

No. 751,438.

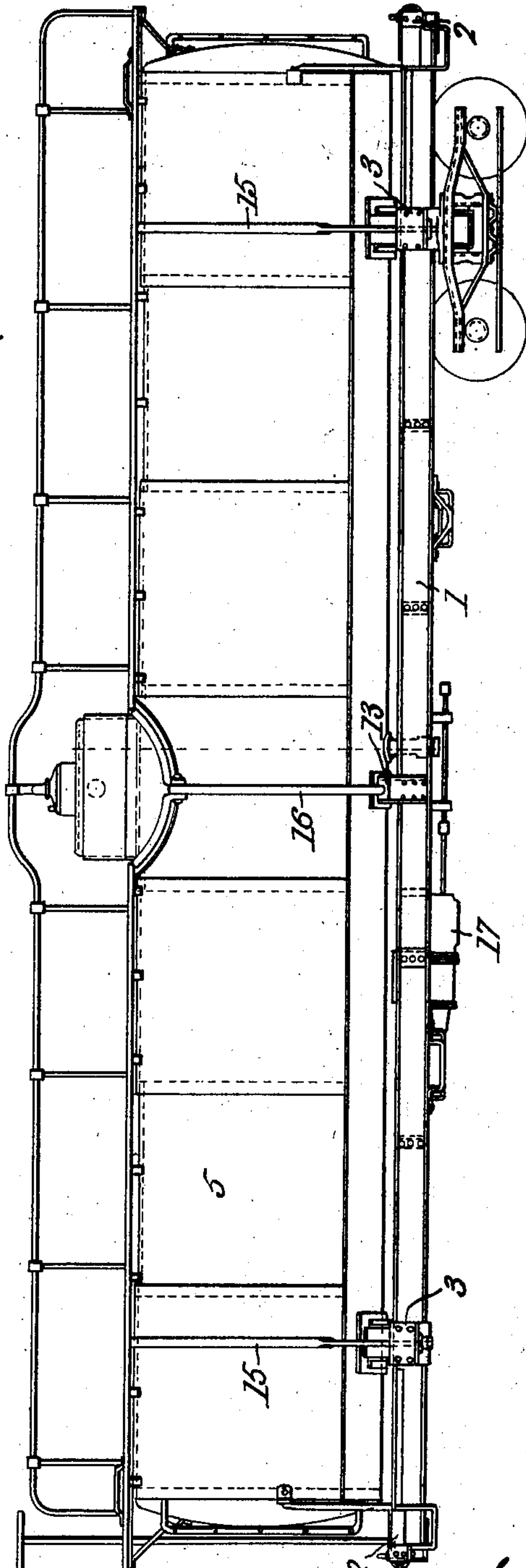
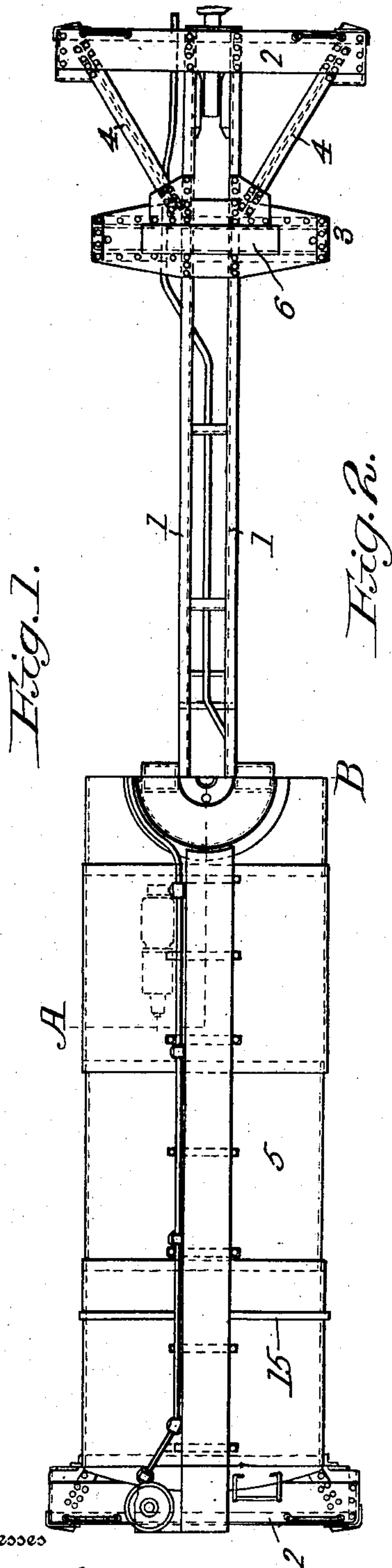
PATENTED FEB. 2, 1904.

A. STUCKI.
TANK CAR.

APPLICATION FILED OCT. 24, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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E. H. Finckel

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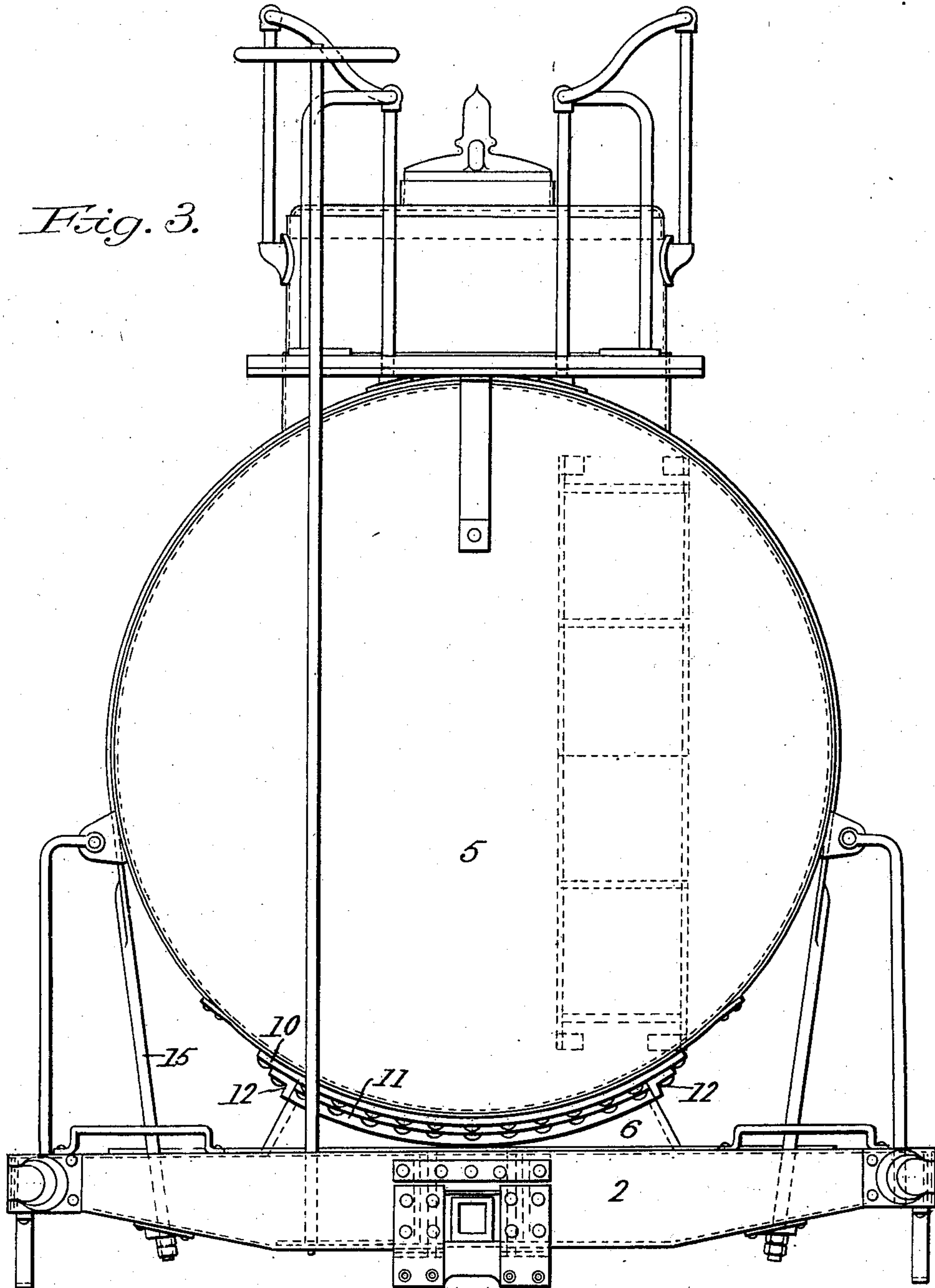
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3 SHEETS—SHEET 2.

Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

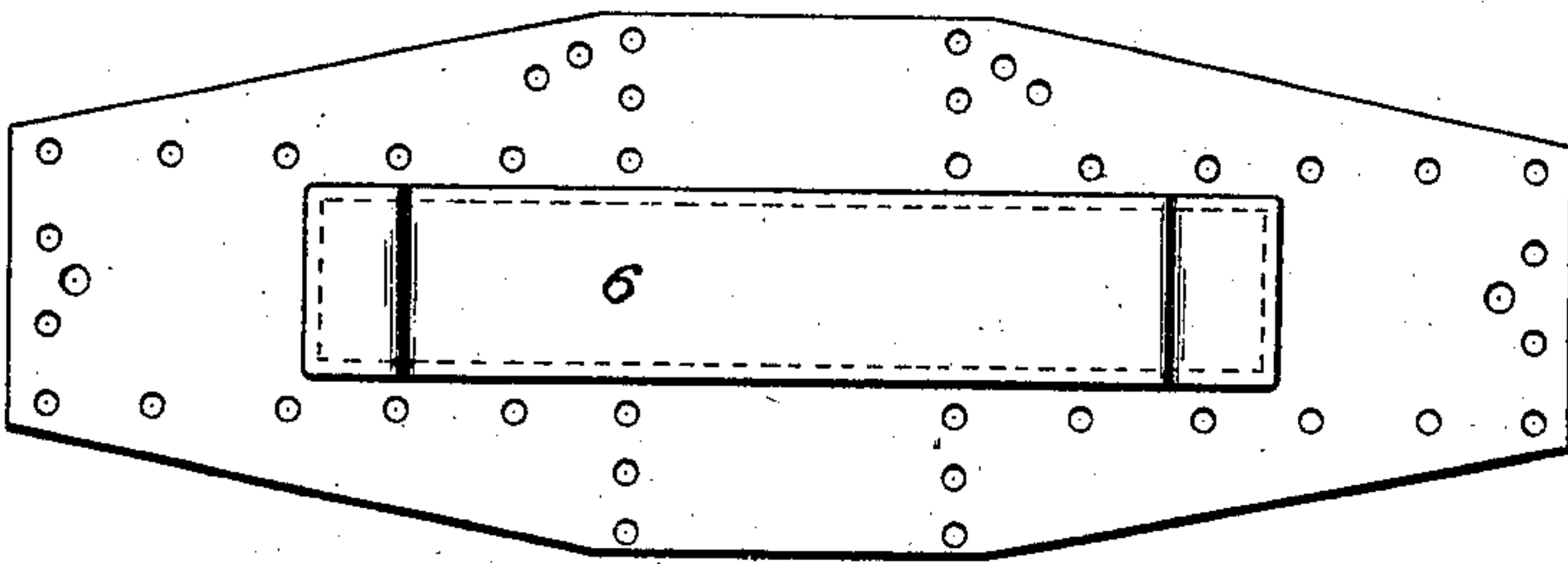


Fig. 6.

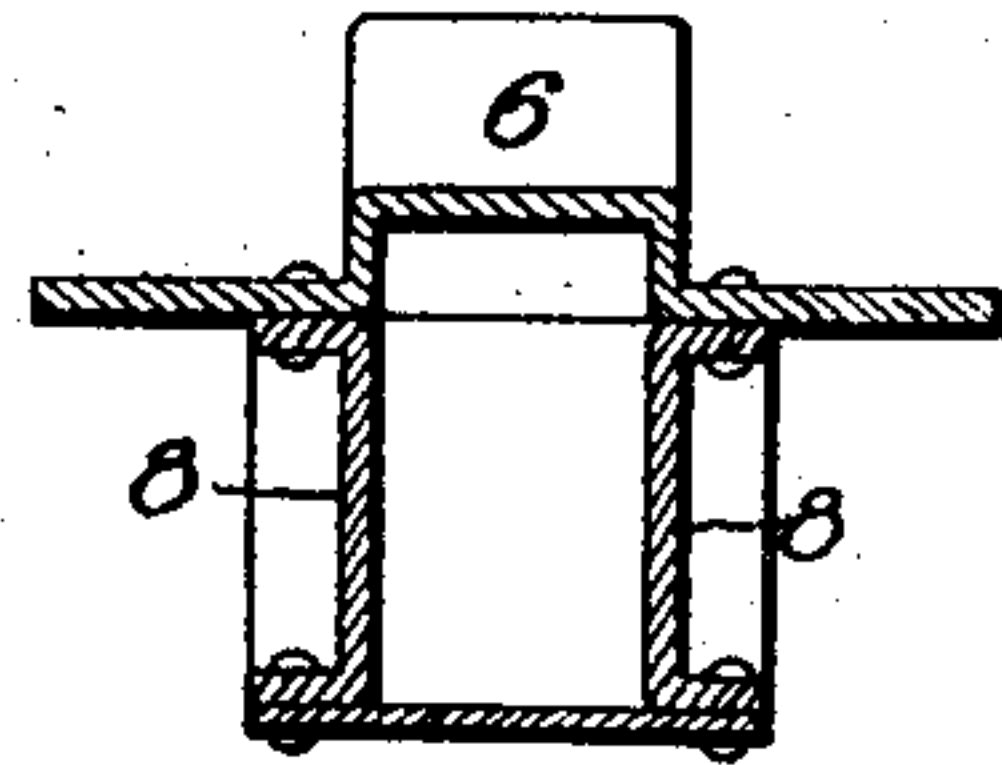


Fig. 5.



Fig. 7.

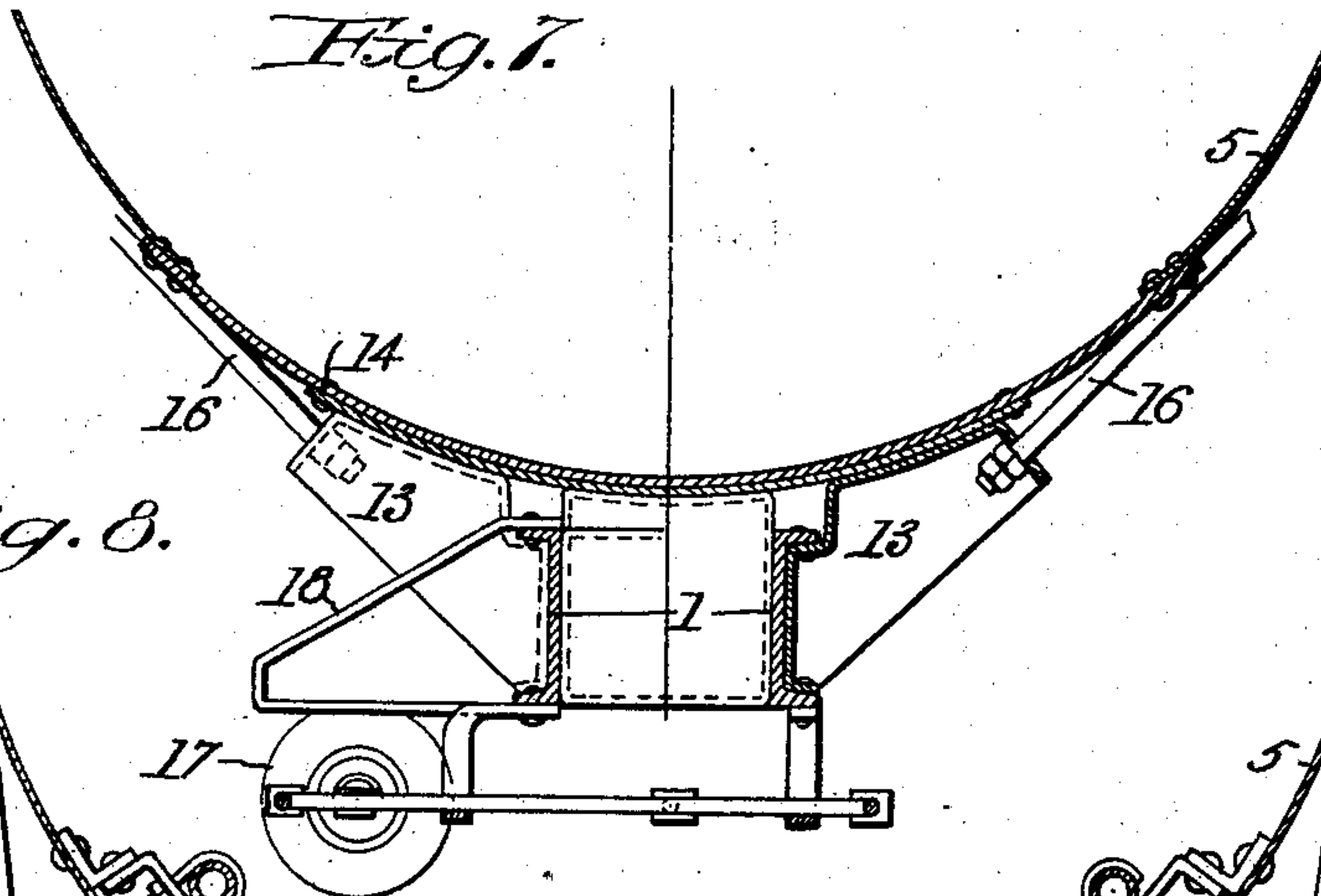
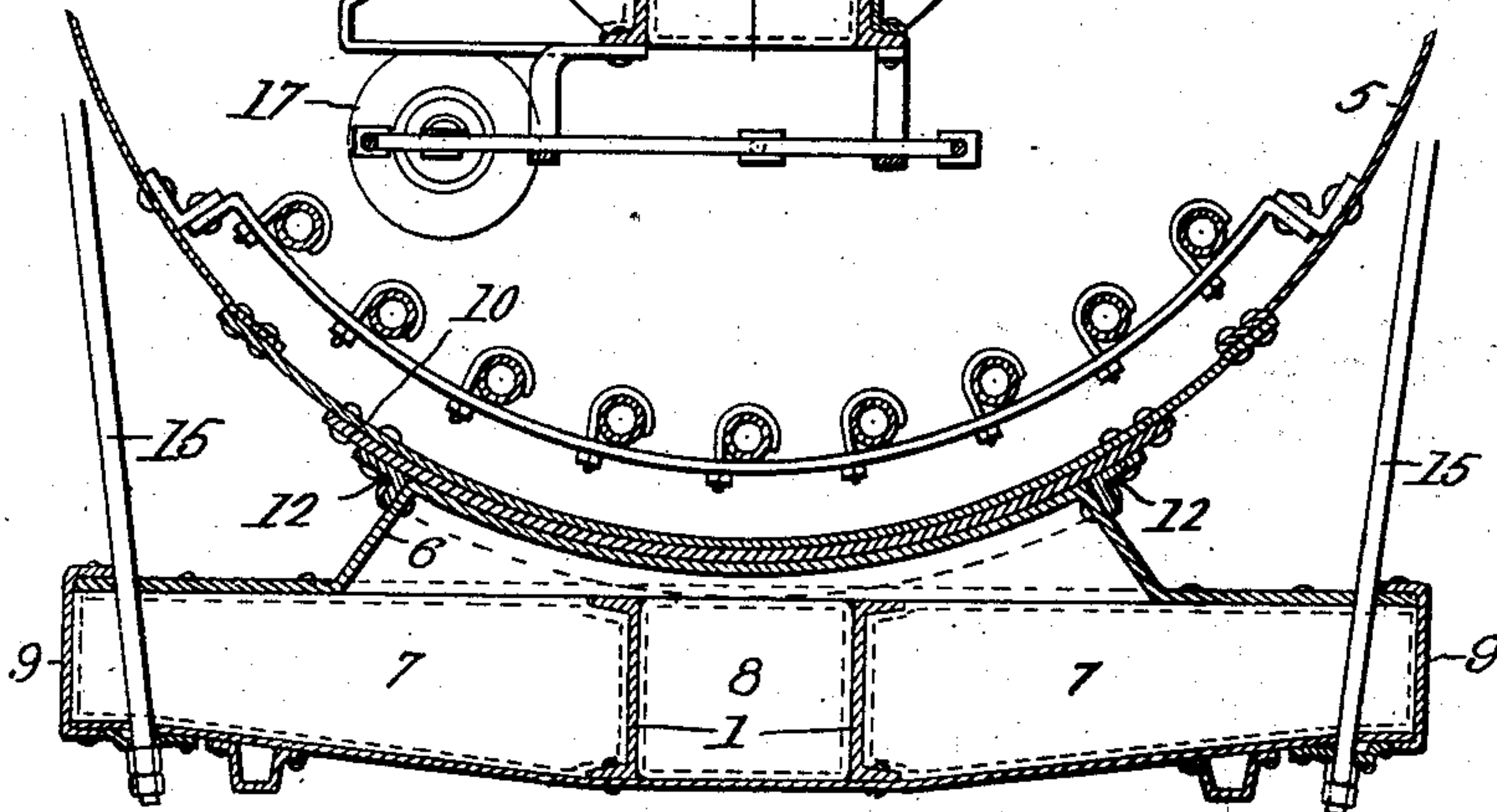


Fig. 8.



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UNITED STATES PATENT OFFICE.

ARNOLD STUCKI, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO
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A CORPORATION OF NEW JERSEY.

TANK-CAR.

SPECIFICATION forming part of Letters Patent No. 751,438, dated February 2, 1904.

Application filed October 24, 1902. Serial No. 128,644. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD STUCKI, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Tank-Cars, of which the following is a full, clear, and exact description.

This invention relates to a "tank-car," so called, and has especial reference to the underframe therefor and the means for mounting the tank upon such underframe.

In carrying out the invention I use an underframe consisting, essentially, of parallel longitudinal sills corresponding to the center sills of an ordinary metallic underframe, these sills being pressed to shape or constructed of rolled or other commercial shapes and provided with body-bolsters and end sills. Interposed between the underframe and the bottom of the tank are certain saddles upon which the tank rests and to which it is secured against endwise and transverse movement. The tank is strapped to these saddles.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 shows in its right-hand end a plan view of the underframe and in its left-hand end a top plan view of the tank-car. Fig. 2 is a side elevation. Fig. 3 is an end elevation, on a larger scale. Fig. 4 is a top plan view of the saddle detached. Fig. 5 is a longitudinal section of said saddle. Fig. 6 is a vertical transverse section of the saddle and the other component parts of the body-bolster. Fig. 7 is a transverse vertical section taken substantially in the plane of the line A B of Fig. 1. Fig. 8 is a transverse section through the bolster and the lower adjacent portion of the tank.

The underframe comprises parallel sills 1, which may extend from one end sill 2 to the other end sill of the car and provided with built-up bolsters 3 near opposite ends, or continuous bolsters may be used, and the center sills extend from bolster to bolster, with independent draft-rigging sills between the bolsters and the end sills. The sills 1, the end sills 2, and the bolsters may be of any approved

construction and of pressed shapes or rolled or other commercial shapes, and the center sills may be bellied or of uniform cross-section, as desired. In the preferred construction there is no necessity for "side" sills, so called. The end platforms receive the brake-operating mechanism, grab-irons, push-pockets, steps, and coupler-operating device, and they are of sufficient width to accommodate train hands. The end sills and the bolsters are connected by diagonal braces 4.

5 is a cylindrical or other shaped tank of desired construction. Mounted upon or preferably forming the tops of the body-bolsters are saddles 6 of a curvature substantially concentric with the curvature of the tank and constructed, preferably, as shown more in detail in Figs. 4, 5, and 6, wherein the saddle proper is struck up from a flat plate of metal, which plate is riveted to the members of the bolster and constitutes a top cover-plate for said bolster. The invention, however, is not limited to this particular construction of saddle. As herein particularly shown, the bolster may be of the built-up variety and composed of diaphragms 7, rigidly secured to the center sills, and one or more diaphragms 8 interposed between and secured to the center sills, and a bottom cover-plate. The diaphragms 7 have lateral flanges, as shown more especially in Fig. 6, and the flange or base of the saddle is riveted to these flanges. The ends of the diaphragms, including the ends of the saddles, are boxed in with caps 9, where the construction herein described is adopted. A filler-plate 10 is riveted to the tank near each end, and these filler-plates come into contact with the saddles. However, the saddles and filler-plates or tank are not directly united; but, on the contrary, the tank is restrained from endwise movement by means of transverse angle-bars 11, which are riveted through the filler-plates and tank, and axial movement of the tank upon the saddles is prevented by angle-bars 12 at the sides of the saddles, which are also riveted through the filler-plates and tank. This construction relieves the rivets through the tank proper from any possible jarring and prevents

the tank from getting leaky under rough service. The filler-plates form bearing-surfaces for the saddles, so that any wear taking place falls upon these filler-plates rather than upon the tank, and hence the tank is preserved from injury. At the center of the car an additional saddle is provided composed of pressed steel or other shapes 13, substantially as shown in Fig. 7, which are riveted to the center sills, and a filler-plate 14 may be interposed between the tank and this saddle 13. The tank is tied down to these various saddles by means of straps 15, which are anchored in the body-bolsters, and a strap 16, anchored in the component parts 13 of the center saddle.

It will be observed that by means of the parts 13, constituting the center saddle and the band 16, the center sills are pulled up against the tank, and thus prevented from bending down whenever severe end shocks come on the center sills.

The center sills may be adapted to receive the air-brake cylinder 17 by the provision of a bracket 18, riveted to a center sill, as shown in Fig. 8.

The bolsters may be of considerably less length than is shown proportionately in the drawings, and thus there may be effected an economy in weight and cost. In fact, the bolsters need be no longer than is required for the proper spacing of the side bearings.

By the construction described the tank itself takes the place of the car-body proper and is practically self-sustaining, while its frame rests on two trucks, as in any ordinary car.

It will be evident that a tank-car of the construction described may be of much less weight than the ordinary construction without any sacrifice of durability.

In addition to the advantages stated as resulting from the construction it will also be noticed that the tank may be detached from its underframe without removing any rivets.

Parts herein shown and not particularly described may be of usual or approved construction.

What I claim is—

1. In a tank-car, the combination of an underframe comprising center sills and bolsters projecting beyond them laterally, a tank, saddles

upon the bolsters and upon which the tank rests, and straps passed over the tank and anchored in the bolsters.

2. In a tank-car, an underframe, comprising essentially longitudinal sills, transverse bolsters, and saddles on said bolsters, combined with a tank having filler-plates riveted to it adjacent the saddles, and transverse and longitudinal angle-bars riveted to the filler-plates and tank and engaging the saddles.

3. In a tank-car, an underframe, comprising essentially longitudinal sills, transverse bolsters, and saddles on said bolsters, combined with a tank having filler-plates riveted to it adjacent the saddles, transverse and longitudinal angle-bars riveted to the filler-plates and tank engaging the saddles, and straps engaging the tank and the bolsters.

4. In a tank-car, the combination of center sills, bolsters connected therewith, saddles on said bolsters, a tank mounted upon said saddles, a saddle secured to the center sills about midway of the length of the tank, and a strap passed around the tank and anchored in the midway saddle.

5. In a tank-car, an underframe, comprising essentially longitudinal sills, and built-up bolsters, having top plates constructed with integral saddles and adapted to receive a superposed tank.

6. In a tank-car, an underframe, comprising longitudinal sills, and transverse bolsters, the tops of which bolsters are made as saddles whose curvature is concentric with the tank, combined with a tank, filler-plates riveted to said tank opposite the bolsters, transverse angle-bars riveted to the filler-plates and tank, and adapted to engage opposite sides of the saddles, and longitudinal angle-bars also riveted to the filler-plates and tank, and adapted to engage the ends of the saddles, and means to hold the tank down upon the underframe, whereby the tank is readily separable from its underframe without taking out any rivets.

In testimony whereof I have hereunto set my hand this 20th day of August, A. D. 1902.

ARNOLD STUCKI.

Witnesses:

A. F. SMELTZER,
J. C. LANGFITT.