

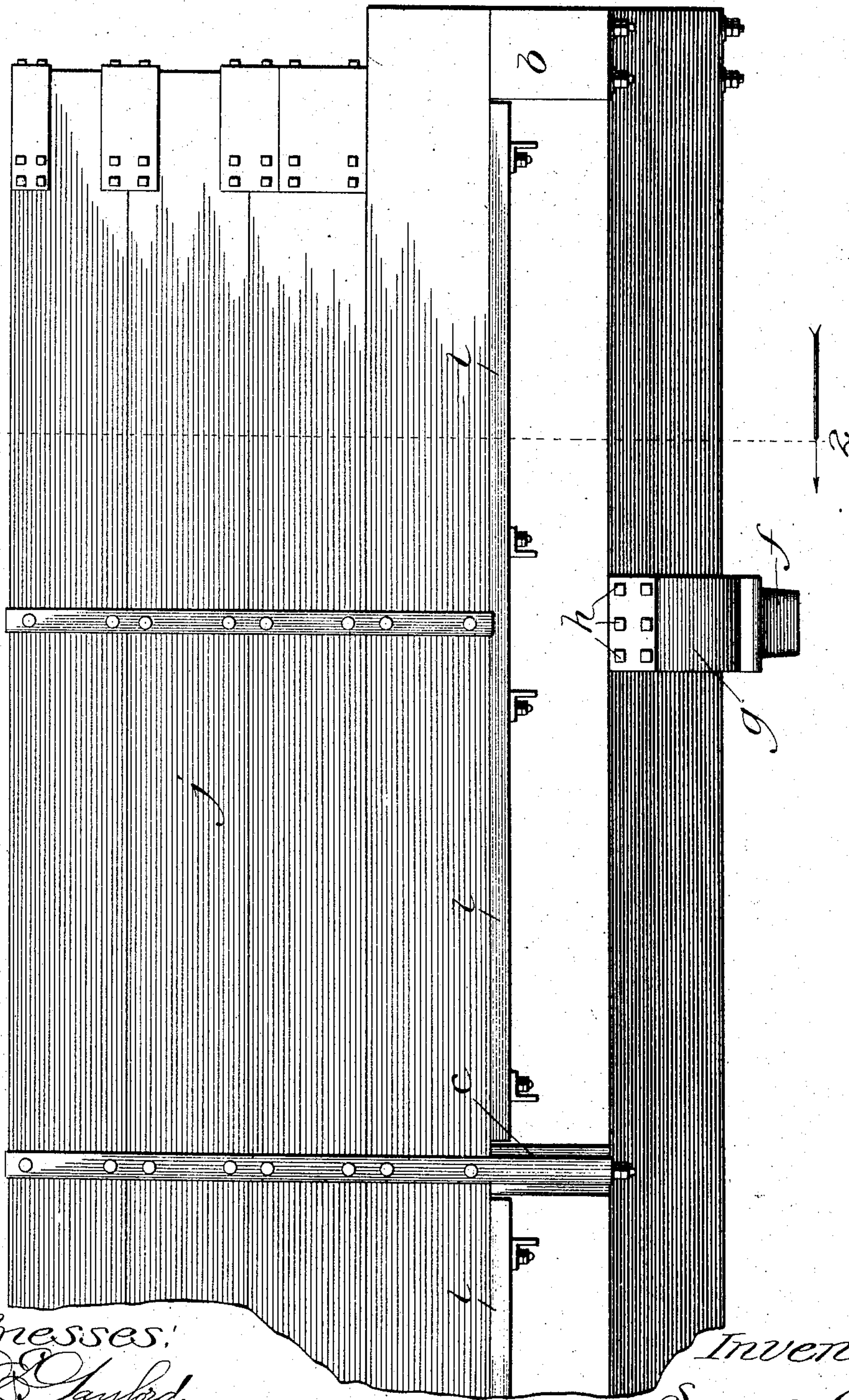
No. 780,764.

PATENTED JAN. 24, 1905.

S. OTIS.
RAILWAY CAR.

APPLICATION FILED JULY 25, 1903.

2 SHEETS—SHEET 1.



Witnesses:
 Capt. Payford.
 Geo. C. Review.

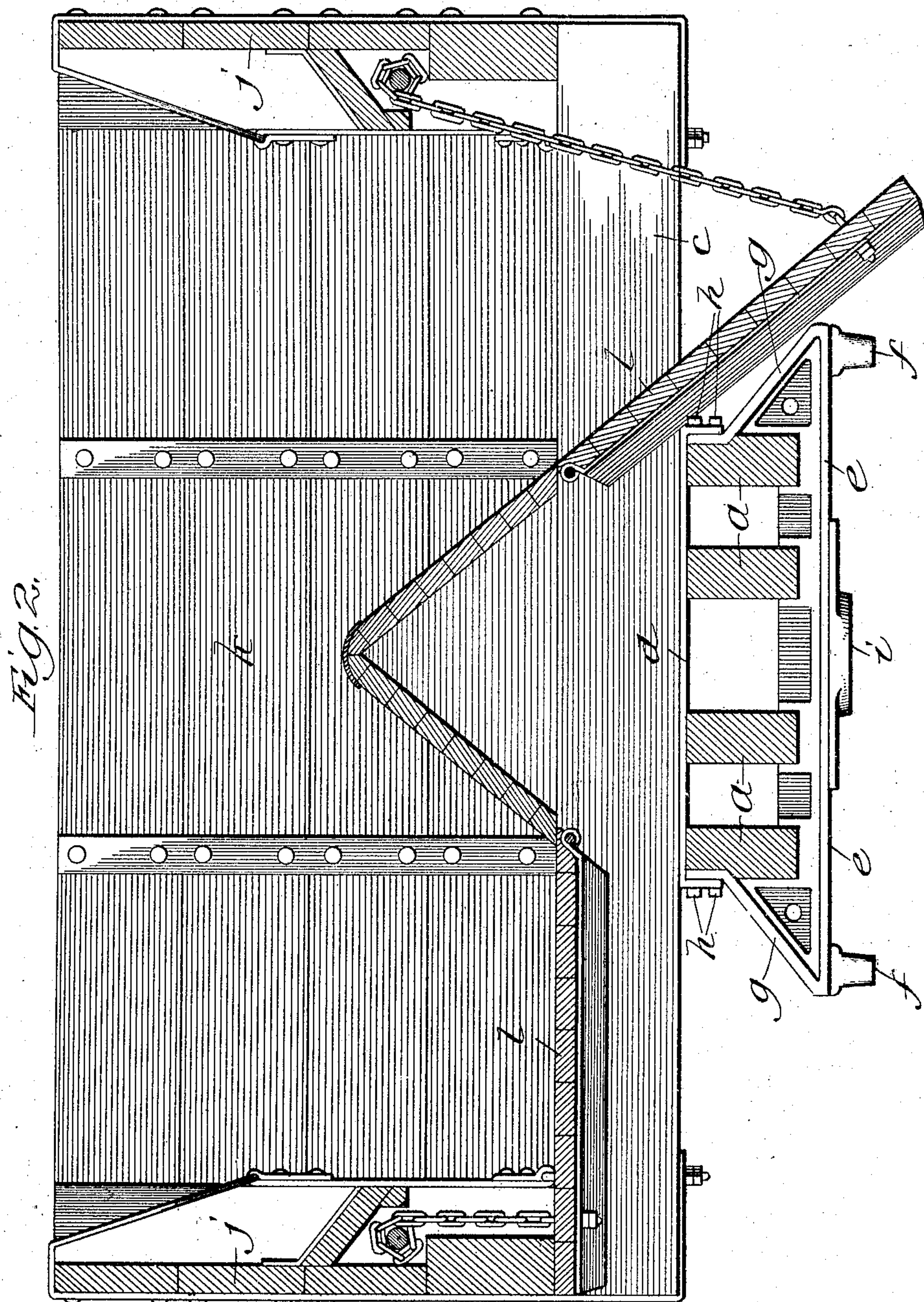
Inventor:
Spencer Otis,
By Thomas F. Sheridan,
Att'y.

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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

SPENCER OTIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL COAL DUMP CAR COMPANY, OF RAPID CITY, SOUTH DAKOTA, A CORPORATION OF SOUTH DAKOTA.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 780,764, dated January 24, 1905.

Application filed July 25, 1903. Serial No. 166,938.

To all whom it may concern:

Be it known that I, SPENCER OTIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

My invention relates to that class of cars known as "freight-cars," and particularly to
10 the class of freight-cars known as "dump-cars," having special reference to the arrangement of longitudinal and cross sills, so as to provide for the forming of an efficient body-bolster, all of which will more fully hereinafter
15 appear.

The principal object of the invention is to provide a simple, economical, and efficient frame for railway-cars which provides, in effect, an efficient body-bolster.

20 The invention consists principally in a railway-car in which there are combined a plurality of longitudinal sills centrally disposed, a plurality of deck-beams laid thereon and extending from side to side of the car, and a bar
25 transversely arranged under the longitudinal sills so as to embrace the same and form in connection therewith a body-bolster.

The invention consists, further and finally, in the features, combinations, and details
30 of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of one end of a car as it appears when constructed in accordance with
35 these improvements, and Fig. 2 a cross-sectional elevation taken on line 2 of Fig. 1 looking in the direction of the arrow.

In illustrating and describing these improvements I have only illustrated and will describe
40 that which I consider to be new taken in connection with so much that is old as will properly disclose the invention to others and enable those skilled in the art to practice the same, leaving out of consideration other and
45 well-known elements which, if set forth herein, would only tend to confusion, prolixity, and ambiguity.

In the art to which this invention relates it

is well known that it is very desirable to have a drop-bottom dump-car which will discharge
50 as much of the load as possible between the end boards thereof. In the present state of the art, however, this cannot always be accomplished in that there are transverse sills or beams arranged above the body-bolster of
55 the car, so that if swinging sections or dumping-doors be arranged over the truck a space will be left between the deck-beam over the body-bolster and the adjacent edge of the door through which fine material—such as ore,
60 gravel, and the like—may percolate to fall into the bolster mechanisms.

The principal object of this invention, therefore, is to remove this objection by providing a car-frame so constructed and arranged that
65 the deck-sill usually placed above the body-bolster may be dispensed with, thus permitting the use of a dumping-section which will extend over and across the body-bolster to the next adjacent deck-beam, so as to discharge
70 all of the material over the car-truck without letting any of it percolate, as heretofore, into the bolster mechanism, and which will at the same time provide a structure to withstand the stress and strains incident to
75 the ordinary usage of the car.

In constructing a car in accordance with these improvements I provide a supporting-frame portion composed of a plurality of longitudinal sills *a a*, centrally disposed and arranged
80 at a lower level than usual. These longitudinal sills extend from end to end of the car and practically flush with the outer sides of the end sills *b*, which are arranged upon the outer upper ends of the longitudinal
85 beams. A plurality of deck-beams *c* is also provided and laid upon these longitudinal beams and extend from side to side of the car. It will be noticed that there is no transverse sill or deck-beam arranged over the
90 ordinary bolster mechanism or at the point where the center of the truck is usually placed.

It will be readily seen that some means must be provided for sustaining the car-body on the truck as a substitute for the usual bolster
95 mechanism, and in order to provide such means

I make what I term a "new and improved body-bolster," formed of an upper bar *d*, transversely arranged across and laid on the upper surface of the longitudinal sills and extending downwardly at each end. I next provide a lower bar *e* and arrange it transversely of such longitudinal sills and against their lower surfaces. This lower bar extends outwardly beyond such longitudinal sills to a point where it provides the usual side bearings *f*, thence extends upwardly and inwardly—in other words, is inclined, as at *g*—until it meets the side sills and is connected thereto and to the downturned ends of the upper bar by means of bolts *h*. This lower bar is also provided with the usual center bearing *i*, the use of which is well known and needs no further description here. It will also be seen on examining Fig. 1 that this body-bolster is arranged midway between the end sill and the next adjacent deck-beam and that there is therefore no necessity for a deck-beam or transverse sill over such body-bolster.

In using these improvements with a drop-bottom dump-car I provide in connection with the usual upwardly-extending side boards *j* and end boards *k* a drop-bottom formed of a plurality of swinging sections *l*, pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center thereof, so that they may be dropped down to form inclined discharging-aprons, as shown to the right of Fig. 2, and discharge materials to either or both sides of the track. Again examining Fig. 1, it will be seen that the first swinging section at each end of the car extends from the inner side of the end sill across and over the improved body-bolster to the next adjacent deck-beam without making any joint or crack, so that fine loose material may be carried in the car, there being at no time any danger of leakage of material to affect the operation of the bolster or truck mechanism. Again, it will be seen that this peculiar construction and arrangement of elements permits of the discharge of material from one end of the car to the other, over as well as between the trucks.

I claim—

1. In a railway-car of the class described, the combination of a plurality of longitudinal sills centrally disposed, a plurality of deck-beams laid thereon and extending from side to side of the car, and a bar transversely arranged under the longitudinal sills so as to embrace the same and form in connection therewith a body-bolster, substantially as described.

2. In a railway-car of the class described, the combination of a supporting-frame formed of a plurality of longitudinal sills centrally disposed, a plurality of deck-beams laid transversely thereon and extending from side to side of the car, and a metal beam arranged under the longitudinal sills so as to embrace

the same and provided with center and side bearings to form in connection with such longitudinal and transverse sills a body-bolster, substantially as described.

3. In a railway-car of the class described, the combination of a supporting-frame portion formed of a plurality of longitudinal sills centrally disposed, a plurality of deck-beams laid transversely thereon and extending from side to side of the car, a bar transversely arranged over such longitudinal sills so as to inclose the same, and a bar transversely laid under such longitudinal sills connecting the same and connected with the upper bar and forming in connection with such sills and upper bar a body-bolster, substantially as described.

4. In a railway-car of the class described, the combination of a supporting-frame portion formed of a plurality of longitudinal sills centrally disposed, a plurality of deck-beams laid transversely thereon and extending from side to side of the car, a bar transversely arranged over such longitudinal sills so as to inclose the same, and a bar transversely laid under such longitudinal sills connected with the same and with the upper bar and forming in connection with such sills and upper bar a body-bolster, substantially as described.

5. In a railway-car of the class described, the combination of a plurality of longitudinal sills extending from end to end of the car, an end sill arranged on the upper outer ends of the longitudinal sills, a plurality of deck-beams transversely disposed and laid on such longitudinal sills and extending from side to side of the car, and body-bolster mechanism formed of an upper transverse bar arranged over the longitudinal sills and a lower transverse bar inclosing the lower and side surfaces of such longitudinal sills connected with the upper bar and arranged between each end sill and the next adjacent deck-beam, substantially as described.

6. In a railway-car of the class described, the combination of a plurality of longitudinal sills extending from end to end of the car, an end sill arranged on the upper outer ends of the longitudinal sills, a plurality of deck-beams laid transversely on such longitudinal sills and extending from side to side of the car, body-bolster mechanism formed of an upper transverse bar extending over the longitudinal sills and a lower transverse bar extending beneath such longitudinal sills connected with the upper bar and arranged between each end sill and the next adjacent deck-beam, and center and side bearings on such lower bars, substantially as described.

7. In a railway-car of the class described, the combination of a supporting-frame formed of a plurality of longitudinal sills centrally disposed extending from end to end of the car, end sills transversely laid on the upper outer ends of said longitudinal sills, a plurality of deck-beams transversely laid on such longitudinal

tudinal sills and extending from side to side of the car, a body-bolster for each end of the car arranged between the end sills and the next adjacent deck-beams and formed of an upper transversely-arranged bar extending over the longitudinal sills and a lower transversely-arranged bar secured against the lower surfaces of such longitudinal sills extending beyond the same and inclined upwardly and inwardly to meet the upper bar to which it is also attached, and a dumping-bottom for such car formed of a plurality of swinging sections pivotally secured to the supporting-framework at each side of the longitudinal center—one of such sections being arranged at each end of the car and extending substantially from the inner side of the end sill across and over the body-bolster to the next adjacent deck-beam, substantially as described.

8. In a railway-car, the combination of a body-bolster provided with a lower member having center and side bearings integral therewith, and an upper member connected to such lower member and forming a space therebetween for receiving the longitudinal sills of a car, such bolster extending to but not beyond the outside of such side bearings, substantially as described.

9. In a railway-car, the combination of a body-bolster provided with a lower member having center and side bearings integral therewith upon its under side and shoulders upon its upper side adapted to engage the longitudinal sills of the car, and an upper member connected to such lower member and forming a space therebetween for receiving such longitudinal sills, the lower member being of a length equal to the distance between the outer side of the side bearings, substantially as described.

10. In a railway-car, the combination of side frames, transverse beams upon which such side frames are mounted, longitudinal sills upon which such transverse beams are laid, and body-bolsters extending transversely of the longitudinal sills out of engagement with the side frames and forming a space between the ends of such bolsters and side frames, substantially as described.

11. In a railway-car, the combination of side frames, transverse beams upon which such side frames are mounted, longitudinal sills upon which such transverse beams are laid, body-bolsters extending transversely of the longitudinal sills out of engagement with the side frames and forming a space between the ends of such bolsters and side frames, and a plurality of swinging bottom-sections pivotally mounted in the car-frame, substantially as described.

12. In a railway-car, the combination of side frames, transverse beams upon which such side frames are mounted, body-bolsters formed of upper and lower members between which such longitudinal sills are mounted, such bolsters being of less length than the transverse beams and having both ends out of engagement with the side frames of the car and forming a space between the ends of such bolsters and the side frames, and swinging bottom-sections mounted in the car-frame movable between the ends of the bolsters and the side frames, substantially as described.

13. In a railway-car, the combination of side frames, a body-bolster of less length than the distance between the side frames mounted in fixed relation to such frames having both its ends out of engagement with the side frames and having a space between the ends of such bolster and the side frames, and mechanism supported by said bolster for supporting the side frames, substantially as described.

14. In a railway-car, the combination of side frames, a body-bolster of less length than the distance between the side frames having both its ends out of engagement with the side frames and having a space between the ends of such bolster and the side frames, mechanism supported by said bolster for supporting the side frames, and dumping-doors extending over said bolster and between the ends thereof and the side frames, substantially as described.

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Witnesses:

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