

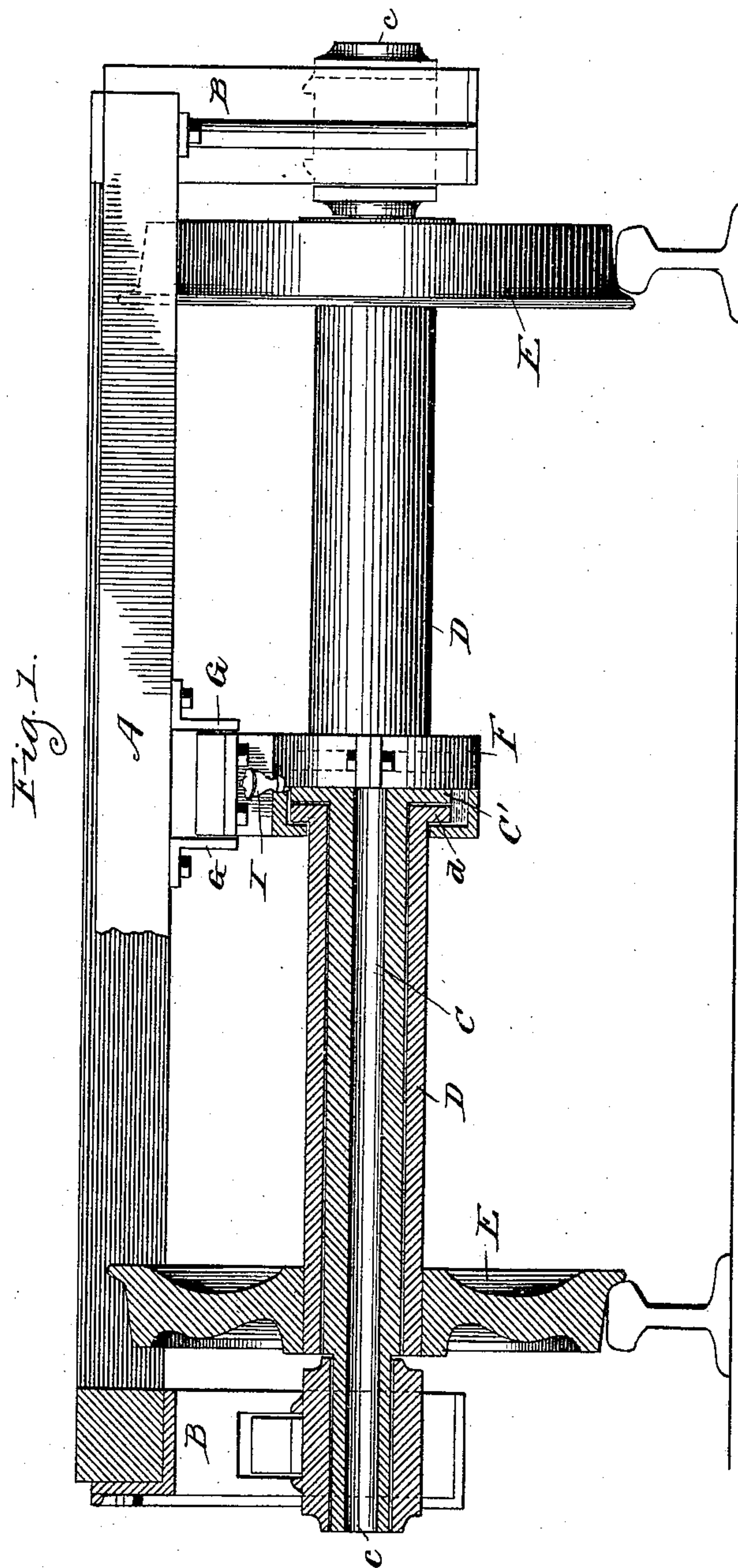
(No Model.)

2 Sheets—Sheet 1.

F. J. SEYMOUR.  
SELF LUBRICATING CAR AXLE.

No. 407,256.

Patented July 16, 1889.



Witnesses,  
J. J. Mann,  
Frederick Goodwin

Inventor,  
Frederick J. Seymour

By, Offield & Towle Attys.

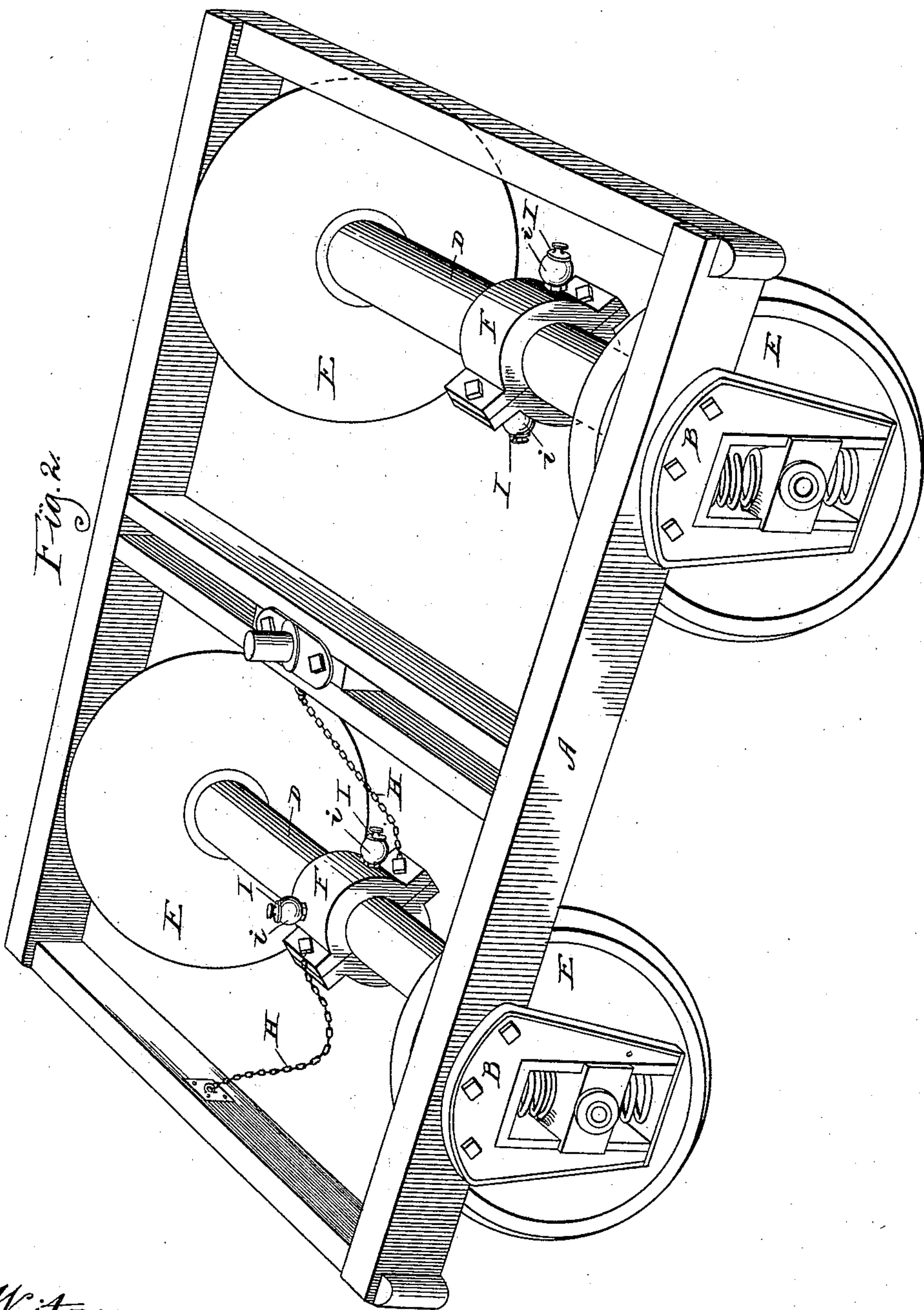
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# UNITED STATES PATENT OFFICE.

FREDERICK J. SEYMOUR, OF FINDLAY, OHIO, ASSIGNOR TO THE AUTOMATIC LUBRICATING TUBULAR AXLE COMPANY, OF CHICAGO, ILLINOIS.

## SELF-LUBRICATING CAR-AXLE.

SPECIFICATION forming part of Letters Patent No. 407,256, dated July 16, 1889.

Application filed October 30, 1888. Serial No. 289,567. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK J. SEYMOUR, a citizen of the United States, residing at Findlay, Ohio, have invented certain new and useful Improvements in Self-Lubricating Car-Axles, of which the following is a specification.

My invention relates to a compound car-axle constructed with a central core or tube, the projecting ends of which form the journals for the wheels, and two sleeve-sections exterior to the central axle, to which the wheels are rigidly secured, and which sleeves are adapted to rotate independently of the central axle and of each other; to novel means for securing the sleeve-sections from endwise movement, and to provisions for lubricating said sleeves automatically.

One object of my invention is to provide a car with such an axle as will permit the acceleration of speed in one wheel in passing curves, whereby injury to the rail and wheel, caused by the running or crowding of the wheel against the rail in the usual construction of rigid axle, is avoided.

Another object of my invention is to provide means whereby the lubrication of the surfaces in frictional contact is effected automatically.

In the accompanying drawings, Figure 1 is an elevation, partly in section; and Fig. 2 is a perspective of a four-wheel truck.

A represents the truck-frame, and B the usual journal-boxes suspended therefrom.

C is a central axle-body, which is preferably made from a steel tube having its ends *c* turned off to form journals and a central flange or collar *C'* midway of its length. Sleeved over the part C are tubular axle-sections D, upon the outer ends of which the wheels E are shrunk or otherwise secured. These tubular sections terminate at the outer faces of the wheels. The axle-sections D have turned up or flanged inner ends *d*, which abut against the collar *C'* of the axle-body C.

F is a two-part clamp or casing fitted around the abutting ends of the divided axle-sections, so as to embrace the flanges *d* thereof and prevent the endwise movement of said tubular sections. As shown in Fig. 1, this casing is adapted to be kept in vertical position by

means of the guides G, which depend from the truck-frame. In Fig. 2 the guides are omitted, and in one instance chains H are connected to the clamp F and to the truck-frame to prevent its revolving with the axle. For light service, however, the clamp may be left free to rotate with the axle.

I provide for the automatic lubrication of the axle by securing on the clamps F one or more oil-cups I, which may be of any of the improved patterns, but preferably an oil-cup which has a metallic oil-reservoir, as *i*, with a screw-plug to permit its refilling and a plunger or piston with its inner end projected through to the parts in contact. The lubricant will preferably be admitted to the periphery of the collar C, and will be distributed by the movement of the flanges *d* of the sleeves, and will, by reason of the heat and friction of the parts, spread along the periphery of the axle-body C, thus lubricating thoroughly all the bearing-surfaces of the axle. This means will be effective for lubricating the journals of the axles, but additional means may be employed.

A car-axle constructed as above described provides for passing the sharpest curves without injury to the track or rolling-stock and without sudden jarring of the car, and is particularly effective on cable-railway lines in cities, where of necessity the curves are sharp and it is difficult to provide for a slow speed in passing them. This construction of axle necessitates, however, some simple and effective method of lubrication, and this is provided by my improved means of mounting the lubricators and distributing the lubricant.

I claim—

1. In a compound car-axle, the combination of a central axle-body adapted to form the journals, and two hollow sleeves exterior to the central axle, to which the wheels are rigidly secured, said sleeves terminating at the outer sides of the wheels and adapted for independent rotation, and said axle provided with a central flange, against which said sleeve-sections abut at their inner ends, substantially as described.

2. The combination, in a car-axle, of an inner axle-body extended to form the journals, of two exterior sleeve-sections, to which the

respective wheels are rigidly secured, said axle having a central flange or collar, and said sleeves having on their inner ends flanges abutting against said collar and being adapted  
5 for independent rotation, and a divided clamp adapted to prevent endwise movement of the wheels on the axle, substantially as described.

3. A compound car-axle, comprising in construction an inner axle-body and exterior  
10 sleeve-sections, to which the wheels are se-

cured, said inner axle having a central flange or collar, and said sleeve-sections having flanges abutting the central collar, and a central clamp adapted to secure the sleeve-sections in place and provided with a lubricator, 15 substantially as described.

FREDERICK J. SEYMOUR.

Witnesses:

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