H. M. PFLAGER.

CAR UNDERFRAME.

APPLICATION FILED JUNE 5, 1908.

916,586.

Patented Mar. 30, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

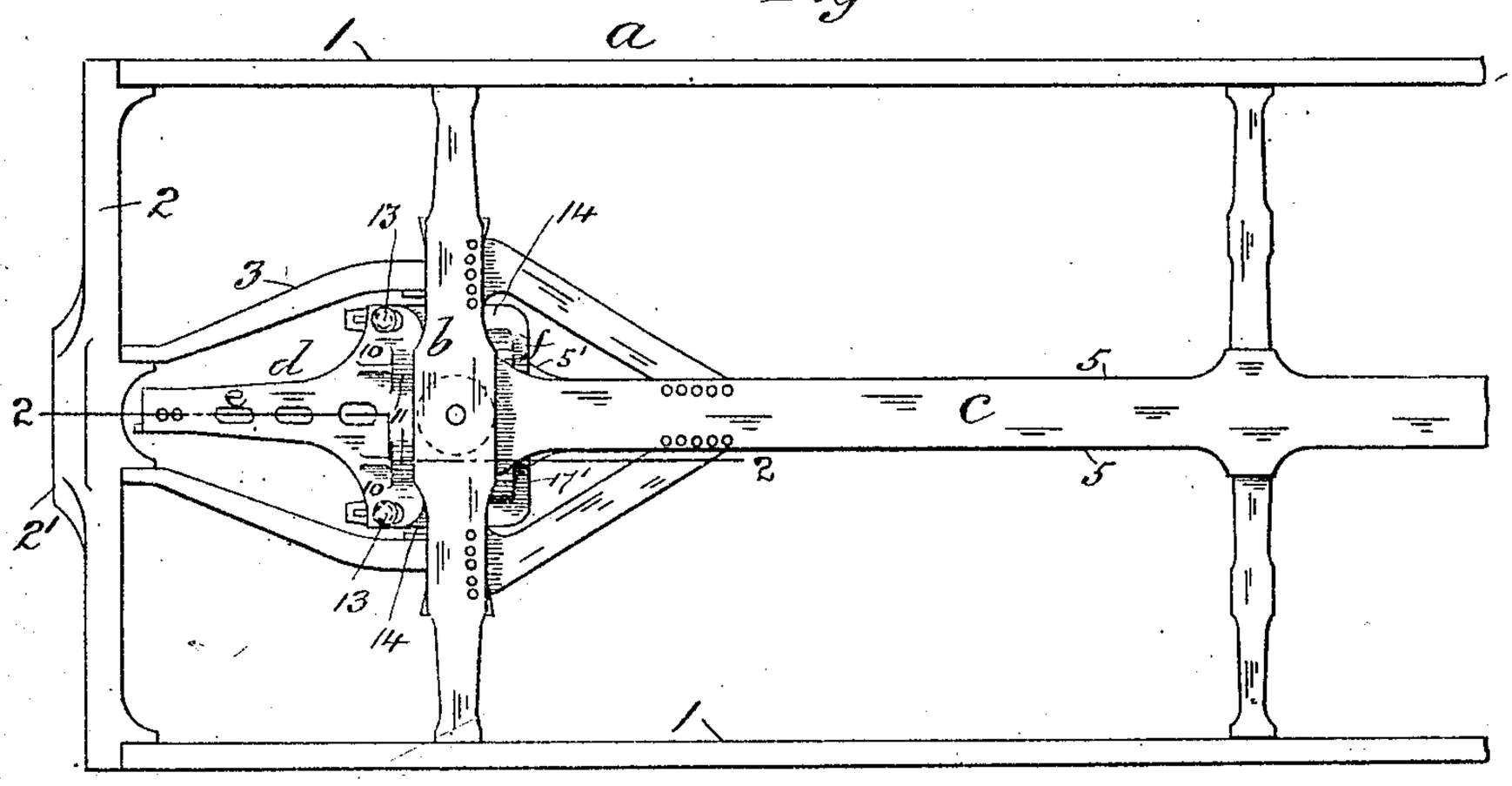


Fig. 2.

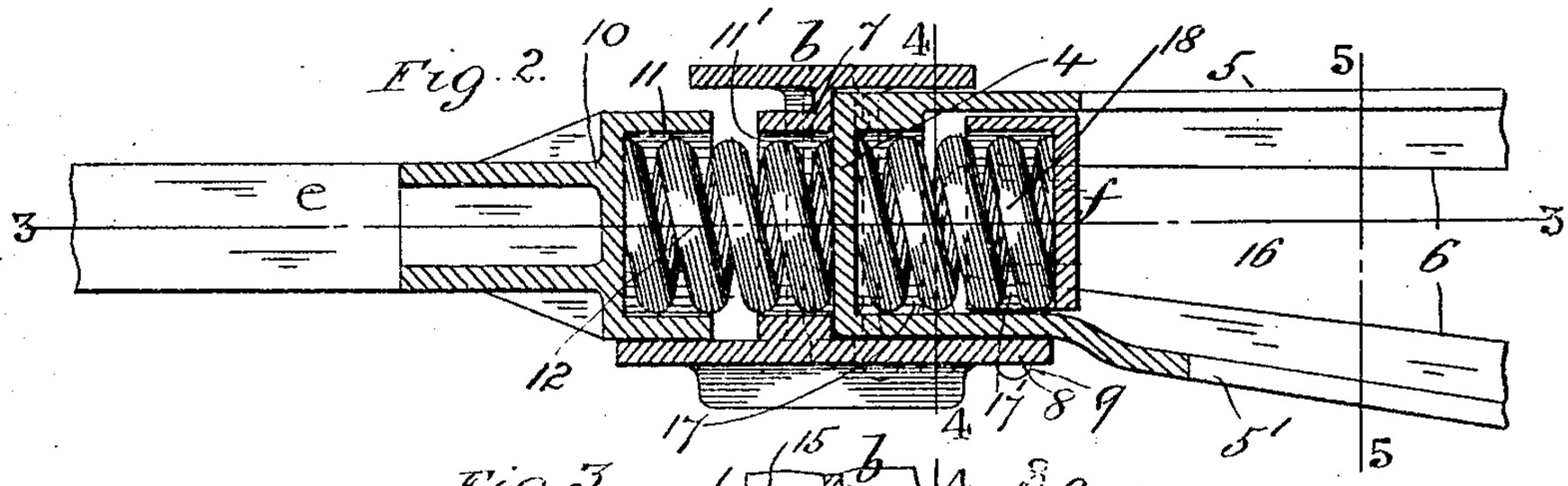
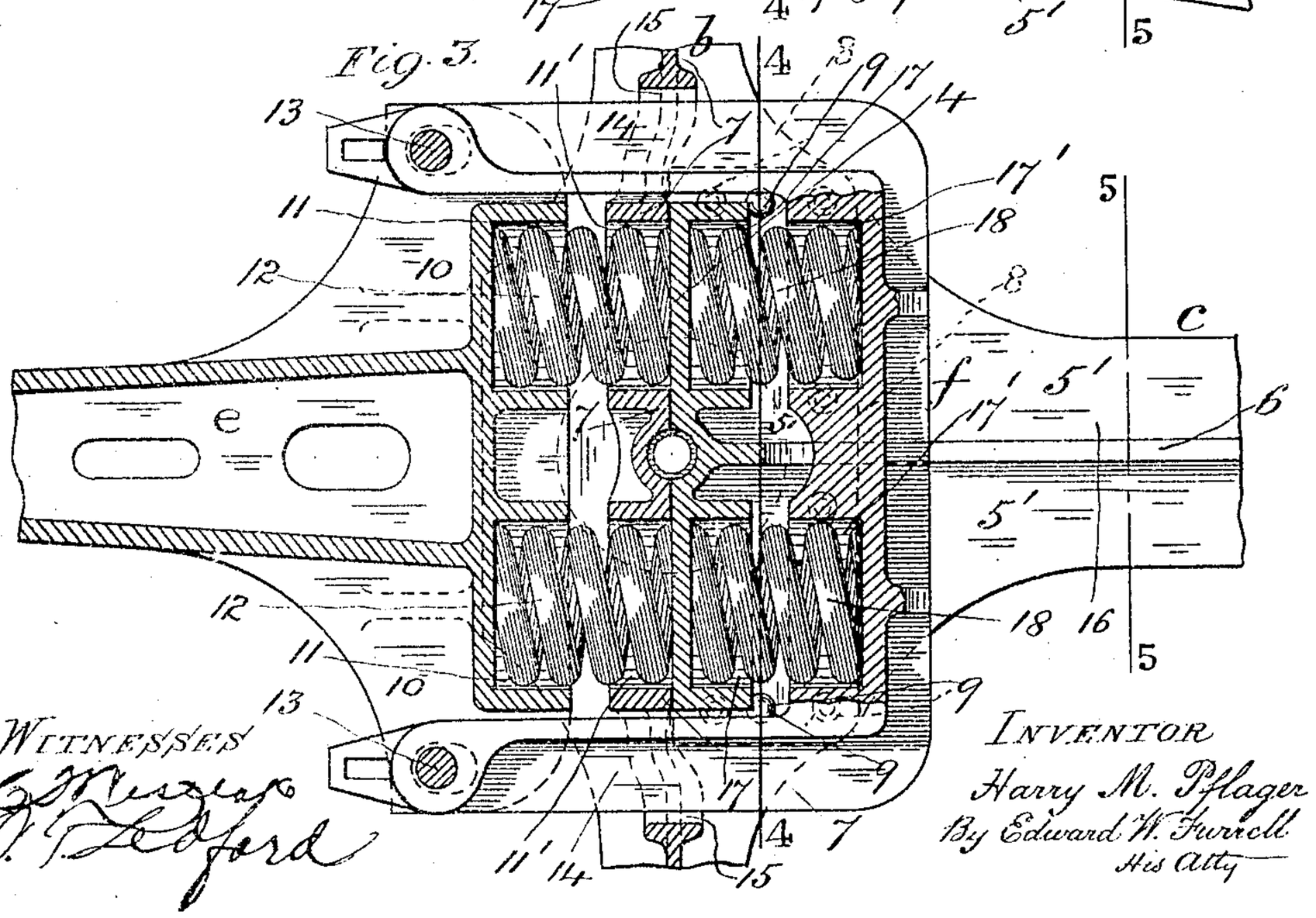


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

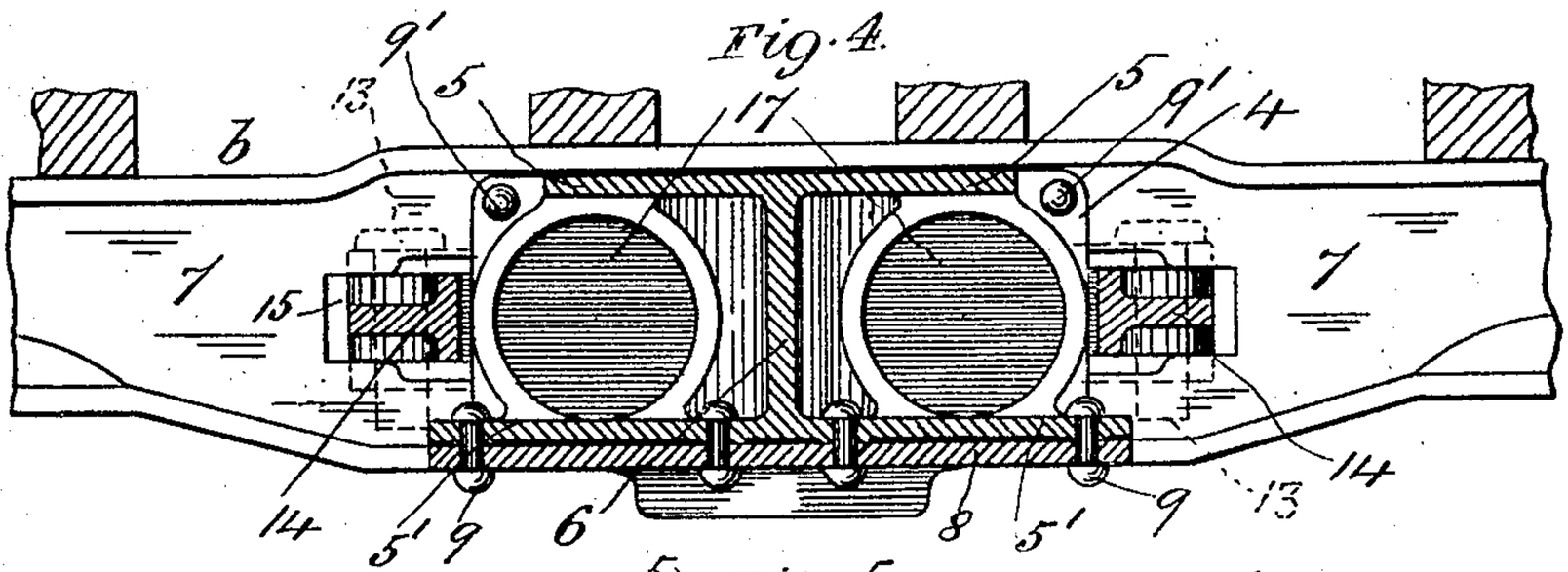


Fig. 5.

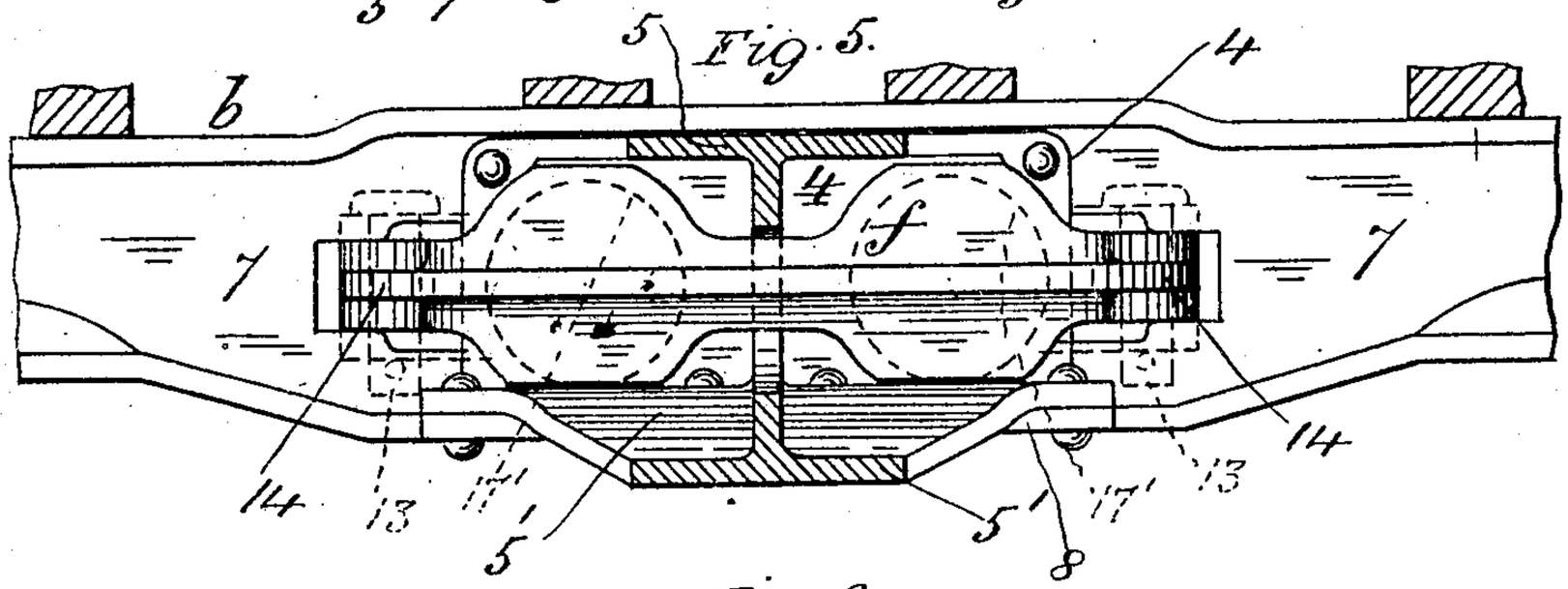
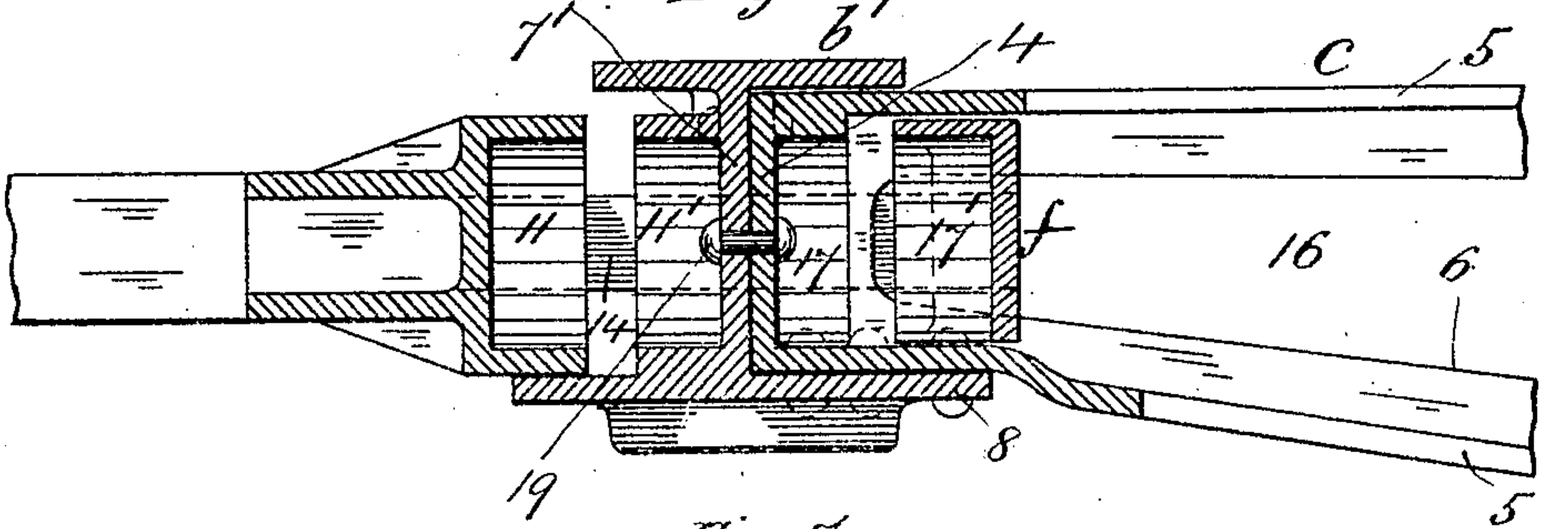
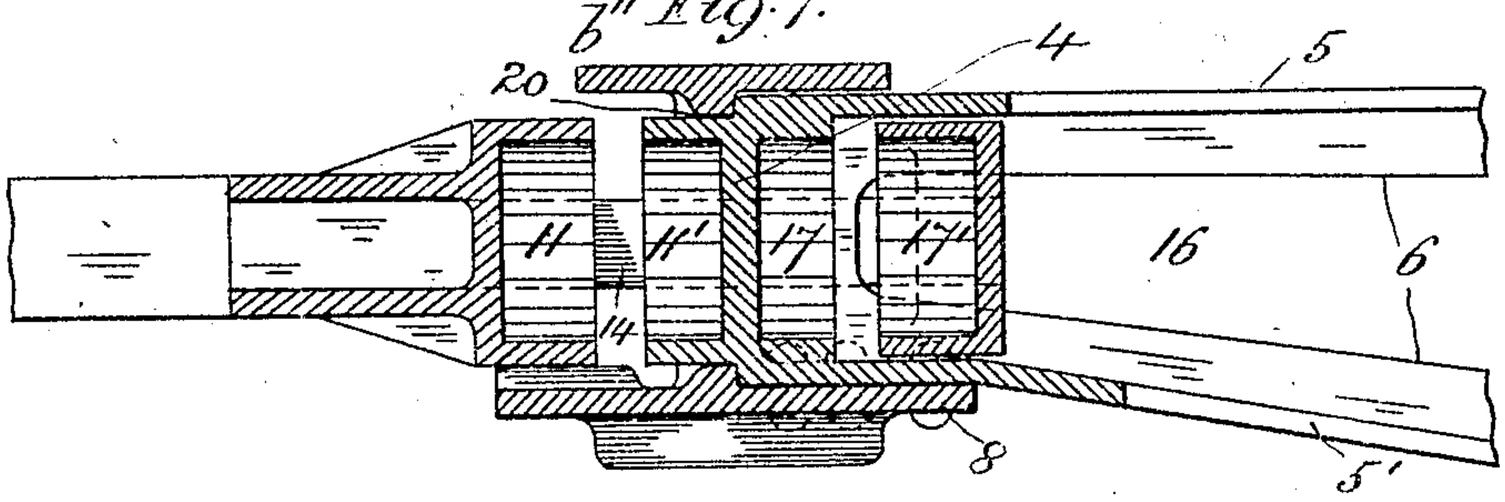


Fig. 6.



b'' Fig. 7.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HARRY M. PFLAGER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO TRANSOM DRAFT GEAR COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

CAR-UNDERFRAME.

No. 916,586. Specification of Letters Patent. Patented March 30, 1909.

Application filed June 5, 1908. Serial No. 436,839.

To all whom it may concern:

Be it known that I, HARRY M. PFLAGER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car-Underframes, of which the following is a specification.

My invention relates particularly to a metallic car underframe having a single longitudinal center sill extending between and adapted to butt endwise against the body-bolsters, to which the end portions of the sill are riveted or otherwise fixed; and my invention has for its object to increase the efficiency and resistance of the underframe to the stress of the draft-gear and abnormal end shock.

The invention consists in features of novelty as hereinafter described and claimed, reference being had to the accompanying drawing forming part of this specification, whereon,

Figure 1, is a top plan view of one end and adjacent portion of my improved metallic car underframe with a preferable form of draft-gear applied thereto; Fig. 2, a vertical longitudinal section to enlarged scale, through the underframe and draft-gear on line 2, 2, in Fig. 1; Fig. 3, a horizontal section thereof on line 3, 3, in Fig. 2; Figs. 4 and 5, vertical transverse sections through the underframe and draft-gear (omitting the springs) on lines 4, 4, and 5, 5, in Figs. 2 and 3, and Figs. 6 and 7, corresponding views to Fig. 2 (omitting the springs), showing modifications of the improvement.

Like letters and numerals of reference denote like parts in the respective figures.

Referring to Figs. 1, 2, 3, 4, and 5, *a* represents one end and the adjacent portion of a metallic car underframe embodying my improvement and comprising in the present case, two opposite longitudinal side sills 1, an end sill 2 having the dead-block 2′ and fixed at its ends to the corresponding ends of the side sills 1, body-bolster *b* fixed at its ends to the side sills 1 adjacent to the end sill 2 and secured to the latter by two opposite horizontal braces 3 which converge from the body-bolster *b*, one on each side of and at a suitable distance from the longitudinal center of the underframe *a*, to the end sill 2 at its middle portion, and a single longitudinal center sill *c* which is adapted to butt endwies against the rear side of the body-bolster *b* to which it is fixed as hereinafter more particularly referred to, the body-bolster *b* and center sill *c* being respectively, preferaby composed of cast steel integral throughout and I-shaped in cross section as shown.

d represents the car draft-gear which may be of any suitable type, preferabiy as shown and similar to that described in the United States Letters Patent granted to me January 23, 1906, Number 810,805, for improvement in draft-gear for railroad cars, except that in carrying out my invention the draft-gear is applied directly to the center sill *c* in lieu of to the body-bolster as in the said patent, for which purpose the end of the center sill *c* is closed, or formed transversely, with an upright rectangular-shaped end-plate 4 which unites with the top and bottom flanges 5, 5′, and web 6 of the center sill *c*, and is adapted to butt at its outer face against the web 7 of the body-bolster *b*, and to close the inner ends of the housings or openings therethrough for the play of the "buffing" springs of the draft-gear as hereinafter more particularly described, the adjacent portions of the bottom flanges 5′ of the sill *c* being preferably widened, according to the lateral extension of the end-plate 4 beyond the body of the center sill *c*, and adapted to be supported thereat on the bottom flange 8 of the body-bolster *b* to which it is rigidly secured by rivets (or bolts) 9, the end-plate 4 being also fixed to the web 7 by rivets 9′.

The draft-gear *d* in the present case, comprises the draw-bar *e* having a horizontally arranged cross-head 10 at its inner or rear end, in the face of which opposite to the front side of the body-bolster *b*, is formed at each side of the longitudinal center of the underframe *a* and center sill *c*, a cylindrical housing or pocket 11, while through the web 7 of the body-bolster *b*, opposite to and in central longitudinal alinement with each housing 11, is preferably formed a tubular housing or opening 11′ which is closed at its inner end, or rear side of the bolster *b*, by the end-plate 4 of the center sill *c*, as before mentioned, the housings 11, 11′, being in the same horizontal plane with each other. Within the housings 11, 11′, are placed the "buffing" springs 12 which in the normal position of the draft-gear *d*, bear at their

outer or front ends against the bottom of the housings 11 (or draw-bar *e*, 10) and at their inner or rear ends against the end-plate 4 of the center sill *c*.

To the cross-head 10, at or adjacent to each end thereof, is coupled by a pin 13 the arm 14 of a yoke *f* which is arranged horizontally in the plane of the draw-bar *e* and adapted to straddle the end plate 4 of the center sill *c* from its rear side, the arms 14 being slidable through openings 15 formed therefor transversely through the web 7 of the body-bolster *b*, and the center sill *c* having an elongated longitudinal lightening hole or opening 16 through its web 6 adjacent to the end-plate 4 for enabling the yoke *f* to be assembled and removed, and for permitting free play thereto at all times in the operation of the draft-gear *d*.

On the inner or rear side of the end-plate 4, at each side of the longitudinal center of the underframe *a* and web 6 of the center sill *c*, is formed a cylindrical housing or pocket 17, while on (or in) the face of the yoke *f* opposite to each housing 17, is formed a similar housing 17′, the housings 17, 17′, being in central longitudinal alinement with each other and preferably, with the housings 11, 11′. Within the housings 17, 17′, are placed the "draft" springs 18 which in the normal position of the draft-gear *d* bear at their outer or rear ends against the bottom of the housings 17′ (or yoke *f*), and at their inner or front ends against bottom of the housings 17, or inside of the end-plate 4 of the center sill *c*.

In operation, when pulling on the draw-bar *e*, the yoke *f* is drawn forward, and in so doing compresses the draft-springs 18 between the yoke *f* and the end-plate 4 of the center sill *c* on its rear side and simultaneously releases the head 10 of the draw-bar *e* from the buffing-springs 12 which lie free within their housings 11, 11′. In buffing, the draw-bar *e* with its head 10 is forced rearward so as to compress the buffing-springs 12 against the face of the end-plate 4, or end of the center sill *c*, and at the same time release the yoke *f* from the draft-springs 18 which lie idle within their housings 17, 17′.

By my invention the pressure of the springs 12 and 18 is applied initially and directly to the center sill *c* instead of to the body-bolster as in the said patent, and thereby increases the rigidity and resistance and insures the maximum strength of the underframe *a* in the operation of the draft-gear or when subjected to abnormal end stress. It is here noted that the other end and adjacent portion of the underframe *a* not shown on the drawing being similar in construction, and in the operation of the draft-gear applied thereto, no further description thereof is needed.

In the modification of my improvement shown in Fig. 6, the housings or openings 11′ for the buffing-springs (not shown) are not formed entirely through, but are closed at their inner or rear ends by the web 7′ of the body-bolster *b*′ instead of by the end-plate 4 of the center sill *c*, whereby the pressure of the buffing-springs is applied directly to the front side or web 7′ of the bolster *b*′ instead of to the center sill *c* as above described, and the stress of the draft-springs only, applied directly to the center sill *c*, and in this case also the end-plate 4 is fixed to the said closing parts of the web 7′ by rivets (or bolts) 19 in addition to the rivets 9′ before described.

In the modification shown in Fig. 7, the housings 11′ for the buffing-springs are formed entirely on the face of the end-plate 4 of the center sill *c* and project forward therefrom through openings 20 formed therefor transversely through the web 7″, the pressure of the buffing and draft springs respectively, being applied directly to the center sill *c* as previously described.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a metallic car underframe, the combination of the body-bolsters having respectively, an opening transversely therethrough on each side of the longitudinal center of the underframe adapted to form a housing for the buffing-spring of a suitable draft-gear, a center sill extending longitudinally between the body-bolsters, an upright plate forming part of the said sill across each end thereof adapted to butt on its front side against the corresponding body-bolster and to close the said openings therethrough, housings for the draft-springs of the said gear on the rear side of the said plate, the said "buffing" and "draft" springs being adapted to bear at their inner ends against the front and rear sides respectively, of the said plate within the said housings, and means for fixing the said sill to the body-bolsters, substantially as described.

2. In a metallic car underframe, the combination of the body-bolsters having respectively, an opening transversely therethrough at each side of the longitudinal center of the underframe, a center sill extending longitudinally between the body-bolsters, an upright plate forming part of the said sill across each end thereof and adapted to butt against the corresponding body-bolster, a housing projecting from the front side of the said plate through the said opening, for the buffing spring of a suitable draft-gear, housings for the draft-springs of the said gear on the rear side of the said plate, the said "buffing" and "draft" springs being adapted to bear at their inner ends against the front and rear sides respectively, of the said plate within the said housings, and means for fixing the said sill to the body-bolsters, substantially as described.

3. As a new article of manufacture, a car

sill having an upright plate across each end thereof adapted on each side for the application thereto of a suitable draft-gear, the said plate forming a component part of the sill, substantially as described.

4. As a new article of manufacture, a car sill having an upright plate across each end thereof adapted on each side for the application thereto of a suitable draft-gear, substantially as described.

5. As an article of manufacture, a car sill having means integral therewith for the application thereto at its end of suitable draft-gear, substantially as described.

6. In a car underframe, the combination of a body-bolster, and a sill having means integral therewith for the application thereto of a suitable draft-gear, substantially as described.

HARRY M. PFLAGER.

Witnesses:
HAL BELLVILLE,
EDWARD W. FURRELL.