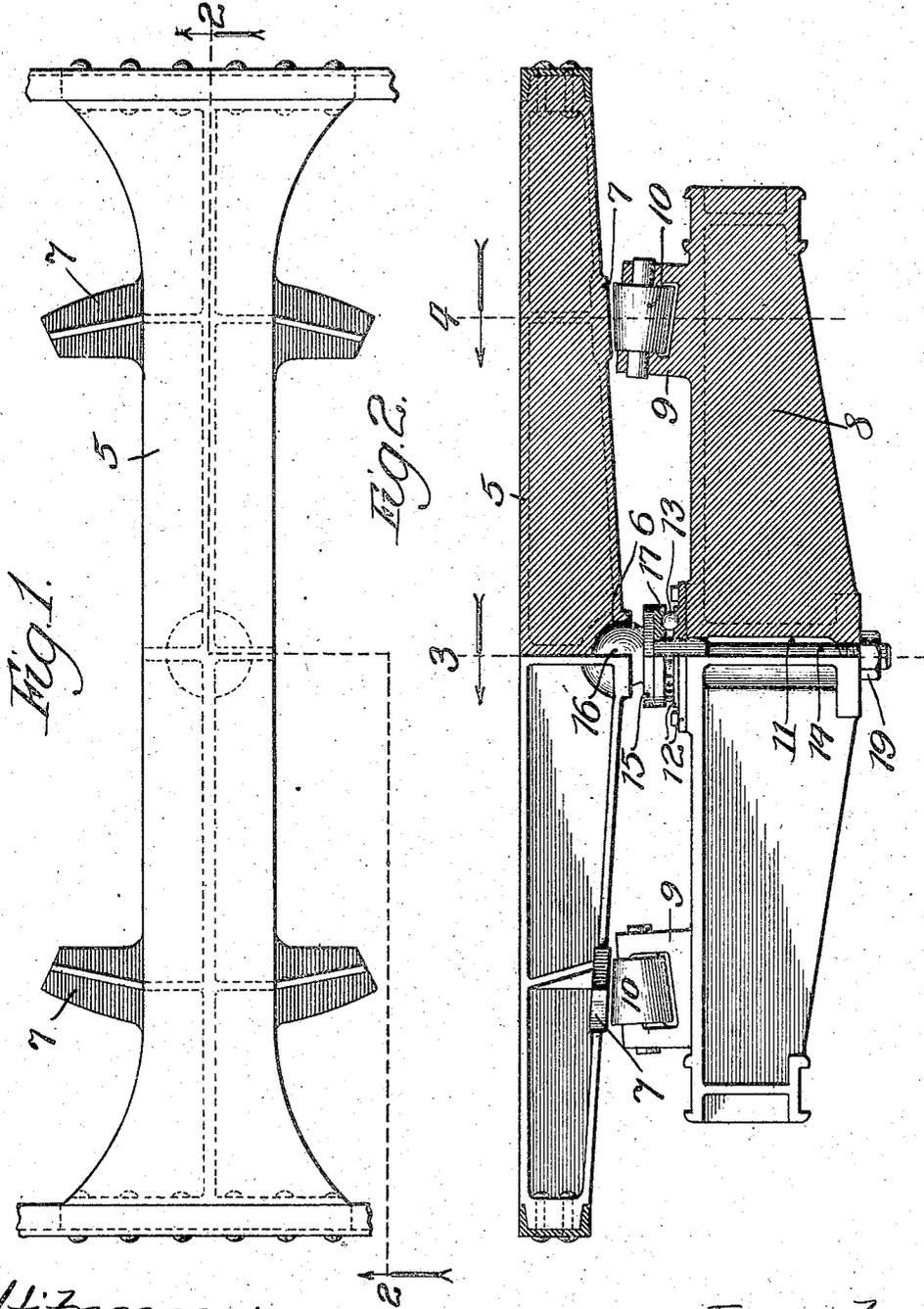


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2 SHEETS—SHEET 1.



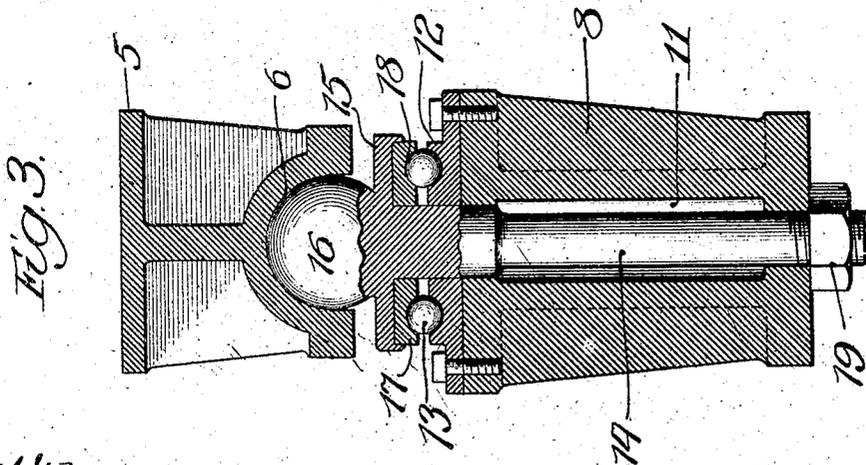
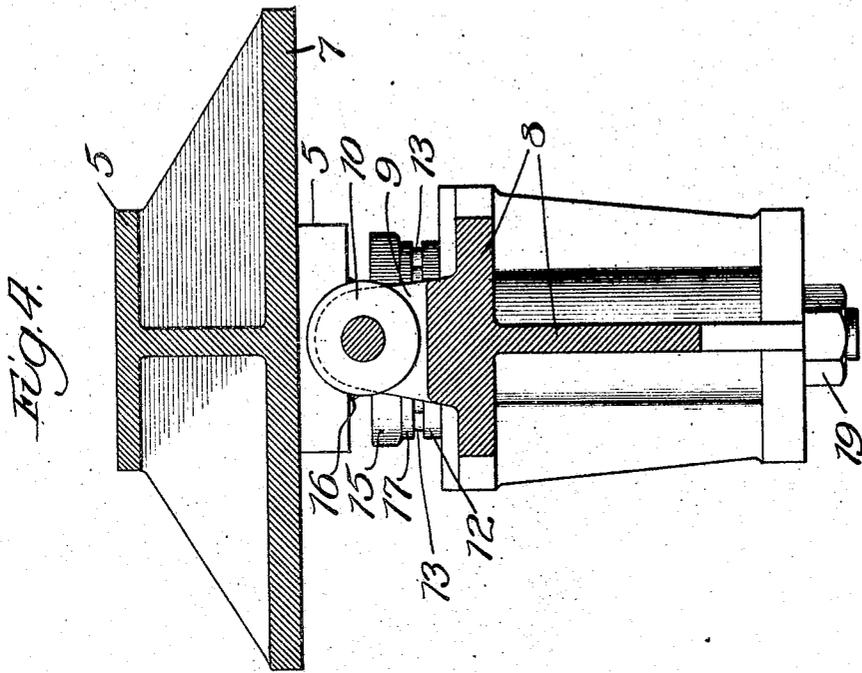
Witnesses:  
*Ed. C. Chayford,*  
*John Enders,*

Inventor,  
*Charles H. Anderson,*  
 By *Dunsmuir, Lee, Britton & Miles,*  
*Attys.*

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# UNITED STATES PATENT OFFICE.

CHARLES H. ANDERSON, OF SEATTLE, WASHINGTON.

## CAR-BOLSTER.

941,691.

Specification of Letters Patent. Patented Nov. 30, 1909.

Application filed July 7, 1909. Serial No. 506,333.

*To all whom it may concern:*

Be it known that I, CHARLES H. ANDERSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a new and useful Improvement in Car-Bolsters, of which the following is a specification.

My invention relates to improvement in the construction of the companion bolsters interposed between car-bodies and their trucks.

My object is to provide a construction of bolsters adapted for railway-cars generally and more especially for interurban electric-railway cars, which, besides holding the truck and car-body together with desired security, will permit relative rocking of the parts within comparatively wide limits and, furthermore, contribute to safety and smoothness of travel of the car-body during changes in angle either vertical or horizontal.

In the drawings—Figure 1 is a broken plan view of the car-body bolster; Fig. 2, a view on irregular line 2—2 in Fig. 1 showing the body and truck-bolsters half in elevation and half in section; and Figs. 3 and 4, enlarge sections on lines 3 and 4 in Fig. 2.

The body-bolster 5, forming a part of the under frame of the car-body, is provided at its under side with a central semi-spherical ball-socket 6 and two segmental bearing-plates 7, each in the arc of a circle drawn from said socket and presenting a smooth under faces slightly inclined toward the center of the bolster. The truck-bolster 8 is shaped at its ends, in practice, to fit the particular spring-supported securing means therefor on the truck, which it is not thought necessary to illustrate. The bolster 8 is provided toward opposite ends with bearings 9 for frusto-conical rollers 10 registering with the bearing-plates 7, and has a central opening 11 surrounded at its upper end by a fixed truck center-plate 12 having an annular groove forming a lower ball-race member filled with balls 13. Journalled in the opening 11 is a king-bolt 14 having an annular shoulder 15 and a head 16 of spherical form fitting the socket 6 in the body-bolster. Under the shoulder 15 is an annular bearing-

plate 17 having an annular groove 18 in its under side forming an upper race-member engaging the balls 13. The king-bolt is held against removal by a nut 19.

The ball-bearing described permits ready turning of the king-bolt in the truck-bolster, whereby the car-body and truck may turn with reference to each other without material friction. The ball-and-socket construction 16, 6 forms the connecting joint between the bolsters and avoids any binding or material wear thereat from rocking of the car-body or during changes in angle, as when the car starts upon or leaves an incline in the roadbed. The rollers 10 and segmental plates 7 form cooperating stops of an anti-friction nature limiting the rocking movements of the car-body.

My improved construction affords not only a most desirable pivotal connection between the car-body and truck contributing materially to the comforts of travel, but tends to lessen injurious results in the case of certain accidents. For example, in the event of a collision between trains, causing one car to telescope another, a car-body in rising would readily leave its truck and be freed from the weight thereof, thereby tending to diminish the force of impact between the car-bodies; furthermore, the freed truck would probably be caused to strike against the truck of the other car and thus further tend to diminish the force of the impact of the car-bodies against each other.

What I claim as new and desire to secure by Letters Patent is—

1. In combination, a car-body bolster having a spherical socket in its under side, a truck-bolster, a king-bolt on the truck-bolster having a spherical head to fit said socket and an annular shoulder below said head, a grooved annular bearing plate below said shoulder, a grooved center plate on the truck-bolster, and balls interposed between said plates.

2. In combination, a car-body bolster, a truck-bolster, a king-bolt journalled in the truck-bolster, and a ball-and-socket bearing connection between the king-bolt and body-bolster.

3. In combination, a car-body bolster, a truck-bolster, a king-bolt and ball-bearing

therefor on the truck-bolster, and a ball-and-socket bearing connection between the king-bolt and body-bolster.

4. In combination, a car-body bolster, a truck-bolster, a ball-and-socket bearing connection between the said bolsters, one bolster having bearing surfaces on opposite sides of said ball-and-socket connection, and roll-

ers on the other bolster forming stops to engage said surfaces in the rocking of the car-body. 10

CHARLES H. ANDERSON.

In presence of—  
MORRIS B. SACKS.  
R. E. BANKS.