H. T. KRAKAU.

RADIAL DRAFT GEAR.

APPLICATION FILED MAY 13, 1905. RENEWED SEPT. 17, 1907.

900,025.

Patented Sept. 29, 1908.

3 SHEETS—SHEET 1.

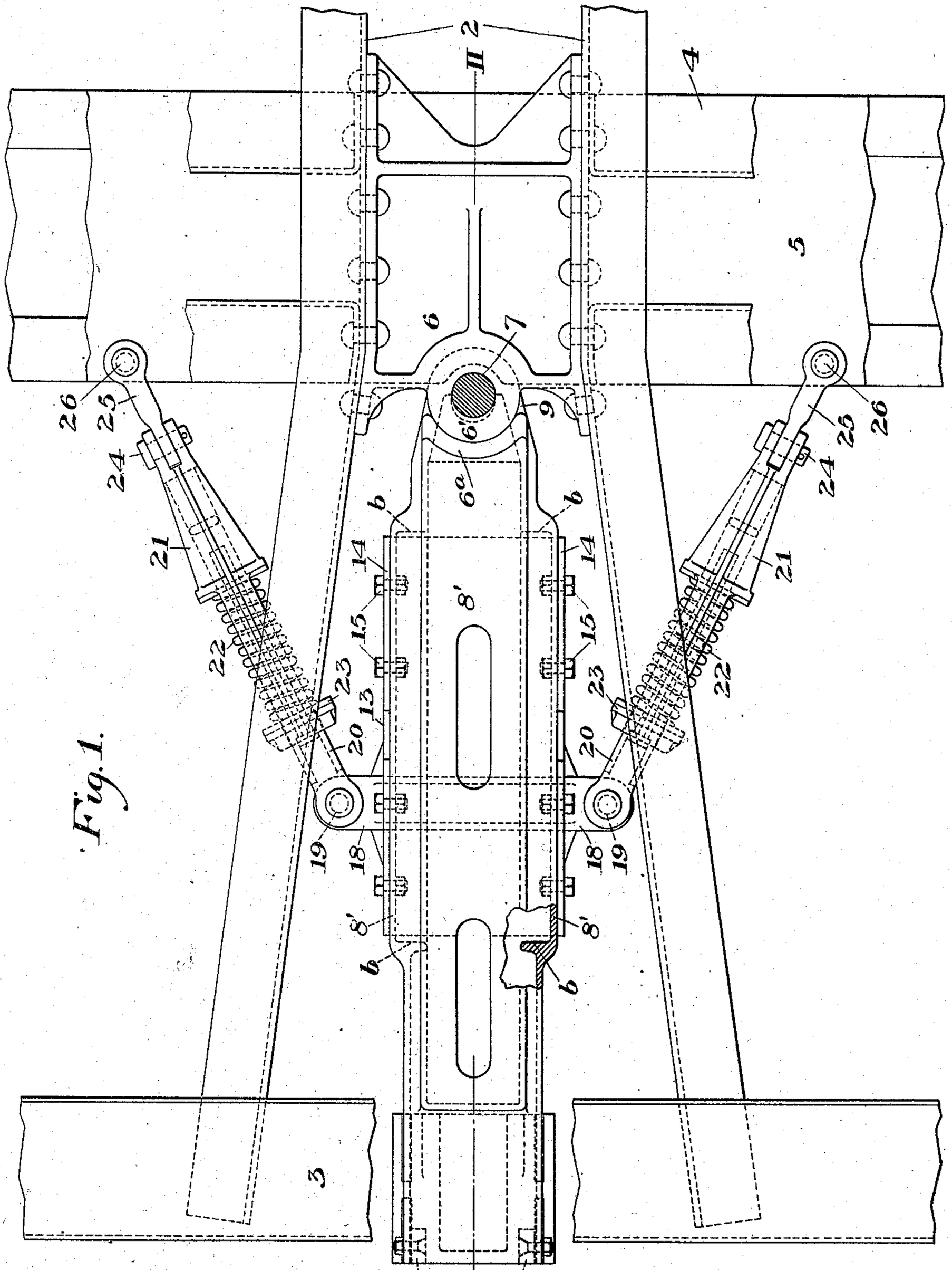

Fig. 1.

WITNESSES

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3 SHEETS—SHEET 2.

Fig.2.

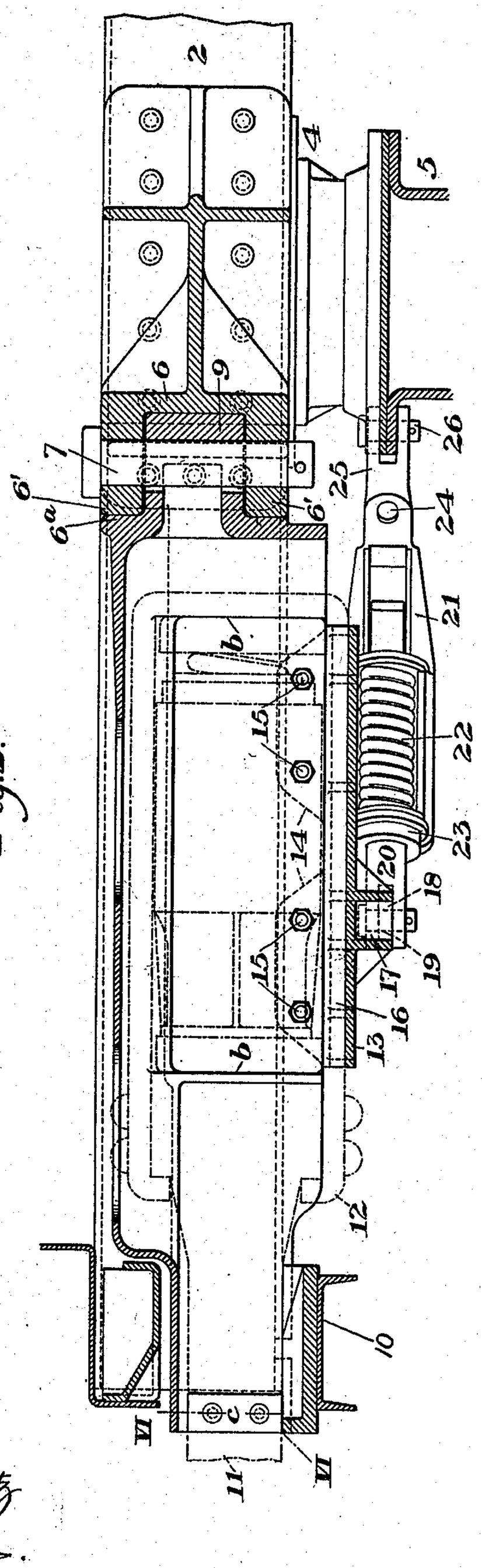
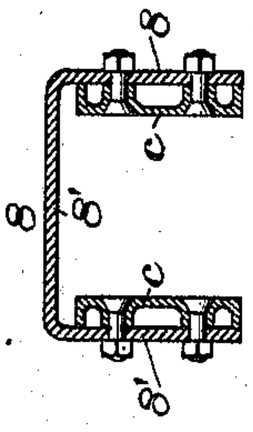


Fig.6



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3 SHEETS—SHEET 3.

Fig. 3.

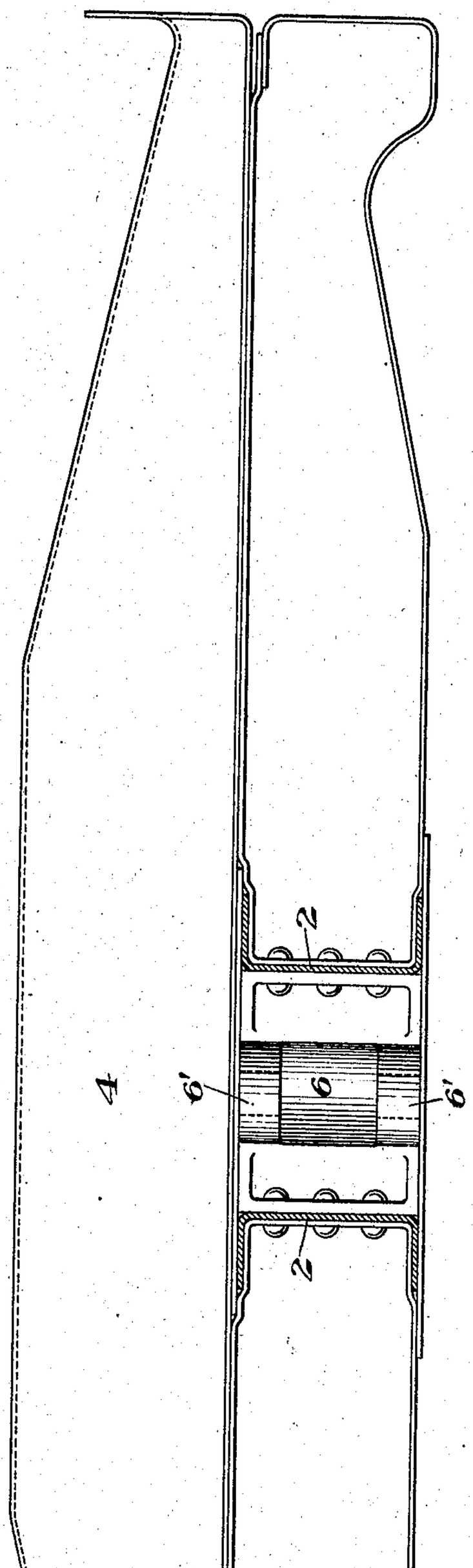

Fig. 4.

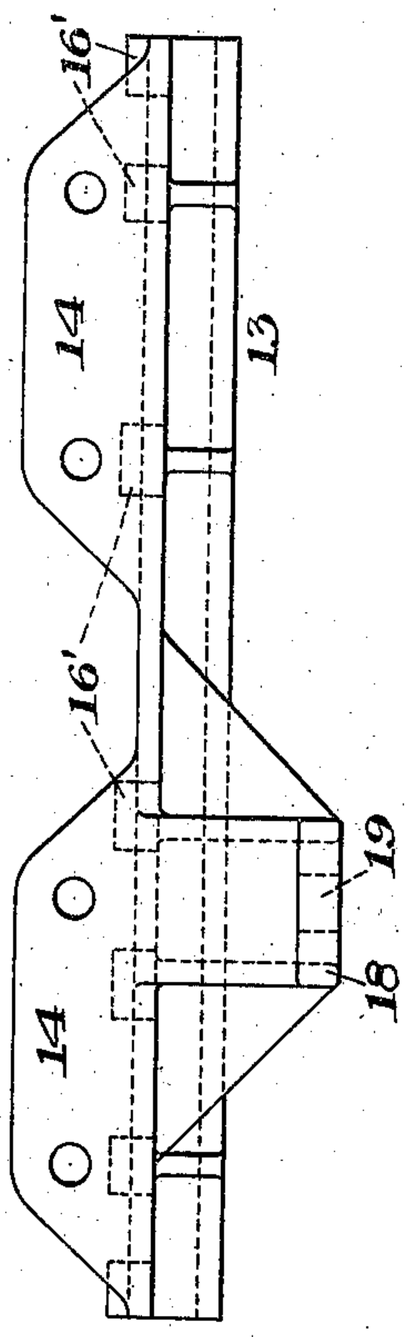

Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

HARRY T. KRAKAU, OF CLEVELAND, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

RADIAL DRAFT-GEAR.

No. 900,025. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed May 13, 1905, Serial No. 260,264. Renewed September 17, 1907. Serial No. 393,324.

To all whom it may concern:

Be it known that I, HARRY T. KRAKAU, of Cleveland, Cuyahoga county, Ohio, have invented a new and useful Radial Draft-Gear, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a draft-gear embodying my invention; Fig. 2 is a vertical longitudinal section on the line II—II of Fig. 1; Fig. 3 is a side elevation of the bolster showing the center casting to which the frame of the draft-gear is pivoted; Fig. 4 is a side elevation of the piece which supports the yoke and serves as part of the connection of the gear-rigging with the truck; Fig. 5 is an end view partly in section of the piece shown in Fig. 4; and Fig. 6 is a vertical cross-section on the line VI—VI of Fig. 2.

My invention is an improvement on the radial draft-gear for which I have already obtained Letters Patent Reissue No. 12,178, dated December 1, 1903.

As shown in the drawings, 2, 2 represent the center-sills of the car, 3 the end sill, 4 the body-bolster, and 5 the truck-bolster. At the place where the center sills cross the bolster I interpose between the sills a casting 6, the construction of which is shown in Figs. 1, 2 and 3. It fills the space between the sills being riveted or bolted thereto at its sides, and has at its forward end an open socket constituted by upper and lower flanges 6′ in which the rear end of the gear-rigging frame is set, vertical holes being formed in the flanges to receive the pin 7 on which the gear-rigging frame swings radially. Obviously the parts can be reversed, the socket being formed on the end of the gear-rigging and fitting a projection on the casting 6.

The draft-gear frame 8 is preferably a casting having side portions or plates 8′, a top-portion 8′, and a rear pivotal bearing 9 which fits in the socket 6, being held therein by the pin 7. It also preferably has shoulders 6^a which may abut against the ends of the flanges 6′. The socket is at the extreme forward end of the piece 6.

The pin-hole in the bearing 9 is made somewhat larger than the pin, so that the rear end of the bearing can abut against the base of the socket and transmit thereto the strains of buffing. The forward end of the frame is supported under the end-sill by a carry-iron 10, and in the frame is set the draft rigging proper, comprising a drawbar-shank 11, a yoke 12, and spring mechanism and followers (shown by dotted lines).

The draft-gear frame constitutes in effect a swinging draft-beam which contains and supports the longitudinally movable part of the draft-rigging. It therefore has end shoulders *b* constituting stops for the followers, and it may have intermediate stops if desired. At the forward end of the frame it may be provided with filling pieces *c* at each side of the shank of the drawbar.

To support the yoke and followers and also to afford means for connecting the draft-gear frame to the truck, I employ a yoke-support shown in detail in Figs. 4 and 5. It consists preferably of a casting 13 having vertical flanges 14 adapted to receive and to be bolted to the side-plates of the frame by bolts 15, and having a middle portion 16 adapted to receive the yoke. It also has lips 16′ bearing against the inner surfaces of the side plates; and at its base it has preferably a longitudinal strengthening flange 17, and depending lateral flanges or lugs 18 formed with bolt-holes 19 to connect it with the guiding spring-rods 20 which are connected pivotally thereto as shown in Fig. 1. Each of these guiding-rods preferably comprises a rod 20 which is pivoted to the yoke-support as above stated and extends telescopically within a rear piece 21 which extends forward preferably in the manner of a cage over the spring 22 and has a collar 23 in advance of the spring. The rear piece 21 is connected by a pivot-pin 24 with a link 25 which is connected by a pin 26 with the truck-bolster, the pins 24 and 26 being set at right angles to each other so as to afford a joint flexible in two directions and thus adapted to provide for vertical as well as horizontal relative motion between the parts. The draft-gear frame is therefore capable of rising and falling relatively to the truck and the truck is allowed to rise and fall in relation to the car-body without putting any strain upon the truck connection. The doubly flexible joint may be at the forward end of the guiding connection instead of the rear end, or such joint may be placed at both ends thereof.

The advantages of my invention in respect of the simplicity and strength of the

device will be appreciated by those skilled in the art.

Within the scope of my invention as broadly claimed the parts may be modified since

What I claim is:—

1. A radially movable draft-gear having a frame adapted to carry longitudinal parts of the draft rigging, said frame pivoted with a socket connection at its rear end to the car-frame, and having an end bearing at the socket, and a pivot pin holding the frame at the socket and fitted in a hole of somewhat larger diameter than the pin; substantially as described.

2. A draft-gear having a radially movable frame adapted to contain the longitudinally-movable parts of the draft-rigging, and an attached bottom support for the frame, having lateral bolting flanges and a middle guiding portion for the drawbar yoke; substantially as described.

3. A draft-gear having a radially movable frame adapted to contain the longitudinally movable parts of the draft-rigging, and an attached bottom support formed to receive a guiding truck-connection; substantially as described.

4. A draft-gear having a radially movable frame adapted to contain the longitudinally movable parts of the draft-rigging, and an attached bottom support having lugs to receive a guiding truck-connection; substantially as described.

5. A draft-gear having a radially movable frame adapted to contain the longitudinally movable parts of the draft-rigging, and an attached bottom support having depending lugs to receive a guiding truck-connection; substantially as described.

6. A draft-gear having a radially movable frame adapted to contain the longitudinally movable parts of the draft-rigging, and an attached bottom support flanged longitudinally on its under side; substantially as described.

7. A radially movable draft-gear having a guiding connection with the truck, said guiding connection being flexibly jointed so as to be capable of motion both horizontally and vertically; substantially as described.

8. A radially movable draft-gear having a guiding connection with the truck, said guiding connection being jointed by vertical and horizontal pins; substantially as described.

9. A radially movable draft-gear having a guiding connection with the truck, said guiding connection being flexibly jointed both horizontally and vertically, and having spring-mechanism; substantially as described.

10. A draft-gear having a radially movable frame adapted to contain the longitudinally movable parts of the draft-rigging, an attached bottom support for the frame, having lateral bolting flanges and a middle guiding portion for the drawbar yoke, and having end-shoulders *b* constituting stops for the followers; substantially as described.

11. A draft-gear having a radially movable frame adapted to contain the longitudinally movable parts of the draft-rigging, and having filling pieces at the sides of the drawbar shank; substantially as described.

12. A draft gear having a swinging endwise movable draft rigging carrying frame substantially as described.

13. A draft gear having a swinging endwise movable draft rigging carrying frame provided with a bearing to relieve strains from its pivot substantially as described.

14. A draft gear having a swinging endwise movable draft rigging carrying frame and provided with a bearing to relieve buffing strains from its pivot substantially as described.

15. In a draft gear, a swinging endwise movable frame, and draft rigging mounted upon the frame substantially as described.

16. In a draft gear, a swinging endwise movable frame provided with a bearing to relieve strains from its pivot, and draft rigging mounted upon the frame substantially as described.

17. In a draft gear, a swinging endwise movable frame having a bearing to relieve buffing strains from its pivot, and draft rigging mounted upon the frame substantially as described.

18. A draft gear having a swinging endwise movable draft rigging carrying frame provided with a bearing to relieve strains from its pivot, and spring-guiding members for opposite sides of the frame substantially as described.

19. The combination with a car frame, of a draft rigging carrying frame provided with a pivotal connection therewith, said draft rigging carrying frame having endwise play upon its pivotal connection, and provided with a bearing to relieve strains from the pivotal connection substantially as described.

20. A swinging endwise movable draft gear carrying frame, substantially as described.

21. A pivotal draft gear carrying frame having a lost motion connection with its pivot to remove strain therefrom, substantially as described.

22. A swinging endwise movable draft gear carrying frame carried by a car frame and having a guiding connection with the truck, substantially as described.

In testimony whereof, I have hereunto set my hand.

HARRY T. KRAKAU.

Witnesses:
HENRY F. POPE,
HARRY E. ORR.