

956,633.

Fig. 1.

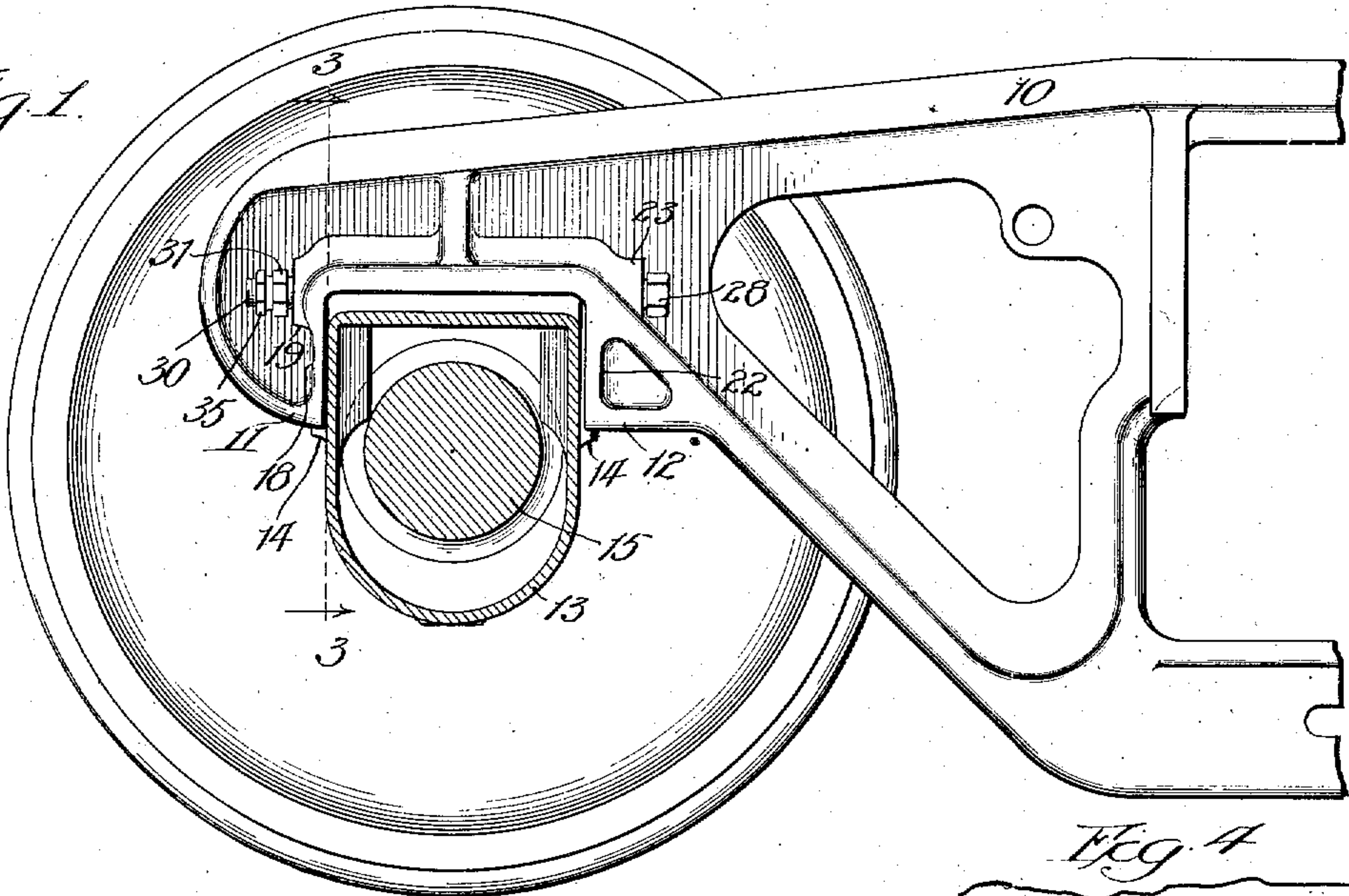


Fig 2

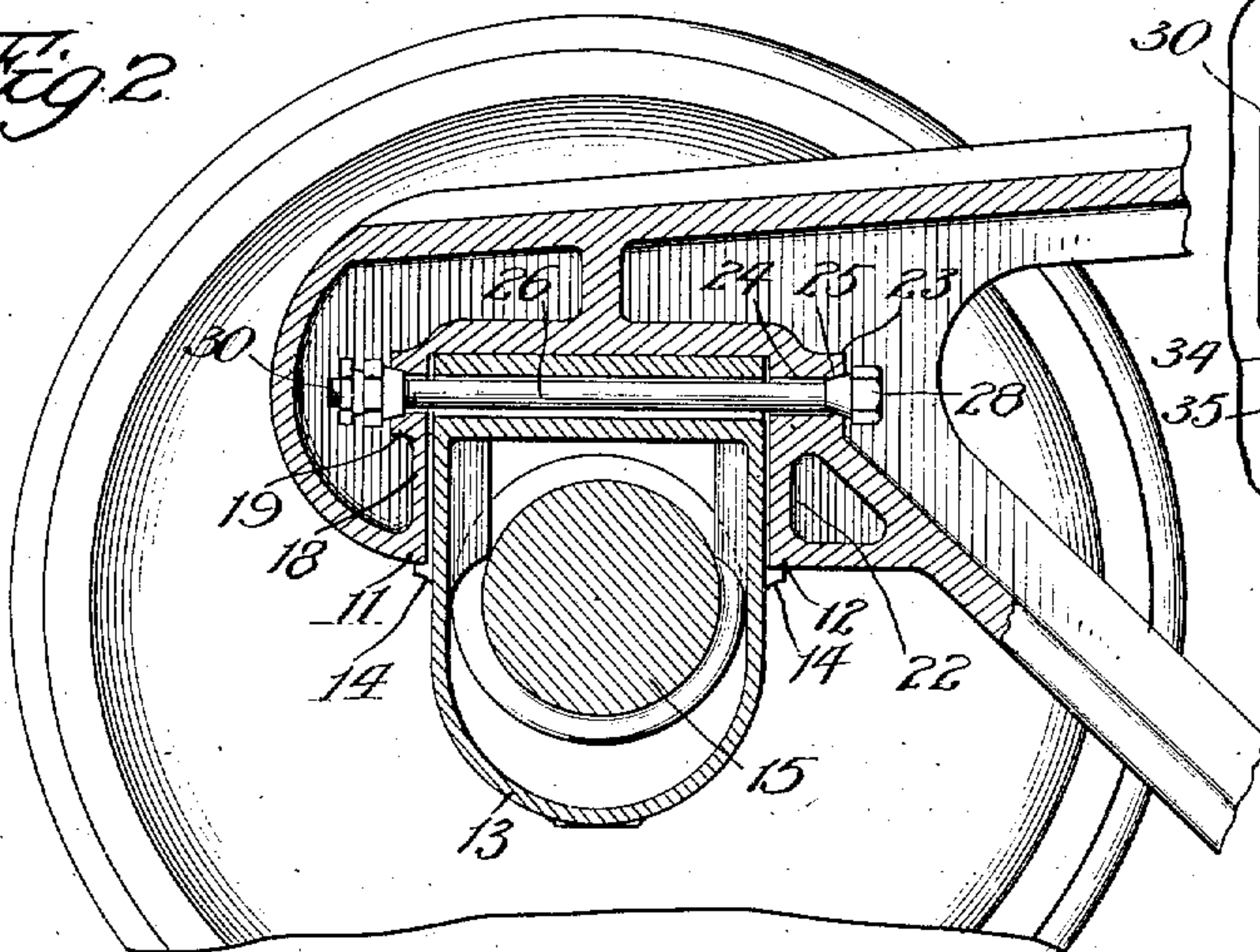


Fig. 4

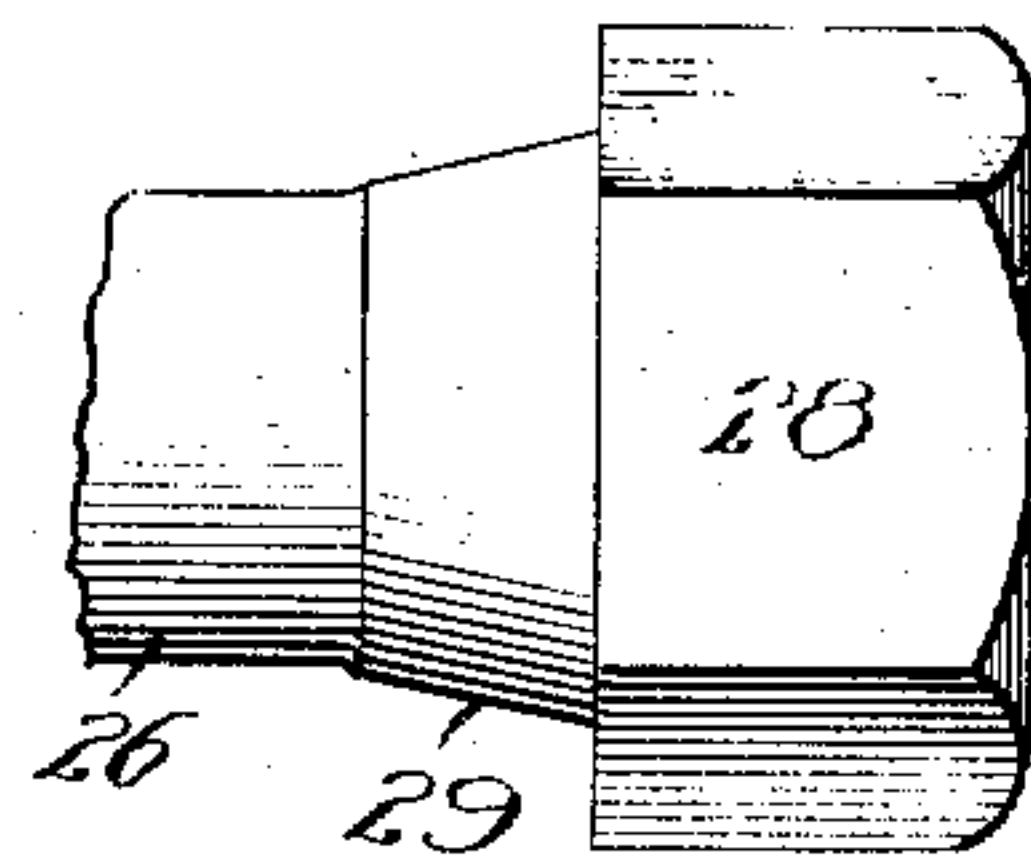
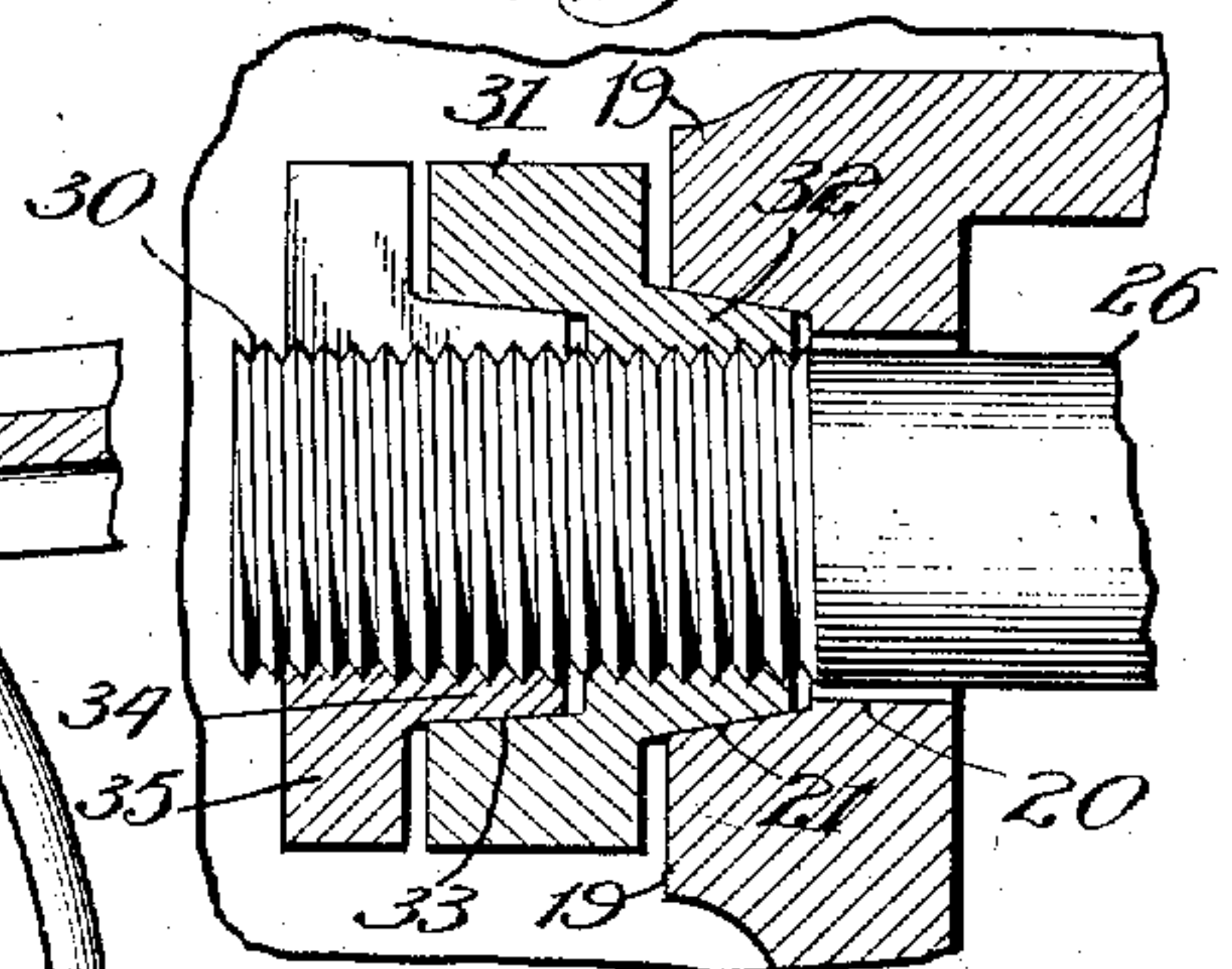


Fig. 3.

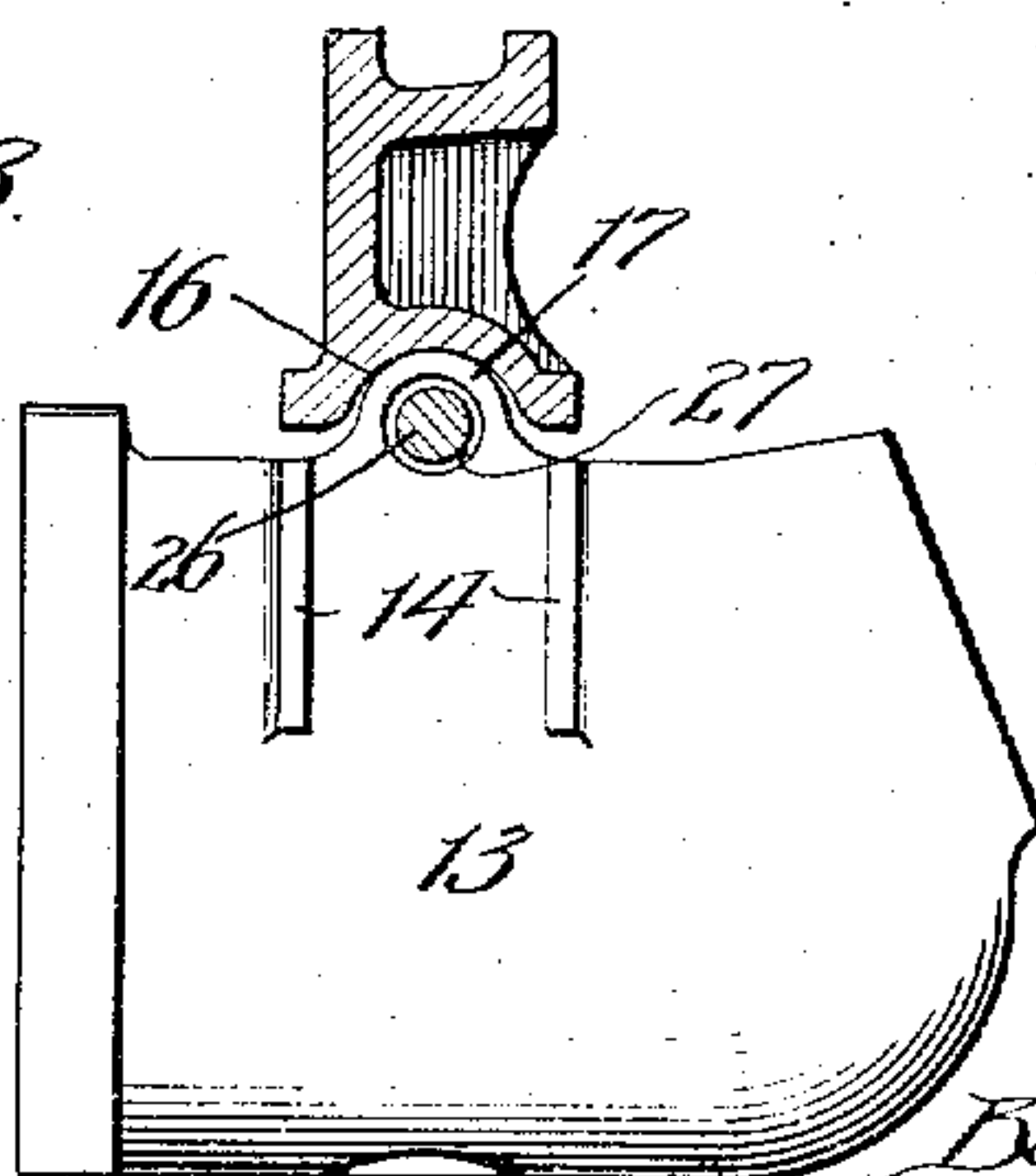


Fig. 5.

Witnesses  
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# UNITED STATES PATENT OFFICE.

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## CAR-TRUCK SIDE FRAME AND JOURNAL-BOX.

956,633.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed December 3, 1909. Serial No. 531,146.

*To all whom it may concern:*

Be it known that I, GEORGE G. FLOYD, a citizen of the United States, residing at Granite City, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Car-Truck Side Frames and Journal-Boxes, of which the following is a specification.

My invention concerns railway car-trucks and has for one of its objects the construction of such trucks in such a manner that if the journal-boxes become damaged or injured they may be readily replaced; that the wheels and axles may be easily rolled out of the truck by slightly jacking up the side-frames; that this result can be accomplished in a truck in which the side-frames are transversely connected together by connecting bars or beams fixedly riveted thereto, there being no cutting of rivets required when the journal-boxes or axles and wheels are taken out of place; and another object of the improved construction being to so make the parts that the journal-boxes can automatically adjust themselves longitudinally of the axles, that is transversely of the side-frames, so that a uniform bearing is secured throughout the full length of the journal portion of the axle.

In addition my improved construction possesses means for holding the journal-boxes to the truck-frame in case the truck becomes upset or topples over, and the parts are so arranged and associated that no wear is possible on such journal-box retaining means during the ordinary operation of the truck, and, furthermore, such retaining means is so constructed and connected to the other parts that there is no tendency for it or its securing means to become loose under any conditions of service.

These with other features of advantage will be made apparent from a consideration of the following detailed description of a preferred embodiment of the invention, which I have illustrated in the accompanying drawings, throughout the various views of which like reference characters refer to the same parts.

In these drawings—Figure 1 is a fragmentary elevation of portions of a car-truck showing a section of the side-frame in elevation and the journal-box in section; Fig. 2 is a substantially central vertical section

through such journal-box and the end part of the side-frame; Fig. 3 is a vertical section on line 3—3 of Fig. 1; Fig. 4 is an enlarged section showing the locking-nuts for the retaining bolt; and Fig. 5 shows the head of such bolt in elevation.

In this embodiment of the invention the side-frame 10, which may be of any preferred or desired general shape, has at each end the depending spaced portions 11 and 12 between which the journal-box 13 is accommodated, the latter having on each side a pair of ribs 14, 14' straddling the two parts 11 and 12. It will be apparent, therefore, that these shoulders 11 and 12 embrace the top portion of the journal-box and hold such box securely in proper position, the load, transmitted from the car-body to the side-frame, being in turn transmitted from the latter to this journal-box by merely resting thereon. Displacement of the journal-box longitudinally of the side-frame is, as will be readily understood, effectively prevented by these two depending embracing portions 11 and 12 which extend down over the box approximately one-third the depth of the latter.

In order that these journal-boxes may have a slight rocking or swinging movement transversely of the side-frame, whereby to secure a uniform bearing throughout the length of the bearing brasses, not shown, on the journal-boxes of the axles 15, that part of the side-frame 10 above the journal-box is so shaped as to provide a longitudinal groove 16 curved in cross-section and adapted to accommodate and receive a curved, centrally-apertured rib 17 extended across the top face of the journal-box and forming an integral part thereof. The curvature of the bottom of the groove 16 is of somewhat greater radius than that of the rib 17, so that the journal-box, even while the load is transmitted thereto from the side-frame, may rock or swing slightly to accomplish the result above specified.

In case a car-truck becomes derailed or topples over, it is desirable that the journal-boxes and axles and wheels shall be carried therewith rather than to permit a separation of the parts of the truck, and in order that this may be carried out in the present form of truck, I provide the outstanding flange 18 of the part 11 with an enlargement or boss



19, which has extended horizontally there-  
through a hole having a cylindrical inner  
portion 20 which communicates with an  
outer conical or flaring part 21. The flange  
22 of the part or portion 12 of the side-  
frame is also equipped with an enlargement  
or boss 23 apertured in alinement with the  
holes 20 and 21, such aperture having an  
inner cylindrical portion 24 and an outer  
conical part 25. A bolt 26 is extended  
through holes of both bosses 19 and 23 and  
also through the aperture of the box rib 17,  
the shank portion of such bolt being of less  
diameter than that of the parts 20, 24 and  
27, and in order to maintain such bolt cen-  
trally disposed with relation to such holes  
or apertures, so that it may be out of contact  
with the journal-box and so that it will be  
unnecessary to drill or finish the holes 20  
and 24, I provide the bolt at one end with  
a head 28, and adjacent to the side of such  
head the bolt is equipped with a conical por-  
tion 29 shaped to conform to and adapted to  
fit in the conical part 25 of the aperture  
through the boss 23. Such conical section  
of the bolt, as will be readily appreciated,  
holds the reduced shank of the bolt out of  
contact with the walls of the holes 24 and  
27. The opposite end of such bolt is thread-  
ed as at 30 and has screwed thereon a nut 31  
having a conical or externally-tapered por-  
tion 32 adapted to fit in and engage the flar-  
ing wall of the aperture 21, the other face  
of such nut having a tapered cavity 33 for  
the reception and accommodation of the  
tapered or conical extension 34 of the outer  
split lock-nut 35.

To those skilled in this art it will be ap-  
parent that when the bolt has been put in  
place and the nuts have been screwed up  
tight, the conical parts 29 and 32 act to  
hold the bolt centrally with relation to the  
holes 20, 24 and 27, and wholly out of con-  
tact with their walls. The split nut by en-  
gagement with the inner conical surface of  
the nut 31 is cramped or squeezed on to the  
screw-threaded portion of the bolt so that it  
effectively operates as a locking-nut, pre-  
venting backing up of the nut 31. It should  
be noted also that there is no tendency for  
this bolt to become loose due to vibration or  
slight movement between separate castings,  
for the reason that its two ends are effec-  
tively held in place by parts of the single  
side-frame casting.

The operation of this appliance and im-  
proved device is substantially as follows:  
The rib 17 of the journal-box is maintained  
at all times out of contact with the bolt 26  
so that whatever movement may take place  
in the journal-box causes no wearing what-  
ever on the retaining bolt. The presence of  
this bolt through the rib 17 does not inter-  
fere in any way with the slight rocking of  
the journal-box, since, as will be clear from

an examination of Fig. 3, the bolt is ar-  
ranged concentric to the curved surface of  
the rib 17. In case the truck becomes upset  
this emergency bolt becomes active to hold  
the journal-boxes, axles and wheels in assem-  
bled relation with respect to the truck, that  
is, these bolts prevent the separation of the  
truck frame proper from its journal-boxes,  
axles and wheels.

It is very important that a retaining de-  
vice like the bolt 26 shall be effectively held  
in place and shall be so maintained in posi-  
tion that it will not become loose or work out  
of place even though subjected to excessive  
vibration. The use of the split locking-nut  
prevents backing away or loosening of the  
nut 31, but if for any reason such latter  
nut should turn slightly such backing away  
movement of the nut would have but very  
slight loosening influence on the bolt 26,  
owing to the tapered connection of such bolt  
with the side-frame cavity.

In those forms and styles of car-trucks in  
which the journal-boxes are integral with  
the side-frames, damage or injury to one  
only of the pair of journal-boxes requires  
the discarding of the entire side-frame, and  
in such trucks in order to take out the wheels  
and axles it is necessary to cut the rivets  
of all transverse bars connecting together  
the two side-frames, or if none of such bars  
are riveted to the side-frames a necessarily  
weak construction follows. In the present  
form of truck the two side-frames can be  
connected together by any suitable number  
of bars directly riveted thereto, and no cut-  
ting of such rivets is necessary or required  
when it is desired to change the wheels, nor  
is it necessary to take the truck apart to roll  
out the wheels and axles, as is true in the  
above-mentioned style of truck even when  
the side-frames are not fixedly connected to-  
gether, because owing to the fact that the  
journal-boxes are integral with the side-  
frames the latter must be separated suffi-  
ciently to free the ends of the journals be-  
fore the wheels can be rolled out.

Especial attention is directed to the fact  
that in my improved construction the jour-  
nal-boxes can adjust themselves longitudi-  
nally of the axles so as to secure a uniform  
wearing on the journal brasses. Notice is  
also directed to the fact that the retaining  
bolts above mentioned are merely emergency  
connections, that they have no wear upon  
them, and that their two ends are secured  
to the same integral casting, the bolts not  
joining together two separate independent  
parts. In a construction of this kind it is  
not necessary to drill the bolt holes since  
ordinary cored holes may be advantageously  
used owing to the manner of holding the  
bolts in position.

I do not wish to be limited to the precise  
and exact structural features of this par-



particular embodiment of the invention, because the latter is susceptible of a considerable number of embodiments varying considerably in structural details, each possessing essential and valuable features of advantage.

I claim:

1. In a railway car-truck, the combination of a side-frame, a journal-box, and a socket and rib bearing between said frame and box permitting a rocking adjustment of the box transversely of the frame, substantially as described.

2. In a railway car-truck, the combination of a side-frame having a socket or groove therein above the journal-box, and a journal-box having a rib on the top thereof and adapted to fit in said socket or groove, thereby permitting a rocking adjustment of the box transversely of the frame, substantially as described.

3. In a railway car-truck, the combination of a side-frame, a journal-box, and emergency means to prevent separation of said frame and box, said means being normally out of contact with said box, substantially as described.

4. In a railway car-truck, the combination of a side-frame, a journal-box, and emergency means to prevent separation of said frame and box, said means being wholly supported by said frame and normally out of contact with said box, substantially as described.

5. In a railway car-truck, the combination of a side-frame, an apertured journal-box, and an emergency bolt to prevent separation of such frame and box and extended through the aperture of the latter, such

bolt being smaller in cross-section than the hole of said box, substantially as described.

6. In a railway car-truck, the combination of a side-frame having alined holes, an apertured journal-box, and an emergency bolt to prevent separation of such frame and box, said bolt being smaller in cross-section than the holes of the side-frame and the aperture of the journal-box, and means to secure said bolt to the side-frame out of contact with the walls of the side-frame holes and out of contact with the journal-box, substantially as described.

7. In a railway car-truck, the combination of a side-frame, an apertured journal-box, an emergency bolt extended through the aperture of said box and adapted to prevent separation of said side-frame and box, and conical means to hold said bolt in position on the side-frame and out of contact with the walls of said box aperture, substantially as described.

8. In a railway car-truck, the combination of a side-frame having a pair of conical holes, an apertured journal-box, and an emergency bolt extended through the aperture of said box and adapted to prevent separation of said frame and box, said bolt having a conical portion adapted to fit in one of said conical holes of the side-frame and a conical nut adapted to fit in the other conical hole of the side-frame, whereby said bolt is normally maintained out of contact with said journal-box, substantially as described.

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Witnesses:

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