

(No Model.)

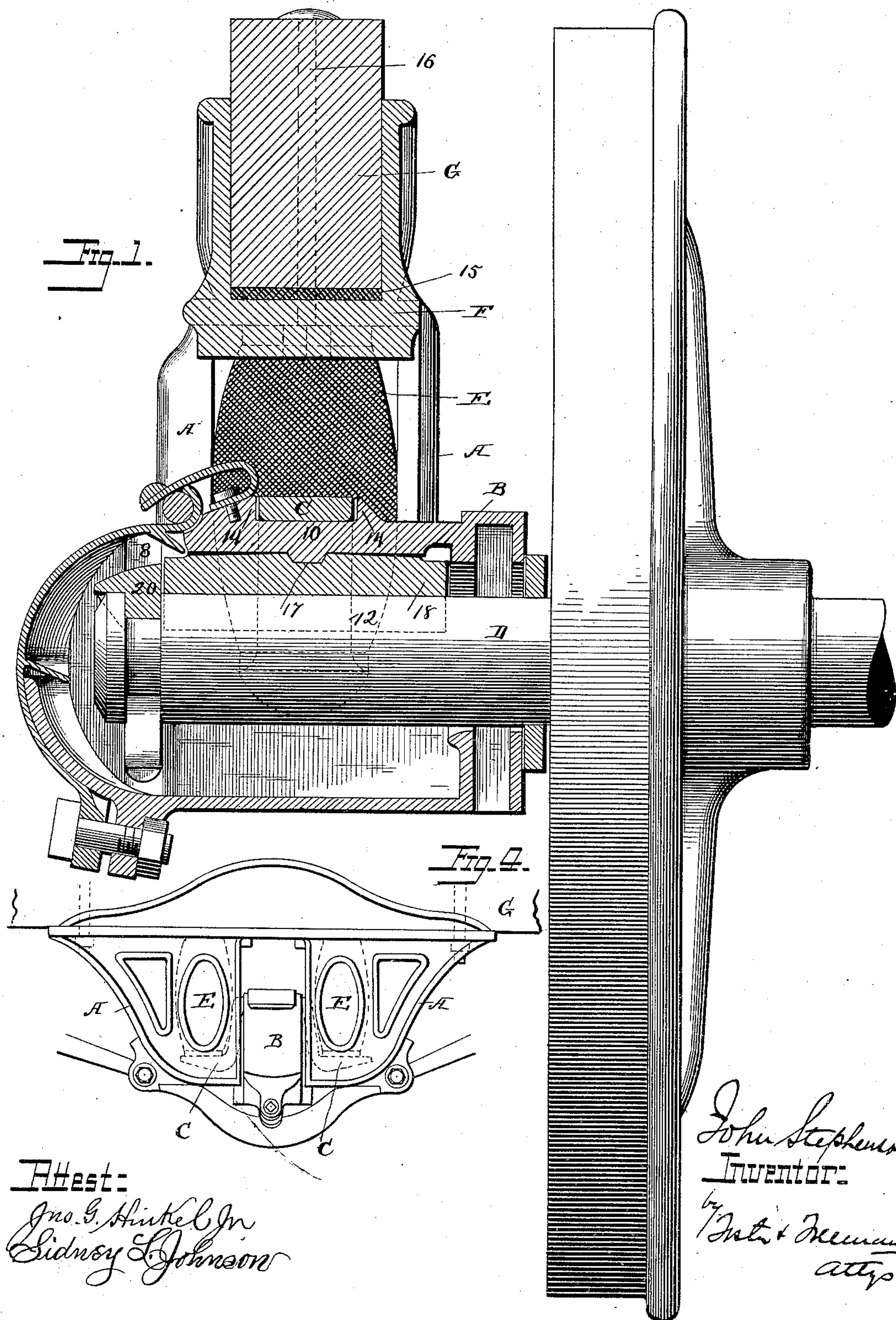
2 Sheets—Sheet 1.

J. STEPHENSON.

CAR AXLE BOX.

No. 378,477.

Patented Feb. 28, 1888.



Attest:

Geo. G. Hinkel Jr.  
Sidney L. Johnson

John Stephenson  
Inventor:  
by J. H. & M. H. Newman  
attys

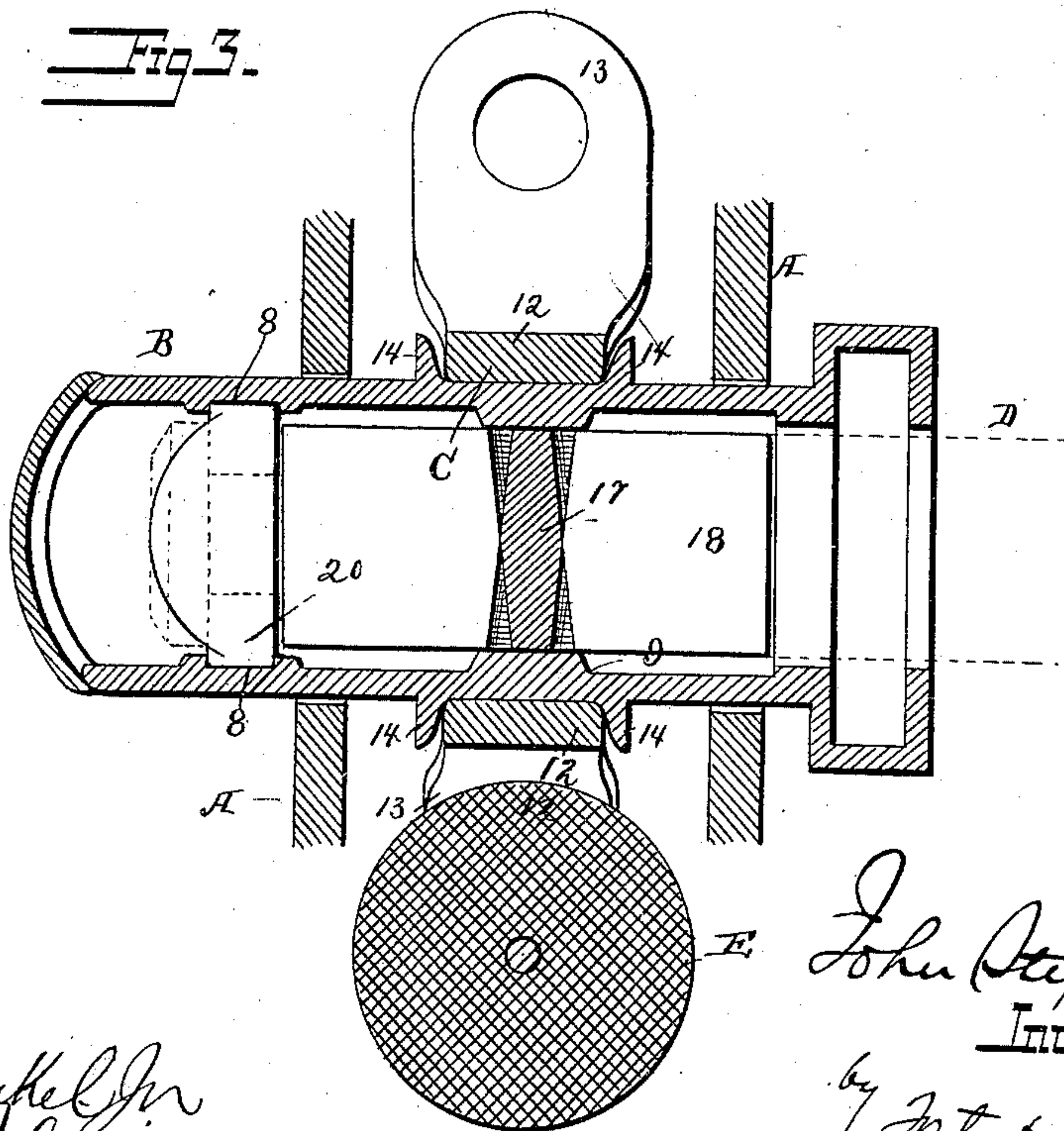
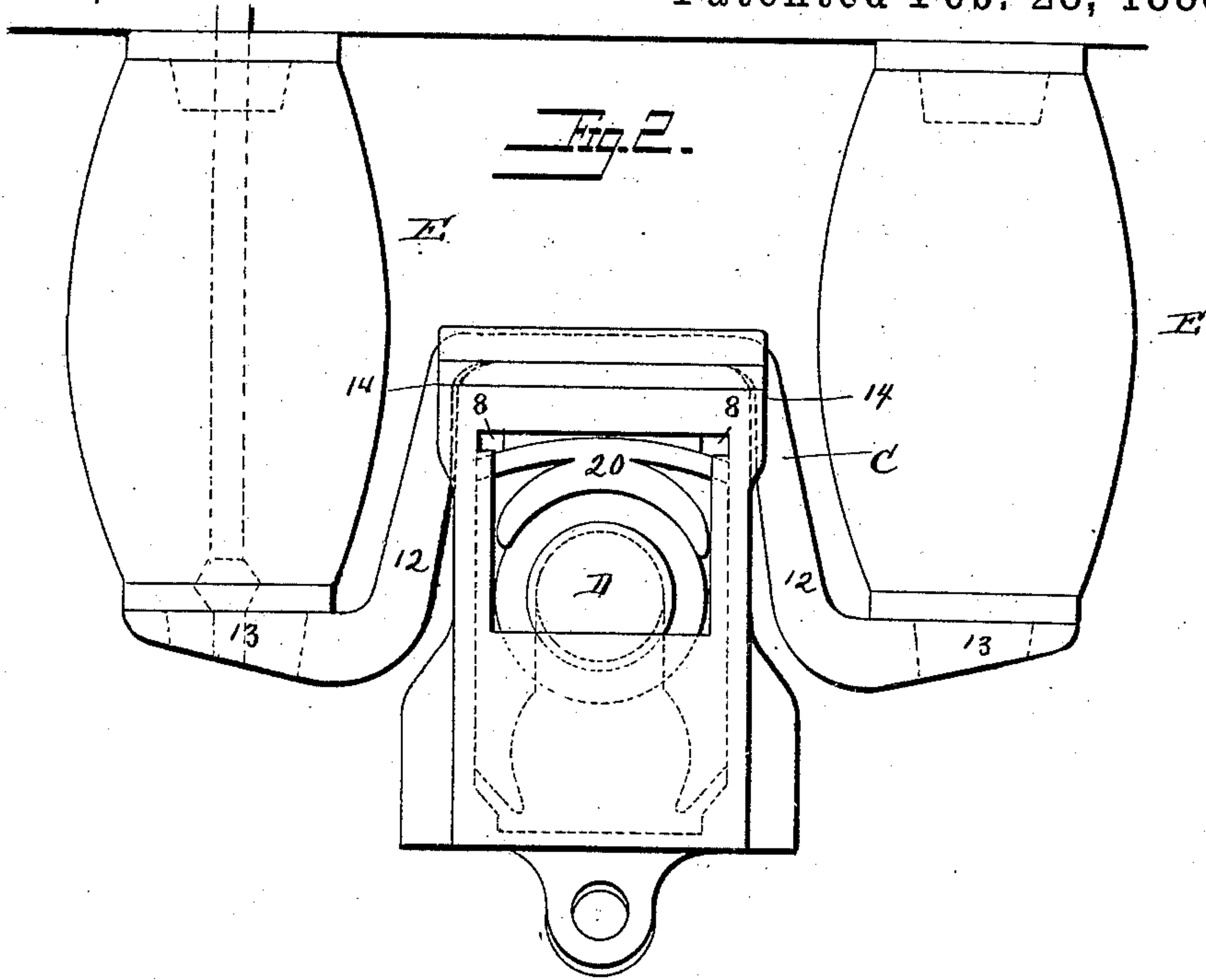
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Atty.



# UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

## CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 378,477, dated February 28, 1888.

Application filed July 21, 1887. Serial No. 244,917. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN STEPHENSON, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Axle-Box Link-Motions, of which the following is a specification.

Experience has shown that the body of a passenger-car should be insulated or severed from sympathetic connection with the running-gear, and especially from the wheels, so that concussion caused by bad rail-joints, switches, turn-outs, crossings, or other obstructions may not reach passengers, or their effects be diminished. For such purpose the swing-bolster used in the trucks of railway-cars and the super spring-gear for tram-cars have become deservedly popular.

My invention is in the same line of purpose, though not claiming to be superior, to the super spring-gear, is less costly, and of lighter weight.

The drawings illustrate a practical embodiment of my invention, in which—

Figure 1 is a central longitudinal sectional elevation of the axle-box, axle-bearing, and its connections. Fig. 2 is a front elevation thereof, the pedestal being removed and the front cap of the box removed. Fig. 3 is a horizontal section of the axle-box and saddle, one spring being in place, showing the journal-bearing in place on the axle; and Fig 4 is a front elevation of the pedestal and axle-box.

In the construction of this improved car-gear is used a double-jaw pedestal, A, in which is the axle-box B, with its upper surface, 10, prepared for a saddle, C, located central to the axle-journal. The pendent limbs 12 of the saddle terminate below the center of the axle D and form supports 13, on which rest the bearing-springs E.

To retain the saddle C positively central to the axle journal-bearing, it is located between walls or stops 14, with freedom to permit its limbs to have a swinging motion.

The combination of swinging and transverse motion requires sympathetic action of the pedestals, which is obtained by interposing rubber, 15, between the pedestal bed-plate F and the car-sill G, the three factors held in union by vertical bolts 16, located on the node line of action, so that the foot of the pedestal may

have some transverse motion without loosening the bolts.

Any deviation of the axle-box transversely from the vertical causes the shell-ceiling to be out of parallel with the axle-journal and form an angle, inducing the bearing 18 to slide along the diverging lines. Therefore the bearing needs provision to prevent such sliding, and also provide that the shell-ceiling may rock at the center of the bearings. Therefore the shell has a cross-bar, 17, at the central part of its ceiling, which indents into the bearing 18, the vertical walls of the cross-bar tapering horizontally and contacting with the vertical walls of the indent only at midway between its ends, as shown by dotted lines, Fig. 3, and thus permit a swing of the bottom of the box in any direction without displacing the bearings.

It is also to be regarded that in passing curves, warped tracks, &c., the axle-journals change their position within the axle-box. Therefore the journal-bearing, while preserving its centrality within the shell, should have liberty for the ends of the bearing to swerve in any direction. Vertical rocking motion has been provided for by the cross-bar at the center, elevating the ceiling above the ends of the bearing, and for the horizontal motion the side walls of the box at 9 contact the bearing 18 midway of its length, and the box-chamber is widened toward the end walls, also permitted by the horizontal tapering of the side walls of the cross-bar 17, so that the bearing ends may swerve either way or in any direction, while its centrality within the box-chamber is preserved.

The axle D is secured within the axle-box by a key check-plate, 20, the limbs of which straddle a restricted portion of the axle, and are held in grooves 8, formed in the walls of the axle-box.

What I claim is—

1. A car-axle-box shell with its ceiling having a cross-bar centrally located between the front and rear walls, the cross-bar indented into the upper surface of the journal-bearing, the contracting vertical walls of the indent and cross-bar not parallel to each other, but diverging from their centers endward, whereby the indent and cross-bar, while holding the bearing central to the axle-journal, permit the bearing to take any position within the box-



shell to which the axle-journal may incline, as and for the purpose described.

2. A tram-car pedestal holding within its jaws an axle-box having a definitely-located  
5 saddle, its pendent limbs carrying at each side of the box a bearing-spring with freedom for swinging motion, and a rubber or other elastic cushion between the pedestal bed-plate and the body-sill, to which the pedestal is fastened  
10 by vertical bolts central to and at right angle with the axle-journal, as and for the purpose described.

3. A tram-car axle-box straddled by a saddle confined central to an axle journal-bearing,  
15 each pendent limb terminating in a shell for a bearing-spring, having liberty for transverse swinging motion, the axle-box shell with its ceiling having a cross-bar centrally located between the front and rear walls, the cross-bar

indented into the upper surface of the journal- 20 bearing, with freedom and room for the bearing to take any position to which the axle-journal may incline, the axle-journal retained in the axle-box by a key check-plate, interlocking box and journal, and the axle-box within 25 the jaws of a pedestal supporting a car-body, with rubber or other cushion intervening between the pedestal bed-plate and the sill to which it is secured by bolts passing vertically through sill, rubber, and pedestal, as and for 30 the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN STEPHENSON.

Witnesses:

S. A. STEPHENSON,

JOHN A. TACKABERRY.