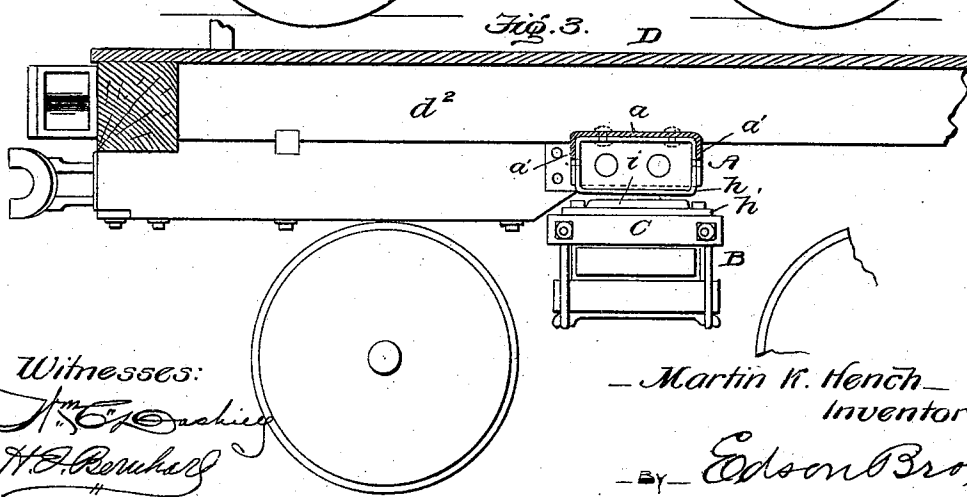
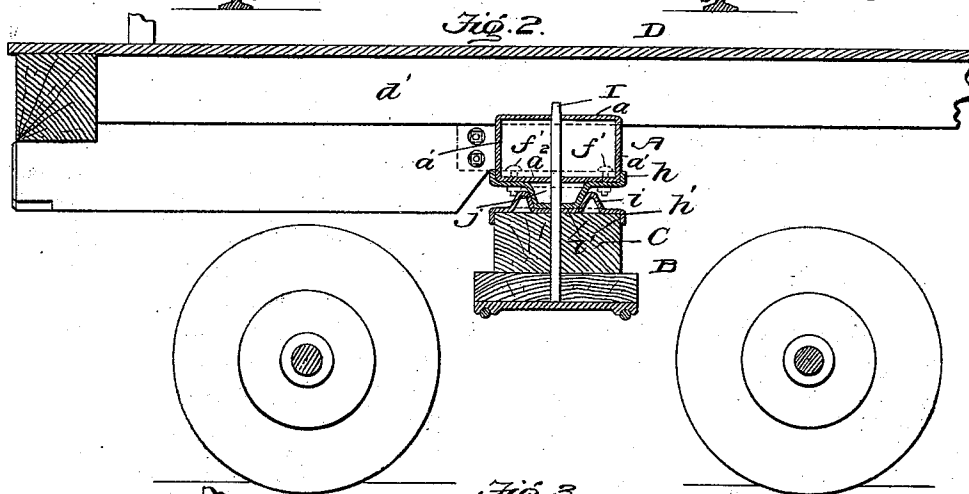
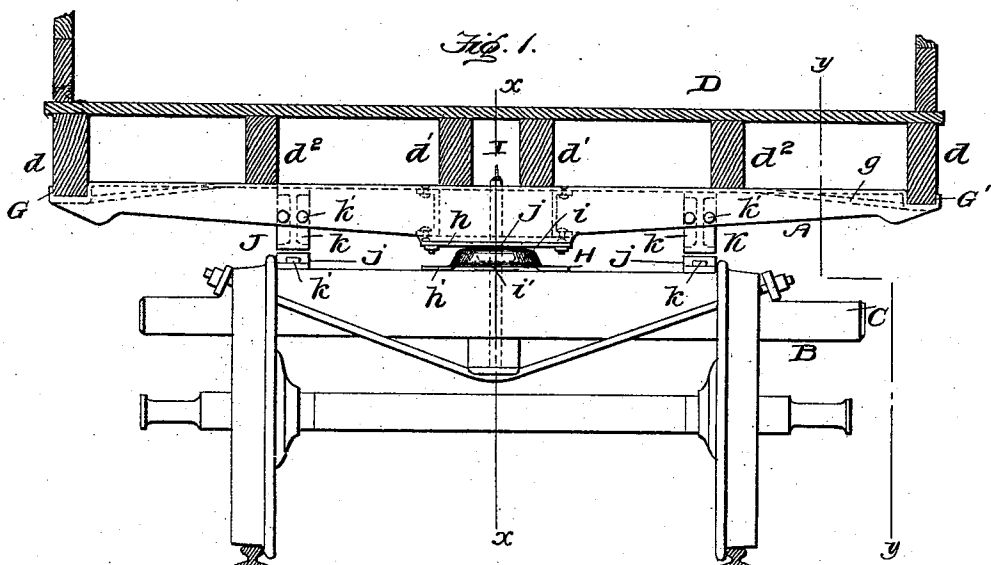


M. K. HENCH.
CAR BOLSTER.

No. 549,788.

Patented Nov. 12, 1895.



Witnesses:

J. E. Graham
H. B. Remick

— Martin K. Hench —
Inventor:

— By — *Edson Bros.*
Attys.

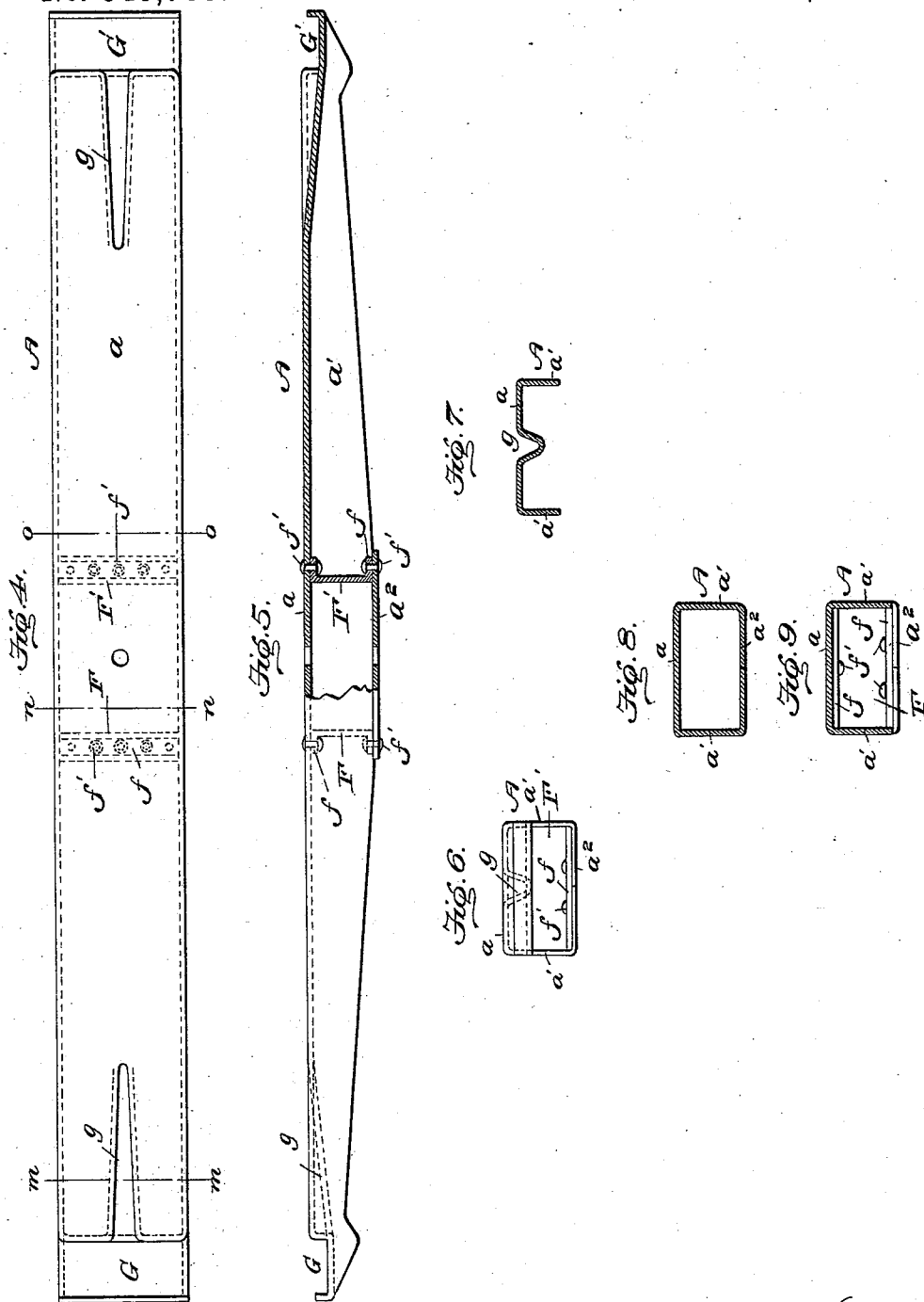
(No Model.)

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No. 549,788.

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Witnesses:

J. M. Orshieles
H. J. Bernhart

Martin K. HENCH.
Inventor:

Edson Bros.
Attys.

UNITED STATES PATENT OFFICE.

MARTIN K. HENCH, OF CARLISLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO L. F. BOWER, OF SAME PLACE.

CAR-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 549,788, dated November 12, 1895.

Application filed October 16, 1894. Serial No. 526,092. (No model.)

To all whom it may concern:

Be it known that I, MARTIN K. HENCH, a citizen of the United States, residing at Carlisle, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Car-Bolsters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the construction of railway-cars it has been the practice to make the car-bolster of wood and metal, the parts of which are "built up" and united together by bolts. In this built-up style of wood and metal bolster it is cumbersome, heavy, and liable to split or break under the weight and strain of the car and be shaken apart by the jolting and jarring of the car when in service. Besides, the bolster cannot be readily adapted to various styles of car work and trucks.

It is the object of this invention to provide an improved car-bolster which is composed of few parts and is simpler and lighter in construction than the common style of bolster, is stronger for a given weight of metal, and is readily shaped and applicable to the sillwork and truck-bolster of railway-cars.

Another object of the invention is to provide a novel form of central bracing and bearing for the middle of the car-bolster, and a further object is to furnish novel side bearings between the central bearing and ends of the bolster, which side bearings serve as bearings to the car-body and as braces for the bolster.

With these ends in view my invention consists of a pressed-steel bolster, essentially of channel-bar form, provided at its ends with depressions to form seats which receive the side sills of the car substructure, and said bolster has longitudinal flanges at the side edges thereof, these side flanges being joined at the middle or central bottom part of the bolster by a transverse bridge, which is integral with the flanges, so that the middle of the bolster in cross-section presents a square or rectangular hollow appearance. The middle hollow part of the bolster at the place where the king bolt or pin from the truck passes through is reinforced to resist the

shock of impact by vertical braces or plates that are inclosed within the walls forming the structure, and which brace-plates are flanged to enable them to be conveniently united to the bolster in a substantial rigid manner.

The invention consists in the combination of devices and in the novel construction and organization of parts which will be hereinafter fully described and claimed.

To enable others to readily understand my invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an end view showing the truck and bolster in elevation, the improved car-bolster in side elevation, and the sillwork of a car in cross-section, as contemplated by my invention. Fig. 2 is a vertical transverse central sectional view on the plane indicated by the dotted line xx of Fig. 1. Fig. 3 is a vertical transverse sectional view on the line yy of Fig. 1 at one side of the truck. Fig. 4 is an enlarged plan view of my improved bolster detached from the car. Fig. 5 is a view, partly in side elevation and partly in longitudinal section, of the bolster shown in Fig. 4. Fig. 6 is an end view of the bolster. Figs. 7, 8, and 9 are transverse sectional views through the bolster on lines mm , nn , and oo , respectively, of Fig. 4.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates my improved car-bolster, which is made of pressed steel and in a single piece. This bolster is used in connection with a truck B, the bolster C forming a part of the truck, and the car-body D, having the side sills d d , the central sills d' d' , and the intermediate sills d^2 d^2 , all of which parts are of the usual or any preferred construction approved by those skilled in the art to which this invention relates.

The bolster A consists of the top plate a , the longitudinal ribs or flanges a' a' , and the transverse web a^2 , which are all formed in a single piece of pressed steel. The flanges a' a' depend from the sides of the top a , and each side flange gradually increases in depth from each end of the bolster to the central middle part of said bolster, and the web a^2 unites the

side flanges $a' a'$ at the middle of the bolster, so as to impart to the bolster, at the middle thereof, the hollow, square, or rectangular form in cross-section shown by Figs. 8 and 9 of the drawings, whereby the strength of the bolster is increased at the place where the greatest strain and wear are brought upon it. To increase the strength and durability of the bolster at this central part, and to enable the bolster to resist the shock of impact in coupling cars, I reinforce it by the employment of the brace-plates $F F'$, which are made in the form of channeled or flanged plates and are wrought from cast, malleable, wrought, or pressed metal. These brace-plates $F F'$ are arranged within the hollow central part of the bolster, on opposite sides of the vertical center thereof, and the flanges or ribs $f f$ at the ends of said brace-plates are applied against the inner surfaces at the top a and bottom web a^2 of said bolster, the plates $F F'$ being rigidly united to the bolster by means of the bolts, rivets, or other fastenings f' . (Shown more particularly in Figs. 4, 5, and 9 of the drawings.)

To accommodate the side sills $d d$ of the sub-structure of the car-body and to provide for a greater depth of the side sills than is ordinarily used in the building of railway-cars, I provide the transverse depressions $G G'$ in the upper surface of the bolster, near the respective ends of the same. These depressions have the solid bottom and the raised flanges at the sides thereof, in order to provide the seats to receive and retain the side bolsters $d d$ of the car-body, and said ends of the pressed-steel bolster are reinforced by the longitudinal tapering channels forming the ribs $g g$, which extend inward from the inside walls of the seats toward the center of the bolster, said tapering reinforcement ribs or flanges $g g$ gradually merging into the surface of the top plate or body a of the bolster, as clearly shown by Figs. 4, 5, and 6 of the drawings.

My improved bolster, made practically from a single continuous piece of pressed steel, affords greater strength and durability with less weight of metal, as compared with the common built-up style of composite wood and metal bolsters; and the bolster can be more readily shaped and formed to adapt and accommodate it to the sillwork of car-bodies of various constructions.

In connection with my improved bolster I employ central and side bearings to sustain the same upon the truck-bolster.

The central bearing H for the bolster consists of the upper and lower plates $h h'$, which are socketed together to enable one to turn upon the other, and which plates are rigidly united to the car-bolster and the truck-bolster, respectively, as shown more clearly by Figs. 1 and 2 of the drawings. In the preferred embodiment of this central bearing the lower plate h' is shaped to form the raised flange i , which produces the central socket i' , open at its upper end. The top plate h is

pressed or formed to produce the central pendent hub j , which protrudes a suitable distance below the car-bolster, and which hub j is shaped and proportioned to fit snugly in the socket i' , formed by the raised flange i on the lower plate. These bearing-plates are fitted snugly together to turn freely one upon the other, and through said plates passes the central king pin or bolt I , that is extended through the bolsters of the car and truck, as shown by Figs. 1 and 2. These socketed plates $h h'$ of the central bearing are united to the car-bolster and the truck-bolster in any suitable way, and said plates $h h'$ are made of cast, malleable, or wrought metal, or of pressed steel, as may be preferred. The side bearings are indicated at $J K$ in Figs. 1 and 3 of the drawings, and they are arranged on opposite sides of the central bearing, between the latter and the ends of the bolster. Each side bearing consists of a flat base-plate j , which is bolted to the top of the truck-bolster, and the channeled plate k , arranged immediately above the base-plate j , out of contact with the same under normal conditions and united to the channeled car-bolster A . These plates k are made of channeled or flanged metal, and they are fitted between the pendent side flanges or ribs $a' a'$ of the bolster, with the solid lower part facing the base-plate, said channeled plates k being united to the top a or the flanges a' of the bolster by rivets k' , bolts, or other suitable fastenings.

The operation and advantages of my invention will be readily understood from the foregoing description, taken in connection with the drawings, by those skilled in the art to which this invention relates.

I am aware that changes in the form and proportion of parts, and in the details of construction of the devices herein shown and described as an embodiment of my invention, can be made by a skilled mechanic without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of the invention.

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

1. As a new manufacture, a pressed steel car-bolster provided with pendent side flanges which taper from the ends toward the middle of the bolster, and the transverse web a^2 which joins the side flanges below the middle part of the bolster, and braces united to the top and bottom of the bolster near the middle thereof, substantially as and for the purposes described.

2. A pressed-steel car bolster provided with the integral flanges and the web a^2 which join said flanges at the middle of the bolster, combined with the upright brace-plates united to the top and web of the bolster, and a central bearing having the upper member thereof united to the web a^2 of the bolster,

substantially as and for the purposes described.

3. A pressed-steel car-bolster having the integral side flanges and the web a^2 which joins
5 the flanges below the top of the bolster, at the middle thereof, combined with internal braces fastened to the top and web of the bolster, a central bearing having its upper member
10 united to the web a^2 of the bolster and interlocked with the lower member of said bearing which is fixed to the truck bolster, and a king bolt which passes through the car and truck
bolsters and the interlocking members of the central bearing, substantially as and for the
15 purposes described.

4. A pressed-steel car-bolster provided, near its ends, with the depressions forming the sill seats, G, in the upper face of the bolster, and having its pendent side flanges joined by the central transverse web a^2 , and the internal
20 braces fastened to the top and web a^2 of said bolster, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN K. HENCH.

Witnesses:

WM. C. MILLER,
JOHN R. MILLER.