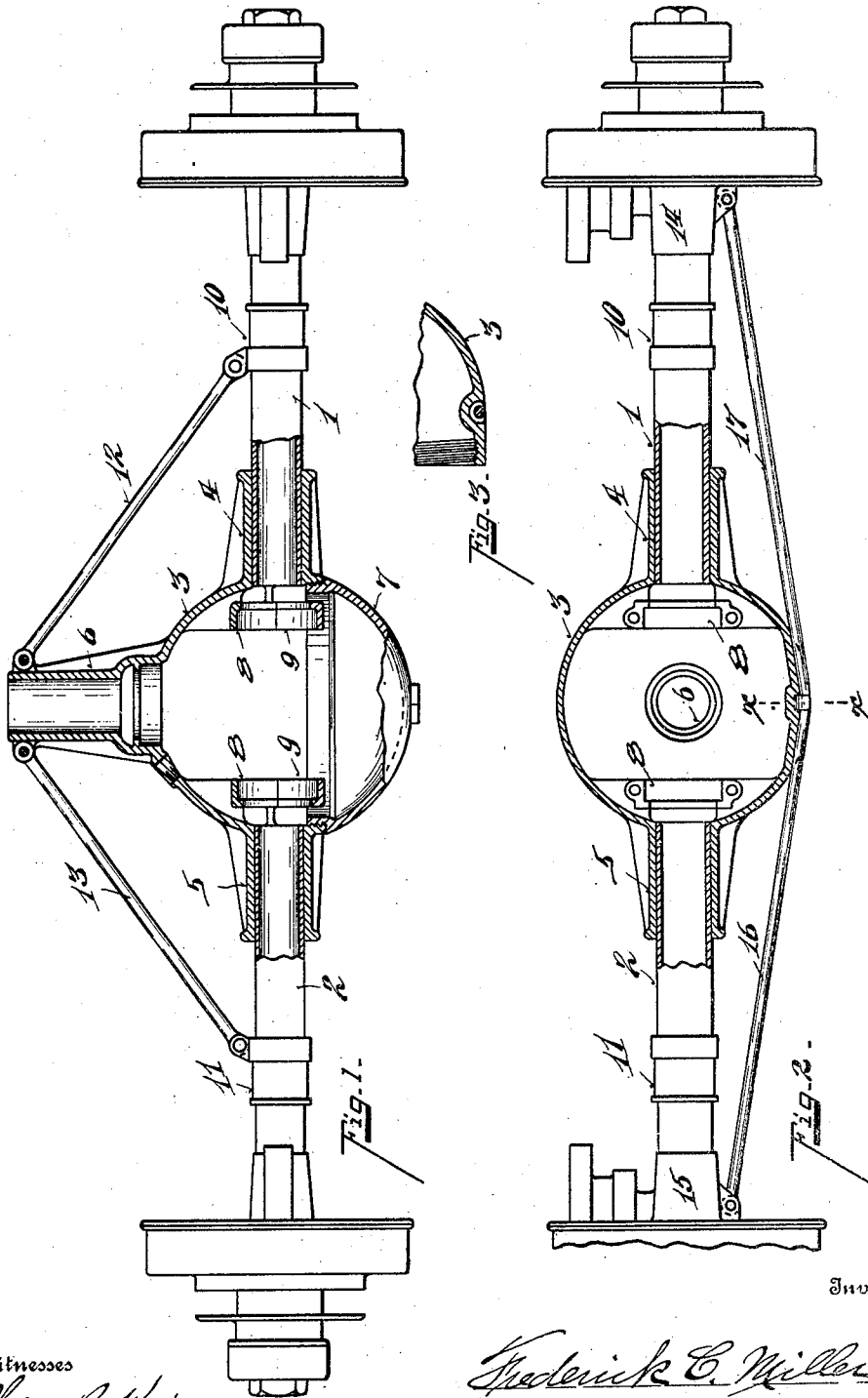


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 REAR AXLE FOR AUTOMOBILES.
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931,451.

Patented Aug. 17, 1909.



Inventor

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UNITED STATES PATENT OFFICE.

FREDERICK C. MILLER, OF CINCINNATI, OHIO.

REAR AXLE FOR AUTOMOBILES.

No. 931,451.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed March 19, 1907. Serial No. 363,315.

To all whom it may concern.

Be it known that I, FREDERICK C. MILLER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Rear Axles for Automobiles, of which the following is a specification.

My invention relates to an improvement in the construction of the rear axle for automobiles.

One of the objects of the invention is to provide a gear casing with a removable cap, detachable at the rear of the vehicle, the line of separation being in a vertical plane, whereby the interior of the casing is rendered perfectly accessible and the gearing removable.

Another object of the invention relates to means for strengthening the axle and the gear casing relatively to one another.

The features of the invention will be more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a top plan view of the rear axle, showing the casing in horizontal section. Fig. 2 is a rear view of the rear axle, showing the gear casing in central vertical section. Fig. 3 is a fragmentary section of the casing.

1, 2, represent the opposite end of the tubular rear axle.

3 represents a casing having the sleeves 4, 5, into which the tubular axle sections 1, 2, are respectively pressed, brazed or otherwise secured. The casing 3 is formed with an endwise projecting stub sleeve 6, into which extends the transmission shaft.

7 represents a cap forming a detachable section of the casing 3. The division is formed on a vertical line through the casing and at the rear of the axle, the cap being preferably screw threaded into the stationary casing section. By this means, when the cap 7 is removed, the interior of the casing is opened up, exposing and rendering perfectly accessible the interior mechanism from the rear of the vehicle, so that the parts can be repaired or removed while the axle remains attached to the vehicle truck, without the necessity of removing the body. The bearings housings in the casing are formed by the fixed members 8 to which the detachable caps 9 are bolted.

10, 11, represent the supports for the

springs, which may be sleeves pressed onto the axle, or may be made in one with the axle.

12, 13, represent rods; the outer ends of which are secured to the axle at 10, 11, and the inner ends to the casing sleeve 6. These rods lying in a horizontal plane securely brace the front of the casing to the axle, (see Fig. 1).

14, 15, represent sleeves supporting the brake mechanism pressed or otherwise secured to the tube 1.

16, 17, represent a rod, the outer ends of which are connected to the sleeves 14, 15, the middle portion of which is bent down and connected to the bottom of the casing 3, see Fig. 2, by having a shoulder or lug 20 notched or socketed into the bottom of the casing. Preferably the rod 16, 17, is countersunk into the bottom of the casing, as indicated in dotted lines, Fig. 2, so as to be flush with the lower surface thereof, and hence the middle portion of said rod has the same road clearance as the bottom of the casing. This rod being sprung or bowed under the casing, gives great rigidity to the parts so reinforced. These rods lying in a vertical plane form another and a transverse brace between the casing and the axle, so that the axle and the casing are securely tied together and protected against strains in a vertical or horizontal plane, as well as against all strains. This construction is extremely simple and strong, as well as 90 compact.

The provision of a section of the casing formed as a cap, detachable on a vertical line, makes it possible to instantly open up the casing giving complete access thereto from the rear of the vehicle, without any further dismemberment of the organization, an element of immense practical utility.

Of course by stating that the rods extend in horizontal and vertical planes, I means approximately, as they may be slightly inclined thereto without materially changing the results.

Having described my invention, I claim:—

1. In combination with a tubular rear axle of an automobile, a gear casing secured thereon, rods extending in a horizontal plane with their inner ends attached to the gear casing and their outer ends attached to the axle, and a rod extending substantially in a vertical plane with its outer ends attached to the axle, and its intermediate portion

bowed under and socketed in the bottom of the casing, substantially as described.

2. In a tubular axle for automobiles, a gear casing secured thereon, a truss rod having its ends attached to the axle; and its intermediate portion bent under the casing, the contacting portion of said rod being countersunk in and socketed to the under-

surface of said casing, substantially as described.

In testimony whereof, I have hereunto set my hand.

FREDERICK C. MILLER.

Witnesses:

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