

No. 762,610.

PATENTED JUNE 14, 1904.

S. A. BEMIS.

BOLSTER SUPPORT FOR RAILWAY CAR TRUCKS.

APPLICATION FILED OCT. 5, 1903.

NO MODEL.

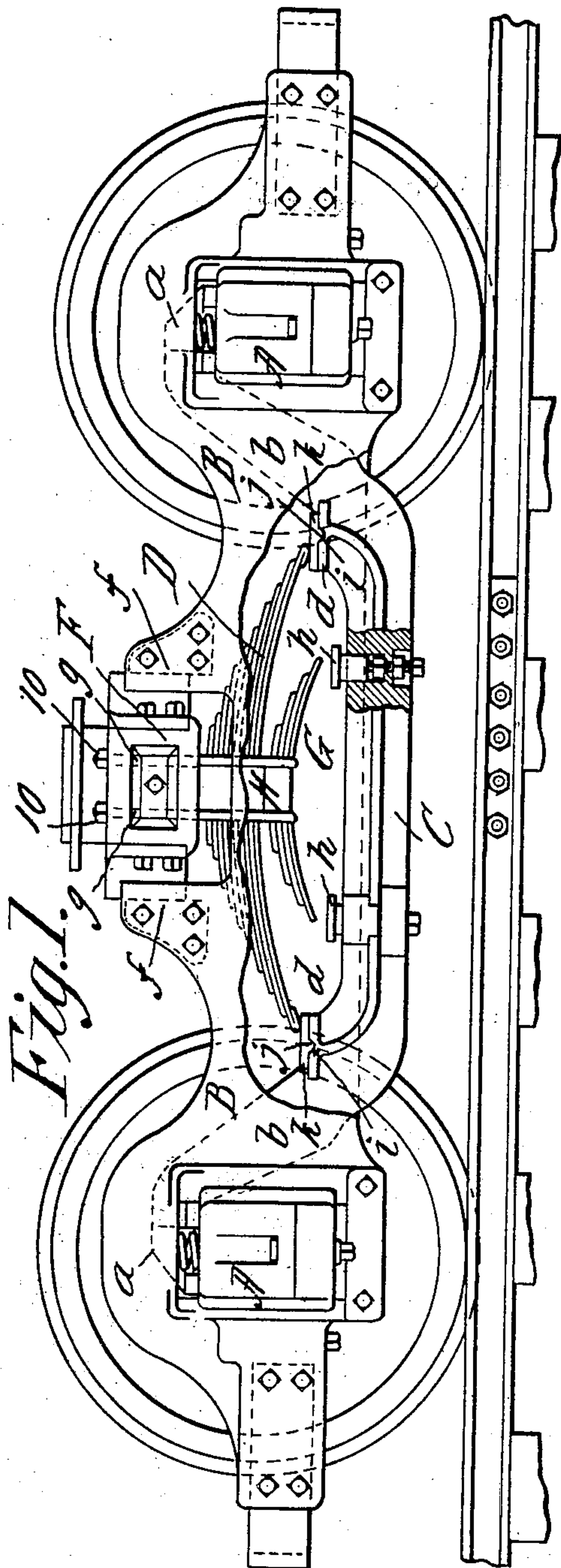


Fig. 1.

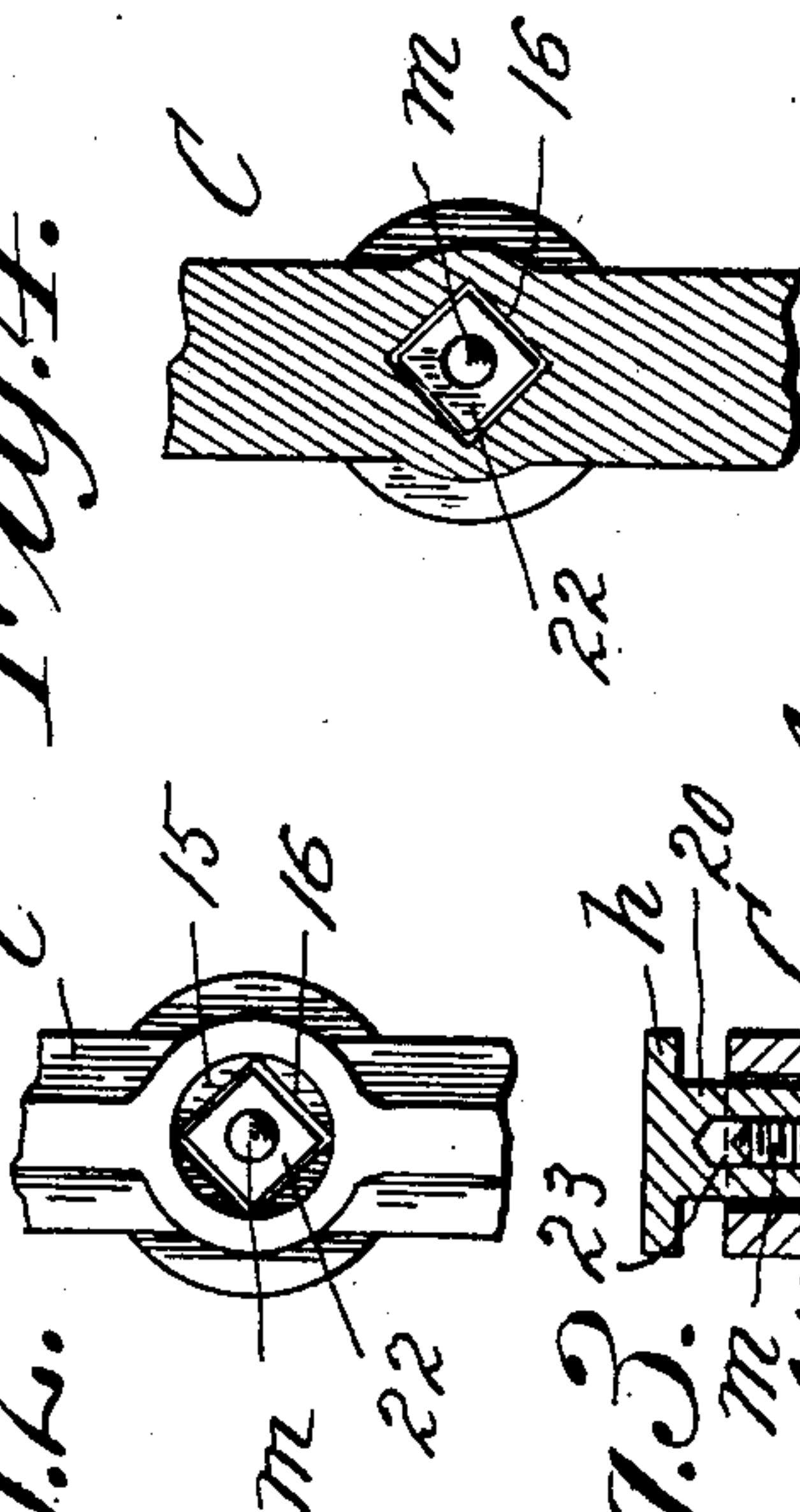


Fig. 2.

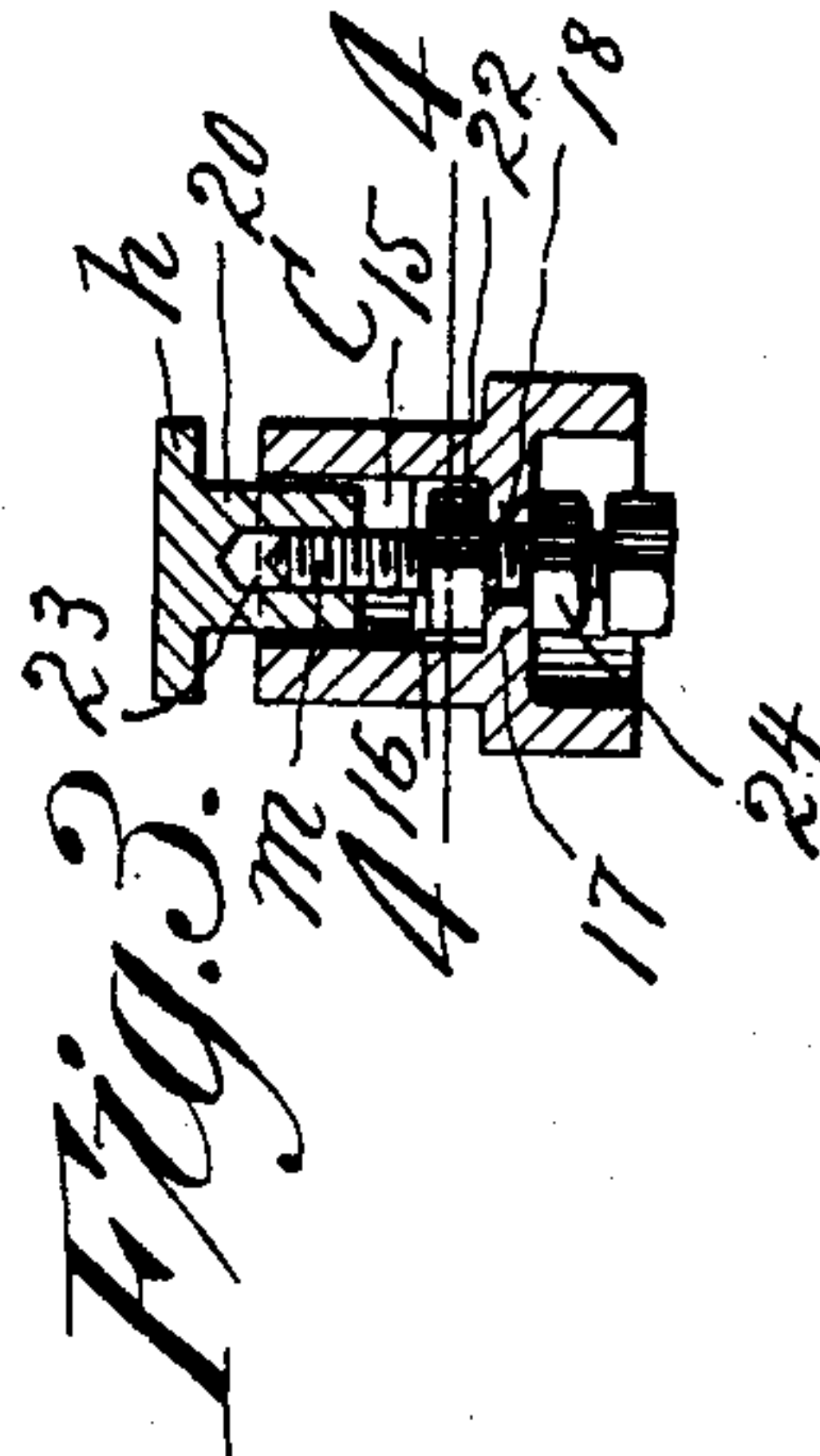


Fig. 3.

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UNITED STATES PATENT OFFICE.

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BOLSTER-SUPPORT FOR RAILWAY-CAR TRUCKS.

SPECIFICATION forming part of Letters Patent No. 762,610, dated June 14, 1904.

Application filed October 5, 1903. Serial No. 175,888. (No model.)

To all whom it may concern:

Be it known that I, SUMNER A. BEMIS, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Bolster-Supports for Railway-Car Trucks, of which the following is a full, clear, and exact description.

10 This invention relates to improvements in trucks for railway-cars of a class in which the car-body is supported on a transverse bolster which rests on elliptic springs which in turn are supported by a side bar ranging longitudinally of the truck, the latter being of a downwardly-dipping bowed form and having its extremities in bearing upon the tops of the journal-boxes. The truck having a generally novel organization and typical of the class of railway-car equipment to which the present invention is especially applicable is shown and described in an application for Letters Patent of the United States filed by me under date of October 31, 1903, and Serial No. 179,316.

25 The object of the present invention is to provide a double set of elliptical springs under the car-body-supporting bolster, the first set normally being under compression and sustaining the weight of the body, while the second or supplemental spring is normally non-compressed and relieved of any compression thereon as occasioned by the weight of the car-body; but such second or supplemental spring is so arranged as to be brought into compression and to assist in supporting the load when the latter becomes excessive and beyond which the primary spring has the capability of sustaining, the result being that the car-body will be carried spring-supported easily and with a considerable degree of resiliency, conducing to comfort of the riders, and yet on occasion there will be adequate spring-supporting provisions for the accommodation of maximum loads; and the invention consists in constructions or arrangements of parts and combinations of parts, all substantially as hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is

a side elevation of the improved truck, a portion of the side frame being broken away for clearer illustration and a part shown in vertical section. Fig. 2 is a plan view of an intermediate portion of one of the equalizing side bars comprised in the truck as the primary support for the load. Fig. 3 is a vertical sectional view through the part of the structure represented in Fig. 2. Fig. 4 is a horizontal sectional view on line 4 4, Fig. 3.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A A represent the journal-boxes understood as supported on the ends of the car-wheel axles, as usual.

B represents the side members or yoke-beams of the truck-frame, the same sustaining all of the portions and equipments pertaining to the truck proper, but having no office for supporting the load imposed on the truck and constituted by the car-body, &c.

Each of the side members B is spring-supported at the tops of the journal-boxes and is of hollow construction to accommodate within and between the side members thereof what is herein termed the "equalizing-bar" C, which is of a bowed and downwardly-dipping form having horizontal extremities *a a*, directly resting on the front and rear journal-boxes A A. This bar C has at about the junction of its intermediate horizontal part with its endwise upwardly-extending portions *b b* the horizontal ledges or rests *d d* for the front and rear bottom portions of the elliptic springs D, which are suitably secured to and depend below the transom-bolster F, the length of which extends transversely of the truck and has its extremities engaged for vertical guidance in the upstanding members *f f* of the U-formed middle portion or yoke of the side or yoke beam B.

G represents the secondary or supplemental elliptic spring, arranged with its convexity upward and located beneath the primary elliptic spring D, such spring G, together with the one D, being clamped to the under side of the end portion of the transom-bolster F by a clip or spring retainer H, comprising as a

part thereof the vertical bolts *g*, fastened by nuts 10 10.

Beneath the extremities of the secondary elliptic spring *G* are horizontal rests *h h*, the locations of which are endwise inside of the rests *d d* for the ends of the primary elliptic spring *D*, the spring *G* being shorter than the one *D*.

The normally relative locations of the ends of the secondary elliptic spring are above the tops of the rests *h*, and the primary elliptic spring *D* is of such strength and capacity for the yielding support that the weight of the car-body and its ordinary load will be sustained by the primary elliptic spring through the medium of the transom-bolster without so far depressing the transom-bolster and the primary spring as to bring the secondary spring by its extremities against the rests or abutments *h h*; but on the occasions of excessive loads on the car-body the bolster, with both springs, will be so far depressed as to bring the supplemental spring to bear against the rests of the equalizing-bar, which latter then supports the load yieldingly through the medium of both the primary and the secondary springs.

In order to adjust the truck so that the secondary spring will come to its bearings after any given predetermined load or weight is imposed upon the supporting-bolster, the rests *h h* are provided movable and adjustable and have adjacent means therefor, as represented more particularly in Fig. 3.

The equalizing-bar has in its upper portion a vertical circular socket 15, below which is a polygonal socket 16, at the base of which is a horizontal web 17, having a comparatively small vertical screw-hole 18 therethrough.

The rest *h* is constituted as a horizontal member at the top of a circular depending hub-like portion 20, fitting and vertically playing in the socket 15.

A headed screw *m* extends by its shank upwardly loosely through the hole 18 in the web 17 and with a screw engagement through a polygonal nut 22 in the correspondingly-formed socket 16 and with a screw-threaded engagement in the screw-tapped axial hole 23 in the portion 20 of the rest *h*.

A binding-nut 24 screw-engages the screw and may be set up against the under side of the web 17. By the manipulation of these parts the rest *h* may be positioned higher or lower and retained in any given set position, so that the space between the top of the rest and the adjacent extremity of the secondary spring may be as great or little as desired for the extent of freedom of movement of the secondary spring bodily in the downwardly direction before it becomes effective and contributes as a supporting factor for the car and its load.

The rests *d d*, as shown in Fig. 1, are provided with intermediate notches *i*, receiving

the engagement therein of a depending rib *j* on a removable chafing-plate *k*.

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

1. In a car-truck, the combination with the journal-boxes and the side truck member extending longitudinally between, and supported by, said boxes, of a car-body-supporting bolster having at and below the extremity thereof a primary elliptic bolster-supporting spring, the extremities of which have supporting-bearings on, and at different portions of the length of, said side member, and a secondary spring supported by, and depending below, the end portion of the bolster and having its extremities slightly above and out of contact with the top of said side member, and adapted, upon the imposition of excessive stress on the primary spring to be brought to bearings against said side member.

2. In a car-truck, the combination with the journal-boxes and the side member *C*, comprising intermediate horizontal portion, upwardly and endwise extending end portions *b b* and horizontal extremities *a a* resting on the journal-boxes and having spring-rests *d d* at end portions of the horizontal intermediate part thereof, and having spring-rests *h h* separate from each other and both between the rests *d d*, of a car-body-supporting bolster having at and below the extremity thereof, a primary bolster-supporting spring *D*, the extremities of which have permanent bearing on said rests *d d* and a secondary bowed spring intermediately secured to the end of the bolster and depending therebelow and having its extremities normally above and separated from said rests *h h*.

3. In a car-truck, the combination with the journal-boxes and the side truck member extending longitudinally between, and supported by, said boxes, of a car-body-supporting bolster having at and below the extremity thereof a primary elliptic bolster-supporting spring, the extremities of which have supporting-bearings on, and at different portions of the length of, said side member, and a secondary spring supported by, and depending below, the end portion of the bolster and having its extremities slightly above and out of contact with the top of said side member and adapted, upon the imposition of excessive stress on the primary spring to be brought to bearings against said side member, and virtually-adjustable bearing members, for the extremities of the secondary spring sustained provided on said side member.

4. In a car-truck, the combination with the journal-box-supported side bar *C* having at intermediate portions thereof the separated vertical sockets 15 and the base-web 17 having a perforation therethrough and spring-rests *h* having flat upper portions and hub-like depending portions extended downwardly

into said sockets and screws extending through the perforated webs and engaging said rests, of a car-body-supporting bolster having at its end portion an elliptic spring the depending extremities of which are in bearing on portions of the said side bar endwise beyond said rests and a secondary elliptic spring connected to the bolster and having the depending extremities thereof above and normally separated from the upper surfaces of said rests for the purposes set forth.

5. In a railway-truck, the combination with the axle-box-supported side bar, of bowed form, as described, of a car-body-supporting bolster, a primary elliptic spring D with the free extremities thereof downwardly extended and having bearing at different supporting portions in the length of the said side bar and

the secondary elliptic spring having its upwardly-bowed middle portion adjacent the upwardly-bowed middle portion of the primary spring, and the clip or holder H embracing the middle portions of said two springs and clamping the same to the under side of the end portion of the bolster and comprising bolt-like members upwardly penetrating the end portion of the bolster and having confining-nuts at their upper extremities, substantially as described and shown.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses, this 25th day of September, 1903.

SUMNER A. BEMIS.

Witnesses:

A. V. LEAHY,

WM. S. BELLOWS.