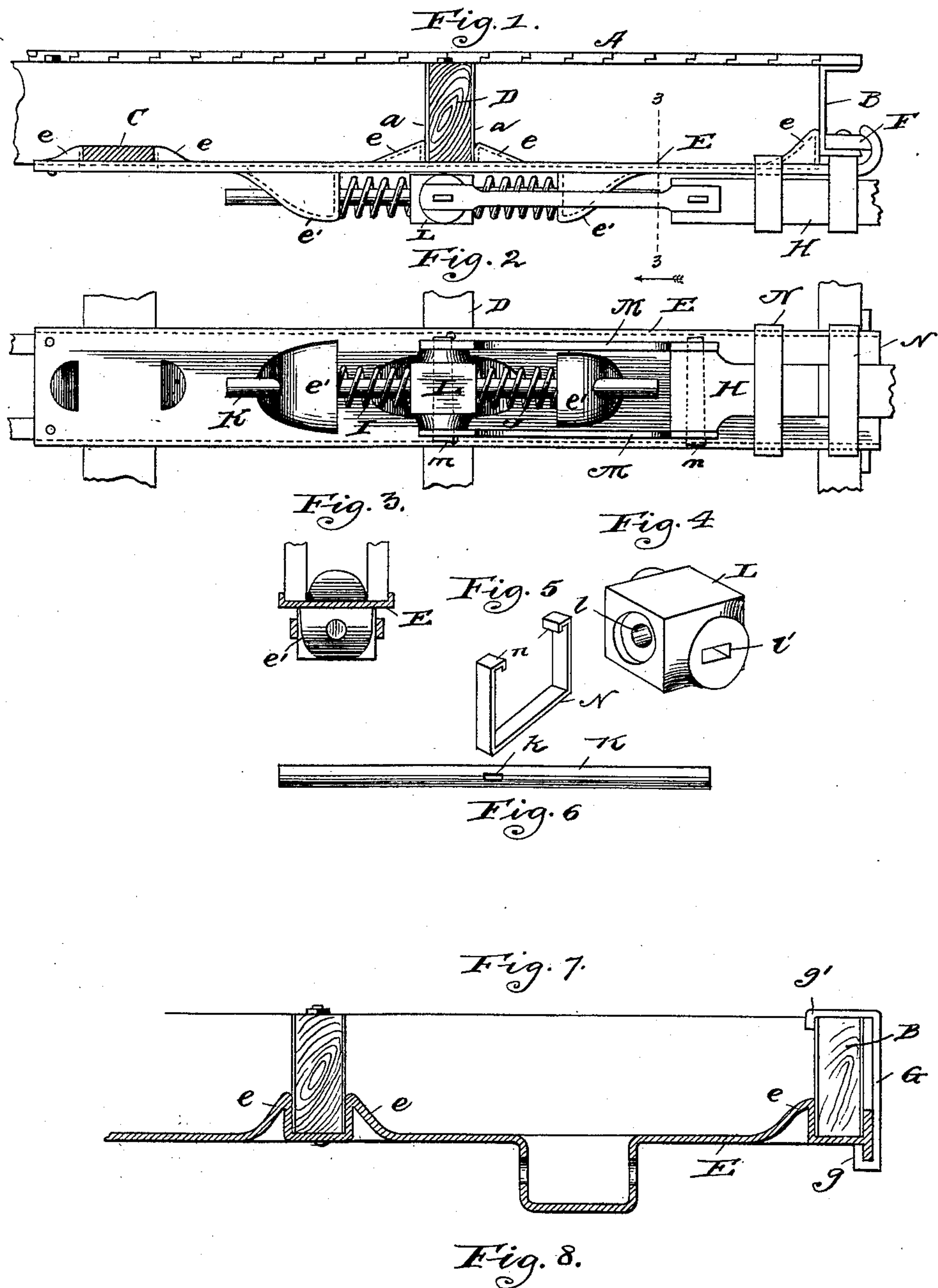


(No Model.)

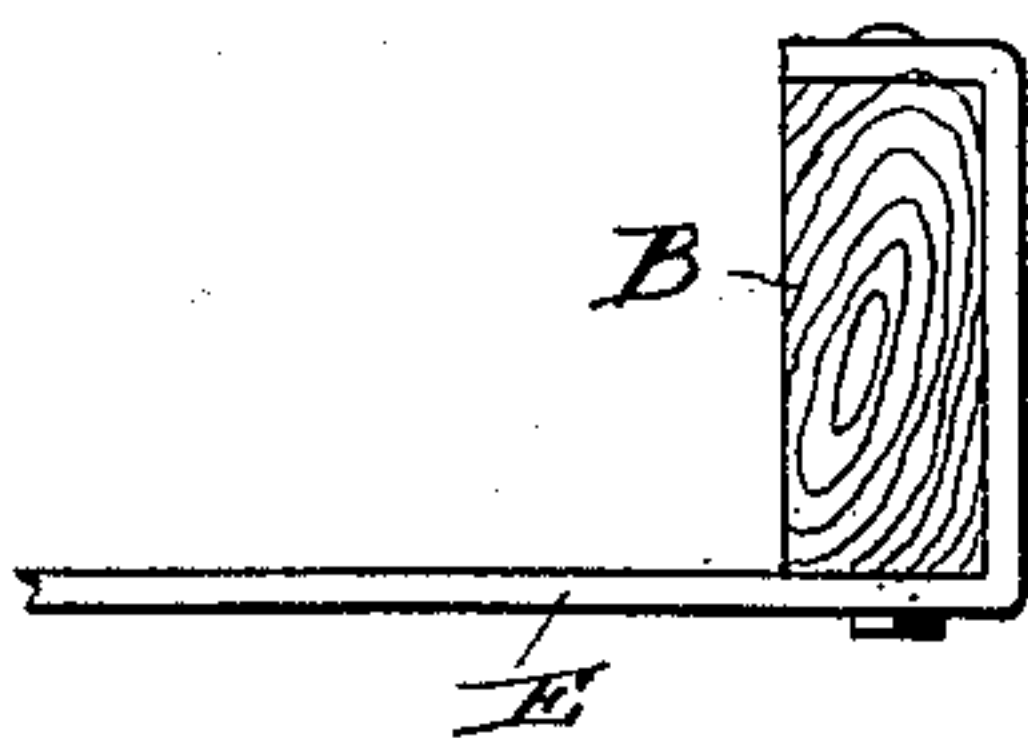
G. L. HARVEY.
DRAW GEAR FOR CARS.

No. 432,274.

Patented July 15, 1890.



Witnesses,
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UNITED STATES PATENT OFFICE.

GEORGE L. HARVEY, OF CHICAGO, ILLINOIS.

DRAW-GEAR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 432,274, dated July 15, 1890.

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To all whom it may concern:

Be it known that I, GEORGE L. HARVEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draw-Gear, of which the following is a specification.

My invention relates to an improved draw-gear for railway-cars, and has for its object to provide a draw-gear which shall secure great strength with due regard to simplicity and economy of construction and lightness.

In carrying out my invention I so connect the draw-head with the frame-work of the car that the strain shall be transmitted to the floor-timbers and sills, and thereby distributed so as to lessen the liability of breaking the frame-timbers and prevent the pulling out of the draw-gear, which with the present construction so frequently occurs as to become a source of great danger, expense, and delay in the operation of railway-trains. To this end I provide a draw-gear, which by preference has a bearing upon the body-bolster and the end sill of the car and, if desired, upon one or more intermediate frame-timbers. By this method of connecting the draw-gear with the car-frame I distribute the strains and greatly lessen the danger of breaking the frame-timbers and render it practically impossible to pull out the draw-gear. I have also improved the construction of the draw-gear by the provision of a draft-connection having lugs to engage the cross-timbers and end sill instead of relying upon bolts, as in the usual construction, and this draft-connection in the preferred form is made from a steel bar or plate, which is forged, pressed, or cast to furnish the engaging-lugs, which are preferably so disposed as to provide seats and side bearings for the cross-timbers and adapted to transmit the strains from the draw-head, either in pulling or buffing the car, to the cross-timbers and through them to the longitudinal sills of the frame. This plate or bar is also in the preferred construction provided with integral shoulders or lugs to furnish bearings for buffer-springs and apertured for the passage of a sliding rod carrying a block, against which the inner ends of the springs have a bearing, said block being connected by a link or links with a draw-head.

I have improved the details of construction of these last-named parts; but said details may be varied in a structure embodying the principal feature of my invention above mentioned. For example, a single spring may be used instead of two or more, and the manner of mounting said springs and of connecting the draw-head with the principal draft-connection may be varied.

In the accompanying drawings, Figure 1 is a longitudinal section through the floor of the car and showing my draw-gear in side elevation. Fig. 2 is an inverted plan view of the parts shown in Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1. Figs. 4, 5, and 6 are details, respectively, of a buffer-block, hanger, and a sliding rod on which the buffer-block is mounted. Fig. 7 shows a modified form of the draft-connection; and Fig. 8 is a further modification, showing the means of securing said draft-connection to a wooden end sill.

In the drawings, A indicates the floor of the car; B, the end sill thereof; C, the bolster; and D, Figs. 1 and 2, an intermediate cross-timber. The end sill and cross-timbers may be either wooden or metal beams, and I have shown in the several views of the drawings different forms. Where the wooden timber is used, I employ, by preference, chafing-plates *a*. E represents the draft-connection, which, in the form shown in the drawings, is a metallic plate of irregular outline, and either cast or wrought to provide bearing lugs or shoulders *e* to engage the end sill and one or more interior cross-timbers—as, for example, the bolster and one or more intermediate cross-timbers, as in Fig. 1, or the end sill and bolster only, as shown in Fig. 7. The form of these shoulders or lugs will be varied to adapt them to the particular construction of cross-timber or end sill with which they are employed. For example, as shown in Fig. 1, the end sill is a channel-beam presenting outwardly, and in this instance the outer end of the plate E is hooked or curved upwardly and rearwardly, and beneath it is driven a wedge F.

In Fig. 7 the forward end of the plate E terminates in a T-head, and a separate piece G has bent portions *g g'* to engage this head and the top of the end sill. Of course it will be understood that instead of making the

connection directly to the end sill it may be made to the breast-timber, where such timber is employed in the construction of a car. I prefer to make the plate E from pressed steel, which in the raw or rough will be a plate of suitable width—say sixteen inches—and the lugs will be formed conveniently by means of male and female dies. To provide for mounting the springs and for connecting the draw-head H to the plate E, I also form one or more downwardly-projecting shoulders or lugs e' , as in Fig. 1.

In Fig. 1 of the drawings I have shown a practicable method of mounting the springs and of connecting the draw-head to the plate E. I and J represent coiled springs having a bearing at their outer ends, respectively, against the shoulders e' , and said shoulders are apertured for the reciprocation thereof through of a rod K, having a buffer-block L detachably secured thereto; said block being apertured at l for the passage of the rod therethrough, and having keyways l' at right angles to said aperture. The rod K has a keyway k therein. This buffer-block may be connected to the draw-head by means of a link or links M, detachably secured to the buffer-block and draw-head, respectively, by means of keys m , the key securing the ends of the links to the buffer-block passing also through or into the keyway in the rod K. The draw-head may be supported by the hangers N, and the plate E has its edges preferably flanged, as shown in Fig. 3 of the drawings, and the hanger N has its ends hooked, as at n , to engage these upturned edges. It will be understood that the links M, instead of terminating at the buffer-block, as shown in the drawings, may be extended beneath the body of the car and connected to a draw-head at the opposite end thereof, so as to make what is known as a "continuous draw-bar."

In the modification shown in Fig. 7 there is shown in sectional elevation a plate having a U-shaped bend presenting upwardly to form the engaging shoulders or stops e ; but the principle of the invention is present in this modified construction, which only differs in its structural feature and illustrates one of the many modifications which may be made from said invention.

Now, it will be obvious that with a draw-gear of the above construction the strains and shocks will not only be transmitted to the cross-timbers and the longitudinal sills, but that the efficiency of the device is not dependent upon the use of securing bolts or rivets, but in the direct tension and compression of the parts of the draw-gear and sills,

and the strains and shocks being so widely distributed, the danger of breaking the timbers is averted, while the pulling out of the draw-gear is rendered practically impossible.

I claim—

1. In a draw-gear, a plate having a plurality of integral lugs projected from the face thereof and adapted to engage the sides of one or more of the transverse timbers of the car, whereby to sustain the draw-gear both in pulling and buffing, substantially as described.

2. In a draw-gear, a plate having integral lugs or shoulders adapted to engage one or more of the cross-timbers of the cars, and having also oppositely-projecting lugs to adapt the plate for connection with the draw-head, substantially as described.

3. In a draw-gear, a plate having integral lugs to engage one or more of the cross-timbers of the car-frame and oppositely-projecting lugs to furnish bearings for buffer-springs, a buffer-block having a bearing on said springs, and links connecting the draw-head to the buffer-block, substantially as described.

4. In a draw-gear, a plate having integral upwardly-projecting lugs to engage the cross-timbers of the car and a downwardly-projecting lug or lugs to provide bearings for buffer-springs, said downwardly-projecting lugs having ways therein, a rod adapted to slide in said ways and carrying a buffer-block, springs having a bearing on said downwardly-projecting lugs and said block, and links connecting the draw-head and the block, substantially as described.

5. A draw-gear plate constructed from pressed steel having integral projecting shoulders or lugs to adapt the plate for engagement with the cross-timbers of the car and for connection with the draw-head, substantially as described.

6. In combination with the end sill and bolster of a car, a draw-gear comprising a plate having integral shoulders to engage the end sill and bolster and a downwardly-projecting lug or lugs to provide bearings for a buffer-spring or springs, ways in said downwardly-projecting lug or lugs, a rod reciprocating in said ways, a spring buffer-block detachably secured to said rod, and links connecting said block with the draw-head, substantially as described.

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