

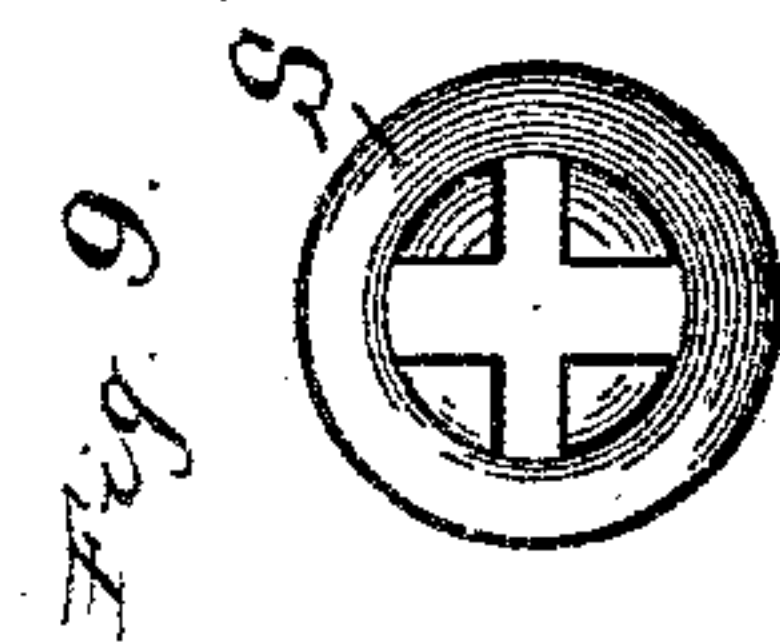
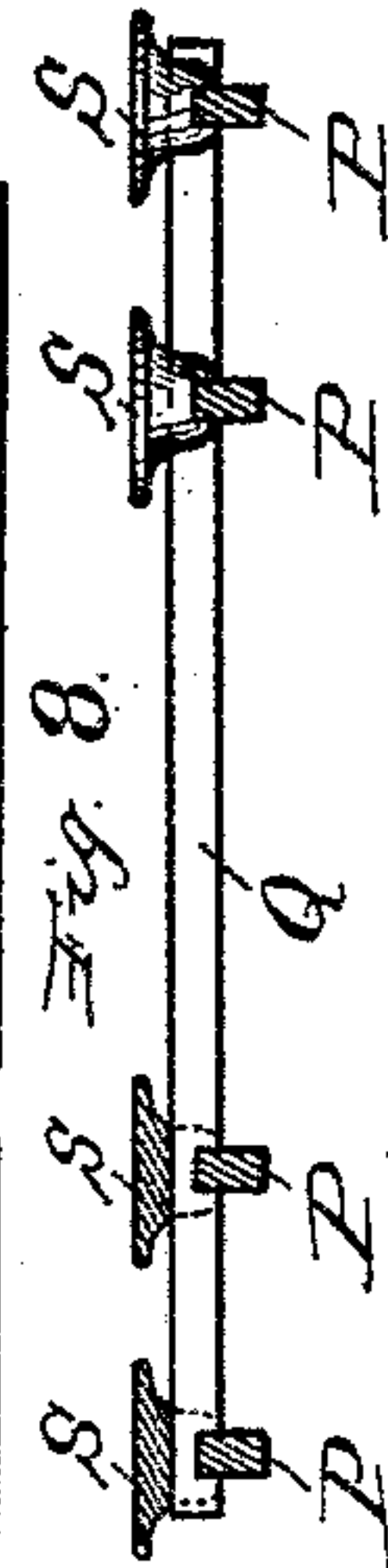
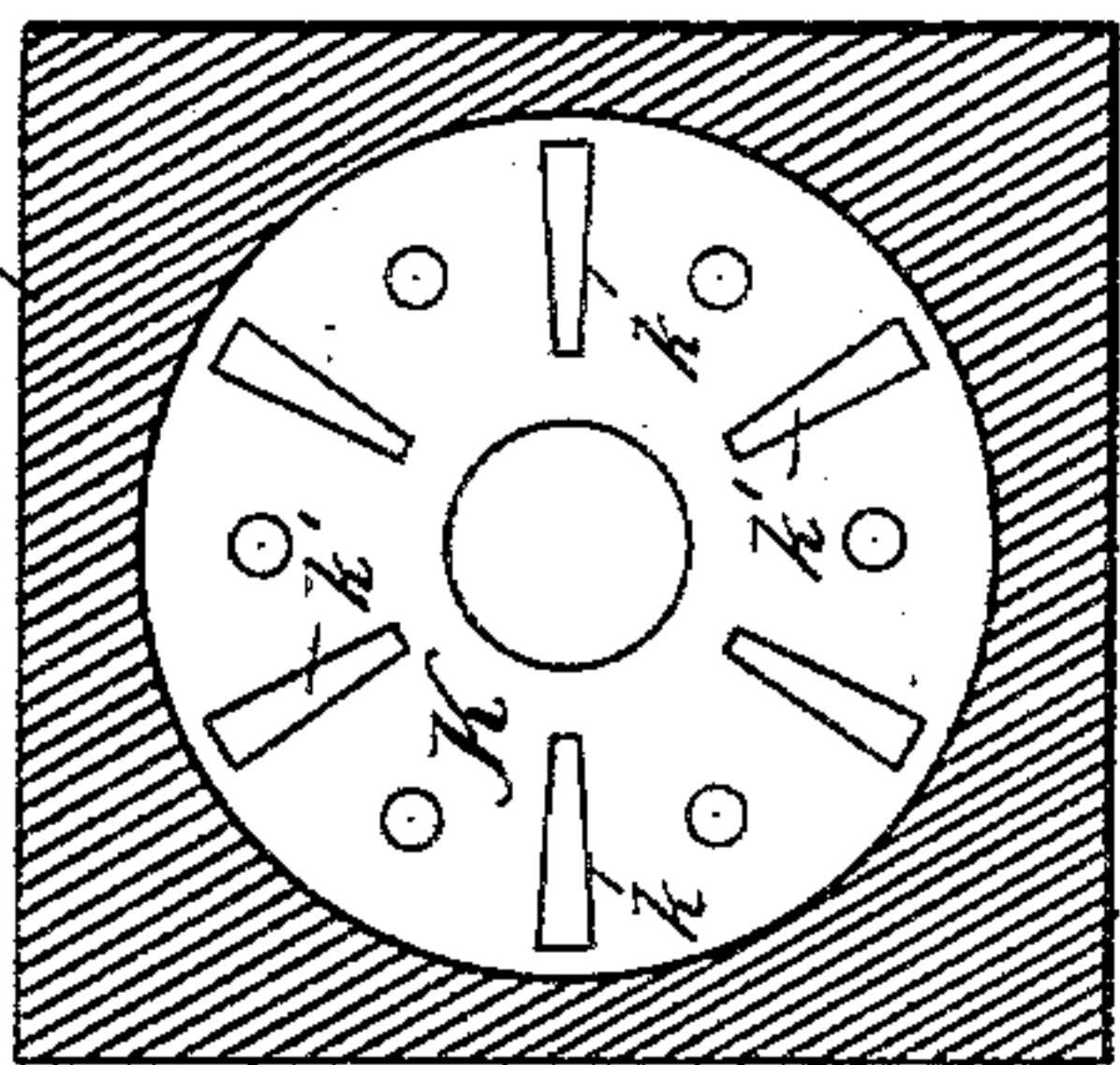
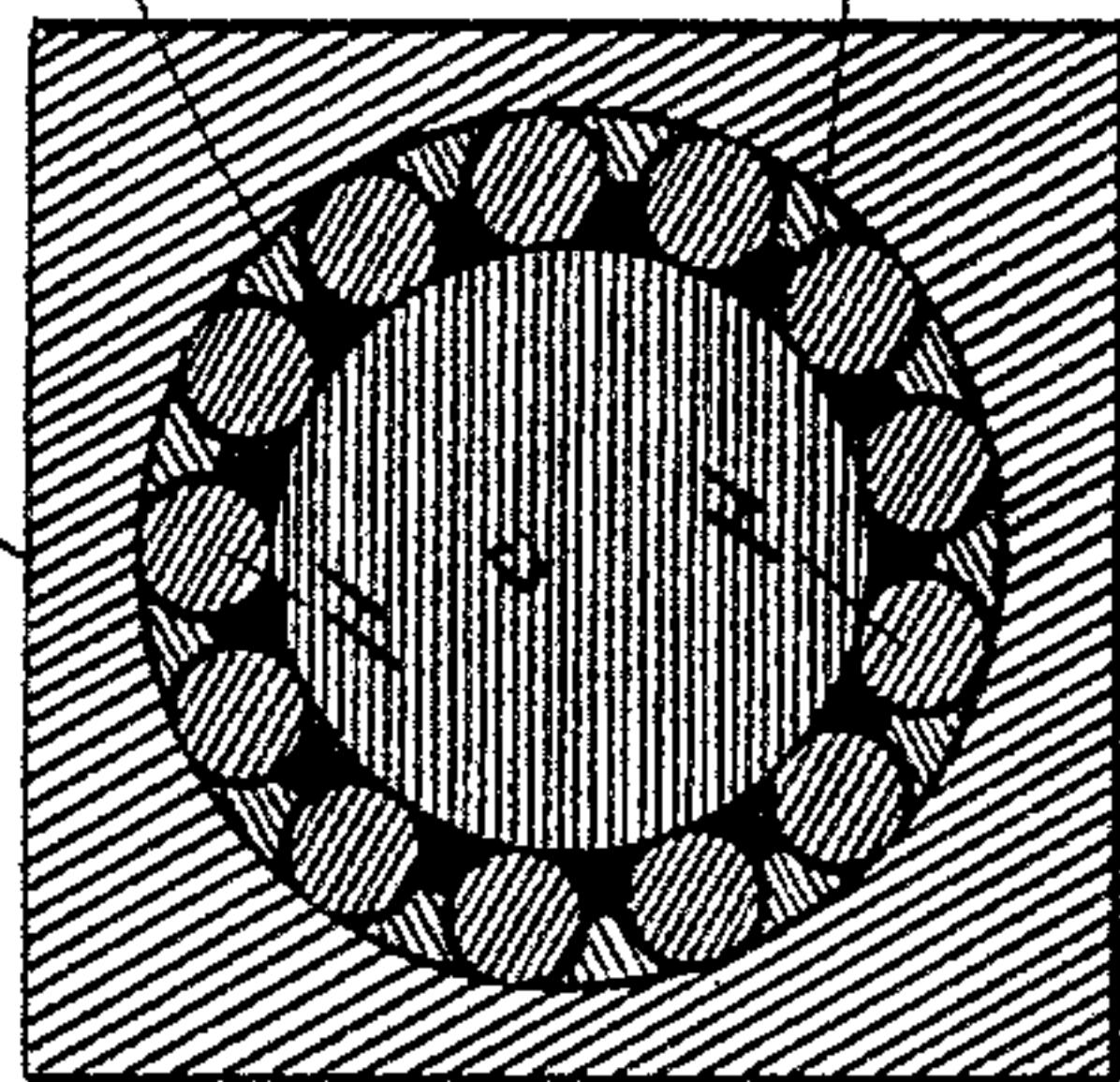
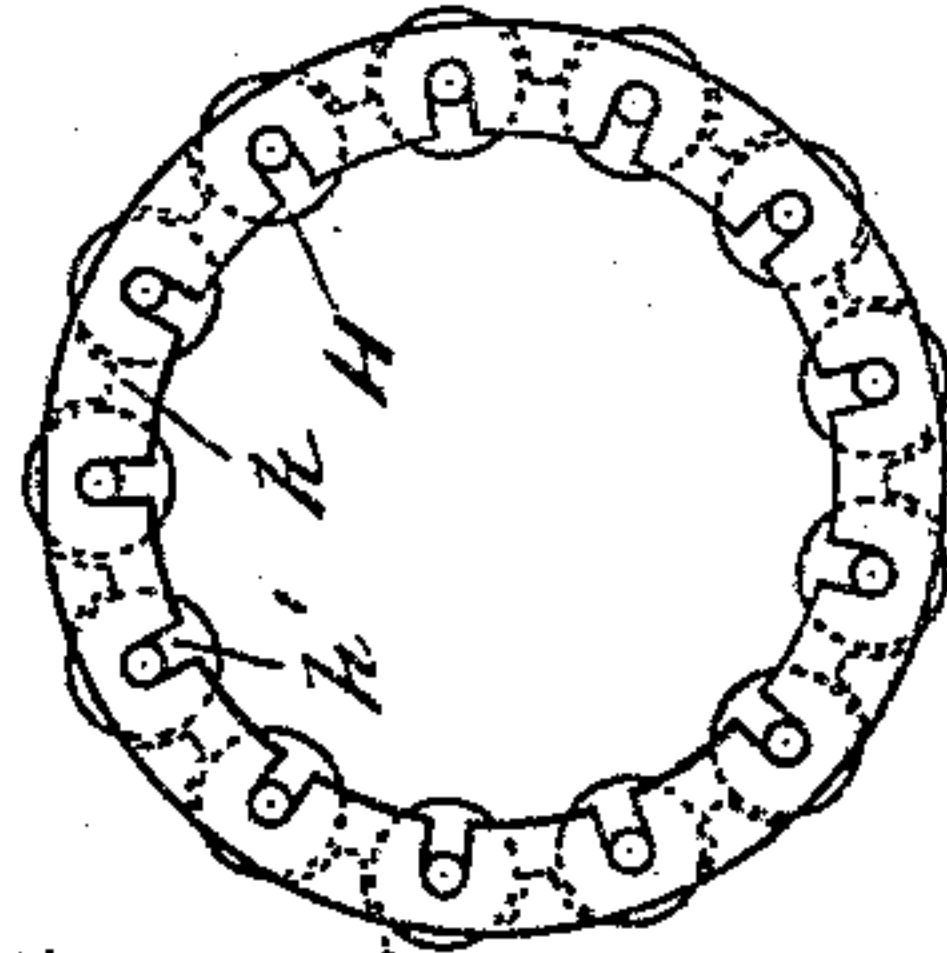
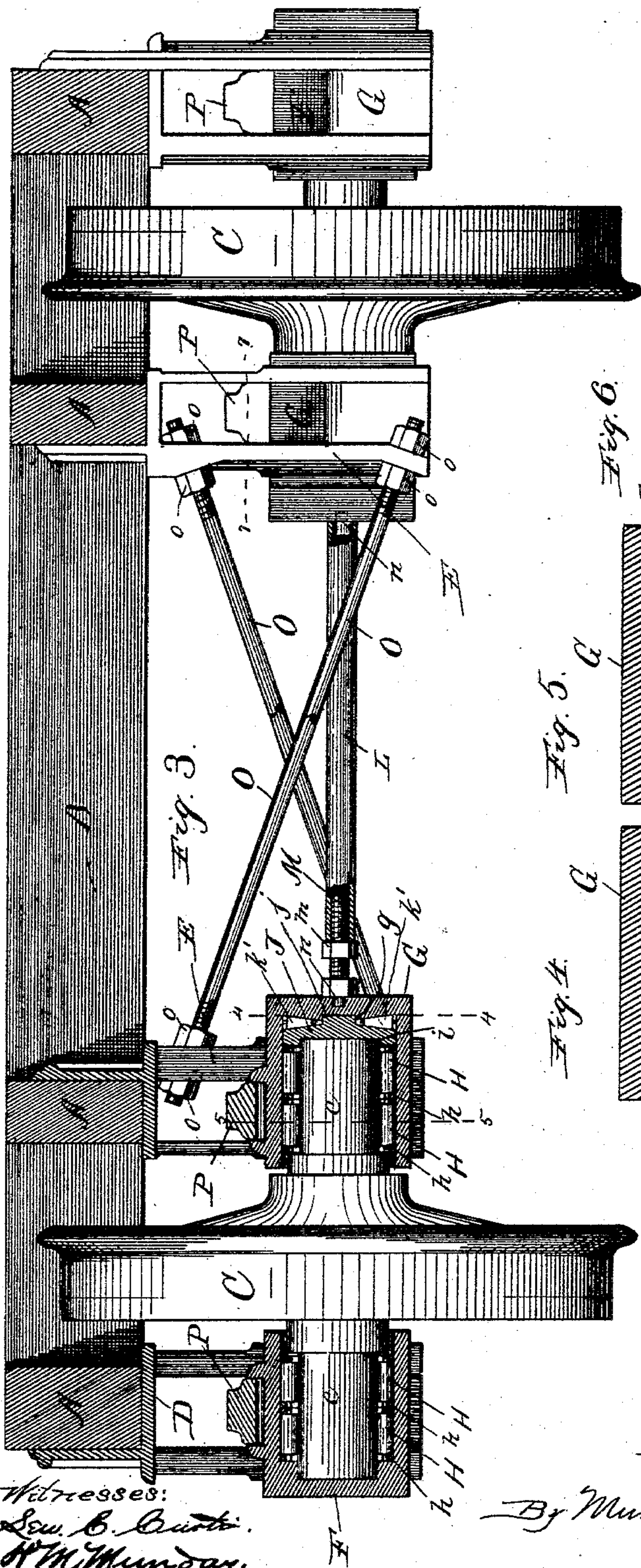
(No Model.)

2 Sheets—Sheet 2.

S. W. TANNER.
CAR TRUCK.

No. 411,751.

Patented Sept. 24, 1889.



Witnesses:
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H. M. Munday.

Inventor:
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(No Model.)

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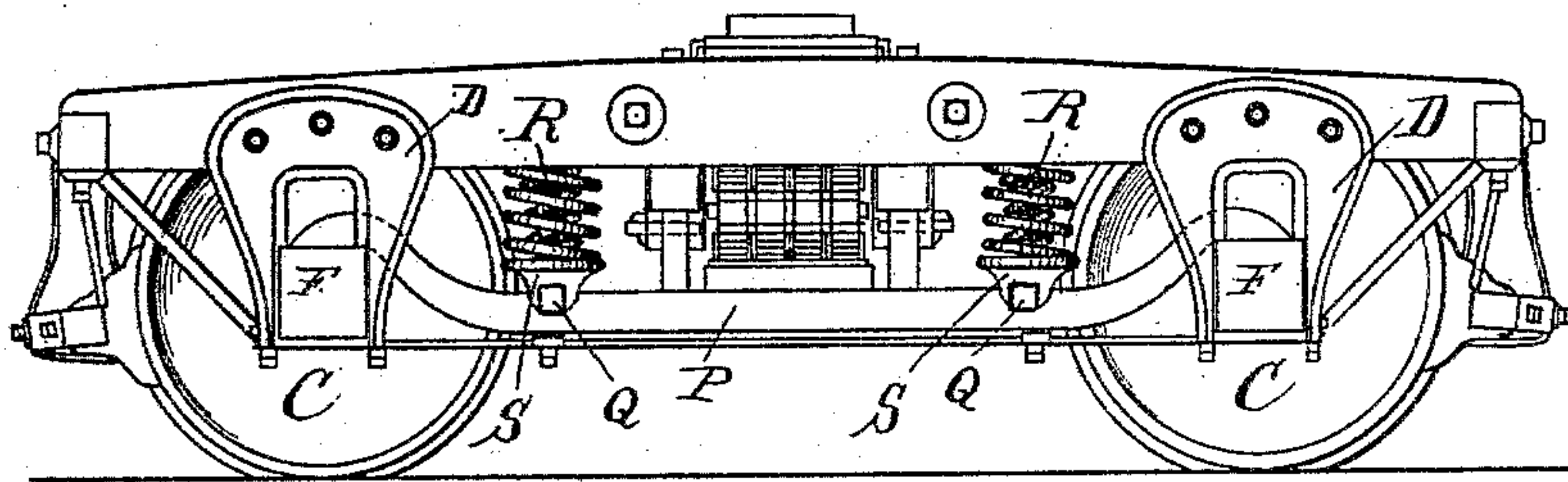


Fig. 1.

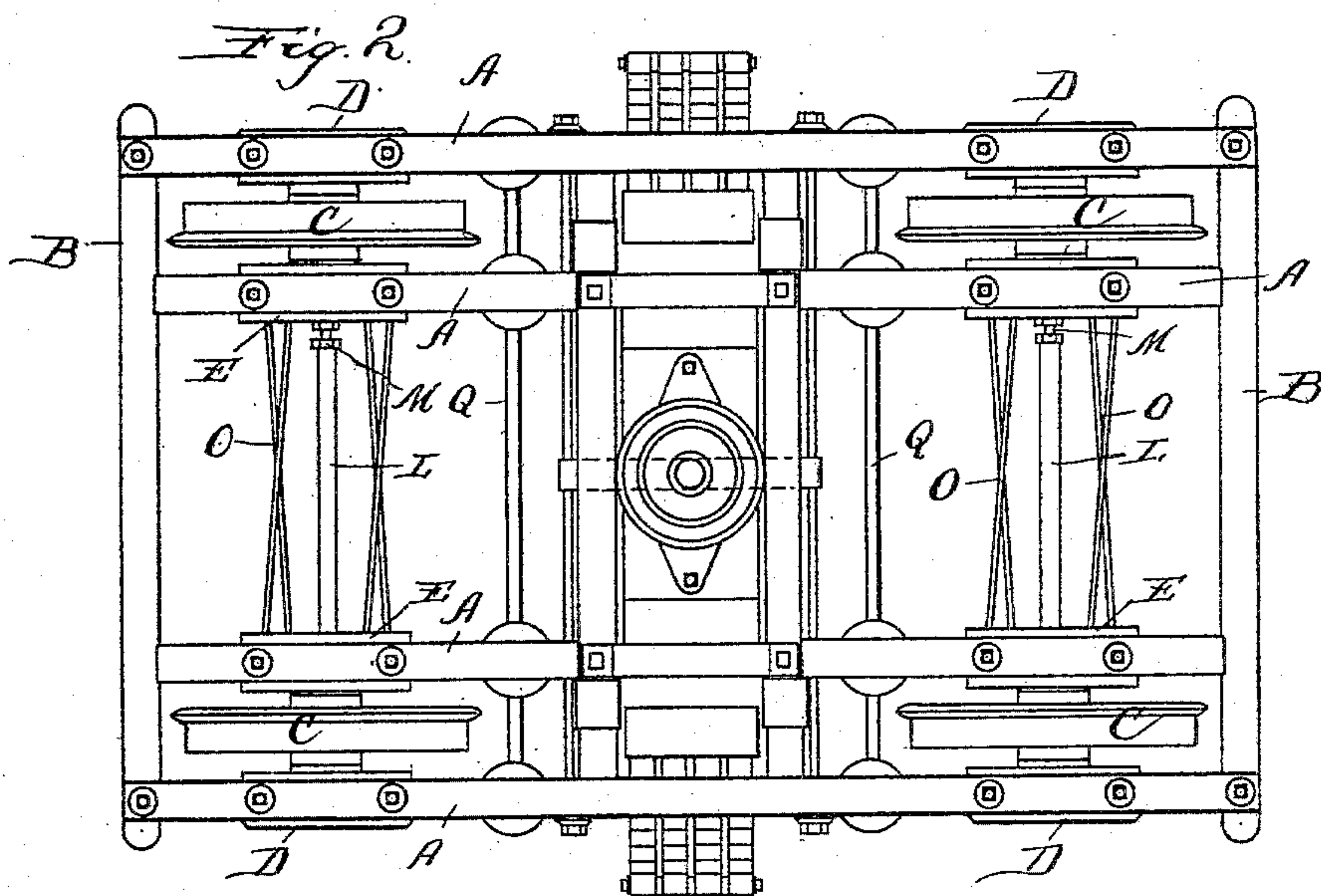
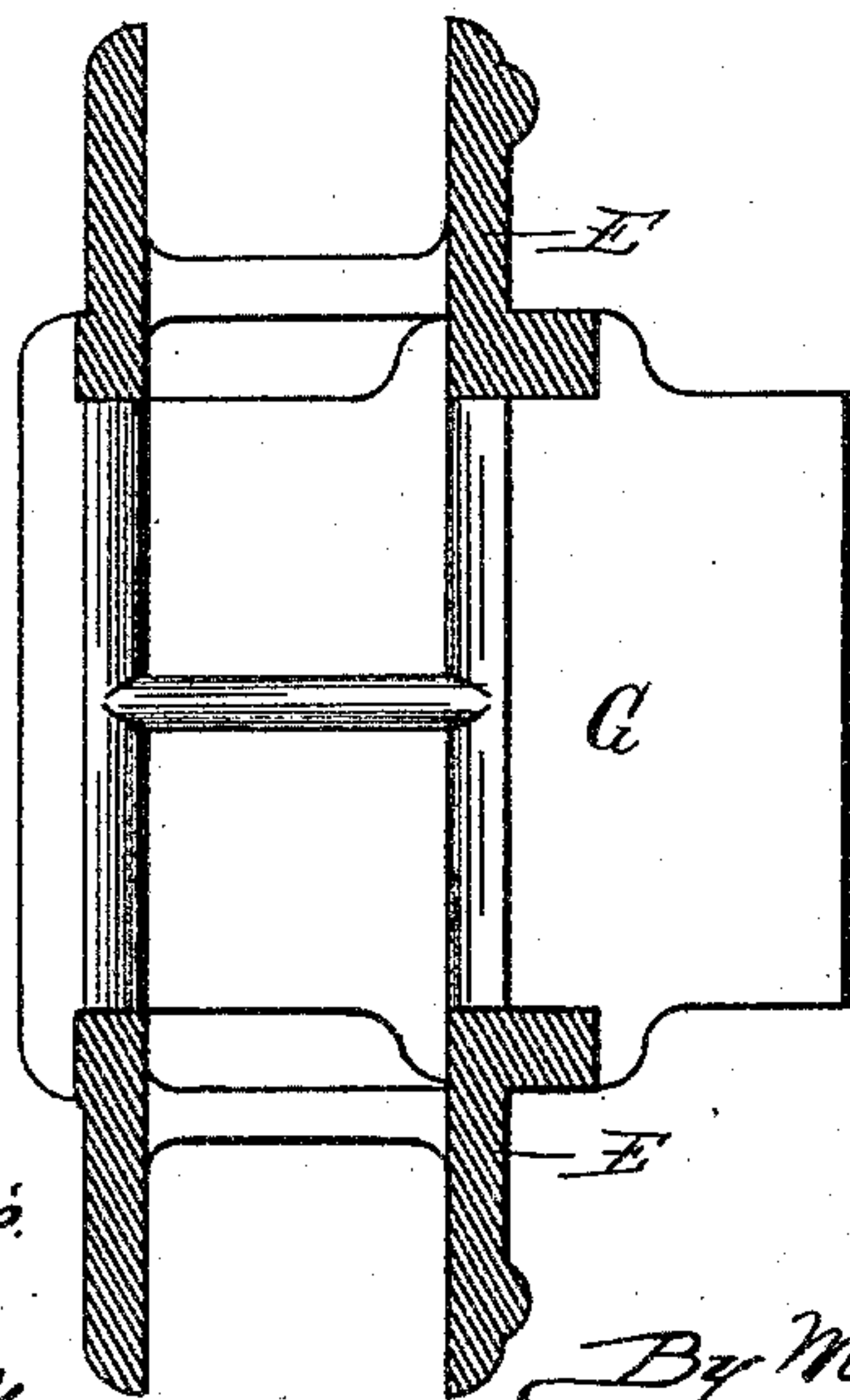


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL W. TANNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE TANNER
ANTI-FRICTION WHEEL COMPANY, OF SAME PLACE.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 411,751, dated September 24, 1889.

Application filed January 19, 1889. Serial No. 296,815. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL W. TANNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Trucks, of which the following is a specification.

This invention is an improvement in that class of car-trucks wherein the wheels are provided with separate and independent axles and journal-boxes at each end of the axles; and it consists in the novel features of construction hereinafter described, and pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a side elevation, and Fig. 2 a plan, of my improved car-truck. Fig. 3 is an end view, partly in section, upon the line of one of the axles. Figs. 4 and 5 are sections upon the lines 4 4 and 5 5 of Fig. 3. Fig. 6 shows an end view of one of the series of rollers forming part of one of the journal-bearings. Fig. 7 is a section on line 7 7 of Fig. 3. Fig. 8 is a detail section showing the uniting of the equalizing-bars, and Fig. 9 is a bottom view of the spring-seat.

In the drawings, A A represent longitudinal parts, and B B transverse parts, of the truck-frame. Each wheel C of the truck is provided with a short independent axle c, and such axle has bearings at either end in boxes, the outer end in box F and the inner end in box G. An exterior pedestal D and an interior pedestal E, secured to the frame, are also provided for the boxes of each wheel, such pedestals differing from each other mainly in the fact that the interior ones are adapted to receive cross-braces, as hereinafter described, while the exterior ones are of the ordinary pattern and contain no such provision. The boxes are provided with roller-bearings, consisting of a series of rollers H, held in rings h, the latter being slotted interiorly or toward the center, as seen at h', to receive the journals of the rollers. The interior boxes are made long enough to give room for an anti-friction end-thrust device, consisting of a plate J, borne upon the axle, and a series of anti-

friction rollers bearing against the interior of the box. This plate J is provided with a recess i upon one side, whereby it may be fitted onto the end of the wheel-axle c, and a central boss j, which will center in a corresponding recess g in the end of the box.

Between the outer portions of the plate J and the end of the box an annular V-shaped recess is formed, in which I insert another plate K, having radial tapering slots k, in which slots are placed cone-shaped anti-friction rollers k'. This end-thrust-receiving device is not claimed as new at this time, as it has been shown by me in a previous application.

Between the inner journal-boxes of each pair of wheels I place an adjustable brace, located directly in the axial line of the wheels, so that the end-thrust is sustained by such brace in the direct line in which the thrust is exerted, and any tendency to force the boxes askew which would follow the location of said brace at one side of the axis is avoided. This brace is straight, and preferably consists of a tubular female portion L and a male portion M, having a threaded engagement with the tubular portion. When thus constructed, the parts being provided with appropriate nuts m, the brace may be lengthened or shortened, as may be required. Stud n, one formed on the end of the part M and the other inserted in the part L, may be employed at either end of this brace in connection with corresponding recesses in the boxes to position and hold the brace at the axial line of the boxes. The studs allow all necessary vertical movement to the boxes without disturbing the brace. I further brace the opposite inner pedestals from one to the other by means of rods O, of which there are two at each side of the axial line, and said rods are inclined from the top of one pedestal to the bottom of the other, and they may also be made to cross each other laterally, if desired. These braces are adapted to resist crushing as well as pulling strains—that is to say, they are provided at their junction with the pedestals with nuts o upon each side of the pedestal-web, so that in whichever direction the strain is exerted upon them,

whether by one pedestal toward or away from the other, they will act to resist it. I avoid bending the braces O by casting the web of the inner pedestals so as to afford seats for the nuts so inclined as to be at right angles to the line of the braces, as plainly indicated in Fig. 3.

The pair of wheels at each side of the truck are provided with equalizing-bars P, resting in their pedestals and upon the journal-boxes, there being one bar in the outer pedestals and one in the inner pedestals. All the equalizing-bars I tie firmly together by two cross-bars Q, located as shown, and they are thereby rendered a unit and give great strength and solidity to the structure. The equalizing-springs R, by which the weight of the car is sustained, are placed upon the equalizing and cross bars at their junctions. Each spring is provided with a metal seat S, having cross-channels in its under surface adapted to set down over and span the junctions of the bars and thus further stiffen the same. The springs R, by reason of their number and disposition, can be reduced in strength somewhat from the usual standard, and thus give great elasticity to the truck, as well as a perfect balancing of the parts.

By providing the inner journal-boxes with anti-friction bearings I obviate one of the objections heretofore existing to trucks of this class growing out of the difficulty of lubricating the inner bearings. The end-thrust-resisting bearing is also anti-friction in character, and thus it likewise needs no lubrication.

I claim—

1. In a truck the wheels whereof are provided with independent axles and bearings at each end of such axles, the combination, with the inner axle-journal, of a box provided with an anti-friction end-thrust-resisting device, substantially as specified.

2. In a truck the wheels whereof are provided with independent axles and bearings at each end of such axles, the combination, with the inner axle-journal, of a box provided with an anti-friction bearing and an anti-

friction end-thrust-resisting device, substantially as set forth.

3. The combination, with the opposite wheels of a truck of the kind herein shown, of a brace extending from the box of one wheel to the box of the opposite wheel in the axial lines of the wheels, substantially as set forth.

4. The combination, with the opposite wheels of a truck of the kind herein shown, of an adjustable brace extending from the box of one wheel to the box of the opposite wheel in the axial line of the wheels, substantially as specified.

5. The combination, with the opposite wheels of a truck of the kind herein shown, of adjustable braces extending diagonally from the inner pedestal of one wheel to the inner pedestal of the opposite wheel, substantially as set forth.

6. The combination of the opposite wheels of a truck of the kind herein shown, adjustable braces extending diagonally from the inner pedestal of one wheel to the inner pedestal of the opposite wheel, such braces being also adapted to resist strains in both directions, substantially as set forth.

7. In a truck of the kind herein shown, the equalizing-bars at both sides of the truck and the cross-bars uniting them, combined and operating substantially as set forth.

8. The truck of the kind herein shown, wherein the equalizing-bars at both sides of the truck are tied together, substantially as set forth.

9. The combination, with the equalizing-bars and the cross-bars uniting them, of the springs R, located at the junction of said bars, substantially as set forth.

10. The combination, with the equalizing-bars and the cross-bars uniting them, of the springs R, and the metal seats for such springs spanning the junctions of the bars, substantially as set forth.

SAMUEL W. TANNER.

Witnesses:

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