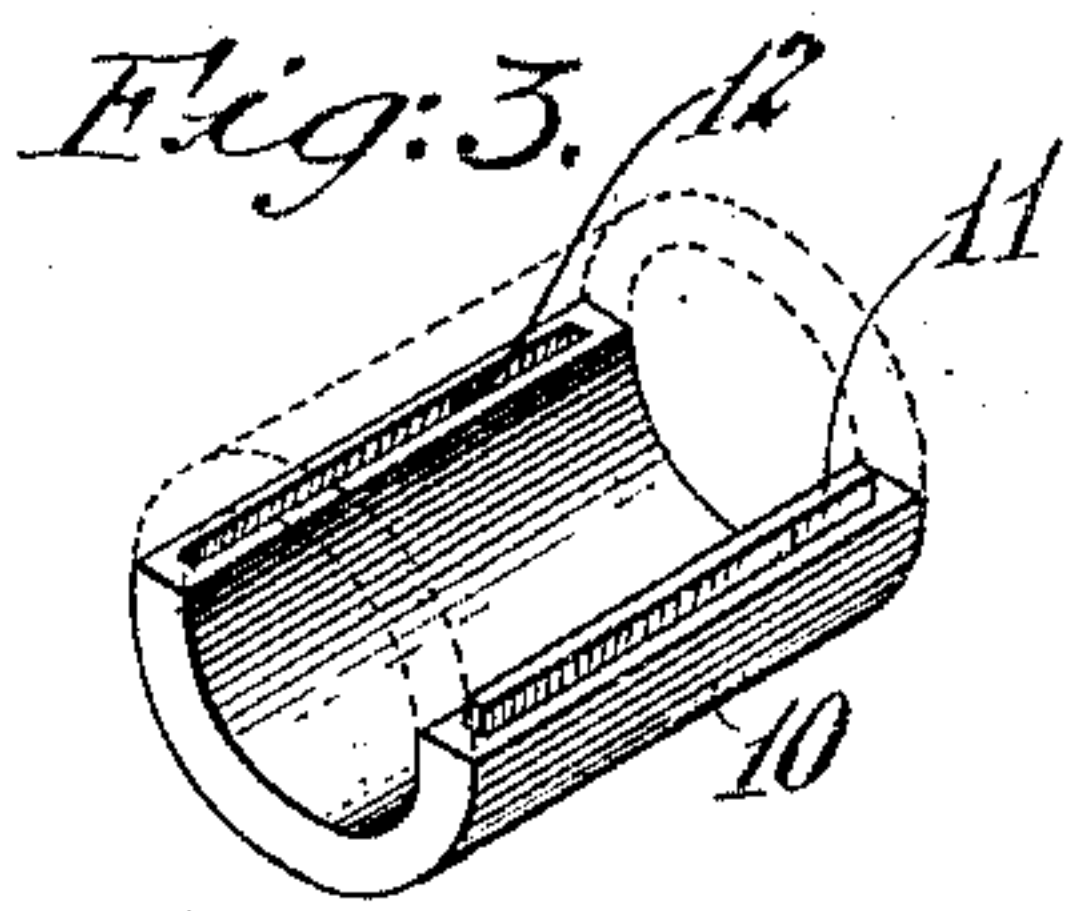
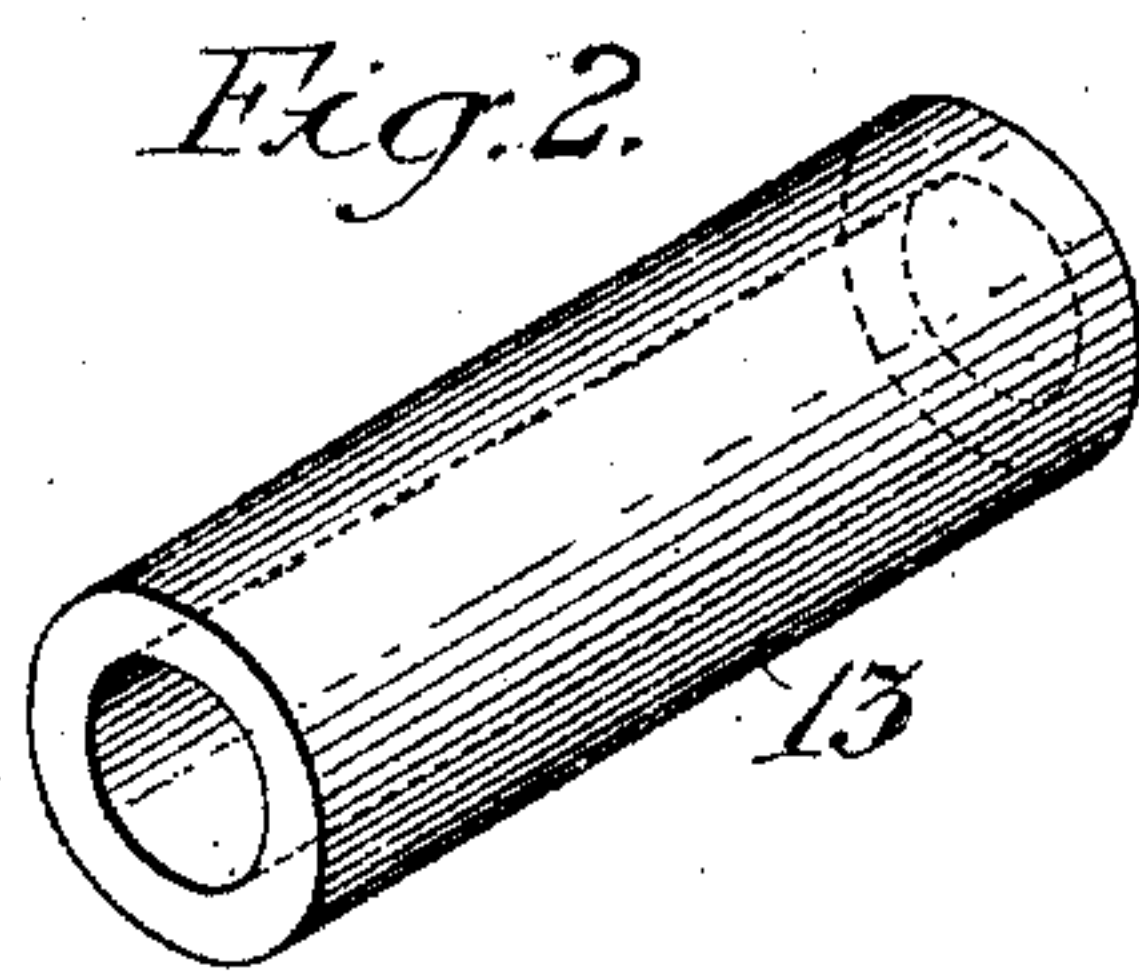
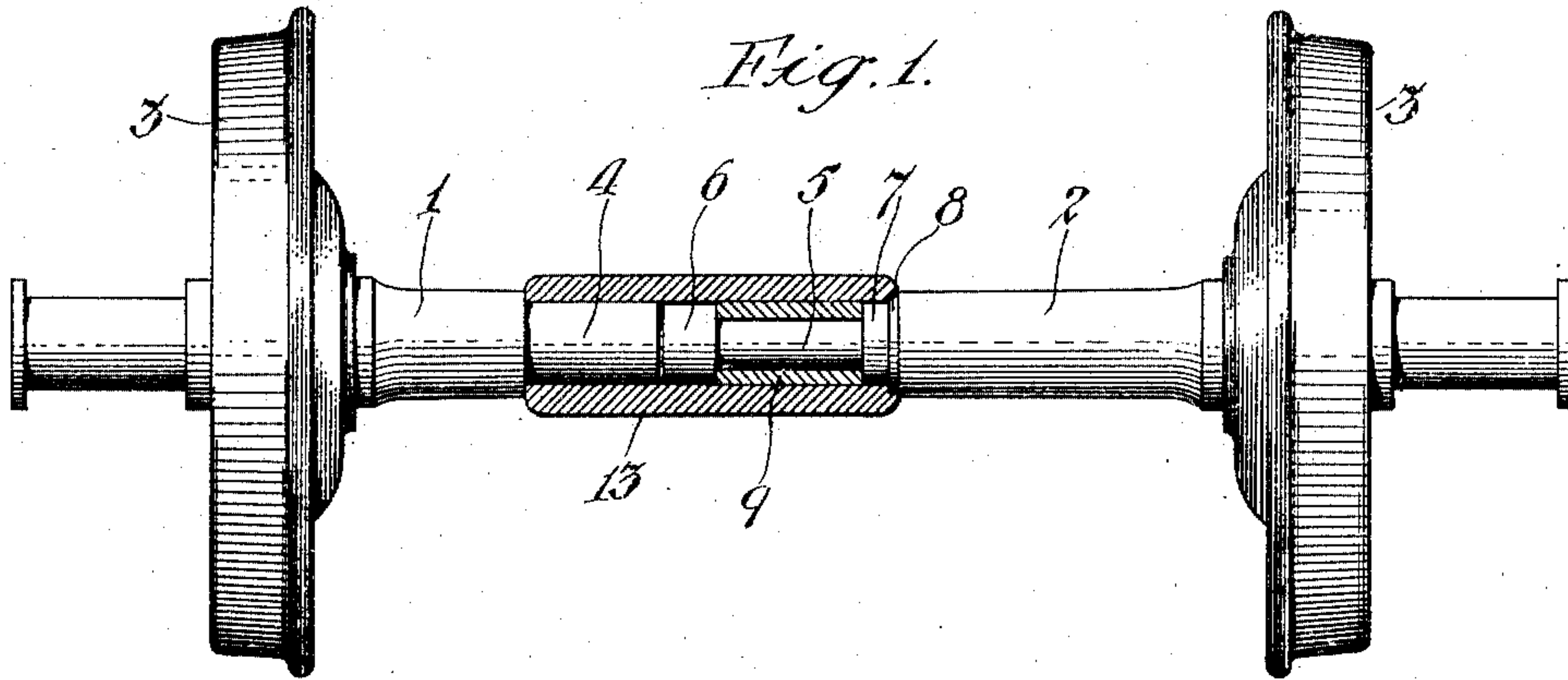


M. MARKARIAN.
 REVERSIBLE CAR AXLE COUPLING.
 APPLICATION FILED AUG. 18, 1908.

929,771.

Patented Aug. 3, 1909.



Witnesses:
 Louis W. Gratz.
 Frank Abraham.

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 His Attorney.

UNITED STATES PATENT OFFICE.

MELKON MARKARIAN, OF LOS ANGELES, CALIFORNIA.

REVERSIBLE CAR-AXLE COUPLING.

No. 929,771.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed August 18, 1908. Serial No. 449,156.

To all whom it may concern:

Be it known that I, MELKON MARKARIAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a Reversible Car-Axle Coupler, of which the following is a specification.

In railway cars having solid axles a twisting strain is exerted on the axle in going around curves on account of the outer wheel having to travel over a greater distance than the inner wheel. In addition to this twisting strain the wheels wear heavily against the track and squeak, and on sharp curves it is necessary to lubricate the track to prevent excessive wear and squeak.

The object of the present invention is to avoid the torsional strain referred to to obviate the necessity of lubrication of the track and prevent squeak and to also prevent wear on the wheels and track.

The accompanying drawings illustrate two forms of the invention, and referring thereto:—Figure 1 is a front elevation of a car axle, partly in section. Fig. 2 is a perspective view of the outer collar. Fig. 3 is a perspective view of the split collar.

1 and 2 designate the two sections of the car axle which are respectively provided with wheels 3. The section 1 has a reduced end portion 4 and the section 2 has its end turned down to form a neck 5 with a head 6 of slightly smaller diameter than the end 4. A wide shoulder 7 and a narrow shoulder 8 are located between the neck 5 and main portion of the section 2. A split bushing 9 is arranged on the neck 5 and consists of two semi-cylindrical sections 10, one of which is shown in detail in Fig. 3. Each section 10 has a tongue 11 and a groove 12, the tongue 11 of one section being adapted to fit in the groove 12 of the other section, thus permitting the split collar 9 to be readily attached in place on the neck 5 between the head 6 and shoulder 7. The internal bore of the split

collar 9 is such that it has a journal fit on the neck.

An outer sleeve 13 is forced on the reduced end portion 4 of the section 1 with a driving fit and is also forced on the split collar 9 with a similar fit so that the two sections of the axle are held together in such a way that the axle section 1, sleeve 13 and collar 9 may rotate as one piece, while the axle section 2 rotates as a separate member within the split collar 9.

It is apparent that when the invention is employed the car in rounding a curve will cause the outer wheel to rotate faster than the inner wheel, which function is permitted on account of the coupling employed. Inasmuch as each wheel is permitted to travel on the track at its natural speed all unnecessary friction between the wheel and track is avoided and all torsional strain on the axle is eliminated. The independent movement of the wheels also relieves friction on the rail and enables an increase of speed of the car and also enables a greater tonnage to be hauled.

The device can readily be applied to all axles, is very simple in construction, of economical manufacture and of great durability.

What I claim is:—

A differential car axle comprising two axle sections, one section having a neck with a head at one end of the neck, and a wide shoulder and a narrow shoulder at the other end of the neck, the other section having a reduced end, a split collar on said neck, and an outer collar rigidly fastened on said split collar and on said reduced end.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 12th day of August 1908.

MELKON MARKARIAN.

In presence of—

G. T. HACKLEY,
FRANK L. A. GRAHAM.