(No Model.)

4 Sheets—Sheet 1

E. W. M. HUGHES.

TANK CAR.

No. 512,297. Patented Jan. 9, 1894.

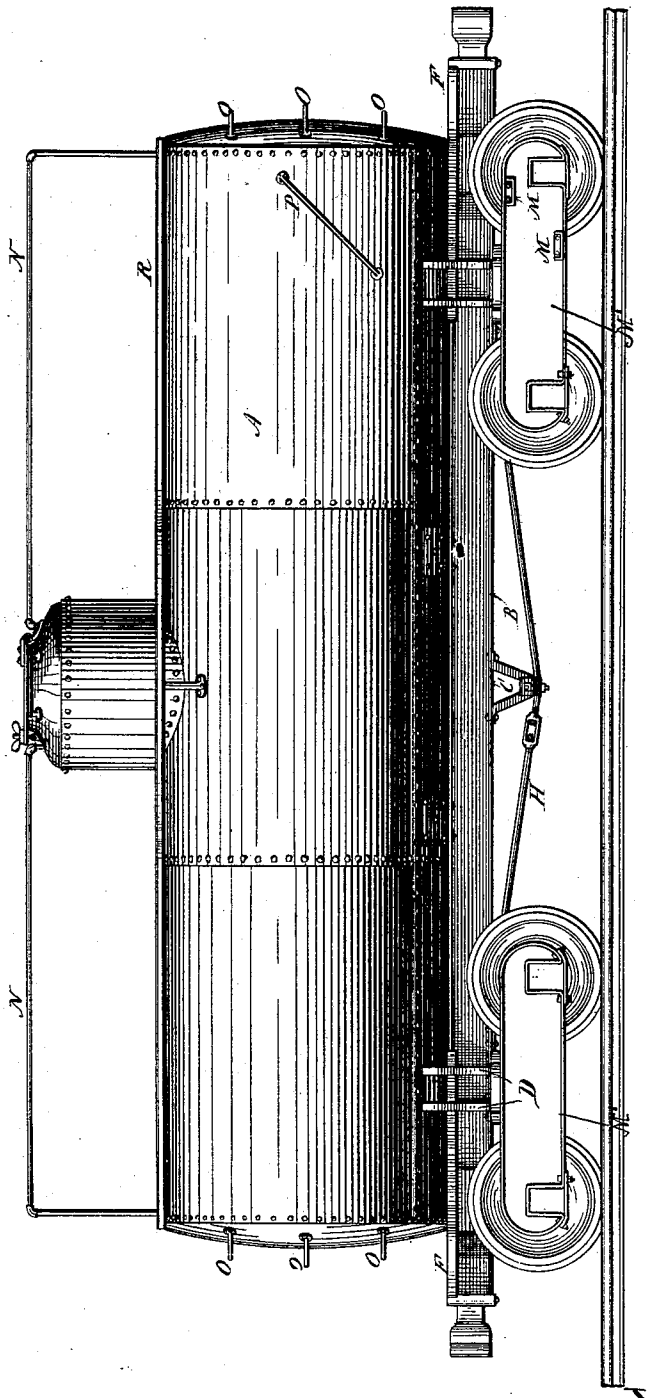

Fig. 1.

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G. F. Miatt

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(No Model.) 4 Sheets—Sheet 2.

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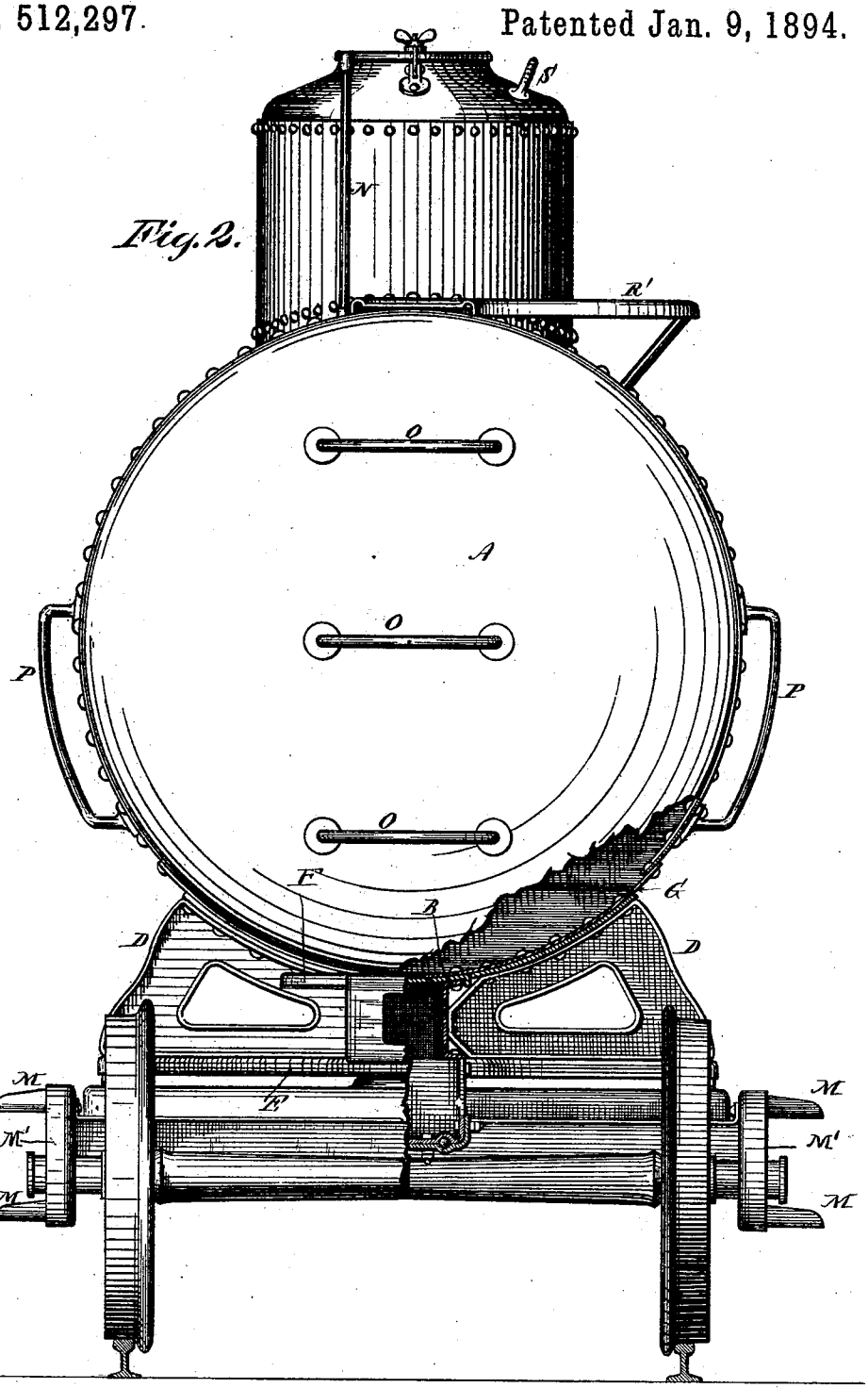
Fig. 2.



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4 Sheets—Sheet 3.

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TANK CAR.

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Fig. 3.

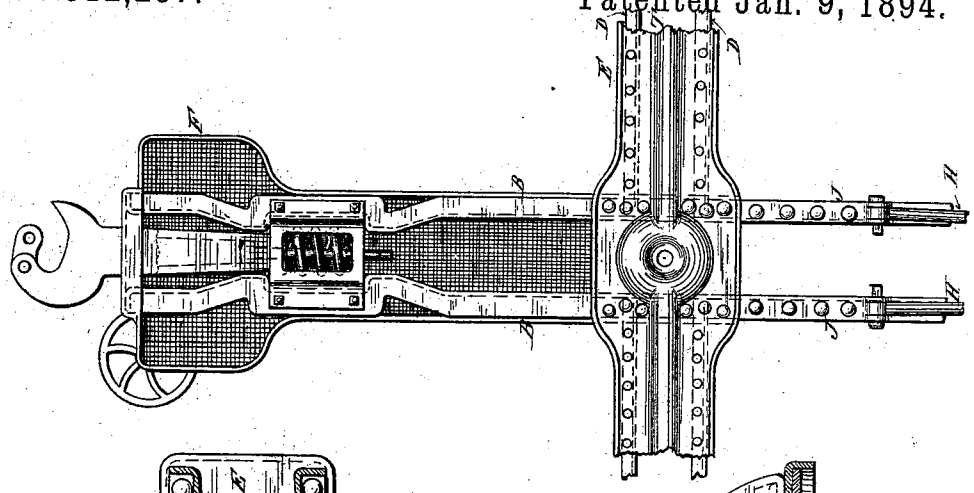


Fig. 4.

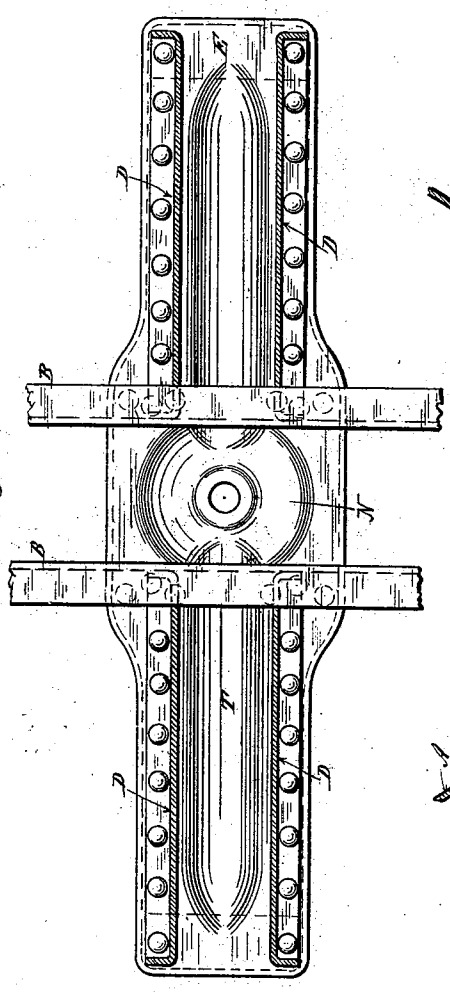
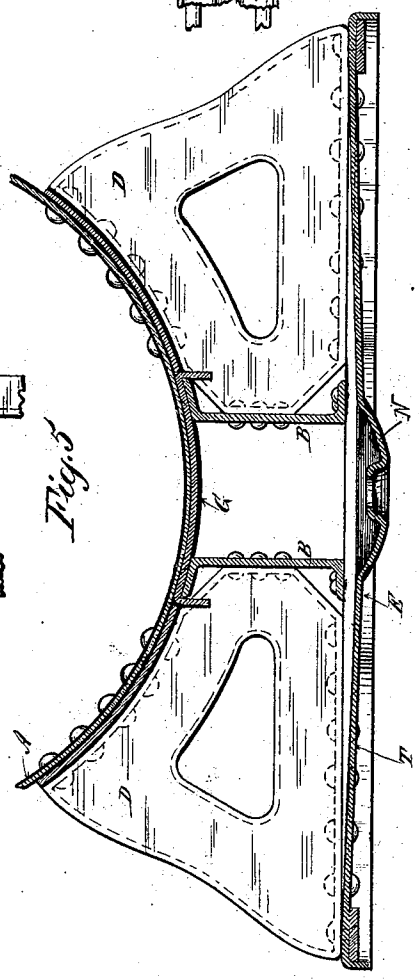


Fig. 5.



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(No Model.) 4 Sheets—Sheet 4.

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TANK CAR.

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Fig. 6.

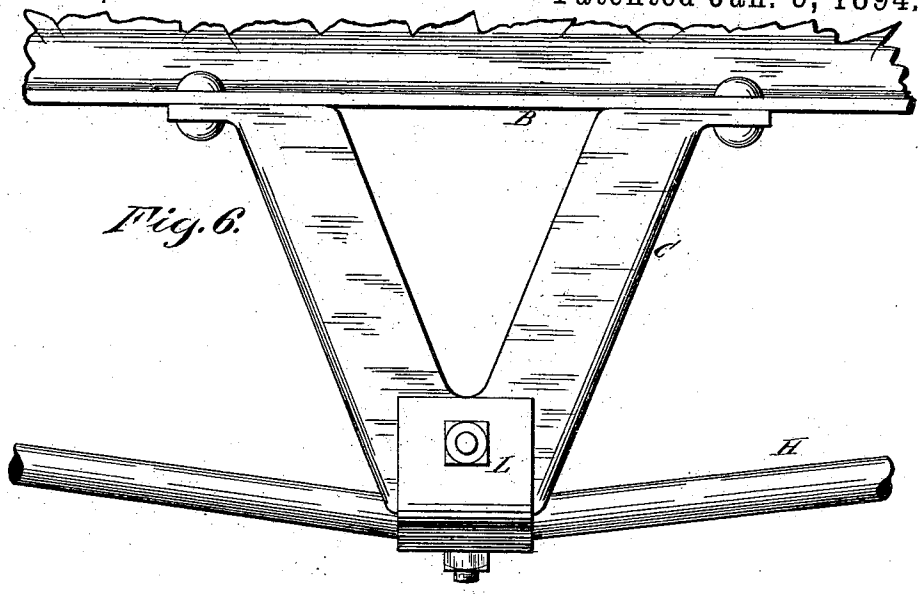
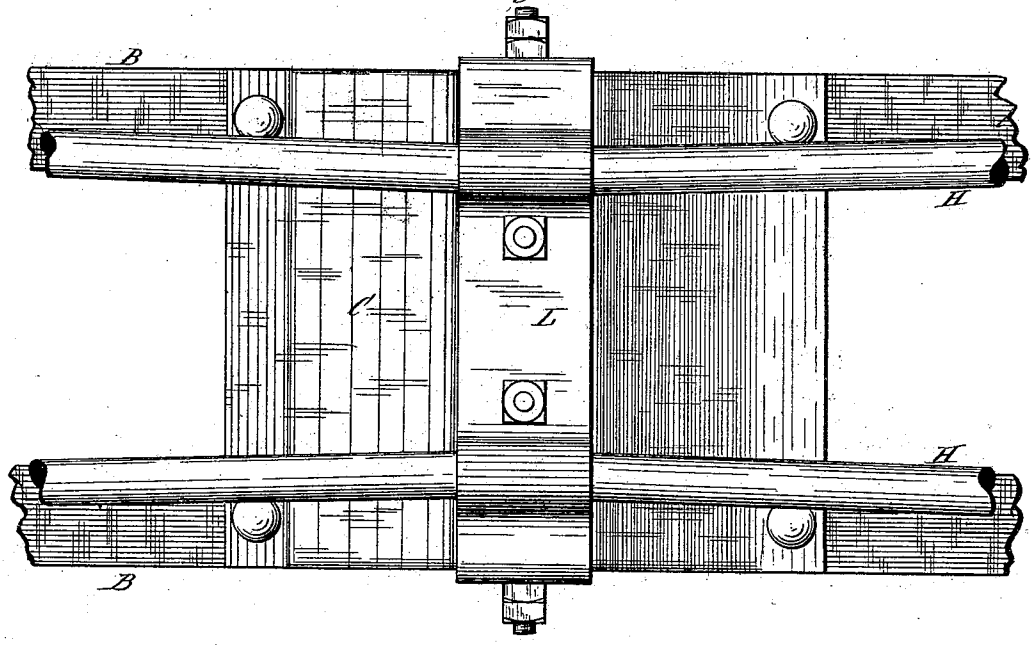


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD WILLIAM MACKENZIE-HUGHES, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE FOX SOLID PRESSED STEEL COMPANY, OF SAME PLACE.

TANK-CAR.

SPECIFICATION forming part of Letters Patent No. 512,297, dated January 9, 1894.

Application filed August 17, 1889. Serial No. 321,183. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WILLIAM MACKENZIE-HUGHES, of Chicago, Cook county, Illinois, have invented a new and useful Improvement in Tank-Cars, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to an improvement in tank cars, especially those designed for the transportation of oil or similar bodies; and it consists in a simpler and more economical structure than those heretofore made, and one in which the tank is carried upon a car body provided with longitudinal sills extending the length of the car and serving likewise for the draw gear attachment. The body bolster likewise is so constructed as to serve the purpose of a body bolster and likewise as a cradle or support for the tank to rest upon.

The details of my invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a lateral elevation; Fig. 2, an end elevation partly broken away; Fig. 3, a bottom view of the draw-bar attachment, showing likewise in part the structure of the bolster; Fig. 4, a view of the top of the bolster and tank cradle; the upper flange of the cradle being broken away; Fig. 5, a cross-section through the bolster; Fig. 6, a lateral elevation showing the detail of the truss rod and queen post; and Fig. 7, a bottom view of the same.

A represents the tank, which may be of any ordinary construction. It is by preference provided with step rods O O O, and with a handle P, and likewise with railing N suitably arranged with reference to the pressed steel running-board R, which is preferably made with flanges on either edge and extended at and around the tank dome. The tank itself is supported upon pressed steel brackets or cradles D D, which are attached to and form part of the body bolster E, which is likewise made of pressed steel and provided with flat edges to which the parts D D are riveted, and is arranged over the transom, the center bearing plate N, of the bolster bearing on a suitable plate on the transom and being connected thereto by the usual king bolts or other means. The center of this body bolster is by preference corrugated, as shown at T, and has a center plate pressed therein, as described in my Patent No. 423,476, dated March 15, 1890. Upon the body bolster E the longitudinal sills BB are supported, to which likewise the parts D D may be riveted at their inner edges, as shown in Fig. 5. These longitudinal center sills B B are made of pressed steel in the general shape of a channel-beam, as shown, their upper edges being arranged at an angle to correspond with that of the plate G resting beneath the tank proper, and which itself is by preference made of pressed steel, and having its outer edges bent down to embrace the sills B B. The ends of the sills B B are by preference shaped so as to form a box or receptacle for the draw-bar attachments, as described in my Patent No. 425,517, dated April 15, 1890. This however is not essential. Above the ends of the sills B B a supplemental floor F is arranged, which may extend beneath the car and as far as the body bolster if desired. The purpose of this is to afford standing room between the cars, which is essential, there being no other platform arranged at that point. The trucks may be of any ordinary construction; but I prefer to provide the side pieces M′ with steps M M. By using these steps, grasping the grip iron P, it is easy to step from the ground upon the platform, and thence to the top of the car by the steps O O O. As the center of the tank might have a tendency to bend the sills, I strengthen them in the ordinary way by truss rods H, which, however, are combined with the sills in a peculiar way by a sort of double queen post or body truss rod bearing C, which is by preference formed of pressed steel of a generally pyramidal shape provided at its lower edge with receptacles for the truss rods H H, wherein the said truss rods are clamped and held by the clamp piece L, likewise preferably made of pressed steel. By this truss rod bearing it will be seen that both the rods are carried upon one support.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a tank car of a longi-

tudinal tank extending over the trucks and two longitudinal sills formed of single pieces of pressed steel running the length of the car and supported on the trucks and forming the sole support of the tank and the draw bars connected directly to the said longitudinal sills, substantially as described.

2. The combination of a tank car of a tank, a truck, and an intermediate cradle and body bolster combined serving to support the tank upon the truck, substantially as described.

3. The combination in a tank car of a tank, and two longitudinal sills formed of single pieces of pressed steel running the length of the car and serving to support the tank the truss rods H, H, and the double queen post C, supported by and connecting the two longitudinal sills, and formed of pressed steel and supporting the truss rods H, substantially as described.

4. The combination of the body bolster E, formed of pressed steel and provided with the central corrugations T, and the flat edges on either side of the corrugations, and also formed with a central bearing plate, and the cradle D, D, secured to the flat edges of the body bolster, substantially as set forth.

5. The combination in a tank car of the tank, the channel sills supporting the tank, and the supporting plate interposed between the tank and sills and embracing the upper edges of the sills, substantially as described.

6. The combination, in a tank car, of a transversely arranged bolster, the cradles supported thereon, the longitudinal center sills secured to the bolster and arranged between the cradles, and the curved plate G secured to the cradles, and upon which the tank rests directly, substantially as set forth.

7. The combination in a tank car of a tank having steps and grip irons, of a truck, the side pieces of which are provided with steps, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD WILLIAM MACKENZIE-HUGHES.

Witnesses:

W. S. HARTWELL,

WM. VOSS.