

W. P. BETTENDORF, DEC'D.
 J. W. BETTENDORF, ADMINISTRATOR.
 FLOOR CONSTRUCTION FOR FREIGHT CARS.
 APPLICATION FILED MAY 19, 1910.

986,422.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

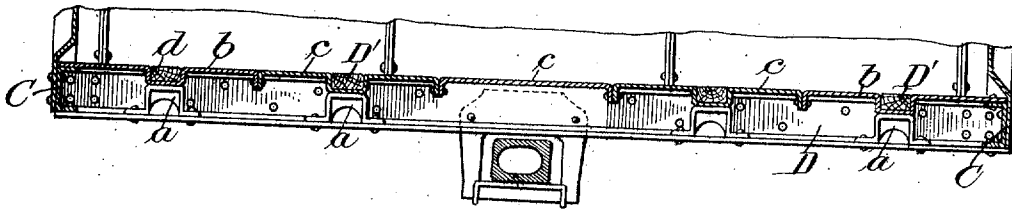


Fig. 2.

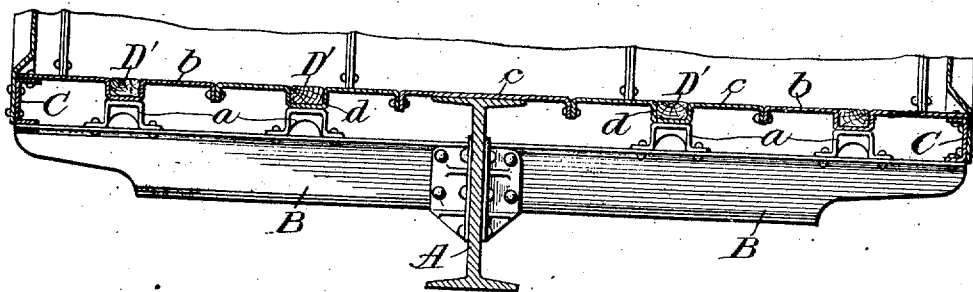


Fig. 5.

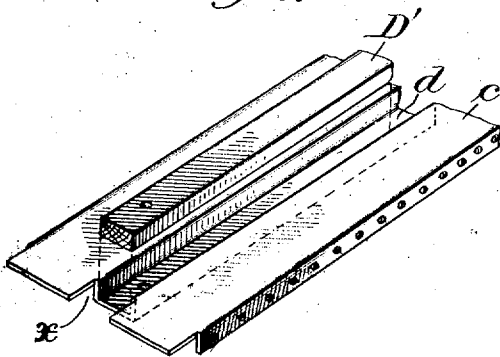
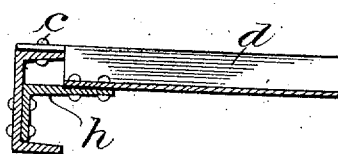


Fig. 4.



Witnesses
 C. W. Vermick
 E. A. Lundy.

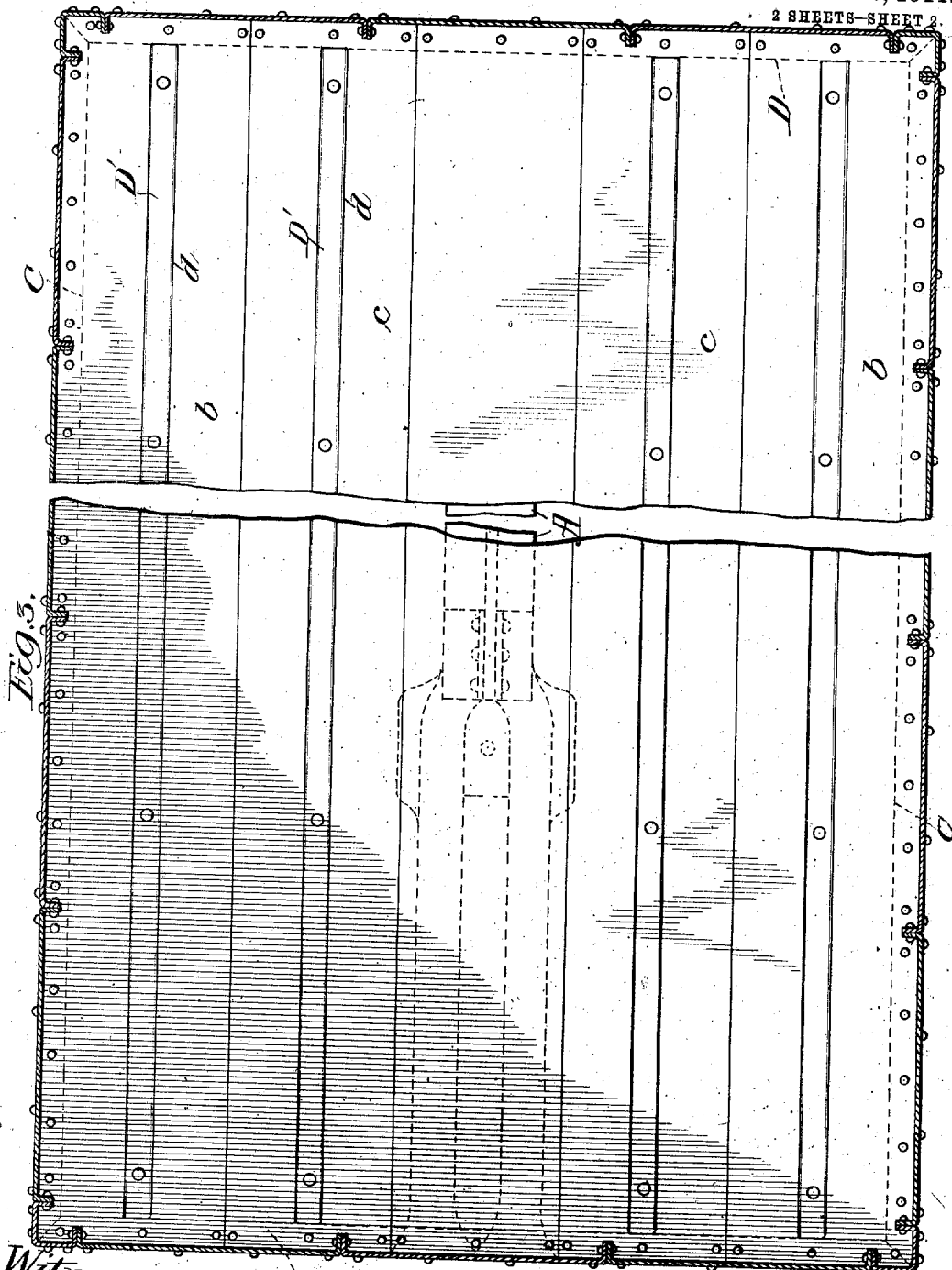
Inventor
 William P. Bettendorf
 by Frank D. Thumason
 Atty

W. P. BETTENDORF, DEC'D.
J. W. BETTENDORF, ADMINISTRATOR.
FLOOR CONSTRUCTION FOR FREIGHT CARS.
APPLICATION FILED MAY 19, 1910.

986,422.

Patented Mar. 7, 1911.

2 SHEETS-SHEET 2.



Witnesses
Cm. Hermann
E. Lundy.

Inventor
William P. Bettendorf
by Frank D. Thannemann
Atty

UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF BETTENDORF, IOWA; J. W. BETTENDORF ADMINISTRATOR OF SAID WILLIAM P. BETTENDORF, DECEASED.

FLOOR CONSTRUCTION FOR FREIGHT-CARS.

986,422.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Continuation of application Serial No. 533,605, filed December 17, 1909. This application filed May 19, 1910.
Serial No. 562,185.

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, a citizen of the United States, residing at Bettendorf, in the county of Scott and State of Iowa, have invented new and useful Improvements in Floor Construction for Freight-Cars, of which the following is a full, clear, and exact description.

My invention relates to freight cars and particularly to the construction of the floor and underframe thereof.

The object of my invention is to provide a floor principally composed of sheet metal plates, but provided with sunken wooden nailing strips which permit the anchoring of freight in a well known manner, and which can be easily replaced from time to time as needed. This I accomplish by the means hereinafter fully described and as particularly pointed out in the claims.

In the drawings:—Figure 1 is a transverse section of the floor of a car embodying my improvements taken in a transverse plane mediate the bolster and end-sill. Fig. 2 is a similar view taken at a point adjacent the body-bolster of the cars. Fig. 3 is a plan view of the floor of the car showing the side-walls thereof in section. Fig. 4 is a detail view showing a longitudinal section of the floor at one end of the car in the longitudinal plane of one of the nailing strips. Fig. 5 is a perspective view of one end of a floor plate showing the nailing strips about to be inserted.

Referring to the drawings A represents the single I-beam center-sill of the underframe of a freight car, and particularly of the metal box-car, described and claimed in the application for Letters Patent of the United States, filed December 17, 1909, Serial No. 533,605, in which the subject-matter of this application was originally disclosed in part. B represents the needle-beams or transverse bearers of said underframe; C the channel-beam side-sills thereof, and D the end-sills of the same. The needle-beams B are, preferably, continuous from side to side of the car, and pass through suitable openings in the web of the said center-sill,—the upper surface of the double flanges of which latter is on the same plane as the upper surfaces of the flanges of the channel-beam side-sills, substantially as shown in the drawings. It may be observed at this point that I do not desire to be con-

finied to a car underframe employing a single I-beam center-sill, in view of the fact that, so far as the novel features of my invention are concerned, a double center-sill, or a box-center-sill may be used just as well. Between the center-sill and the side-sill the needle-beams are provided with stools *a*, resting upon and secured to them that consist of inverted U-shaped metal castings, that may be reinforced, if desired, by webs underneath.

The floor of the car consists of a series of longitudinal sheet metal plates *b*, the ends of which are riveted to the upper flanges of the end-sills and the outer longitudinal edges of the plates, nearest the side of the car, rest upon and are riveted to the upper flanges of the side-sills. The opposite or inner longitudinal edges of said last mentioned plates, as well as both longitudinal edges *c* of the remaining floor-plates, composing the floor between the same, are correspondingly flanged downward and secured together, preferably in longitudinal planes between the center-sill and nearest stools on either side thereof, and between said stools. These floor-plates *b*, are, in the vertical planes of the stools *a* provided with longitudinal grooves or channels *d*, that extend longitudinally from end-sill to end-sill of the car. The end edges of these floor-plates, in alinement with said grooves or channels *d* are recessed or cut away as at *e*, Fig. 5, and the end edges of the grooves rest upon and are riveted or otherwise secured to the longitudinally projecting horizontal branches of inverted L-shaped brackets *h*, the vertical branches of which are secured to the web of the end-sill in a suitable manner, substantially as shown in Fig. 4 of the drawings. These channels are deep enough so that their bottoms rest upon said stools, while their upper surfaces are all in the same horizontal plane, and have wooden nailing strips, *D'*, that are secured therein, in any suitable manner, and are of such dimensions that their upper surfaces are, preferably, in the same horizontal plane as that of the remainder of the floor.

When heavy freight such as machinery, furniture, and the like, are to be loaded on a car possessing my improved floor construction, it is nailed in place, to prevent its shifting when in transit, by frame-work or metal strips nailed to the nailing strips.

This would be very difficult to accomplish if said floor was made entirely of metal, and would require the frame-work of a false floor to be built in the car before it could be satisfactorily accomplished. Whenever necessary these nailing strips may be removed and replaced at a comparatively small expenditure of labor and material.

What I claim as new is:—

1. A box car comprising a sheet-metal floor having longitudinally disposed wooden planks sunk into the same at suitable intervals apart.

2. A box-car comprising a sheet-metal floor having longitudinally disposed wooden planks sunk into the same at suitable intervals apart, and extending from end to end of the car.

3. A box-car comprising a floor made of sheet metal plates, which, between the side-sills of the car, have their longitudinal edges flanged downward and secured together, and between their edges, have longitudinal grooves, and wooden planks inserted in said grooves and having their upper surfaces substantially level with said floor-plates.

4. A box-car comprising side-sills and a center-sill, sheet metal floor plates, the edges of the plates next the side-walls of the car being supported upon and secured to the upper surfaces of the side-sills, and the opposite edges of the said plates and of the other floor plates being flanged downward, and secured to the flanged edges next the same, and longitudinal wooden planks sunk into longitudinal grooves in the plates on each side of the center-sill.

5. A box-car comprising channel-beam side-sills, and a single I-beam center-sill, sheet metal floor plates, the edges of the plates next the side-walls of the car being supported upon and secured to the upper surfaces of the side-sills, and the opposite edges of said plates and of the other floor-plates being flanged downward, and secured to the flanged edges next the same, and longitudinal wooden planks sunk into longitudinal grooves in the plates on each side of the center-sill.

6. A box-car comprising side-sills, a center-sill, needle-beams extending from side to side of the car through the web of said center-sill and supporting the side-sills upon their ends, and sheet metal floor plates, means sustained by said needle-beams for supporting said plates between the center-sill and side-sills, and longitudinal wooden planks sunk into said floor-plates at points on each side of said center-sill.

7. A box-car comprising side-sills, a center-sill, needle-beams extending from side to side of the car through the web of said

center-sill, and supporting the side-sills upon their ends, longitudinally arranged sheet metal floor plates, metal stools secured to said needle-beams for supporting the said plates between the center-sill and side-sills, and longitudinally disposed wooden planks sunk into said floor plates at points on each side of said center-sill.

8. A box-car comprising side-sills, a center-sill, needle-beams extending from side to side of the car through the web of said center-sill, and supporting the side-sills upon their ends, and sheet metal floor plates, the edges of said plates next the side-walls of the car resting upon and secured to said side-sills, and the opposite edges thereof and the edges of the other floor plates being flanged downward and secured together, means for supporting said floor plates mediate their longitudinal edges that are secured to and sustained by said needle-beams, and longitudinally disposed wooden planks sunk into said floor plates on each side of said center-sill.

9. A box-car comprising side-sills, and center-sills, transverse needle-beams the upper surfaces of which are below the upper surfaces of said sills, longitudinally arranged sheet metal floor-plates, the edges of said plates next the side-walls of the car being supported upon and secured to the side-sills, the opposite edges of said last mentioned plates and the longitudinal edges of the other floor plates being flanged downward and secured together, and the said plates on either side of said center-sill having longitudinal grooves therein mediate their side edges, wooden planks seated and secured in said groove, and metal stools sustained by said metal beams and bearing upward against the bottom of said grooves, and supporting said floor plates.

10. A box-car comprising a floor made of sheet-metal plates which between their longitudinal edges are provided with longitudinal grooves and the end edges of which in alinement with said grooves are cut away, and wooden planks inserted in said grooves.

11. A box-car comprising an underframe having end-sills, a floor made of sheet-metal plates which between their longitudinal edges are provided with longitudinal grooves and the end edges of which in alinement with said grooves are cut-away, wooden planks inserted in said grooves, and brackets secured to said end-sills on which the end edges of said grooves are mounted.

In witness whereof I have hereunto set my hand this 29th day of April 1910.

WILLIAM P. BETTENDORF.

Witnesses:

A. D. FRENIER,

O. C. STARY.