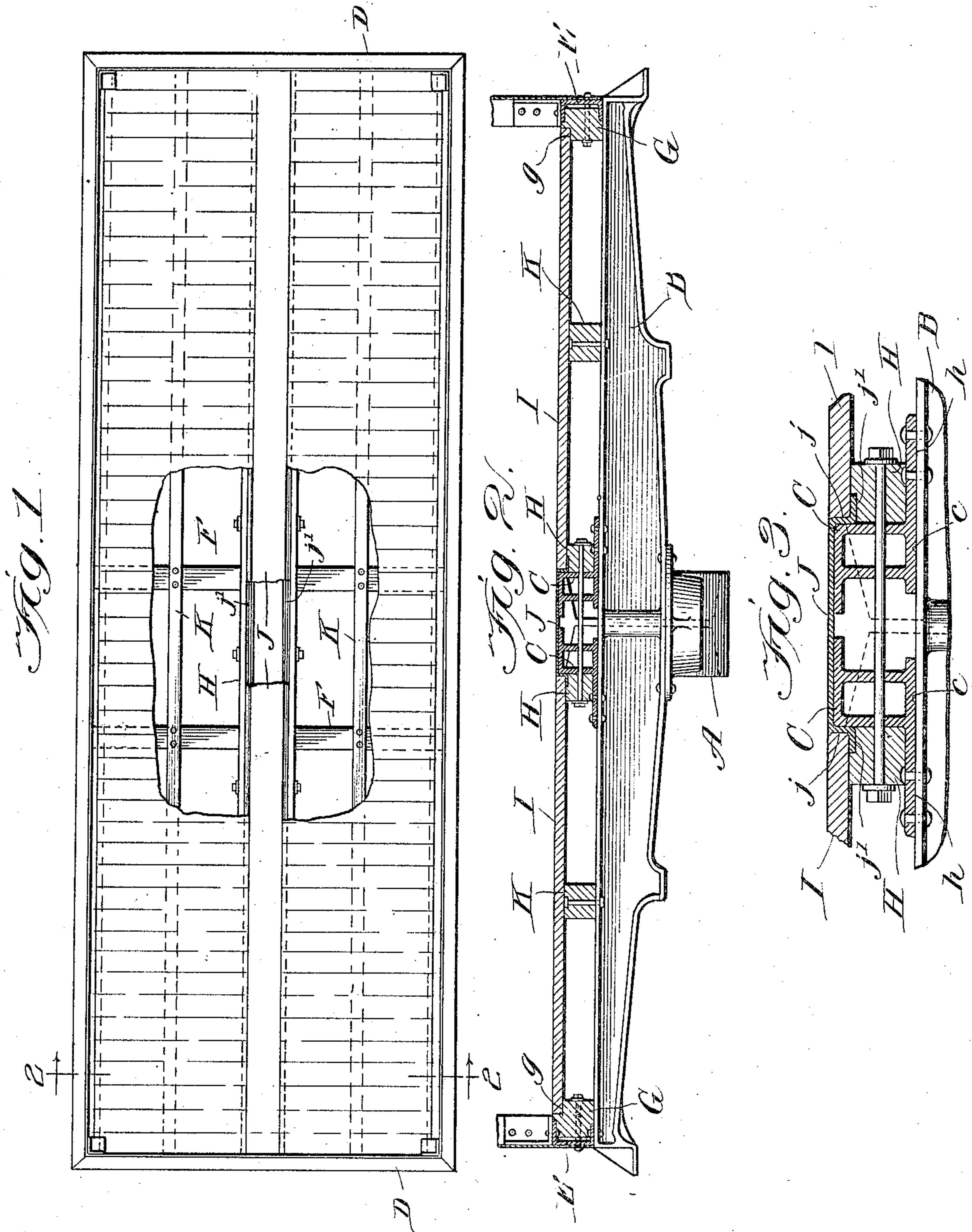


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FLOORING FOR RAILWAY CARS.
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953,116.

Patented Mar. 29, 1910.



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UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF DAVENPORT, IOWA.

FLOORING FOR RAILWAY-CARS.

953,116.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed October 25, 1909. Serial No. 524,468.

To all whom it may concern:

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

My invention relates to the construction of the floors for railway cars, and more particularly to that type of cars now commercially known as "steel cars" or "metal cars", wherein the use of the wooden underframes and sides has been superseded by the employment of pressed, rolled, or cast metal beams; and plates, in order to add strength, lightness and durability to the finished product. Heretofore it has been customary to make the floors of cars of this kind entirely of wood because of the necessity of anchoring the freight and preventing its shifting, by means of braces or other wooden structures nailed to the floor, and because it is easier to replace.

The object of my invention is to enable the floor of the car to be lowered to just above the plane of the upper edges of the sills; to increase the durability of the same by making the central portion thereof above the center sill or sills of metal and to make the same economically and strong and durable with wooden floorings which can be easily and quickly repaired, and utilized for all purposes as easily and conveniently as if it were made entirely of wood. These objects I accomplish by the means and in the manner hereinafter fully described and as more particularly pointed out in the claims, reference being had to the accompanying drawings forming a part hereof, in which:—

Figure 1 is a plan view of the floor portion of a railway car showing my improvements applied thereto. Fig. 2 is a transverse vertical section thereof, taken on line 2—2, Fig. 1, and looking in the direction of the arrows. Fig. 3 is a greatly enlarged fragment in transverse section similar to Fig. 2, of the longitudinal central portion of the floor.

Referring to the drawings, A represents a rolled or cast metal center-sill, that preferably is continuous between the body-bolsters B, of the underframe, and in this particular instance is illustrated as of a single I-beam construction. Secured to the ends of this center-sill a short distance from the vertical planes of each of the body-bolsters are

suitable correspondingly shaped cast-metal draft-sills C, C, that constitute extensions of the center-sill, A, that have their lower portions so shaped as to form arches *c, c*, that arch over the body-bolsters, but have their upper edges in the same horizontal plane as the upper edge of the center-sill, a plane which is maintained from end to end of the car. This construction, in its general aspects, is similar to that shown and described in Letters Patent of the United States No. 780,317, granted to me on January 17th, 1905, for underframes for cars. Extending from end to end of the car and bounding the longitudinal sides thereof, are side-sills E, E, preferably of angular or rolled metal construction, and are so arranged that the lateral flanges thereof project inwardly. These side-sills are, preferably, secured to and supported on the outer ends of the body-bolsters B and to cross-bearers F, F, that are disposed at suitable distances apart between said body-bolsters. These cross-bearers are usually of I-beam construction, and at their centers of length pass through the center-sill and have their upper edges in the same horizontal plane as the upper edges of the body-bolsters.

Longitudinally disposed wooden floor timbers or fillers G, G, are bolted or otherwise suitably secured to the inner face of the side-sills, and preferably correspond in thickness to the height of said side-sills. The outer portion of the upper and lower surfaces of these fillers are recessed in order to fit snugly between the flanges of said side-sills, while the inner upper corner thereof is chamfered to form a seat *g* for the outer ends of the transverse flooring planks, as will hereinafter be more fully described. Corresponding longitudinal wooden floor timbers or fillers H, H, are secured upon each side of the center-sill, and are seated upon the suitable lateral flanges *h, h*, of the draft-sills. These latter fillers H, H, are slightly less in height than the fillers G, G, and therefore need not be grooved. Between the side-sills and the center-sill and draft-sills the flooring consists of transverse planks I, I, whose outer ends are seated in the chamfer in the edge of floor timbers G, and whose inner ends rest upon the floor timbers, H, and terminate against the draft sill or the center-sill according to the part of the car where they are laid. In order to cover over the center-sill and draft-sills from side to side

and from one end of the car to the other, I have provided a sheet metal center-plate J, which is confined and held in place by having its longitudinal edges bent downward over the upper corners of said sills and then bent outward, thereby forming L-shaped flanges j, j , whose horizontal portions j', j' extend under the adjacent ends of the floor planks, I, into depressed seats in the longitudinal timbers, H. When the floor-planks are nailed to timber H, they securely clamp the side-edges of the center-strip and retain it in place without necessitating the use of rivets or bolts, and have the exposed floor surface made thereby smooth. In order to support the flooring-planks between the center-sill and side-sill fillers suitable longitudinally extending wooden stringers K, K, are bolted or otherwise secured to the body-bolsters and cross-bearers about midway between timbers G and H, that extend from end-sill to end-sill of the car.

What I claim as new is:—

1. The combination in a car of an under-frame comprising a center-sill, and needle-beams the upper edges of which are below the corresponding edges of the center-sill, of a flooring the central portion of which is metal and the portions on either side thereof are wooden planks.

2. The combination in a car of an under-frame comprising a center-sill, and needle-beams the upper edges of which are below the corresponding edges of the center-sill, of a flooring the central portion of which comprises a metal-plate extending the length of the car, and wooden-planks on either side thereof.

3. A flooring for cars the central portion of which comprises a sheet-metal plate extending the length of the car, and transverse wooden-planks on either side thereof the adjacent ends of which rest upon said plate.

4. A flooring for cars the central portion of which comprises a metal plate provided with lateral flanges that project in a different plane from the body thereof, and the portions on either side thereof comprising wooden planks one end of which rest on said flanges.

5. The combination in a car of an under-frame comprising a center-sill, and needle-beams the upper edges of which are below the corresponding edges of the center-sill, of a flooring the central portion of which is metal and covers the center-sill, and the portions on either side thereof are wooden-planks.

6. The combination in a car of an under-frame comprising a center-sill, and needle-beams the upper edges of which are below the corresponding edges of the center-sill, of a flooring the central portion of which comprises a metal plate extending the

length of the car and covering the upper edge of said center-sill, and wooden-planks on either side thereof.

7. A flooring for cars the central portion of which comprises a sheet metal plate extending the length of the car and covering the upper edge of the center-sill of said car, and transverse wooden floor-planks on either side thereof the adjacent ends of which rest upon said plate.

8. A flooring for cars the central portion of which comprises a metal plate provided with lateral flanges that project in a different plane than the body thereof and cover the upper edge of the center-sill of said car, and the portions of said flooring on either side of the center comprising wooden floor-planks one end of which rest upon said flanges.

9. In flooring for cars, the combination with a center-sill, and side-sills, of a center-plate covering said center-sill, longitudinally disposed floor-timbers secured to said side-sills, and transverse floor-planks seated on said timbers and said center-plate between the said center-sill and side-sills.

10. In flooring for cars, the combination with a center-sill and side-sills, of a center-plate covering said center-sill from end to end of the car and having lateral flanges, longitudinally disposed floor-timbers secured to said side-sills, and transverse floor-timbers seated on said timbers and the flanges of said center-plate between said center-sill and side-sills.

11. In flooring for cars, the combination with a center-sill and side-sills, of a center-plate covering said center-sill from end to end of the car and having lateral flanges extending below the plane of the top of said center-sill, longitudinally disposed floor-timbers secured to said side-sills, and transverse floor-planks seated on said timbers and the flanges of said center-plate between said center-sill and side-sill.

12. In flooring for cars, the combination with a center-sill, side-sills and cross-bearers, of longitudinally disposed floor-timbers secured to said side-sills and center-sill and resting upon said cross-bearers, a center-plate covering said center-sill and provided with lateral flanges seated in the adjacent edge of the floor-timbers secured to the center-sill, and transverse floor-planks resting upon said timbers and the lateral flanges of said center-plate.

13. In flooring for cars, the combination with a center-sill, side-sills and cross-bearers, of longitudinally disposed floor-timbers secured to said center and side-sill and resting upon said cross-bearers, a center-plate covering said center-sill, and transverse floor-planks seated on said timbers and center-plate and retaining the latter in place.

14. In flooring for cars, the combination

with a center-sill, side-sills and cross-bear-
ers, of longitudinally disposed floor-timbers
secured to said center-sill and side-sills and
resting upon the cross-bearers, a center-
5 plate covering said center-sill and provided
with lateral flanges that project in a differ-
ent plane from the body of said plate, and
transverse floor-planks seated on said tim-

bers and the flanges of said plate and re-
taining the latter in place.

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In witness whereof I have hereunto set
my hand this 16th day of October 1909.

WILLIAM P. BETTENDORF.

Witnesses:

A. B. FRENIER,

F. M. GODDARD.