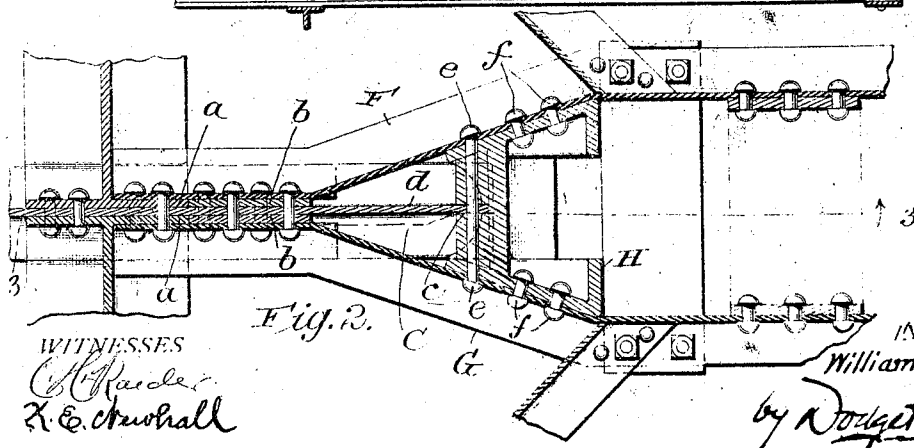
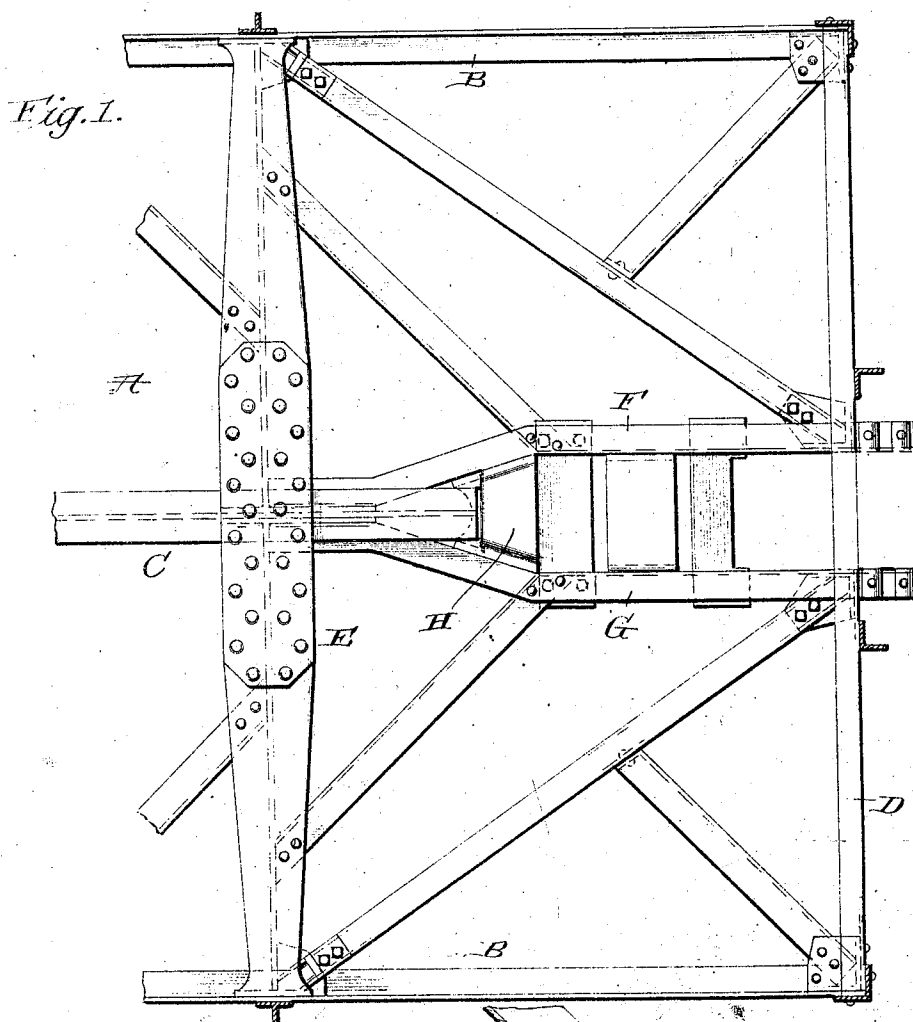


W. R. McKEEN, JR.
DRAFT SILL CONSTRUCTION FOR CARS.
APPLICATION FILED JULY 7, 1911..

Patented June 4, 1912.
2 SHEETS—SHEET 1.



WITNESSES
C. H. Raeder
H. E. Churchill

INVENTOR:
William R. McKen Jr.
by Dodgetts Attorneys

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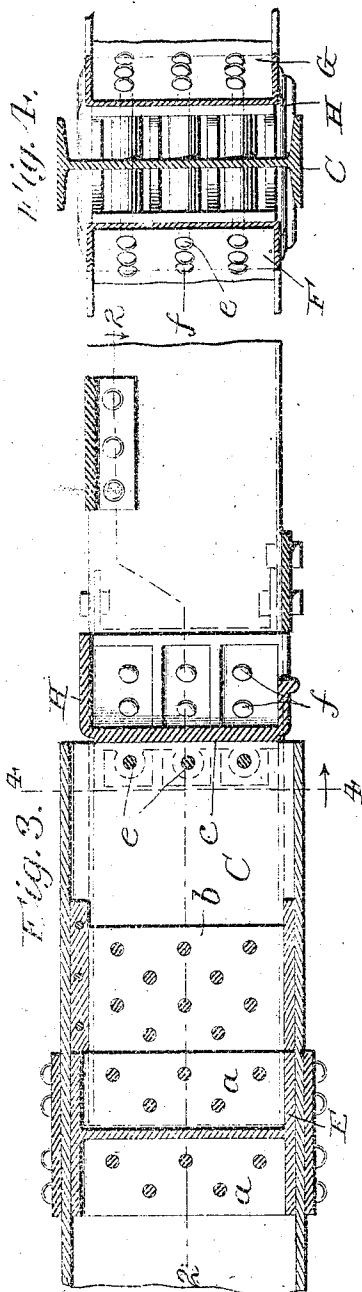


Fig. 6.

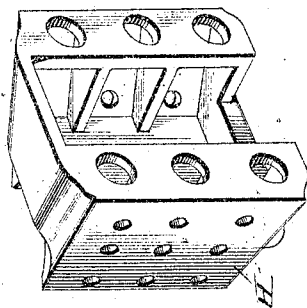
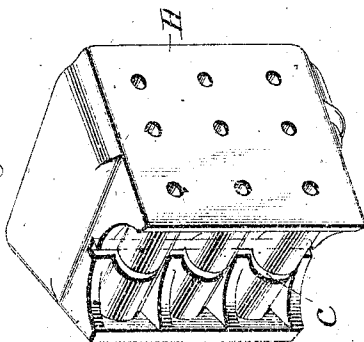


Fig. 5.



WITNESSES
C. E. Porter
A. C. Marshall

INVENTOR:
William R. McKeen, Jr.,
by *Dozier & Sons* Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM R. McKEEN, JR., OF OMAHA, NEBRASKA, ASSIGNOR TO McKEEN MOTOR CAR COMPANY, OF OMAHA, NEBRASKA, A CORPORATION OF NEW JERSEY.

DRAFT-SILL CONSTRUCTION FOR CARS.

1,028,760.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed July 7, 1911. Serial No. 637,326.

To all whom it may concern:

Be it known that I, WILLIAM R. McKEEN, Jr., a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Draft-Sill Construction for Cars, of which the following is a specification.

This invention pertains to draft sills for railway cars, and is in the nature of an improvement upon or addition to the draft sill construction set forth and claimed in my application Serial No. 352,725, filed in the United States Patent Office on the 17th day of January, 1907.

The invention or improvement resides in a V-shaped or wedge-shaped filler and tie-block, placed between and secured to the inclined inner portions of the two draft sills members disclosed in my aforesaid application.

The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of one end of a steel under frame for cars, provided with my improvement; Fig. 2 is a horizontal section on the line 2—2 of Fig. 3; Fig. 3 is a vertical section on the line 3—3 of Fig. 2, but extending through the entire vertical measurement or depth of the draft sill, and center sill and body bolster; Fig. 4 is a transverse section on the line 4—4 of Fig. 3, looking in the direction of the arrow in said Fig. 3; and Figs. 5 and 6 are, respectively, rear and front perspective views of the filler block to which my invention more particularly pertains.

In said drawings, A indicates the forward end of a steel under frame for car bodies, of which B, B, are the side sills, C the center sill, D the end sill, and E the body bolster. Said bolster E consists of two main steel castings, each having a vertical web and horizontal flanges, and end plates or flanges abutting respectively against the web of the center sill C and the side sills B, and riveted thereto, and of top and bottom connecting plates riveted to the horizontal flanges of said steel sections in a manner common in the art and well understood. The rivets connecting the inner end plates

or flanges of the bolster castings to the vertical web of the center sill pass through said flanges and center sill, and hence firmly unite the bolster sections with each other and with the sill. The construction of the bolster thus set forth is the same as in my prior application above referred to, and by reason of the two main castings thereof being arranged to abut against the faces of the vertical web of the center sill, said sill is enabled to pass through the bolster at the midlength of the latter, and to extend both forward and rearward thereof, yet is firmly and rigidly tied to and made substantially integral with the center sill and side sills by reason of being riveted thereto. Diagonal bracing of the herringbone order is employed between the side sills, end sill, center sill, and draft sills, as indicated in part in Fig. 1, but as no claim will be made in the present application to said bracing *per se*, further description thereof is deemed unnecessary.

F and G represent draft sills, which are made of channel iron or steel, of the form best shown in Fig. 4, that is to say, comprising a vertical web, and upper and lower horizontal flanges projecting outward from said vertical web, the term "outward" being used with reference to the central longitudinal axis of the car, or of the center sill. These draft sills have their inner ends arranged to lie in contact with the side faces of the web of the center sill, or of the vertical plates or flanges *a* of the body bolster, and filler plates *b* of the same thickness as said flanges *a*, and forming in effect an extension thereof in the direction of the length of the center sill, so as to afford a flat and even bearing for the vertical webs of the draft sills at such points.

From the outer ends of the filler plates *b*, or thereabout, the draft sills are bent outward away from each other, producing a V-shaped intervening space until a width of separation sufficient to permit the introduction of the draft rig is afforded. From this point the draft sills extend forward to and beyond the end sill, as shown in Fig. 1, parallel with each other, and with the side sills. Suitable braces are carried to the

draft sills from the side sills and bolster, as indicated.

Thus far the construction is in all substantial particulars identical with that of my prior application.

H indicates the filler block to which the present application particularly relates. This is preferably of cast steel, in one piece, of a substantially wedge-form in horizontal section, but of hollow or box-like construction, suitably stiffened and strengthened by horizontal webs and flanges, as best illustrated in Figs. 5 and 6. This block is, at its wider or outer end, of a measurement to fit accurately between the most widely separated portion of the converging sections of the draft sills, as indicated in Figs. 1 and 2, and its side faces approach each other toward its rear or inner end at precisely the same rate, or have exactly the same inclination to the longitudinal axis of the center sill, as do the oblique sections of the draft sills. The filler block H has at its rear end a vertical slot *e*, into which is inserted the vertical web *d* of the center sill C, the block, the draft sills, and the web of the center sill being all rigidly and securely bound together by rivets or bolts *e* passing through them, as shown in Fig. 2. Shorter rivets *f* pass through the vertical webs of the draft sill members, and the side walls of the filler block H, thus making a secure and very rigid connection of the parts. The outer or forward end of the filler block is recessed, both for the purpose of lightening it, and to afford space for the inner or rear end of the draft rig, which extends, or may extend, into said filler block, and may receive support and guidance therefrom.

In the drawings I have represented the vertical flanges at the forward or outer end of the filler block as having large openings formed therein, this being to avoid superfluous material and consequent weight. The draft rig may be of any usual or approved construction, and applied to the draft sills in any convenient manner, the present invention being confined to the filler block.

The purpose of the filler block here described is to guard against possible distortion, either through thrust or draft, of the converging portions of the draft sills. While experience has demonstrated that with ordinary use and sufficiently heavy metal draft sills, the stresses incident both to tension and compression are withstood, it is nevertheless deemed advisable, in order to guard against excessive stresses, to strengthen and bind together the parts in the manner here described, and thus at once to tie in place the converging sections of the draft sills, and to make a more direct and rigid supporting connection between the more widely separated portions of the draft sills and the center sill.

Under the construction here set forth, the center sill and draft sills become in effect one continuous and substantially integral member, reaching from one extremity of the car to the other, and making in a series or train of cars, practically one continuous connecting center sill composed of sections united by the couplers and draft rigs. Both in drawing and in coupling or backing this member receives directly the primary stress, which, however, is distributed through the diagonal bracing to the other portions of the under frame. In other words, the aim and the effect of the construction here set forth is to receive and take the stresses in the most direct manner, and at the mid-width of the car, and through the diagonal and other bracing and tie members, to distribute it over the entire under frame, which, under the construction shown, becomes one unitary trussed frame.

It is, of course, understood that the draft sill construction here shown is duplicated at the other end of the under frame, or in other words, that Fig. 1 represents one end of a symmetrical under frame for cars, the two ends of which, as usual, are in all material respects alike.

Having thus described my invention, what I claim is:—

1. In an under frame for cars, the combination of a center sill; draft sills, the rear ends of which bend toward and lap past the adjacent end of the center sill; and a filler block interposed between the converging portions of the draft sills, and firmly secured thereto.
2. In an under frame for cars, the combination of body bolsters; a single center sill disposed between said bolsters; draft sills, the rear ends of which bend toward and lap past the adjacent ends of the center sills; and a filler block interposed between the converging portions of the draft sills, said parts being firmly joined together, substantially as described.
3. In an under frame for cars, the combination with a single center sill of substantially I-cross-section; of draft sills, the inner ends of which are arranged on opposite sides of and close to the vertical web of the center sill, and which diverge thence to a point in advance of or beyond the end of said center sill, and thence extend parallel with each other; a filler block interposed between the diverging portions of the draft sills; and fastenings rigidly uniting the draft sills to the center sill, and the filler block to the draft sills.
4. In an under frame for cars, the combination of a center sill; draft sills secured at their inner ends to the center sill, and diverging therefrom through a portion of their length, and through another portion extending parallel with each other; a filler

block interposed between the diverging portions of the draft sills, and having a slot at its rear or inner end into which the vertical web of the center sill is carried; and
5 fastenings firmly uniting the draft sills and the filler block to the center sill and to each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM R. McKEEN, JR.

Witnesses:

WILLIAM W. DODGE,

W. DEAN BURTON.