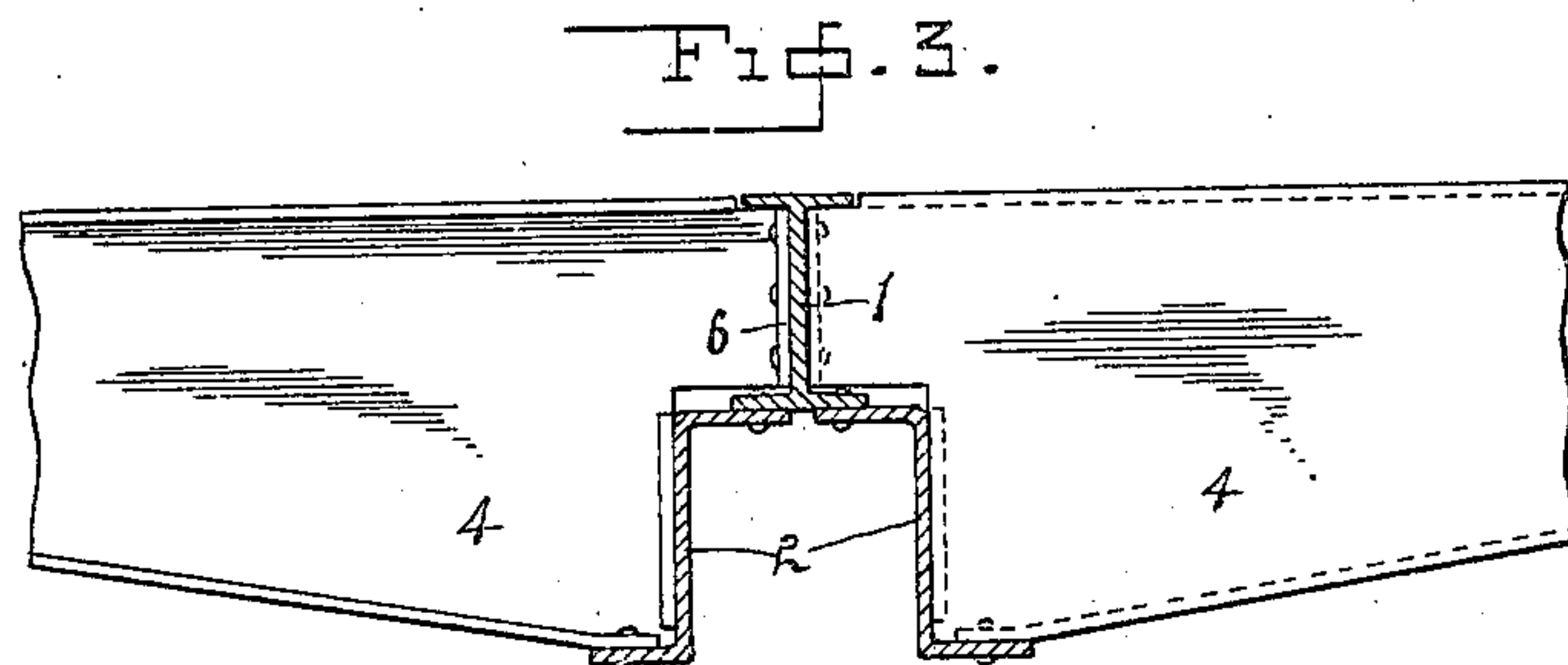
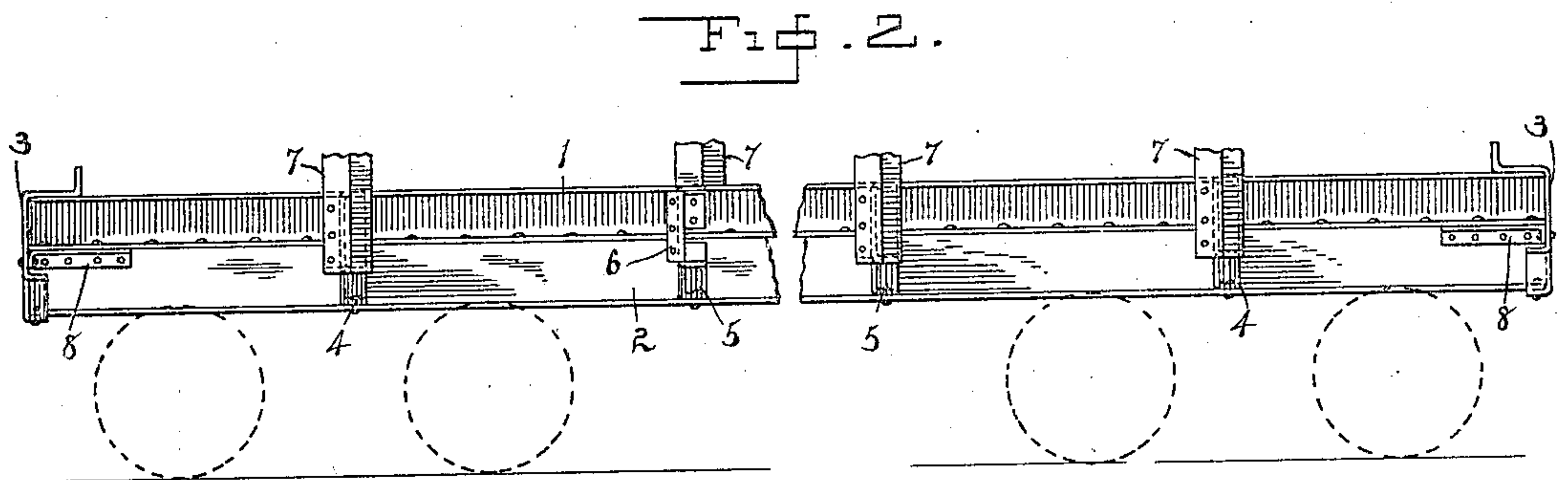
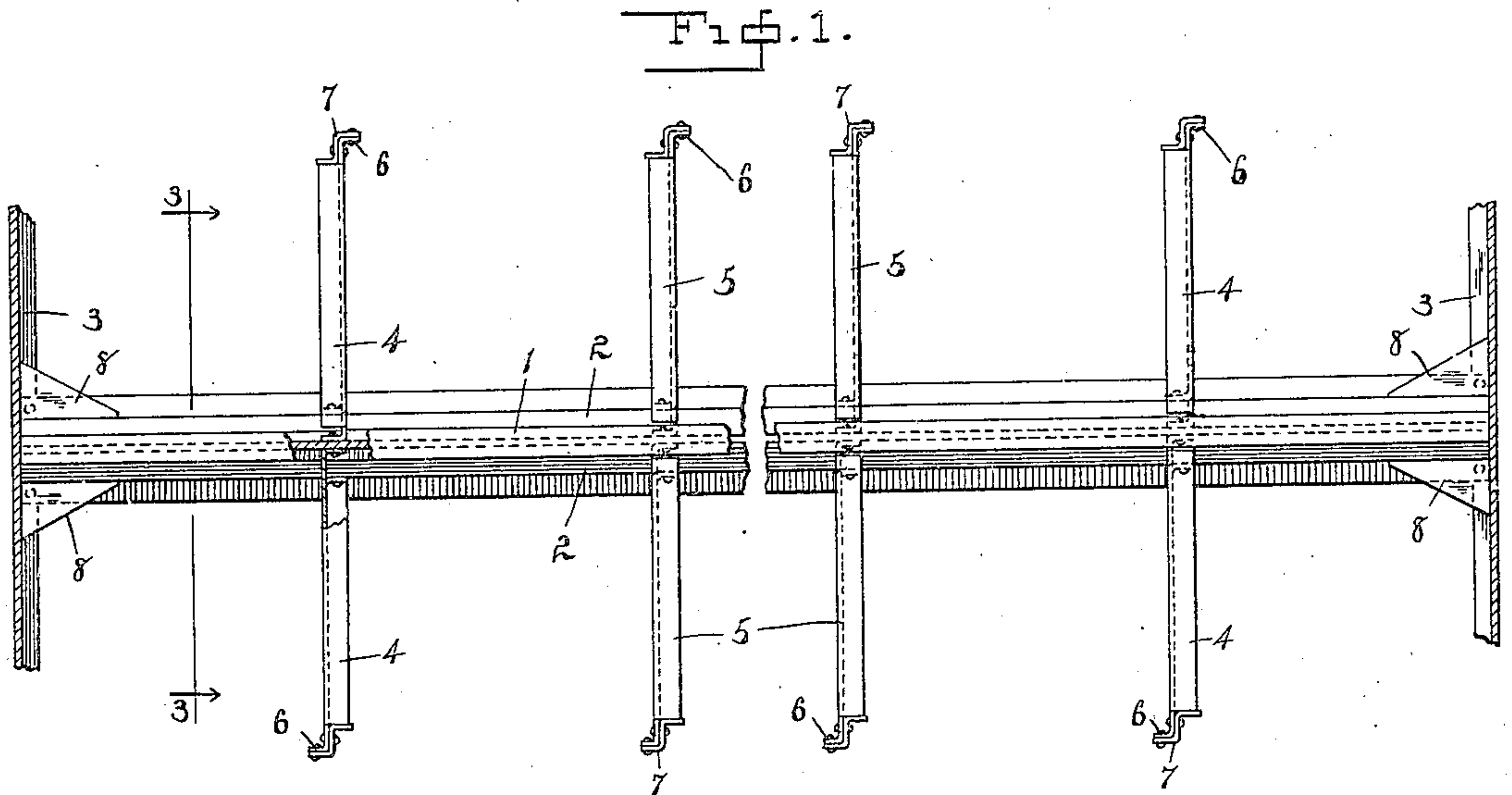


S. OTIS.
RAILWAY CAR.
APPLICATION FILED OCT. 15, 1909.

953,347.

Patented Mar. 29, 1910.



WITNESSES:

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SPENCER OTIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL DUMP CAR COMPANY,
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RAILWAY-CAR.

953,347.

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

Application filed October 15, 1909. Serial No. 522,739.

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 invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

The object of my invention is to simplify and strengthen steel car underframes, the invention claimed in this application relating particularly to the construction of the center sill.

The object and nature of the invention will clearly appear from the following description and claims, taken in connection with the accompanying drawings, in which—

Figure 1 is a fragmentary plan view of a car showing the center sill, end sills and cross members, the remainder of the car structure being omitted in order to show the parts mentioned more clearly. Fig. 2 is a side elevation corresponding to Fig. 1. Fig. 3 is a cross section on the line 3, 3 of Fig. 1.

In my improved car the center sill extends continuously from one end sill to the other and in cross section takes somewhat the form of an inverted Y. The upper part of the center sill consists of an I-beam 1, the lower flanges of which are riveted to the Z-bars 2, all of these parts extending continuously between the sills 3. The webs of the I-beam and Z-bars are arranged vertically, and the upper flanges of the Z-bars 2 lie beneath and are riveted to the lower flanges of the I-beam 1.

The vertical webs of the Z-bars 2 are of sufficient depth and lie at a sufficient distance from each other to form a housing for the draft rigging in the space between the bolsters 4 and the end sills 3.

The cross members including the bolsters 4 and intermediate cross members 5 are constructed in the form of diaphragms shaped at their inner ends to conform to the sides of the center sill and secured thereto. For this purpose I provide the inner ends of the cross members with flanges which are secured to the I-beam 1 by means of rivets which pass through the I-beam and through the flanges of opposite parts of the cross members, and also provide flanges which are riveted to the webs of the Z-bars 2.

At their outer ends the webs of the cross members extend beyond the sides of the car and the projecting ends are bent over as indicated at 6 to form flanges extending parallel to the car side, said latter flanges extending from the web oppositely to the inner flanges which are secured to the center sill. The side stakes consist of Z-bars 7 riveted to the flanges 6 and to the projecting parts of the webs of the cross members.

I have shown the connection between the end sills 3 and center sill reinforced by flanged gussets 8 riveted respectively to the end sills and the vertical webs of the Z-bars.

The structure above explained may be used in cars of widely different type, and not being dependent upon any particular form of car I have found it unnecessary in this application to illustrate or explain other parts of the car structure than those mentioned above.

I claim:

1. In a car underframe, a center sill comprising a central web, flanges at the upper and lower edges of said web, each of said lower flanges comprising a part extending outward horizontally from the lower edge of said web, a part extending downward vertically from the outer edge of said horizontal part, and a part extending outward horizontally from the lower edge of said vertical part.

2. In a car underframe, a center sill comprising a central web, flanges at the upper and lower edges of said web, each of said lower flanges comprising a part extending outward horizontally from the lower edge of said web, a part extending downward vertically from the outer edge of said horizontal part, and a part extending outward horizontally from the lower edge of said vertical part, said center sill extending continuously from end to end of said underframe.

3. In a car underframe, a center sill comprising an I-beam, and Z-bars secured to the lower part of said I-beam.

4. In a car underframe, a center sill comprising an I-beam, and Z-bars secured to the lower part of said I-beam, said center sill extending continuously from end to end of said underframe.

5. In a car underframe, a center sill comprising a vertically disposed I-beam, and Z-bars having their webs arranged vertically and their upper flanges secured to the lower flanges of said I-beam.

6. In a car underframe, a center sill comprising a vertically disposed I-beam, and Z-bars having their webs arranged vertically and their upper flanges secured to the lower flanges of said I-beam, said center sill extending continuously from end to end of said underframe.

7. In a car underframe, a center sill comprising a vertically disposed I-beam, Z-bars having their webs arranged vertically and their upper flanges secured to the lower flanges of said I-beam, said center sill extending continuously from end to end of said underframe, diaphragm cross members

flanged at their inner ends and secured to the webs of said I-beam and Z-bars.

8. In a car underframe, a center sill, end sills, bolsters and intermediate cross members, said center sill comprising a vertically disposed I-beam, Z-bars having their webs arranged vertically and their upper flanges secured to the lower flanges of said I-beam, said center sill extending continuously from end sill to end sill, the space between said Z-bars between the bolsters and end sills forming a housing for the draft rigging.

In testimony whereof, I have subscribed my name.

SPENCER OTIS.

Witnesses:

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