

No. 772,499.

PATENTED OCT. 18, 1904.

A. CHRISTIANSON.  
SADDLE FOR TANK CARS.  
APPLICATION FILED FEB 27, 1904.

NO MODEL.

FIG. 1

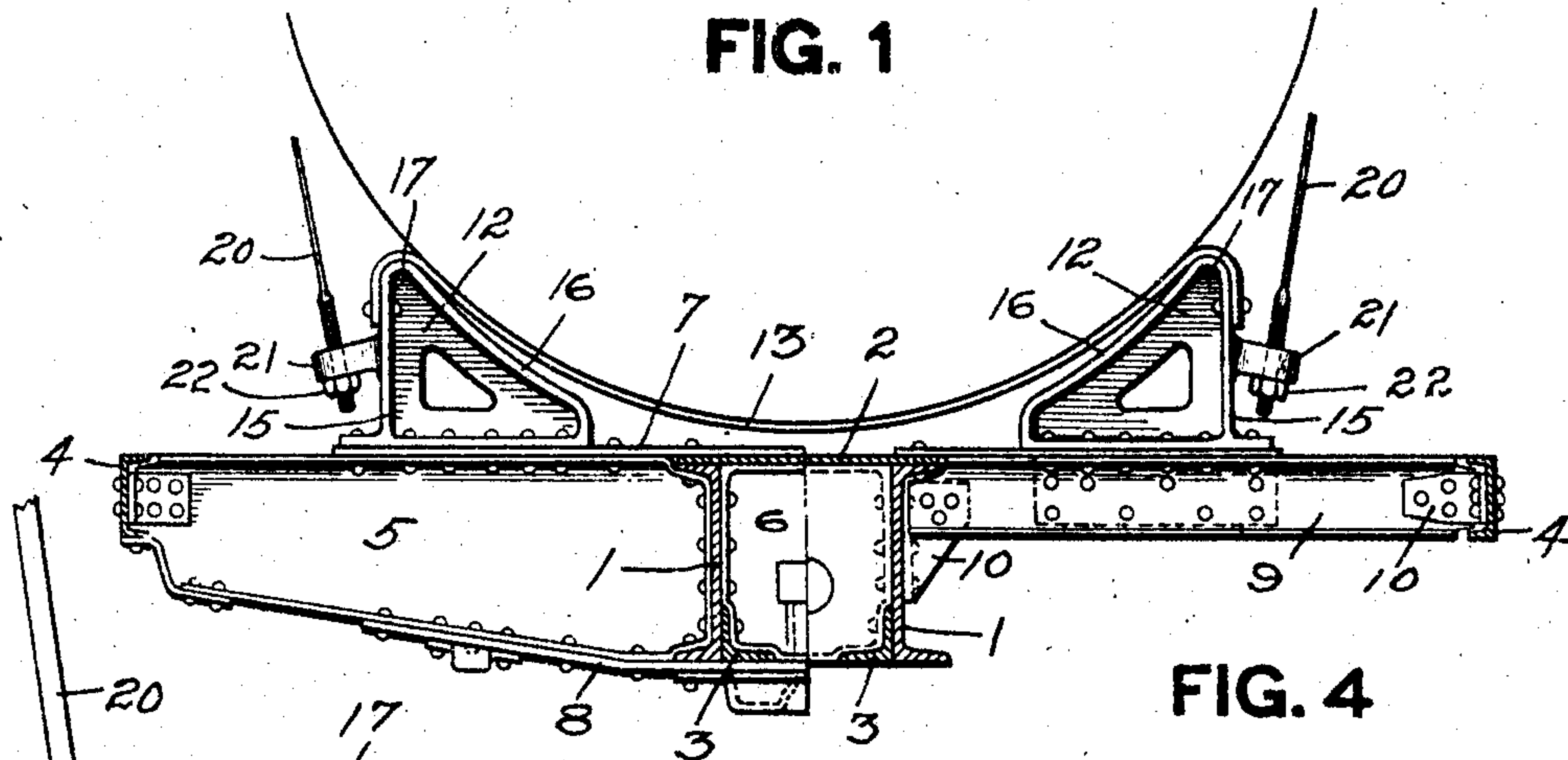


FIG. 4

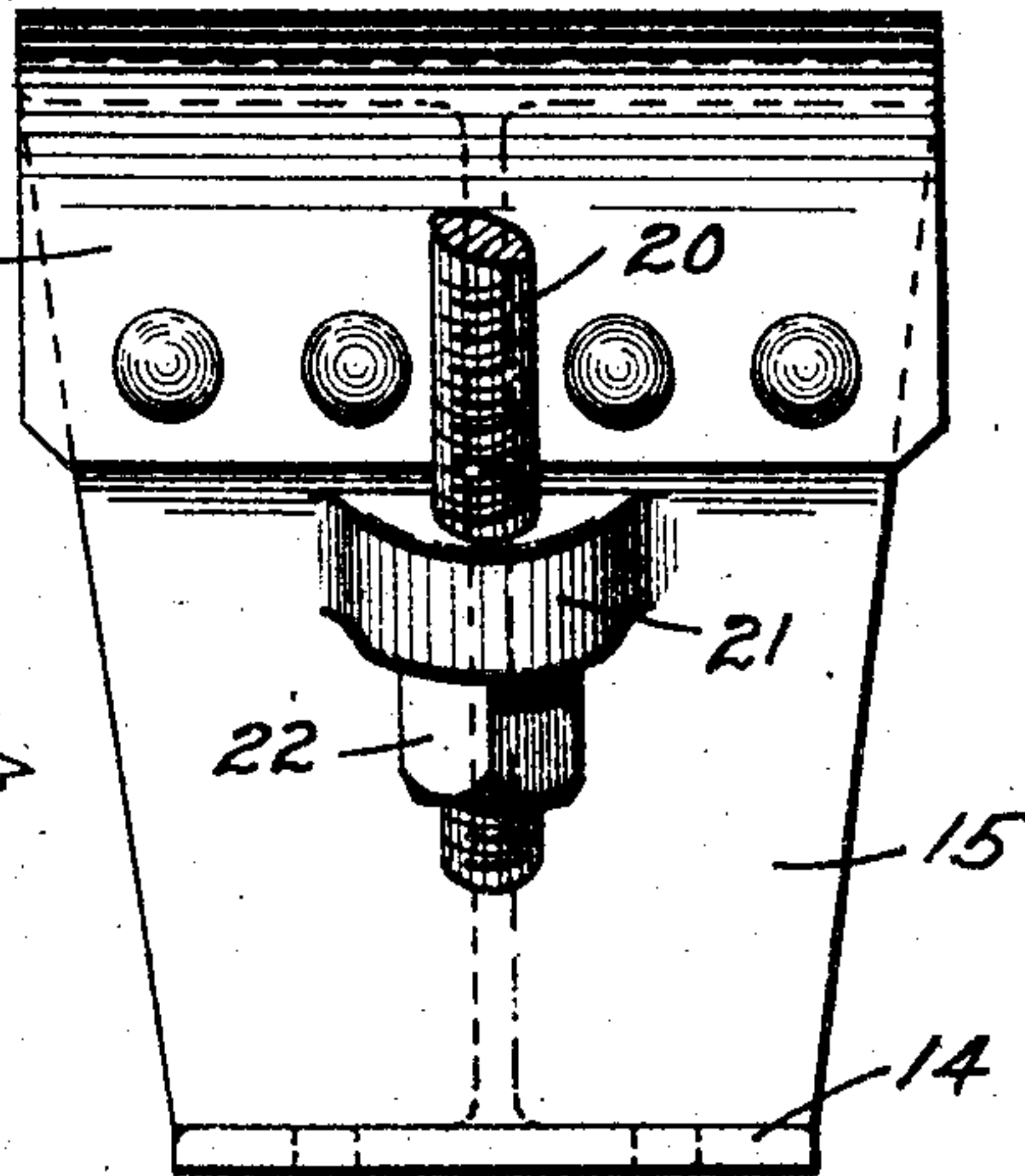


FIG. 2

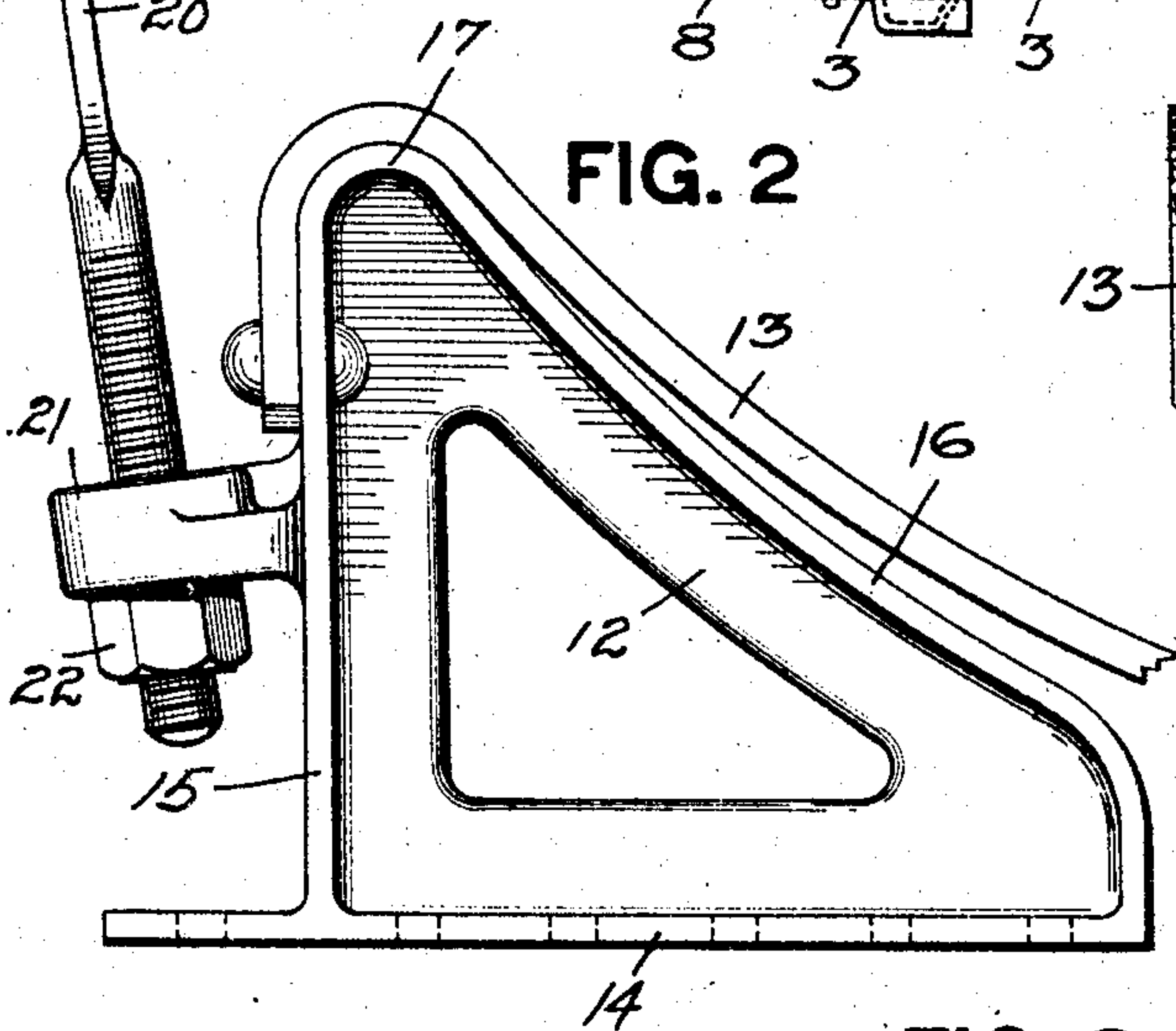
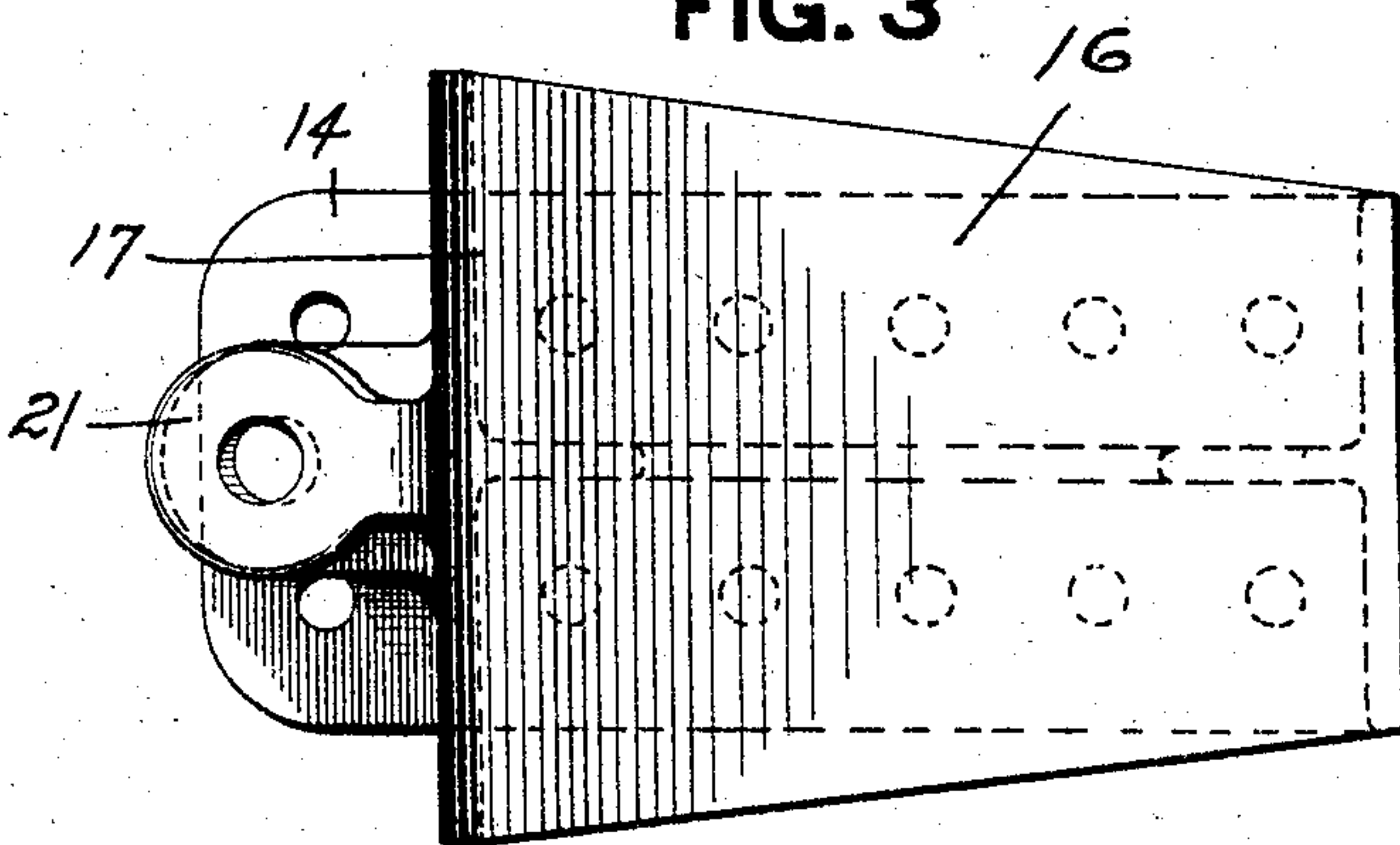


FIG. 3



WITNESSES.

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# UNITED STATES PATENT OFFICE.

ANDREW CHRISTIANSON, OF BUTLER, PENNSYLVANIA, ASSIGNOR TO  
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## SADDLE FOR TANK-CARS.

SPECIFICATION forming part of Letters Patent No. 772,499, dated October 18, 1904.

Application filed February 27, 1904. Serial No. 195,634. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW CHRISTIANSON, a resident of Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement in Saddles for Tank-Cars; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to supporting-saddles for tank-cars; and its object is to provide a support or saddle for the tank which will adapt itself to the shape of the tank whether the latter is perfectly round or not and which will carry the tank as low down to the underframe as possible.

In all tank-cars the tanks are supported upon saddles secured upon or formed as a part of the underframe. Usually these saddle-pieces are built-up segmental members extending continuously across the underframe and having a rigid tank-supporting upper face. One difficulty with prior saddles is that the tank is supported above the underframe a distance equal to the depth of the transverse connecting member of the saddle. Furthermore, the rigid supporting-face of the saddle is necessarily made to conform to the shape of an accurately-shaped tank. Tanks, however, are not always accurate in contour. In fact, there are no two alike, and as a consequence will not be supported at all points by the saddle, thus throwing undue stress upon some portions of the walls of the tank.

The object of my invention is to provide a tank-supporting saddle in which the foregoing difficulties are overcome. To this end each saddle comprises, generally speaking, a pair of blocks, brackets, or posts, cast or otherwise made and secured to the underframe on opposite sides of the longitudinal center of the car, and a tank-supporting band secured at its ends to said brackets and having its intermediate portion concave to form the saddle and preferably being flexible, so that it will accommodate itself to irregularities in the con-

tour of the tank. As a result the tank will be supported at all points even if not perfectly circular, and inasmuch as the saddle comprises no transverse member other than the flat band it will support the tank very low down on the underframe.

The invention also consists in details of construction which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a transverse section through a tank-car, showing my invention applied thereto. Fig. 2 is an enlarged side view of one of the saddle-brackets, showing attached parts. Fig. 3 is a plan view of said bracket, and Fig. 4 is an end view thereof.

Ordinarily two or more saddles will be used, one on each body-bolster of the underframe and preferably two intermediate the body-bolsters. The number, however, can be varied without altering the principle of my invention.

The underframe may be of any preferred construction, that shown in the drawings comprising center sills 1, provided with a top cover-plate 2 and bottom-strengthening angles 3 and side sills 4. The center and side sills are united by body-bolsters and transverse connectors. The body-bolsters shown in the drawings comprise web members 5, extending from the center to the side sills and secured to both and provided with top and bottom flanges, a center brace 6, interposed between the center sills, and top and bottom cover-plates 7 and 8, extending above and below the center sills and secured to the top and bottom flanges of the web members. Intermediate the body-bolsters the side and center sills will be connected by transverse connectors 9, which may be of any suitable form, those shown in the drawings comprising channel members secured to the side and center sills by angle or knee pieces 10. Any other construction of body-bolsters or transverse connectors may be employed.



The saddles each comprise a pair of brackets 12, secured to the transverse members of the underframe on opposite sides of the longitudinal center of the car, and a tank-supporting band 13 secured to said brackets. As shown in Fig. 1, a saddle will be secured to each body-bolster, and another saddle or saddles will be secured to transverse connectors 9, intermediate the body-bolsters. The saddle-brackets 12 are provided with vertical webs having laterally-projecting bottom flanges 14 for riveting to the underframe, flanges 15 on their outer edges, and top flanges 16. These brackets are shown of approximately triangular shape, and two thereof are placed to face each other. The apices 17 of these brackets are rounded off, and the top flanges 16 are sloping, as shown.

The tank-supporting band 13 comprises a metal plate of sufficient strength to carry the entire load of the tank, and the ends thereof are bent over the apices 17 of the brackets and riveted to the outer flanges 15 thereof. The top faces 16 of the brackets are so shaped that the band will be supported for only a short distance at its ends, and the remainder thereof will not be in contact with the brackets. This band, while sufficiently strong to carry the entire load of the tank, will nevertheless be flexible, so that it will accommodate itself to irregularities in the shape of the tank, and thus support the latter at all points.

Inasmuch as the saddle comprises no transverse members extending across the center sills other than the flat band 13, said saddle will support the tank very close down to the cover-plate 2 of the center sills, and consequently will carry the tank as low as possible.

The tank will be held on the saddle by means of ordinary tank-bands 20, the ends of which pass through openings in lugs 21, formed on the saddle-brackets, and will be secured thereto by means of nuts 22.

The saddle described is very simple and cheap of construction and will effectively support a tank which is not an accurate circle and will support the same as low as possible on the underframe.

What I claim is—

1. In a tank-car, the combination of the underframe, and a tank-support comprising a band supported on the underframe at its ends only.

2. In a tank-car, the combination of the underframe, and a tank-support comprising a flexible band supported on the underframe at its ends only.

3. In a tank-car, the combination of the underframe, supports thereon on opposite sides of the longitudinal center of the car, and a tank-supporting band having its ends secured to said supports.

4. In a tank-car, the combination of the underframe, blocks having rounded top portions and secured to said underframe on opposite sides of its longitudinal center, and a tank-supporting band having its ends secured to said blocks and resting on the rounded top portions thereof.

5. In a tank-car, the combination of the underframe, saddle-blocks secured to said underframe on opposite sides of its longitudinal center, said saddle-blocks being of general triangular shape and provided with sloping upper faces and rounded apices, and a tank-supporting band having its ends bent over the apices of said blocks and secured thereto.

6. In a tank-car, the combination of the underframe, saddle-brackets secured thereto on opposite sides of the longitudinal center, said brackets comprising vertical webs having laterally-projecting flanges on the bottom and outer edges, the bottom flanges serving for securing the brackets to the underframe, and a tank-supporting band secured to the outer flanges of said brackets and supported on the apices thereof.

7. In a tank-car, the combination of the underframe, saddle-brackets secured thereto on opposite sides of its longitudinal center, said brackets comprising vertical webs having laterally-projecting flanges on their bottom and outer edges and having rounded apices, the bottom flanges serving for securing the brackets to the underframe, and a tank-band having its ends bent over the apices of said castings and riveted to the outer flanges thereof.

8. In a tank-car, the combination of the underframe, supports secured thereto on opposite sides of its longitudinal center, a tank-supporting band having its ends secured to said supports, and a tank-retaining band passing over the tank and having its ends also secured to said supports.

9. In a tank-car, the combination of the underframe, saddle-blocks of triangular shape secured thereto on opposite sides of its longitudinal center, a tank-supporting band having its ends secured to the apices of said blocks, said blocks being provided with lugs, and a tank-retaining band passing over the tank and having its ends secured to said lugs.

10. In a tank-car, the combination of the underframe, saddle-blocks secured thereto on opposite sides of its longitudinal center, said blocks being provided with rounded apices and with laterally-projecting flanges along their bottom and outer edges, the bottom flanges serving to secure the same to the underframe, lugs on the outer flanges thereof, a tank-supporting band having its ends bent over the apices of said blocks and riveted to the outer flanges thereof, and a tank-retaining band having its ends passing through openings in the lugs on said blocks, and heads

on the ends of said bands and bearing against the lower faces of said lugs.

11. In a tank-car, the combination of the underframe, and saddle-blocks secured thereto and forming supports for the tank and being provided with lugs, and tank-retaining bands having their ends secured to said lugs.

12. A saddle-block for tank-cars adapted to be secured to the underframe and provided

with a lug having an opening therein for receiving and securing an end of the tank-retaining band.

In testimony whereof I, the said ANDREW CHRISTIANSON, have hereunto set my hand.

ANDREW CHRISTIANSON.

Witnesses:

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ROBT. D. TOTTEN.