as described.

30 2. In a draft and buffing rigging, the combination with a yoke, a friction box supported by said yoke against movement in one direction and transversely movable wedge blocks and draft and buffing springs
35 mounted in said yoke, of a follower cooperating with said wedge blocks and a housing telescoping with said yoke and having shoulders cooperating respectively with the friction box and follower, whereby upon
40 movement of the housing in one direction the friction box is moved to operate the wedge blocks and upon movement in the opposite direction the follower is moved to operate the wedge blocks; substantially as
45 described.

3. In a draft and buffing rigging, the combination with the yoke supported for angular movement in a horizontal plane, the front and rear followers mounted in said yoke, the
50 friction box supported against forward movement by said yoke and the springs and wedge blocks interposed between said followers, of the housing telescoping with the yoke and having shoulders cooperating with the friction box and rear follower respectively; sub-
55 stantially as described.

4. In a draft and buffing rigging, the combination with the yoke pivoted to move angularly in a horizontal plane, the housing
60 telescoping with and inclosing said yoke and at its forward end adapted for connection with a coupler shank, of front and rear followers mounted in said yoke, a friction box held by said yoke against forward movement,
65 springs and wedge blocks interposed between

said followers and friction box and shoulders on the housing cooperating with both followers and the friction box; substantially as described.

5. In a draft and buffing rigging, the combination with the yoke pivotally supported at its rear end for angular movement in a horizontal plane, and the housing formed in sections and telescoping with said yoke, of the longitudinally arranged draft and buffing spring mounted in the yoke, followers at opposite ends of said spring, a friction box held by the yoke against movement in one direction, friction blocks mounted between one of said followers, the friction box and one end of the spring and shoulders on the housing for cooperating with the followers and friction box; substantially as described.

6. In a draft and buffing rigging, the combination with the body bolster center pin and thimble surrounding said pin, of the yoke pivotally mounted on said thimble for angular movement in a horizontal plane, the housing telescoping and movable angularly with said yoke, the followers interposed between the telescoping members and the draft and buffing springs and friction members interposed between said followers; substantially as described.

7. In a draft and buffing rigging, the combination with the body bolster the yoke pivotally mounted at its rear end in said bolster to move angularly in a horizontal plane, the housing telescoping and moving angularly with said yoke and having internal shoulders, of followers mounted in the yoke and with which said shoulders cooperate, a friction box with which both the yoke and housing cooperate, one to hold said box against forward movement and the other to impart rearward movement to said box, transversely movable wedge blocks interposed between the box and rear follower, a longitudinally movable central wedge interposed between said wedge blocks and a draft and buffing spring interposed between said central wedge and forward follower; substantially as described.

8. In a draft and buffing rigging the combination with the car sills and the radially swinging draft and buffing gear pivotally mounted on a bearing extending below the sills, of a connection between said bearing and sills forward of the axis of the draft and buffing gear whereby tilting of said bearing under buffing strains is prevented.

9. In a draft and buffing rigging the combination with the car sills and the radially swinging draft and buffing gear pivotally mounted on a bearing below the sills, of a saddle casting mounted on the sills and a connection between said saddle casting and bearing forward of the axis of the draft and buffing gear to prevent tilting of the bearing under buffing strains.

10. In a radially swinging draft and buff-
ing gear the combination with a yoke pivot-
ally connected with the car, and having
shoulders, of a friction box supported by said
5 shoulders against movement in one direction,
friction elements in said box, a spring held
against the friction elements by the yoke and

a coupler frame having shoulders for coop-
eration with the friction box.

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