(No Model.)

F. E. ELLIS.

DRAW GEAR FOR CARS.

No. 497,777. Patented May 23, 1893.

Fig. 1.

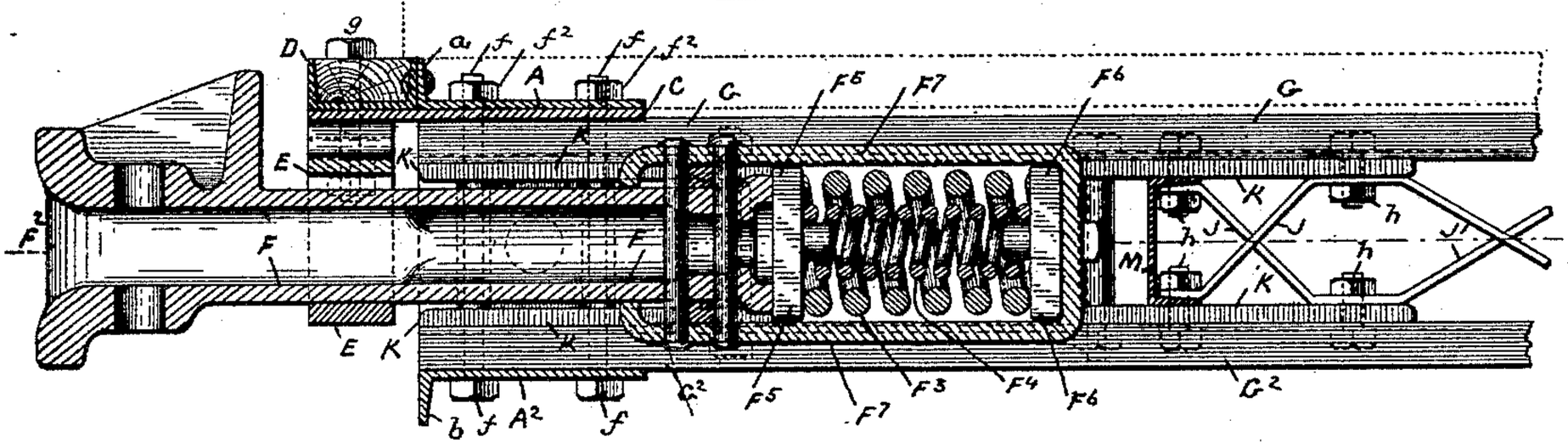

Fig. 2.

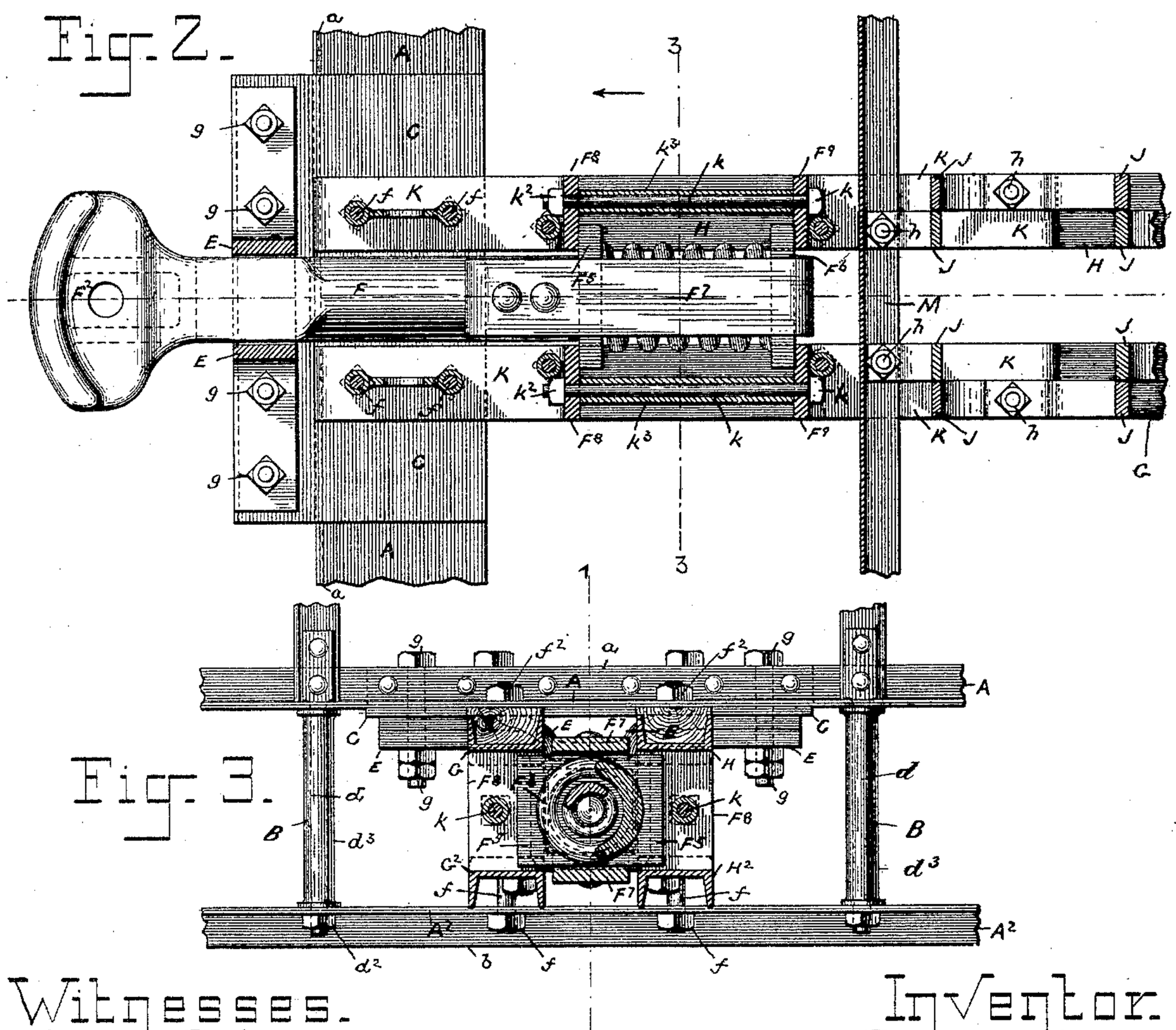

Fig. 3.

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UNITED STATES PATENT OFFICE.

FRED E. ELLIS, OF MELROSE, MASSACHUSETTS.

DRAW-GEAR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 497,777, dated May 23, 1893.

Application filed December 21, 1891. Serial No. 415,789. (No model.)

To all whom it may concern:

Be it known that I, FRED E. ELLIS, a citizen of the United States of America, and a resident of the town of Melrose, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Draw-Gears for Railroad-Cars, of which the following is a full, clear, and exact description.

This invention in draw-gears for railroad cars, in substance, consists of an end-sill of the floor-frame constructed in upper and lower members or sections, which, at intermediate points of their lengths, are joined and held separated by suitable struts and two longitudinal center-sills of the floor-frame each suitably constructed and held separated from each other and at their ends entered between and suitably secured to the upper and lower members of said end-sill and all in a manner to have an open way along and between the center-sills from the outer side of the end-sill, in combination with a draw-bar, its spring or springs and followers, all of any well known, or other suitable construction, which are severally arranged in said open way between said center-sills, having the draw-bar at its head-portion projected forward and supported by a carry-iron held on said end-sill, or otherwise suitably held, and guides and stops for said followers suitably held on said center-sills and all otherwise and preferably supported substantially as hereinafter described.

In the drawings, forming part of this specification, Figure 1 is a central longitudinal and vertical section of the draw-bar, its springs, the end-sill and the carry-iron on the end-sill for the draw-bar, and a side elevation of the end-portion of the longitudinal center-sill back of said parts, shown in section, and which is attached to said end-sill, and also of the followers of the draw-bar. Fig. 2 is a plan view of the under side of the draw-bar, its springs and followers and a horizontal longitudinal section of the center sills. Fig. 3 is a transverse vertical section, line 3—3, Fig. 2. Line 1—1, Fig. 3, is the line of section of Fig. 1.

In the drawings, A, A^2 are the upper and lower members or sections and B, B are struts making up the end-sill which is shown for the central portion only of its whole length.

Preferably each member of the end-sill is made of metal, iron being suitable, and in cross section, as shown, of L shape but it may be of other suitable shape, and the flange *a* of the L of the upper section projects upwardly and that *b* of the lower section projects downwardly. As shown each strut consists of a bolt *d* suitably headed at its upper and screw-threaded at its lower end, a screw-threaded nut d^2 screwed onto the screw-threaded end of the bolt and a sleeve d^3 surrounding the bolt between its opposite ends and extending between the under face of the upper member A and the upper face of the lower member A^2 of the end-sill. The bolts pass through and as stated their sleeves are between the members of the sill and their screw-nuts are at the under side of the lower and their heads are at the upper side of the upper member of the end-sill and all so that both members of the end-sill are held firmly together but separated from each other with an open space between them. The members of the end-sill are also joined by vertical headed bolts *f* and screw-nuts f^2. These bolts secure, as will hereinafter appear, the center-sills and also under and to the upper member of the said sill a flat plate C projected forward of the end-sill and having on its upper side a channel-iron D and on its lower side a carry-iron E for the draw-bar F and said channel-iron D and carry-iron E are secured by headed vertical screw-bolts and nuts *g* to said plate C, all of which however form no part of this invention.

To secure the center-sills G and G^2, H and H^2 to the end-sill A, A^2, the ends of the center-sills are entered between the upper and lower members of the end-sill and said bolts *f* pass through them. The center-sills, as well known, are lengthwise of the floor-frame of a railroad-car and together with the other longitudinal sills, intermediate and side, which are not shown as it was not deemed necessary, they make up substantially the greater part of the floor-frame. Said center-sills are preferably constructed of channel iron and as shown are each composed of upper and lower members or sections and of struts J joining said

sections together and holding them separated from each other, all substantially as described for the end-sill A, A^2. The center-sills are shown for only the end-portion joined to the end-sill as before stated, and as so joined the end of each member of the center sills is between the members of the end-sill, and all so that there is presented a space between and lengthwise of the center-sills which at the outer side of the end-sill, is open and unobstructed.

The draw-bar F is suspended on and with its head F^2 projected from its carry-iron E and further than this the draw-bar, its springs F^3, F^4, its forward and rearward followers F^5, F^6 and its strap F^7, all as well known, or are otherwise suitably located within and at and along the space between the center-sills, but as shown and preferably with the followers F^5, F^6 entered between the upper and lower members of both center-sills for rest against stops F^8, F^9, one F^8 for the forward follower F^5 and the other F^9 for the rear follower F^6 of the draw-bar. These stops extend between the upper and lower members of each center-sill and are fastened thereon in place by headed bolts and screw-nuts *h*. The two and opposite stops on each center-sill as stated, preferably are joined by longitudinal headed-bolts and screw-nuts k^2 located midway or thereabout of the height of the stops and outside of the portions of the followers on which said stops rest and so thereby not to interfere with the movement of said followers. Each bolt *k* between the stops is surrounded by a sleeve k^3.

The draw-bar, its spring, followers and stops all as described and considered as one whole and irrespective of the combination therewith of end and center-sills and their location as to said sills and of the attachment of the stops to the center-sills, operate in all respects as ordinarily. But by the combination of the end and center-sills and application of the draw-bar, its springs, followers and stops in relation to said sills all as has been particularly explained, it is obvious that the whole tensile strain on the draw-bar is sustained practically and most efficiently by and in the direct line of the center-sills, and as the end-sill is in separated upper and lower members and the center-sills are attached directly thereto all as stated, most ample opportunity is afforded for placing the draw-bar and its said attachments in position without in any degree weakening the end-sill and that again for their removal it is only required to loosen and detach but a few of the attaching devices of the sills to wit: bolts *f* joining the end and center-sills, the screw-nuts k^2 of the bolts or rods *k* joining the stops F^8, F^9 for the followers F^5, F^6 of the draw-bar and detaching the carry-iron E.

Preferably the connecting-bolts of the follower-stops F^5, F^6 are incased in sleeves as above stated and by this connection each stop is braced and stiffened by the other. The follower-stops, as particularly shown, are continuous between the members of the center-sills and each stop at each member of the sill has an extension K of some comparative length so as to afford a greater length for its attachment to the members of the sills. The continuity of the stops between the members of each sill however is not absolutely necessary although most efficient and practicable. Again, it is preferable that the stops be located as particularly explained but plainly they may be projected from the face of and into the pathway between the center-sills, but in such case it would be necessary and as well known to provide the center sills with horizontal projecting guides for the followers of the draw-bar, which by the construction particularly described and shown are secured by the upper side of the lower member of each center-sill. To place the follower-stops and guides for the followers on the outer face of the center-sills as above stated, it is plain that the space between the sills would have to be increased sufficiently to accommodate them but while this might be done and without departure from one combination of this invention as herein described, obviously it would to some extent at least detract from the efficiency of a draw-gear constructed in all respects in accordance with this invention.

Preferably the center-sills in conjunction with the other longitudinal sills are joined by continuous cross-bars or irons M of channel or other suitable shape in transverse section. Only one of the cross-irons is shown and they are severally between the upper and lower members of said sills and suitably bolted thereto.

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

1. In a floor-frame for railroad-cars, an end sill in separated upper and lower members and a center sill in two sections, horizontally separated from each other and each in separated upper and lower members and said several members made of iron angle-bars, struts extending between said sill members, and means securing said struts to said sill members which pass through said members and grip and bind together said struts and members in the direction of the height of the sills, in combination with a draw-bar its spring or springs and followers of suitable construction, and severally located lengthwise of and extending along and between said sections of the center sill and between the upper and lower members of the end-sill and stops or rests for said followers, mounted and held on the upper and lower members of said center-sill sections, substantially as described, for the purposes specified.

2. In a floor-frame for railroad cars, an end sill in separated upper and lower members and a center sill in two sections, horizontally separated from each other and each in sepa-

rated upper and lower members and said several members made of iron angle-bars, struts extending between said sill members, and means securing said struts to said sill members which pass through said members and grip and bind together said struts and members in the direction of the height of the sills, in combination with a draw-bar, its spring or springs and followers of suitable construction and severally located lengthwise of and extending along and between said sections of the center sill and between the upper and lower members of the end-sill, stops or rests for said followers mounted and held on the lower members of said center-sill sections and means detachably joining together the stops of each of said sill sections, substantially as described, for the purposes specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRED E. ELLIS.

Witnesses:
ALBERT W. BROWN,
JOHN F. NELSON.