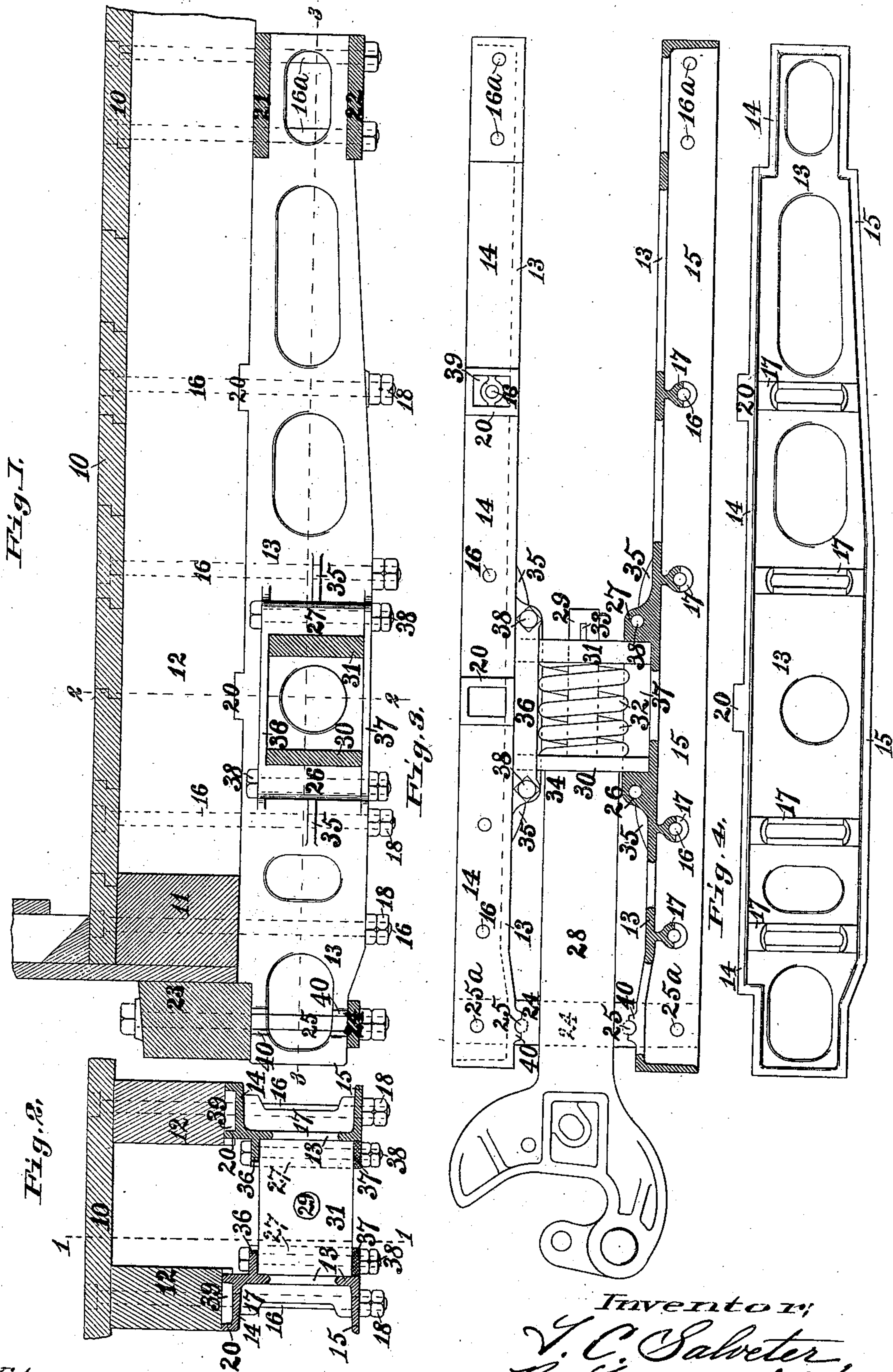


(No Model.)

T. C. SALVETER.
METALLIC DRAFT SILL FOR CARS.

No. 512,329.

Patented Jan. 9, 1894.



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UNITED STATES PATENT OFFICE.

THEODORE C. SALVETER, OF ST. LOUIS, MISSOURI.

METALLIC DRAFT-SILL FOR CARS.

SPECIFICATION forming part of Letters Patent No. 512,329, dated January 9, 1894.

Application filed March 21, 1893. Serial No. 467,000. (No model.)

To all whom it may concern:

Be it known that I, THEODORE C. SALVETER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a certain new and useful Metallic Draft-Sill for Cars, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The main object of my invention is to provide a draft-sill that is light and compact, and is at the same time capable of withstanding the severe shocks and strains to which this part is commonly subjected. For this purpose I make the sill of metal instead of wood, as has been done heretofore; I cut away such parts of the sill as would bear little or no portion of the strains, and provide the same with certain flanges and other appendages, preferably cast integral with the sill and calculated to greatly increase the strength without adding materially to the weight and bulk thereof.

The invention will be best understood by referring to the accompanying drawings, illustrating a form thereof specially adapted for steam railway cars of the usual construction.

In describing the sill I shall call that side thereof which is turned toward the draw-bar the "inner" and the other the "outer" side of the sill.

Figure 1 is a longitudinal vertical sectional view of the lower portion of one end of a car provided with my draft-sill on the line 1—1 of Fig. 2, showing one of the sills as seen from the inner side. Fig. 2 is a transverse vertical section on the plane of line 2—2 of Fig. 1 looking from the left in Fig. 1. Fig. 3 is a plan view of a pair of my draft sills, showing one of them in section, said section being on the plane of line 3—3 of Fig. 1. Fig. 4 is a side elevation of one of the sills, as seen from its outer side.

The same marks of reference indicate the same parts throughout the several views.

10 (Figs. 1 and 2) is the floor of the car.

11 is a transom or transverse bar extending across one end of the car just beneath the floor.

12—12 are two strong and massive longitudinal beams extending lengthwise under the floor of the car, at right-angles to the transom 11.

13—13 are a pair of metallic bars, preferably channel bars, placed lengthwise under the car, one resting against the under surface of each of the two longitudinal beams 12, and having sufficient space between them for the draw-bar and co-operating parts. The upper and lower edges of these channel-bars or sills are preferably turned outwardly, or provided with flanges 14—14 and 15—15 extending outward from the upper and lower edges respectively of the sills 13, so that the sills are substantially E-shaped in cross section (Fig. 2), whereby great strength is secured. The upper flanges 14 of the sills abut snugly against the under surface of the beams 12, the beams and sills being firmly bolted together along the entire length of the sill by the vertical bolts 16 (Figs. 1, 2 and 3), whose heads are preferably countersunk in the floor of the car. These bolts pass through the entire vertical thickness of the beams 12, and through suitable perforations in the upper and lower flanges 14 and 15 of the sills 13, but do not pass through the body of the sills 13, as these would be greatly weakened thereby.

I prefer to have cast integral with the sills 13, the hollow vertical columns 17 (Figs. 2, 3 and 4), through which the said vertical bolts 16 extend. Said columns 17 withstand the greater portion of the strain (which would otherwise tend to break or warp the sills and flanges) when said sills and the beams 12 are firmly keyed together by means of the nuts 18, and bolts 16 aforesaid.

The upper flanges 14 of the sills 13 are provided each with two or more quadrangular or box-shaped ridges or sill-keys 20, which take into suitable depressions in the under surface of the beams 12, a portion 39 of the beam extending into the said quadrangular box or sill-key, whereby the sill and beam are each keyed into the other, as clearly shown in Figs. 1, 2 and 3. The sills 13 are further secured and braced at the back by means of transoms 21 and 22 of metal, which are let into suitable ledges formed respectively in the upper and lower edges of the sills. Beams 12, the rear ends of sills 13, and tran-

soms 21 and 22 are all firmly connected by means of two pairs of vertical bolts 16^a of the kind hereinbefore referred to.

I do not wish to limit myself to the use of the two metal transoms 21 and 22, but the rear ends of sills 13 might be braced by anchoring them to a single wood transom of considerable height or thickness, say like transom 11 (Fig. 1); or any other suitable means for bracing the sills may be employed. In like manner the sills 13 are further secured and braced at the opposite (front) end by means of the deadwood 23 and carrier-iron 24 which, besides performing their usual and ordinary functions, serve to strengthen and brace the draft-sills in like manner as the transoms 21 and 22 just described, being securely anchored to said sills by means of the vertical bolts 25—25 and 25^a—25^a.

Extending vertically across the inner surface of each sill 13 is a front draw-lug 26 and a rear draw-lug 27, forming offsets or ledges at right angles to the sills against which abut the draw-followers hereinafter described.

28 is the draw-head having a reduced back portion or tail-pin 29 which passes through suitable perforations in the front and rear draw-followers 30 and 31. The rear draw-follower 31 normally abuts against the ledges formed by the rear draw-lugs 27 above described. The draw-spring 32 is coiled about the tail-pin 29 of the draw-head, and abuts against the inner faces of the draw-followers. The front draw-follower 30 normally rests against the ledge formed of the front draw-lugs 26, above described. The tail-pin 29 or reduced part of the draw-head extends some distance beyond the rear draw-follower 31, and is locked therein by the usual key 33. When the car is drawn forward this key 33 being drawn against the rear draw-follower 31, depresses the draw-spring 32, forcing the front draw-follower 30 against the draw-lugs 26, whereby the force is communicated through the draft sill to the car. If, on the other hand, the car is pushed or backed, the shoulder 34 of the draw-head bearing against the front draw-follower 30, depresses the draw-spring 32, forcing the rear draw-follower 31 against the rear draw-lugs 27 and communicating the force through the draft-sill to the car. The front and rear draw-lugs are strengthened by the ribs 35 raised on the inner surface of the sills 13 and forming buttresses or braces which greatly strengthen the draw-lugs as aforesaid.

Extending horizontally between the upper portion of the front and rear draw-lug, and projecting at right angles from the inner surface of each sill near its upper edge, is an offset or flange 36, along the under surface of which are moved the upper edges of the respective draw-followers when the car is drawn forward or backed, and the draw-spring is depressed as before described, these flanges 36 serving to confine said draw-followers and prevent their rising upward out of place.

The flange or offset 36 is cast integral with the sill, both for simplicity and greater strength.

Extending horizontally between the lower portion of the front and rear draw-lugs, and corresponding to the flanges 36 just described, are the removable tie-plates 37, which, after the draw-head, draw-spring and draw-followers have been inserted in their proper places, are placed against the lower surface of the draw-lugs and securely held to said lugs by bolts 38 passing through vertical perforations (Fig. 3) in the front and rear draw-lugs 26 and 27. These tie-plates hold the draw-followers and co-operating parts in place, and prevent the same from dropping or being forced out of position downwardly.

It will be observed that the strain on the draft-sill will ordinarily be greatest in the vicinity of the draw-followers, and will diminish toward the rear portion of the draft-sill, which rear portion is therefore made of decreasing height. A further saving of metal, and lightness of the sill are secured by cutting away the middle portions of the same in the spaces between the columns 17 before described, as clearly shown in Figs. 1 and 4. For a like purpose a considerable part of the middle portion of the columns 17 may be cut away, as clearly shown in Figs. 2 and 4.

It will be clear that the strongest portions of the sill are in the vicinity of the columns 17, and some of the sill-keys 20 before described are therefore preferably located directly above the columns 17, being traversed centrally by bolts 16. The front ends (or ends farthest to the left in Fig. 1) of the draft-sill 13, are preferably turned slightly inward, approaching more closely toward each other and toward the draw-head than the remaining portions of the sill.

Extending vertically across the inner surface of the sills near the front end just described I provide, preferably cast integral with the sills, raised ribs 40 having semicylindrical vertical grooves in which rest the bolts 25 which secure together the deadwood 23, carrier-iron 24 and front ends of the sills, as above described. It will be evident that the space between the sills at the front end is, in this manner, greatly contracted, the object of which construction is to leave only a very limited play for the draw-head, thereby guarding against breakage of the reduced part or tail-pin 29 and the draw-followers 30 and 31, the shock of a sideward thrust of the draw-head being spent on and resisted mainly by the bolts 25 just described.

Having fully described my invention, what I desire to claim and secure by Letters Patent of the United States is—

1. The combination of a draw-bar, a pair of metallic channel bars flanged outwardly along their upper and lower edges, connecting mechanism for communicating the force from the draw-bar to said channel bars, and bolts passing through the sills of the car and extending downwardly through both the upper

and the lower flanges of the respective channel bars without passing through the body of said channel bars, whereby a powerful connection between said bars and the car is made.

5 2. A draft-sill for cars, consisting of metallic bars provided with suitable flanges, fastenings for securing said draft-sill to the car, and columns or braces extending between said flanges and partly or entirely surround-
10 ing said fastenings.

3. The combination of a draw-bar, a pair of metallic channel bars flanged outwardly along their upper and lower edges, connecting mechanism for communicating the force from
15 the draw-bar to said channel bars, and bolts passing through the sills of the car and extending downwardly through both the upper and the lower flanges of the respective channel bars, the middle portion of the channel
20 bars being cut away in the spaces intermediate the regions where said bolts are located, whereby greater lightness of the channel bars is secured without impairing their strength.

4. A draft sill for cars, comprising a pair
25 of metallic channel bars, provided on their inner surface with draw-lugs cast integral

with said channel bars, the said channel bars having a pair of upper guides for the draw followers, said guides consisting of longitudinal flanges or strengthening ribs, projecting
30 inwardly from the respective channel bars, and each of said flanges or ribs extending between the front and rear draw-lugs of one of said channel bars.

5. The combination of a pair of channel-bars
35 provided with suitable draw-lugs, horizontal flanges extending between the upper portion of the front and rear draw-lugs, removable tie-plates extending horizontally between the lower portion of the draw-lugs, and suitable
40 fastenings for securing said tie-plates removably in place, whereby the draw-followers and co-operating parts may be conveniently withdrawn and replaced.

In testimony whereof I have hereunto set
45 my hand and affixed my seal, this 18th day of March, 1893, in the presence of the two subscribing witnesses.

THEODORE C. SALVETER. [L. s.]

Witnesses:

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GEORGE L. NEUHOFF.