

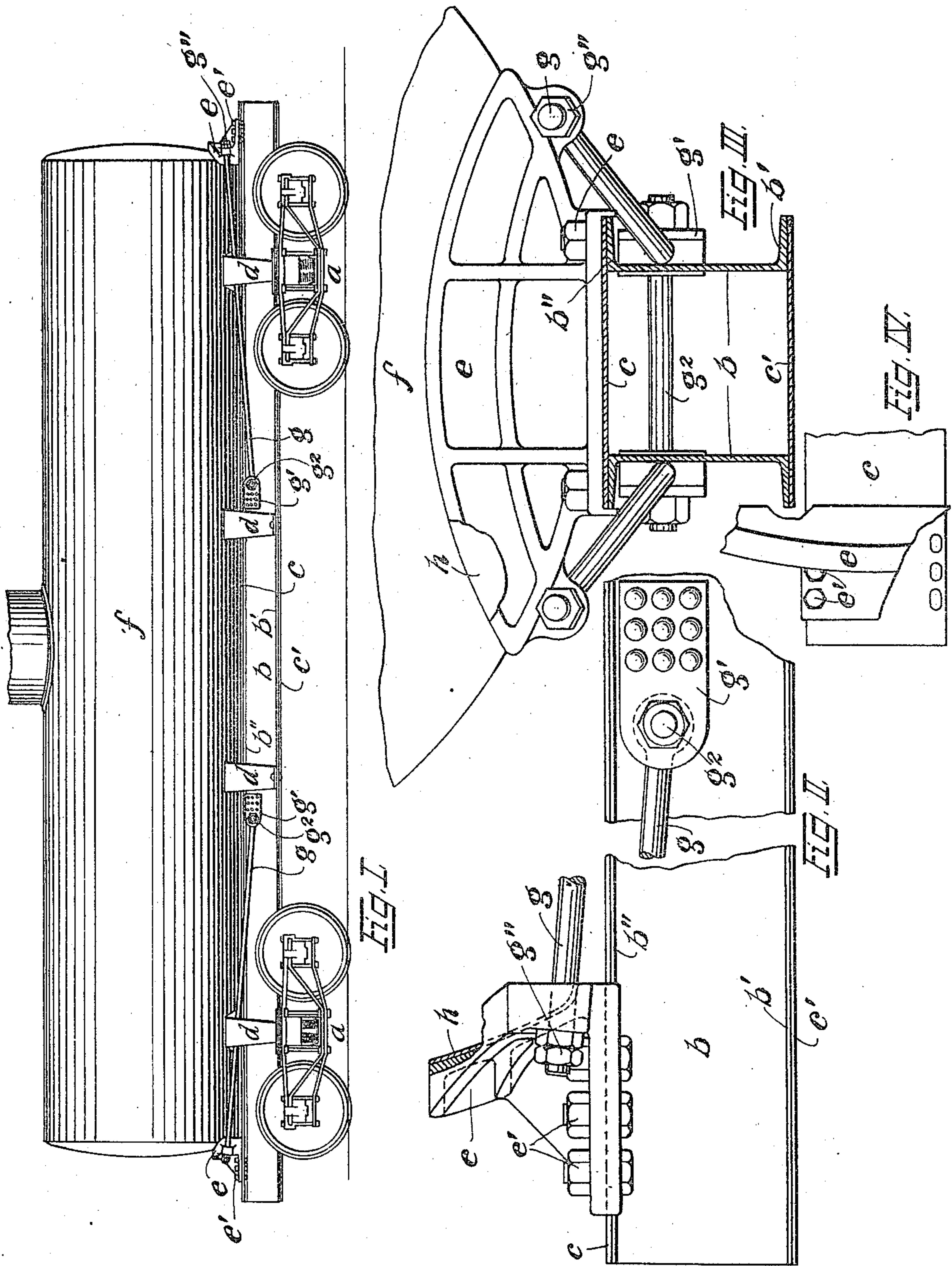
W. M. KRICKBAUM.

TANK CAR.

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963,025.

Patented June 28, 1910.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TANK-CAR.

963,025.

Specification of Letters Patent. Patented June 28, 1910.

Application filed September 23, 1907. Serial No. 394,062.

To all whom it may concern:

Be it known that I, WILLIAM M. KRICKBAUM, a citizen of the United States of America, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tank-Cars, of which the following is a specification.

My invention relates to improvements in tank-cars, and has for its object the production of efficient means for mounting and supporting the tank upon the trucks of such cars.

A common mode, previous to my invention, of mounting tanks upon railway cars, has involved the provision of longitudinal wooden stringers and wooden abutments respectively for engaging the bottom and ends of the tank. By reason of the fact that the metal tanks of commercial sizes are subject to very considerable expansion and contraction particularly throughout their length, amounting frequently to as much as an inch variation, it is found that the tanks work loose within their fastenings, and become damaged because of this. Accordingly, I have improved upon the prior constructions in the manner set forth in the annexed specification and claims, and the embodiment of my invention may first be mentioned in a preliminary way by stating that the car trucks mount a superstructure, the principal members of which are two parallel channel irons or beams which carry a plurality of segmental cradles. The tank itself is supported within said cradles, while at either end of the tank are provided adjustable blocks, preferably secured to the channel members directly and by tie-rods, which blocks ordinarily are formed of cast iron and are provided with yielding bearing faces adapted to withstand the end thrust of the tank. By means of bolts and nuts, said end blocks are provided with an adjustment longitudinal with respect to the tank. These, and other features, will be made the subject of more explicit description, with the aid of the several figures in the accompanying sheet of drawings, wherein:—

Figure I is a view in side elevation of a tank-car equipped in accordance with my invention. Fig. II is an enlarged view in side elevation, partially broken away, of one of the end blocks and its tie-rod connection. Fig. III is a view in end elevation, showing

the tank partially broken away within its supporting cradle, girder-frame and end block; and Fig. IV is a detail illustrating the slotted supporting end of one of the girders for mounting the end block.

Throughout the several figures of the drawings, I have employed the same characters of reference to indicate similar parts.

The general features of car construction need not be particularized herein, for the reason that they are well known and form no part of this invention, but I have shown in Fig. I, the essential features of an improved tank-car equipped with my improvements, while in the remaining figures, these improvements are illustrated in their preferred form. Referring then to the first figure of the drawings, it will be seen that two end trucks *a* support the tank-car; the body of which is formed by two heavy longitudinal channel members or beams *b* united along their upper and lower flanges *b'* *b''* by transverse plates *c* *c'*. Transversely extending across the car frame are shown four cradles *d* supported by the upper plates *c* and lower flanges *b'* of the girders. Iron end blocks *e* are positioned at either end of the tank suitably reinforced, as best shown in Figs. II and III, to withstand the very considerable end thrust of said tank *f*. These end blocks are secured in place primarily by bolts *e'* entering slotted openings in the flanges *b''* of the girder frame and plate *c*. Moreover, tie-rods *g* extend backward upon either side and are suitably attached intermediately of the girders, as by the riveted plates *g'* and cross bars *g''*. The ends of the tie-rods are threaded, whereon the bolts *g''* are screwed.

Preferably the inner faces of the end blocks are equipped with a cushioning material *h* of semi-resilient character, such as hair felt, which may well be of the initial thickness of an inch or more, to provide an equalizing and yielding bearing face for the end of the tank. This is desirable, for the reason that in switching the cars, and even in transit, they are subjected to heavy shocks, which tend longitudinally to displace the tank, and it is desirable that these end blocks shall bear evenly upon the ends of the tank, and closely engage the same to avoid any movement or play.

From the foregoing, it will be appreciated that the tank is securely supported on the

car through the medium of the cradles and their sustaining girder-frame. By reason of the adjustment provided for in the end blocks, these may be tightened or relaxed, 5 to suit climatic conditions, or the temperature of the tank-contents, and the resulting expansion or contraction of said tank. Thus, simply by releasing the bolts e' , the end blocks may be drawn closely against the 10 ends of the tank through the medium of the nuts g'' , or said end blocks may be relaxed if too much tension would otherwise be placed thereon. The bolts e' are then tightened in the adjusted positions occu- 15 pired by the end blocks. The tie-rods are so positioned as to transmit a large portion of the longitudinal strain or shock to intermediate portions of the girder-frame, and avoid the heavy impact which otherwise 20 would be necessarily sustained by the extremities of said frame. Moreover, by providing the yielding face of hair felt, or the like, slight variations in the length of the tank will be compensated for by the yielding nature of this material, even under compression. 25

Having now described the preferred embodiment of my invention, I here claim and desire to secure by Letters Patent, the following:— 30

1. In a tank car, the combination with a supporting frame carried by the trucks of the car, of a tank mounted thereon, end blocks engaging the extremities of the tank 35 and secured to the frame, connecting members securing said end blocks intermediately of the frame, and means for securing the positive adjustment of said end blocks, substantially as set forth.

40 2. In a tank car, the combination with a girder-frame forming the body of the car and supported by the trucks thereof, of a

plurality of cradles thereon, a tank positioned within said cradles, end blocks engaging the extremities of the tank, connecting members supporting said end blocks 45 intermediately of the frame, and positive adjusting means for securing them thereon, substantially as set forth.

3. In a tank car, the combination with 50 a girder frame forming the body of the car and supported by the trucks thereof, of a plurality of cradles thereon, a tank positioned within said cradles, end blocks engaging the extremities of the tank, cushion- 55 ing members interposed between said end blocks and tank, connecting rods extending laterally from said end blocks to points of attachment intermediate of the frame, slotted supports provided for said end 60 blocks upon the extremities of the frame, and means for adjustably securing said end blocks to the connecting rods and extremities of the frame, substantially as set forth. 65

4. In a tank car, the combination with a girder frame forming the body of the car and supported by the trucks thereof, of a tank mounted upon said frame, adjustable end blocks engaging the extremities of the 70 tank and secured directly to the frame, transverse supporting members positioned intermediately of the frame, tie rods uniting the end blocks and transverse members, and means for securing the positive adjust- 75 ment of said end blocks with respect thereto, substantially as set forth.

Signed at Cleveland, this 20th day of September 1907, in the presence of two subscribing witnesses.

WILLIAM M. KRICKBAUM. [L. S.]

Witnesses:

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FRANK V. REID.