

E. A. CURTIS.

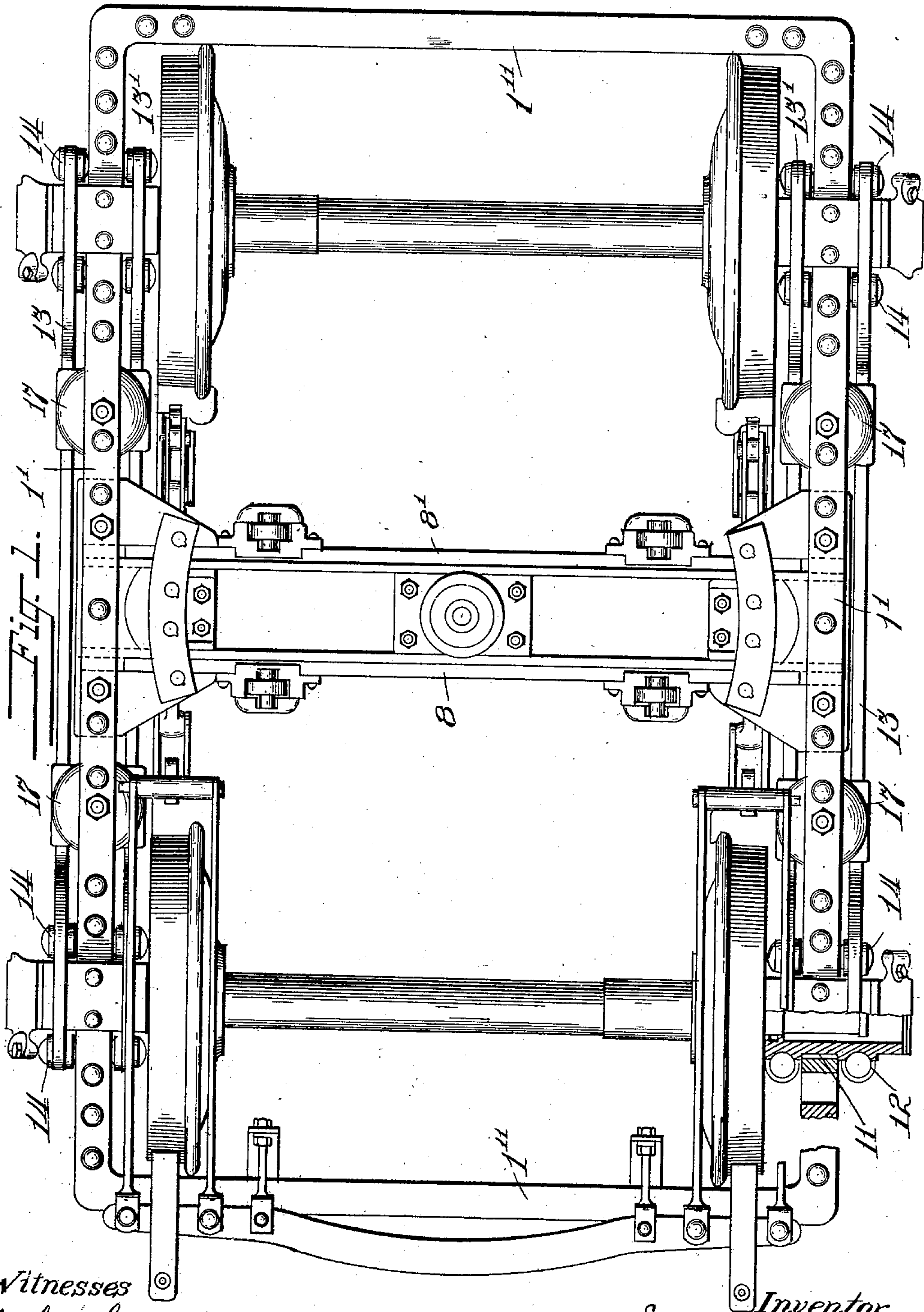
CAR TRUCK.

APPLICATION FILED AUG. 28, 1907.

898,440.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.



Witnesses
Milton Lenoir
Cois Force

By

Inventor,
Edmund A. Curtis,
Albert N. Graves
Attorney.

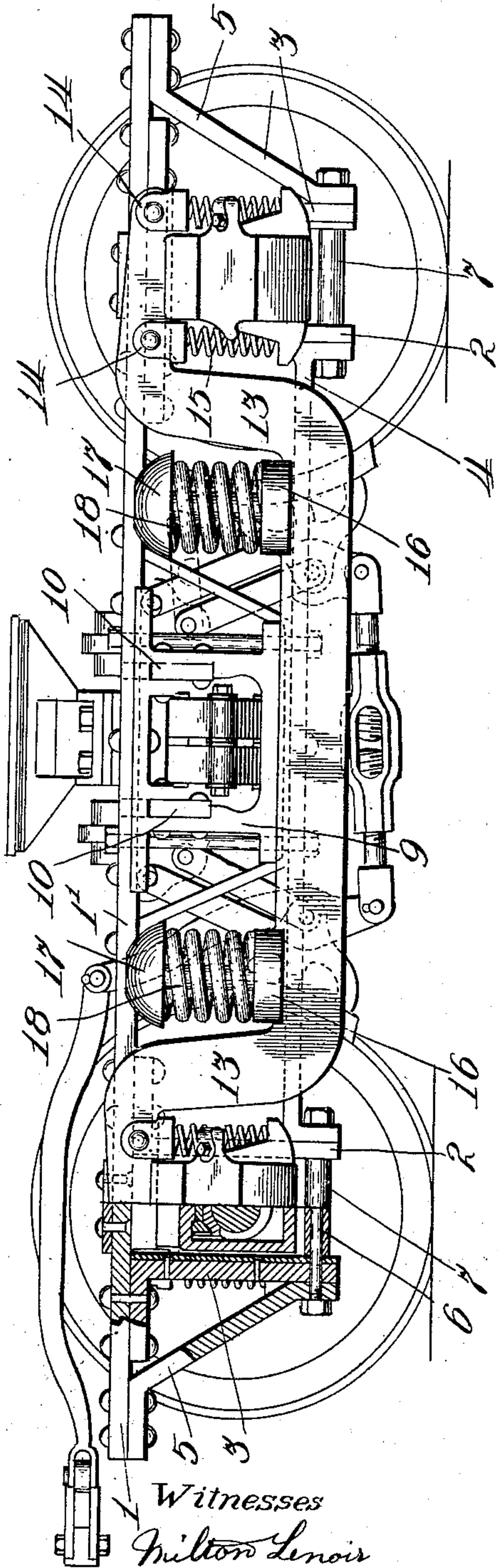
CAR TRUCK.

· APPLICATION FILED AUG. 28, 1907.

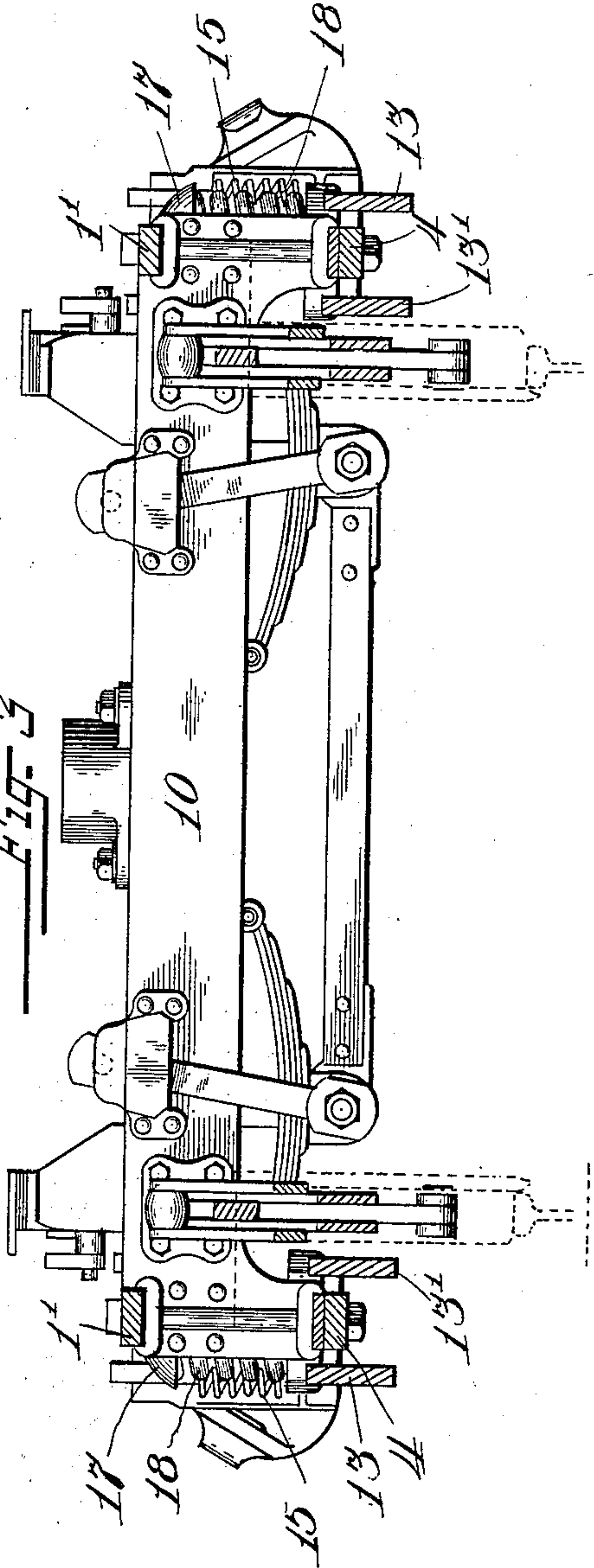
898,440.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 2.



Witnesses
Milton Lenoir
Lois Force



By

Inventor,
Edmund A. Foster,
Albert N. Crane,
Attorney.

UNITED STATES PATENT OFFICE.

EDMUND A. CURTIS, OF DECATUR, ILLINOIS.

CAR-TRUCK.

No. 898,440.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed August 28, 1907. Serial No. 390,418.

To all whom it may concern:

Be it known that I, EDMUND A. CURTIS, a citizen of the United States, and residing at Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

This invention relates to improvements in car trucks and refers more particularly to improvements in the frame construction of such trucks.

The salient object of the invention is to provide a construction in which all of the ease of riding movement inherent to properly constructed trucks of the M. C. B. type is fully preserved, and this ease of riding movement further supplemented or enhanced by combining with the equalizer arrangement of the M. C. B. type double sets of cushion springs between each end of each equalizer and the journal box which supports the same.

The invention will be readily understood from the following description, reference being had to the accompanying drawings, in which

Figure 1 is a plan view of a truck embodying the invention, certain parts being shown in horizontal section in a plane coincident with the axis of one of the car axles; Fig. 2 is a side elevation of the truck, parts being shown in vertical section and in a plane coincident with one of the car axles; Fig. 3 is a transverse, vertical, sectional view taken approximately on line 3—3 of Fig. 1.

Referring to the drawings, 1 designates as a whole a horizontal sill frame, which, in the preferred construction shown, extends entirely around the truck, and the side portions 1' of which form what are usually designated the upper wheel pieces. To the underside of said wheel piece portions are secured downwardly depending pedestal frame members as 2 and 3, these members being desirably formed as L-shaped brackets.

The lower ends of the innermost pedestal members 2 are rigidly united by a lower horizontal wheel piece 4 suitably bolted thereto, while the outer members 3 are suitably reinforced and braced by strut brackets 5. Tie rods 6 and space sleeves 7 connect the lower end of each pair of pedestal sides; the side frame structure and pedestal frames connected therewith, forming, as a whole, a rigid frame structure at each side of the truck, which frame structures are further rigidly

united with each other by the end sill frame portions 1''.

The transom frame members 8 and 8' extend across the center of the truck and are at their ends rigidly united with suitable skeleton pillar castings 9, as indicated at 10, and these pillar castings are in turn secured between the upper and lower wheel pieces as shown clearly in the drawings.

The vertical side members 2 and 3 of each pedestal frame rest within confining ways 11 (see sectional part of Fig. 1) formed in the journal boxes between the lower spring seats 12 of the latter.

13 and 13' designate the equalizers, of which there are a pair at each side of the truck; these equalizers being of the M. C. B. type and arranged in planes immediately outside of and inside of the corresponding upper and lower wheel pieces. Each journal box is provided with four spring seats 12, two at each side thereof, and each end of each equalizer is provided with a pair of spring caps 14 arranged in vertical register with the corresponding pair of spring seats. Between the spring caps 14 and spring seats 12 are interposed pairs of expansion springs 15; the length of these springs being such as to carry the equalizer free from and far enough above the upper side of the corresponding journal box to afford full play of the equalizers without contact.

Across the lower portions of each pair of equalizers are mounted spring supporting saddles 16 and to the under side of the upper wheel pieces, in vertical register with these saddles, are secured spring caps 17. Coiled, main-supporting springs 18 are interposed between the spring caps 17 and saddle 16 and thus serve to carry the rigid frame structure of the truck. The length of the springs 18 is such that the upper wheel pieces are carried above and entirely free from the journal boxes even under full load.

It follows that in a truck having the construction described, the vertical rising movement of each car wheel and its journal box imparts a corresponding movement to the truck frame as a whole through two entirely independent sets of springs, each of which minimizes and cushions such vertical movement. That is to say, assuming any one of the car wheels to pass over an abrupt rise in the track, this movement will first be imparted to the ends of the pair of equalizers which

rest upon this particular journal box through the set of four springs carried by that journal box, that end of the pair of equalizers will be oscillated upwardly compressing the nearer
5 one of the springs 18 somewhat, and the remote spring 18 at the same side also, but in a lesser degree, and these two springs will in turn impart a resultant lifting movement to the rigid truck frame which carries the bol-
10 ster and so carries the car body. Obviously, all of the minor rising and falling movements of the car axles will be completely or substantially absorbed by the system of springs, and the car body be entirely relieved from
15 such minor vertical vibrations. Moreover, if the rise or depression in the track be sufficiently short so as to impart to the wheel only a sudden, short, vertical displacement, this displacement or jolt will be practically all ab-
20 sorbed by the corresponding set of journal box springs alone, since the inertia of the truck frame, as a whole, and the relative stiffness of the main springs 18 will prevent a correspond-
25 ing, responsive movement of the truck frame. In case the rise or depression in the track be abrupt, followed by a continuation of such rise or depression relatively to the general track surface of the rail, then the movement imparted to the truck frame and
30 car body will be an undulatory or wave-like movement and devoid of disagreeable jolting.

While I thus secure the ease of riding movement, it is particularly noted that this is accomplished without sacrificing at all ri-
35 gidity and strength of the main truck frame structure and without introducing radical innovations in the matter of general arrangement of the parts.

It will be obvious that the details of con-
40 struction may be modified without departing from the spirit of the invention and I do not therefore wish to be understood as limiting

my claims to the specific details shown, except in-so-far as said claims are made specific in terms.

45

I claim as my invention:

1. In a car truck, the combination of side frames comprising upper and lower wheel pieces and pedestal frames, all rigidly united with each other, end sill members extending
50 across each end of the truck and rigidly uniting the two side frames, pairs of equalizers arranged to extend one at each side of each of said side frames, a spring supporting each end of each equalizer from the corresponding
55 journal box, saddles arranged to lie across the intermediate parts of the equalizers, and main coiled, expansion springs interposed between said saddles and the overlying wheel pieces and supporting the said frames free
60 from and above the top sides of the journal boxes.

2. In a car truck, the combination of side frames comprising upper and lower wheel pieces, pedestal frames rigid with and forming the end portions of said side frames, end
65 sill members extending across each end of the truck and rigidly uniting the two side frames, pairs of equalizers arranged to extend one at either side of each of said side frames, a group
70 of four springs mounted upon each journal box and unitedly serving to support the two corresponding ends of the pair of equalizers, saddles connecting the intermediate portions of each pair of equalizers, spring caps mount-
75 ed in vertical register with the corresponding saddles upon the upper wheel pieces, and main, coiled, expansion springs interposed between the corresponding spring caps and saddles.

EDMUND A. CURTIS.

Witnesses:

JAS. D. JOHNSON,
J. P. DRENNAN.