

(No Model.)

G. D. WADLEY.
DRAW BAR.

No. 492,853.

Patented Mar. 7, 1893.

Fig. 1.

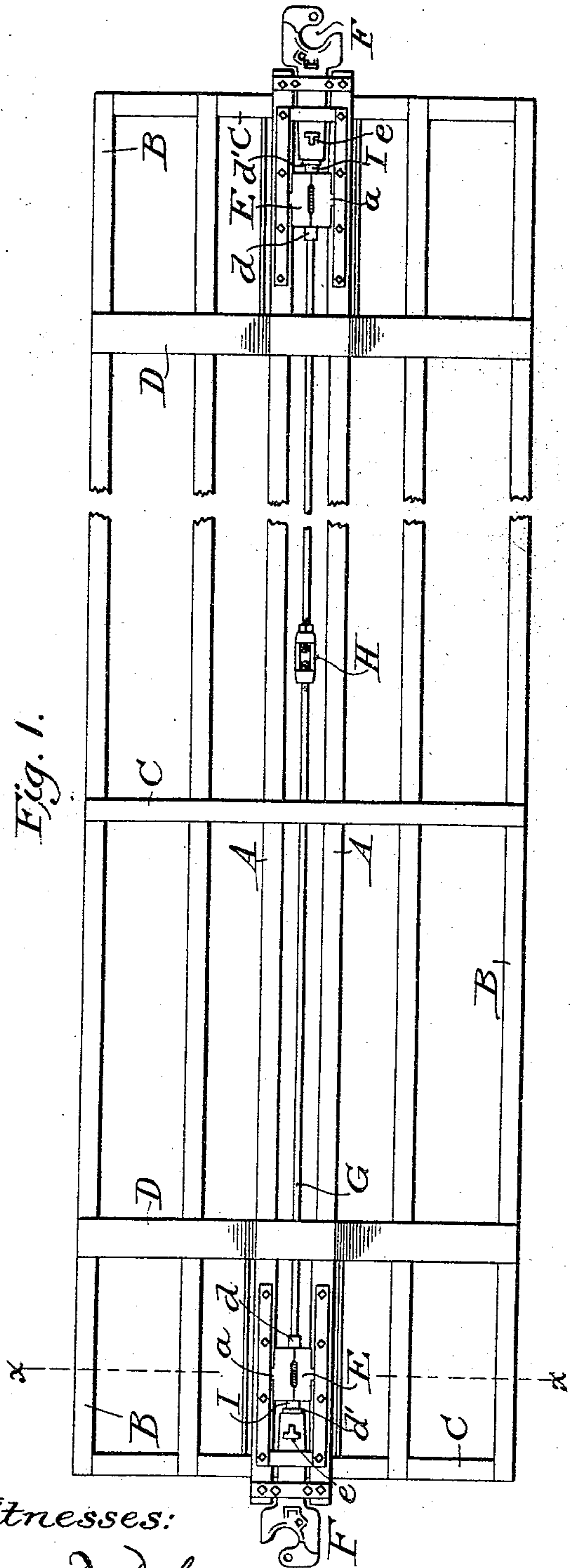


Fig. 2.

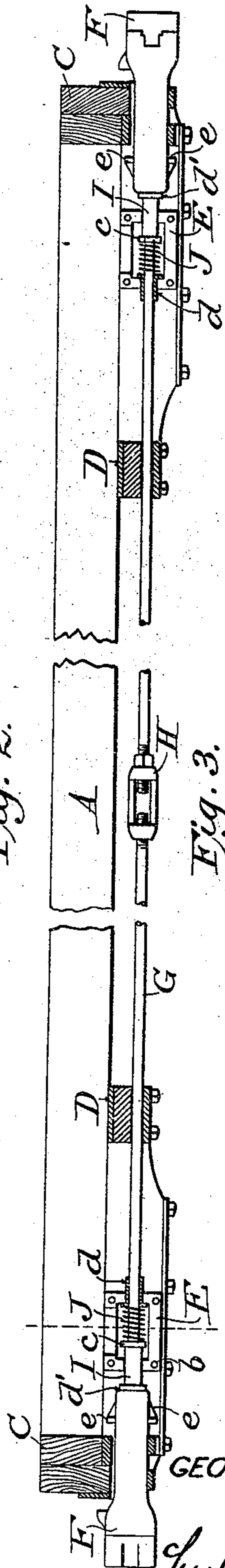
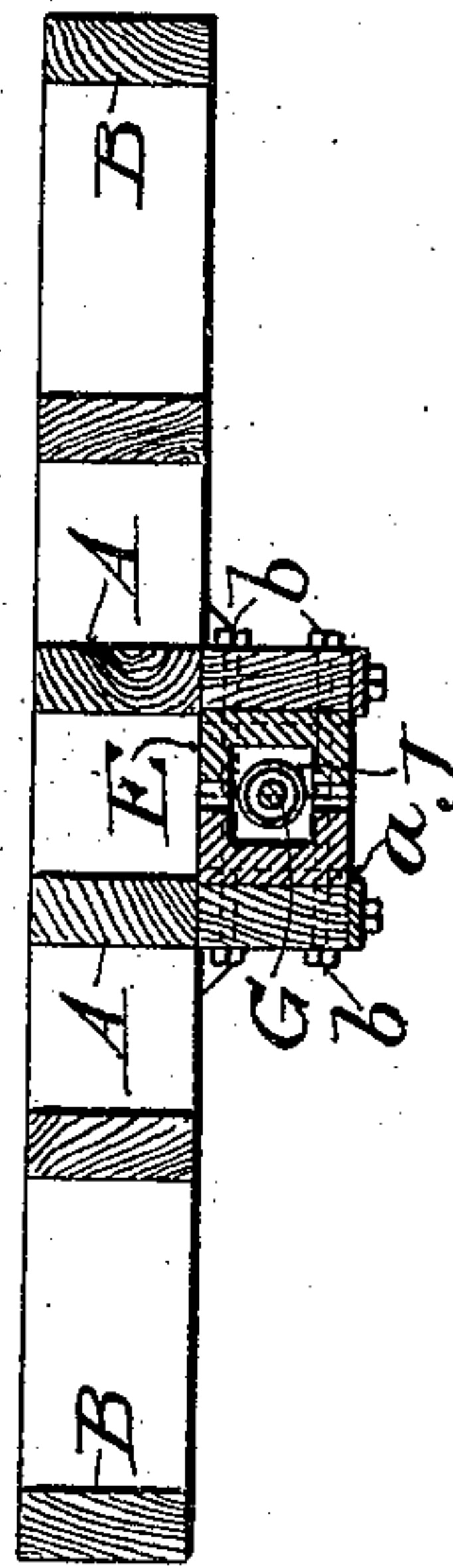


Fig. 3.



Witnesses:

James F. Duhamel

Horace A. Dodge.

GEORGE D. WADLEY,
Inventor,

by Dodge & Sons
Attys.

UNITED STATES PATENT OFFICE.

GEORGE DOLE WADLEY, OF SAVANNAH, GEORGIA.

DRAW-BAR.

SPECIFICATION forming part of Letters Patent No. 492,853, dated March 7, 1893.

Application filed November 25, 1892. Serial No. 453,090. (No model.)

To all whom it may concern:

Be it known that I, GEORGE DOLE WADLEY, a citizen of the United States, residing at Savannah, in the county of Chatham and State of Georgia, have invented certain new and useful Improvements in Draw-Bars, of which the following is a specification.

My invention consists in a novel construction or arrangement of draw-rods or draw-bars of railway cars, whereby the draft strain is distributed over the sills or timbers of the cars from end to end; provision is made for adjusting and for maintaining adjustment of the parts; and safety is afforded against pulling out the draw heads and breaking connection between cars.

In the annexed drawings:—Figure 1 is a bottom plan view of the sills or timbers of a car platform, with my invention applied; Fig. 2, a longitudinal sectional view of the same; Fig. 3, a transverse section on the line *x—x* of Fig. 1.

Prior to my invention draw-rods or bars of railway cars have more commonly been made to extend only a short distance back or inward from the ends of the car, though it has been proposed in some instances to extend said rod from one end of the car to the other, and thus to form a connection between the two draw heads.

My invention relates to the continuous draw rod construction, and is designed to obviate difficulties hitherto experienced in attempts to embody this idea in working form.

It is important to provide springs which shall serve to take up the shock or concussion, both of drawing and buffing; and it is essential to provide means whereby the parts may be kept in proper working relation and adjustment, as otherwise the springs fail to act properly; the draw-rods buckle, or their fastenings are sheared off, drop out, or permit dangerous play. It is likewise important that the part which constitutes the head or abutment against which the rod or bar draws, be a fixture, built rigidly and securely in the frame work of the car platform, as otherwise breakage is apt to result from the severe and sudden strains to which the parts are subjected. I attain these objects and obviate the difficulties hitherto encountered, by the construction shown in the drawings, wherein

A A indicate the inner or middle pair of longitudinal sills or timbers of a car platform; B B, other longitudinal sills or timbers; C C the end sills or cross timbers; and D D, the bolsters, of a common style of framing.

The precise arrangement of the timbers is unimportant, except that there should always be the inner pair of sills A A and suitable cross timbers, bolsters, &c.

Near each end of the car, and advisably between the end sill C and the proximate bolster, there is located a metallic box or casement E, preferably divided in a vertical central plane into two like parts. Each section or half of the box E is formed with a rib *a* on its outer face, and the box is of a width to somewhat more than fill the space between the sills or timbers A A, which are slightly recessed to receive the body of the box and further recessed to receive the ribs *a*. Through bolts *b*, passing through the sills and the interposed box, tie all together; and the bolts are relieved of much of the direct strain placed upon the box, by reason of the bearing of the latter in the timbers A. This form of box or casement is already in use, and is known as the Butler casement; but so far as I am aware it has never been employed in the combination herein set forth.

F F indicate draw-heads of any suitable or approved form, of which there are two, as usual, one at either end of the car. These drawheads are secured on opposite ends of a draw rod or bar G, which extends from one end of the car to the other, and is composed of two sections, which latter are furnished with right and left hand threads respectively. By turning the turn buckle, the rod may be lengthened or shortened as required. The same effect may be secured by a swivel connection of the turn buckle with one section of the draw bar, and a screw connection with the other, but the right and left thread connection is preferred. At the inner end of each draw head, and either integral therewith or separate therefrom as preferred, is a sleeve I, encircling the draw rod G, and made fast thereto. Each sleeve extends through an opening in the outer end of the box or casement E, and is furnished at its inner end, within said box or casement, with a collar or flange *c*, as shown in Fig. 2. The collar or

flange serves both to prevent the withdrawal of the sleeve from the box, and as a bearing for one end of a heavy spiral spring J, which encircles the draw rod within the box. The spring bears at its opposite end against the rear inner end of said box, and consequently affords an elastic takeup or cushion between the box and the draw-rod.

The draw rod G extends through the rear or inner end of the box or casement E, being preferably guided and sustained at that point by a bushing d, held between the two sections of the box, as shown in Figs. 1 and 2. When such bushing is used, the spring J, bearing against its flanged inner end, and being always under at least slight compression, will prevent the bushing from moving inward into the box, the flange or collar in turn precluding outward movement.

The construction thus described being duplicated at the two ends of the car, the turn buckle H, is turned to place both springs J under slight compression,—sufficient to prevent the draw rods from moving without acting upon the springs,—and the apparatus is then ready for use.

In coupling cars together the draw head receives the thrust or impact and transmits it to the sleeve immediately back of such draw head; but as the spring bears at its rear or inner end against the rear wall of the box or casement E, the jar or concussion is taken up by the spring. As the spring becomes compressed, and preferably just before the coils thereof come into actual contact with one another, the inner end of the draw head, or a collar d' on the outer end of sleeve I just back of the draw head, comes into contact with the outer end of the box or casement E, and any further force or pressure will be transmitted to the timbers of the car through said box or casement.

Ordinarily, the power or resistance of the spring will be sufficient to transmit the impelling force to the car timbers before the collar makes contact with the box or casement; but in any event it will effectually take up the initial jar or concussion, facilitating starting of the car, and obviate the injurious effects produced by inelastic or unyielding connections.

In drawing the car, power applied to the draw head at one end thereof, is transmitted through the draw-rod G to the draw head at the opposite end thereof, and the collar c of the sleeve I at said opposite end is drawn against its spring J, which takes up the impact in the same manner essentially as in buffing. Thus it will be seen that in buffing the spring next to the draw head to which the force is applied, serves to take up the thrust; while in drawing, the spring at the end of the car opposite to that at which the power is applied, takes up the impact and prevents concussion or jar.

An important result due to my peculiar construction and arrangement of parts is that

in starting a train, whether backing or drawing, the draw rods of all the cars are connected and move as one, from end to end of the train,—one or the other spring of each car acting as a yielding connection between said draw rod and such car. So too, it will be seen that in pushing and in drawing the force is always applied so that the strain is carried through the whole length of the car instead of being borne by one end only, and there is no danger of pulling out the draw-head or detaching the cross timbers to which the draw head is usually attached or against which it draws. It will also be apparent that the use of the turn buckle as a connection in the middle of the continuous tail rods enables the springs and the rod to be kept at tension and loss motion in the couplers is avoided, thereby doing away with any sudden or dangerous shocks to buffers or tail rods.

I am aware that draw rods have been extended from one draw head to another of a car, and that springs have been arranged in connection therewith to relieve the car of shock or strain in drawing or buffing; but I am not aware that any one has ever before arranged such continuous rod to act upon only one spring at a time, and that one the spring at the rear end of the car; nor am I aware of any prior construction in which springs combined with a continuous draw rod having attached draw heads, are contained within boxes rigidly and immovably secured to the car sills or timbers.

The draw heads may, if deemed desirable, be provided with lugs or shoulders e, to engage with metal straps or braces of the framing and prevent withdrawal of the draw heads in the event of the draw rod breaking or becoming disconnected at the turn buckle. When the sleeve I is made integral with the draw head, however, the collar c will answer this purpose, and will do so in any event unless the draw rod breaks between said sleeve and the draw head.

Having thus described my invention, what I claim is—

1. In combination with the sills or timbers of a car, two boxes rigidly secured thereto, one near each end of the car; a draw rod extending from one box to the other and through both boxes; draw heads secured to said draw rod, one at each end, springs contained within the boxes, one in each; and collars fast upon the draw rods, one within each box, and arranged to bear upon the outer end of the spring in said box, all substantially as described and shown.

2. In combination with sills or timbers A A, boxes E E, rigidly secured to said timbers, a spring J within each box, a draw rod G extending through the boxes E and made in two parts, a turn buckle H, connecting the parts of the draw rod, sleeves I, one secured upon each section of the draw rod and each provided within the box with a collar c; and springs; one within each box, encircling the

draw rod and bearing at their opposite ends against the collars and the boxes respectively.

3. In combination with the floor sills or timbers of a car, two boxes rigidly secured to
5 said timbers, one near each end of the car, springs within the boxes, and a two part draw rod extending from end to end of the car and provided with draw heads at its ends, an intermediate turnbuckle connection, and collars
10 to bear against the outer ends of the springs, all substantially as shown and described;

whereby the force for moving the car both for pushing and pulling is applied so that the whole length instead of one end of the car bears the strain.

In witness whereof I hereunto set my hand
15 in the presence of two witnesses.

GEO. DOLE WADLEY.

Witnesses:

CHAS. P. JONES,
RO. T. MACDONALD.