

No. 717,340.

Patented Dec. 30, 1902.

O. A. CADMUS.  
CAR WHEEL.

(Application filed Apr. 18, 1902.)

(No Model.)

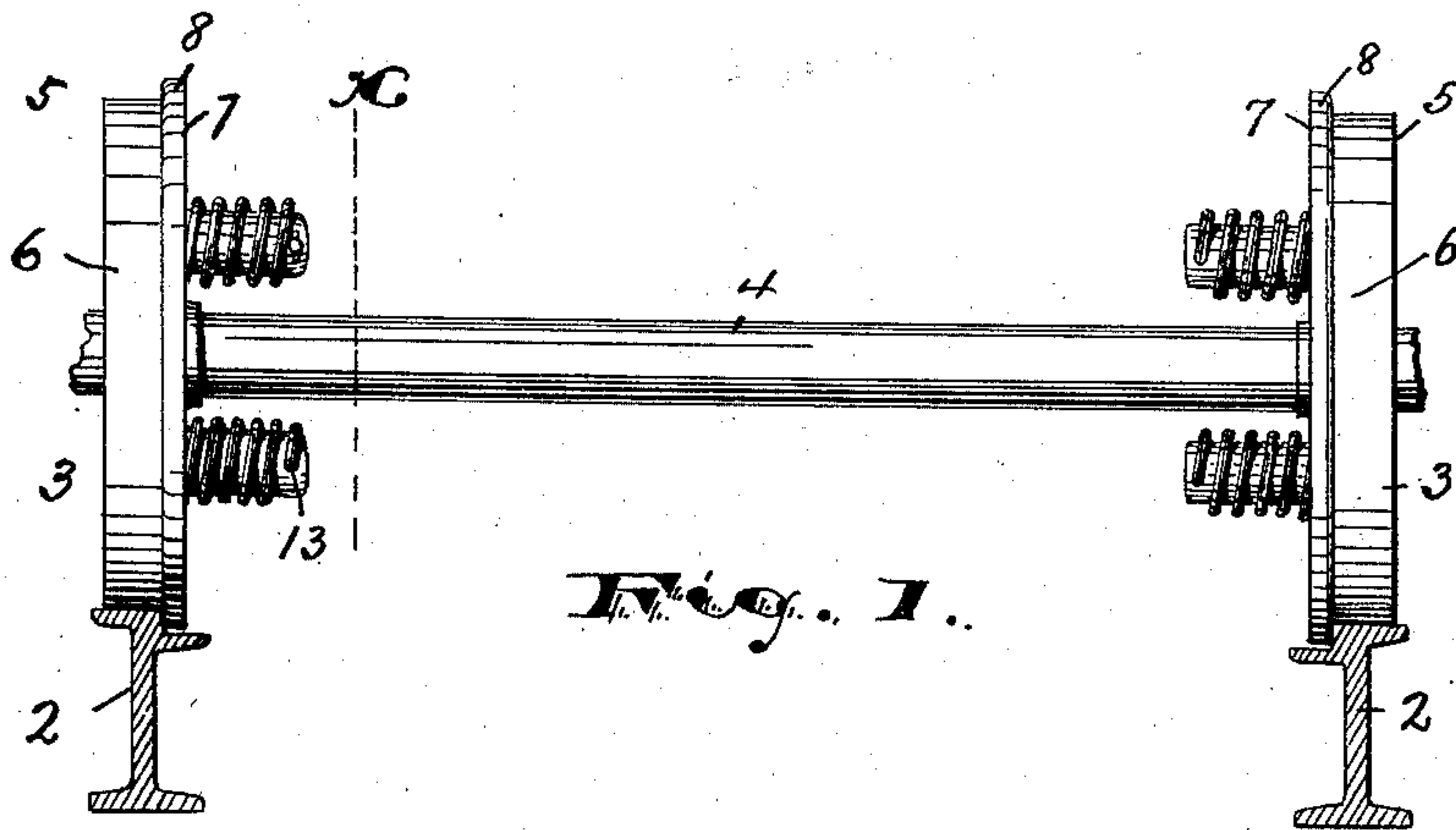


Fig. 1..

Fig. 5..

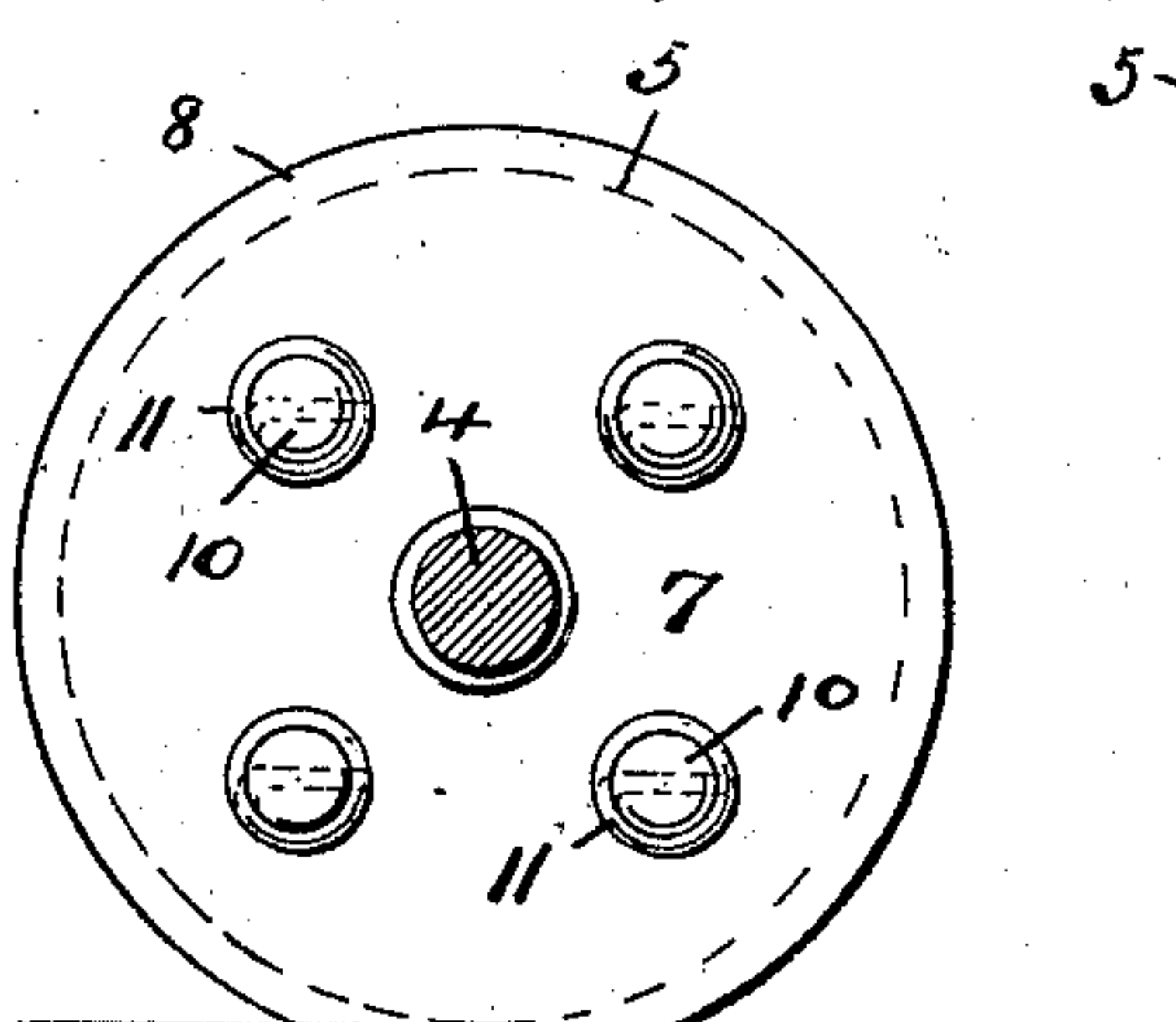
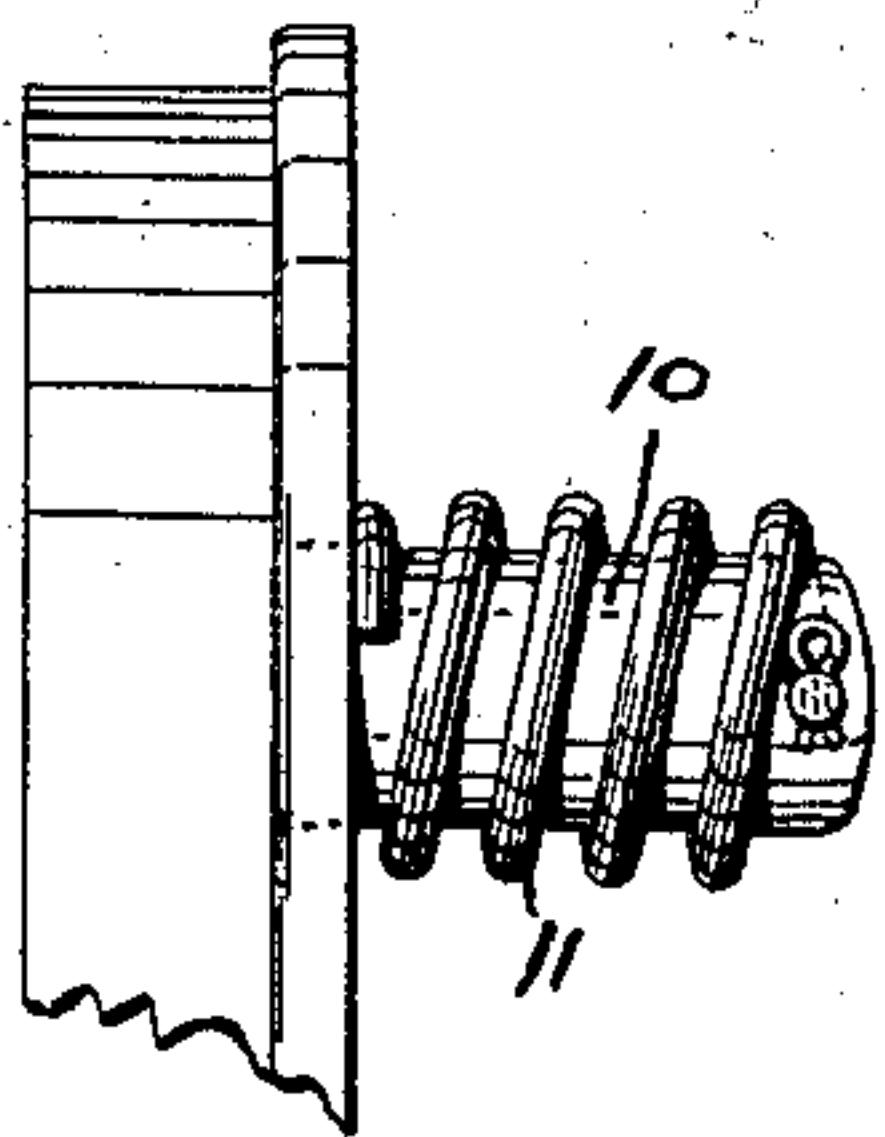


Fig. 2..

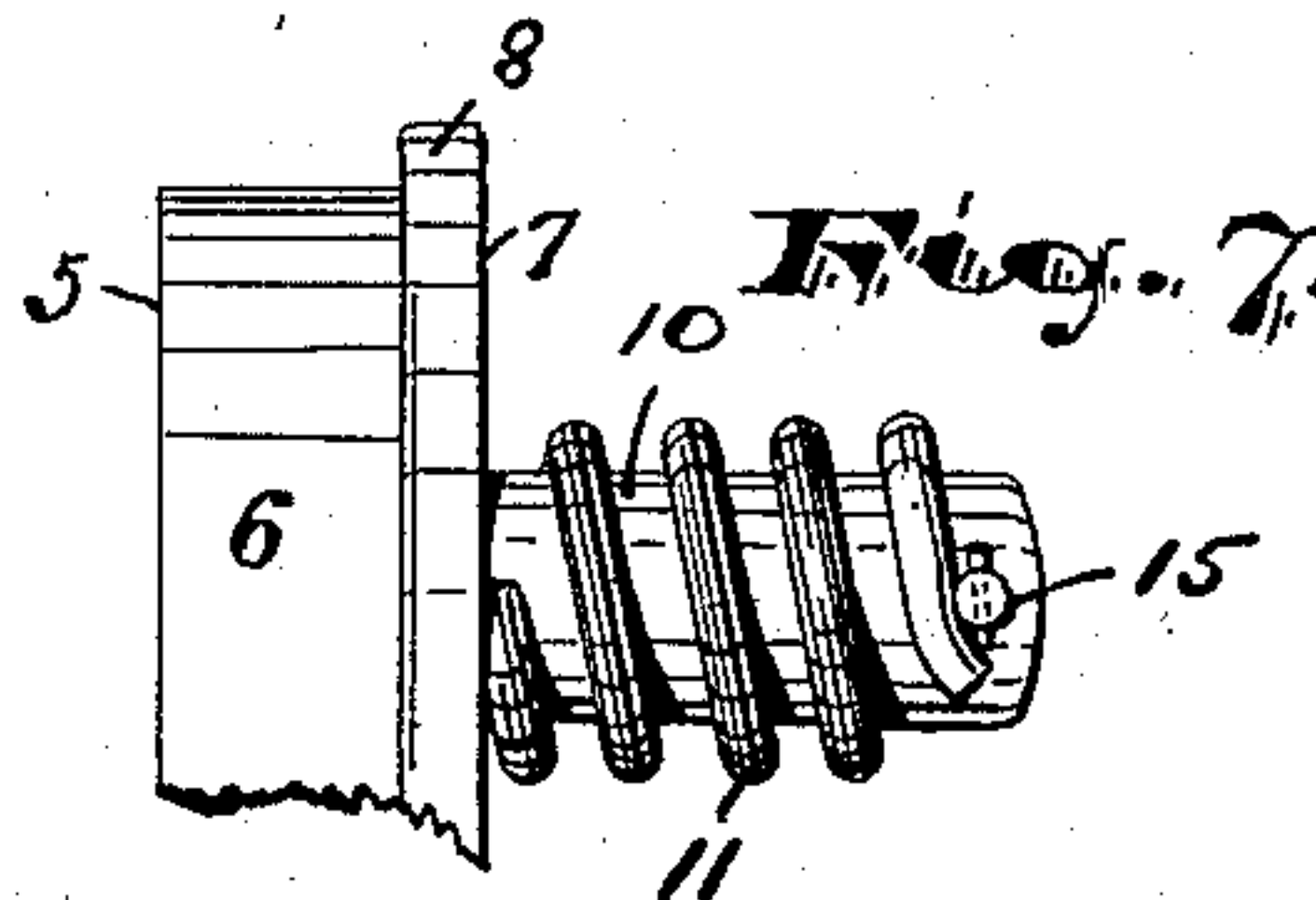


Fig. 7..

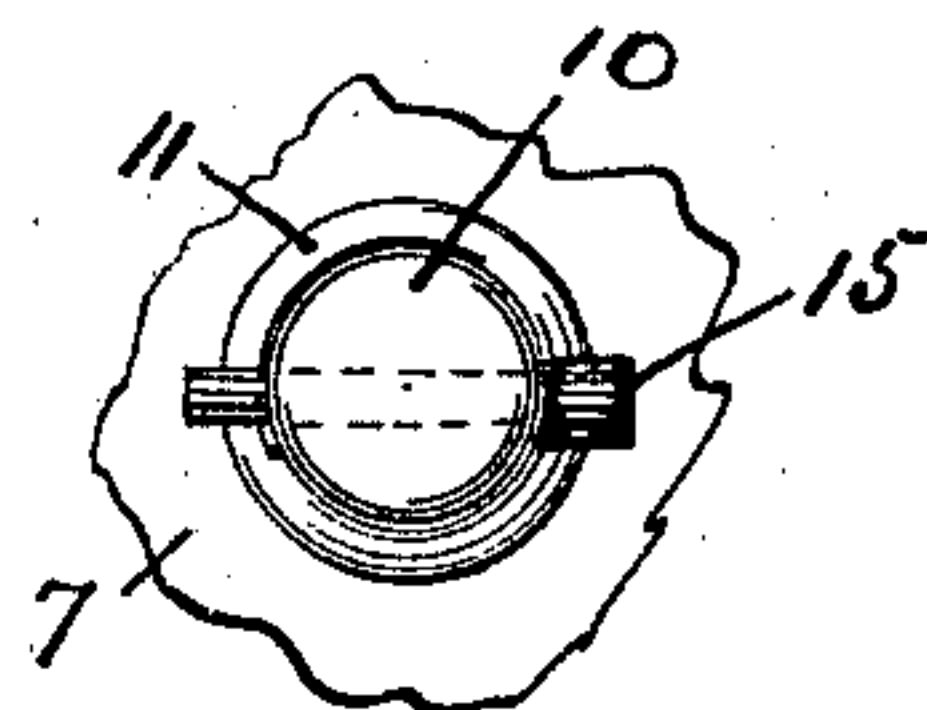


Fig. 8..

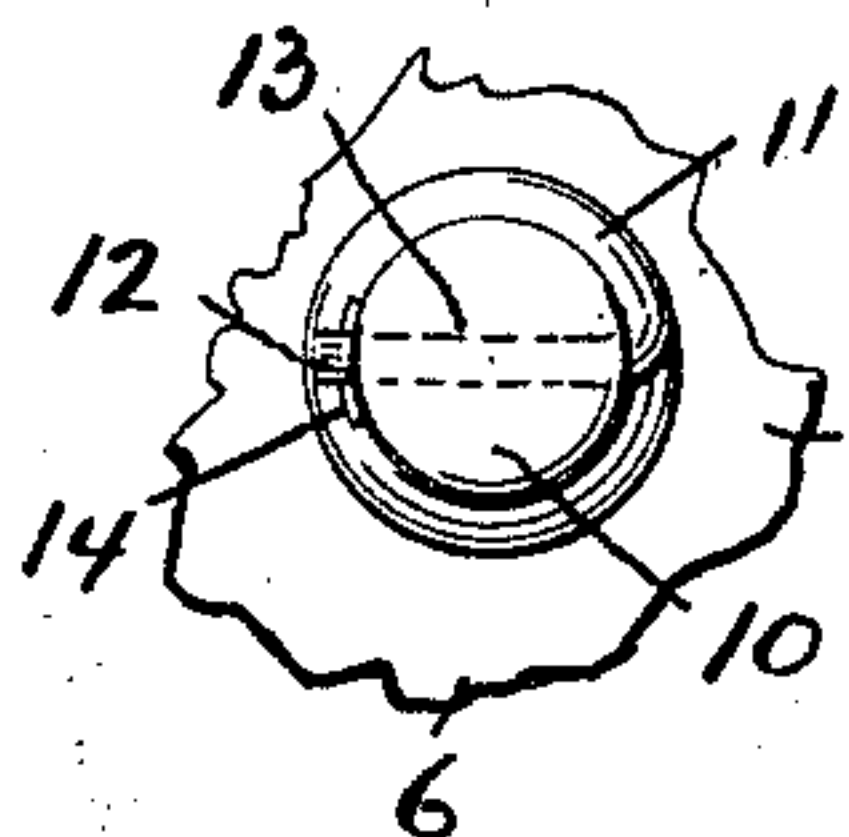


Fig. 6..

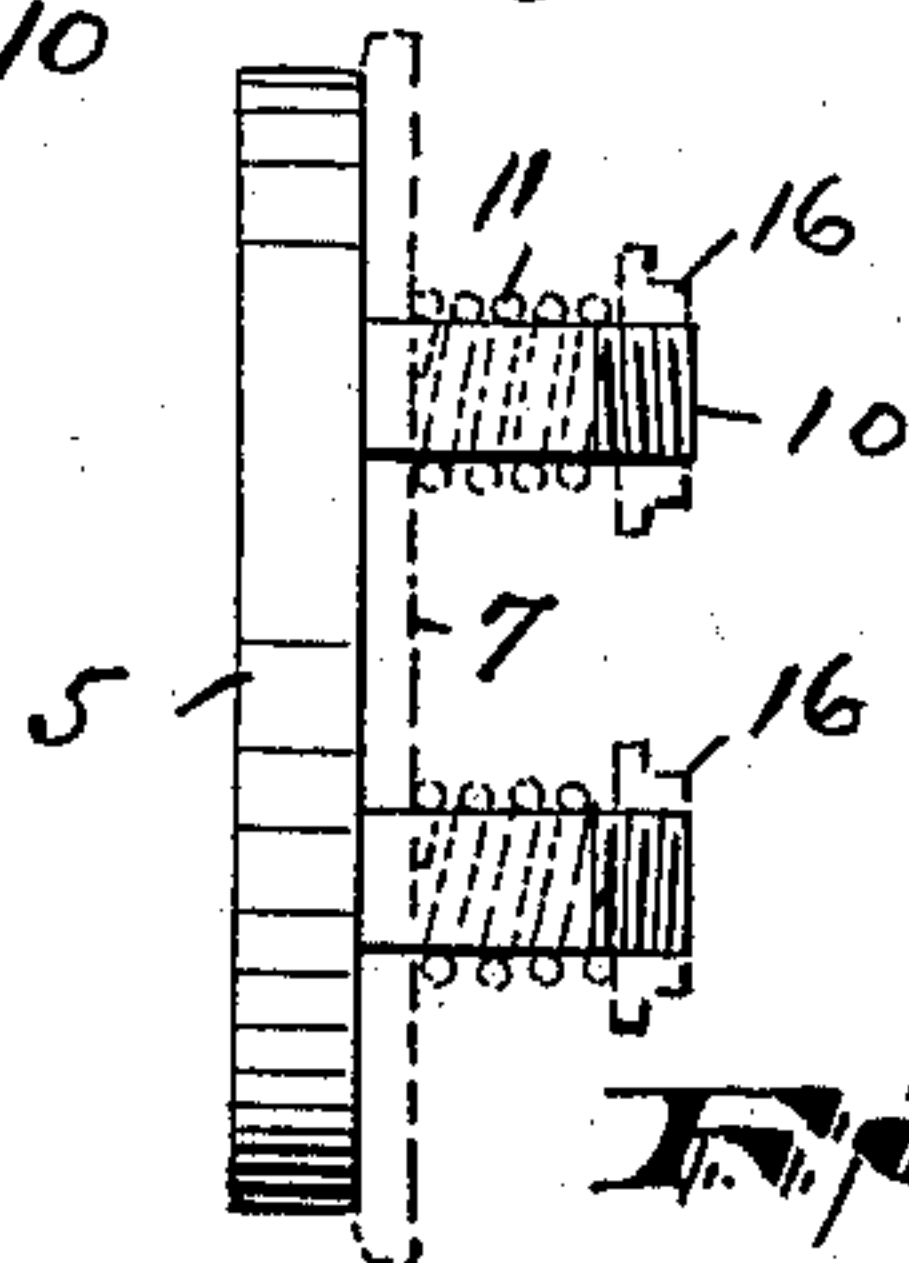


Fig. 3..

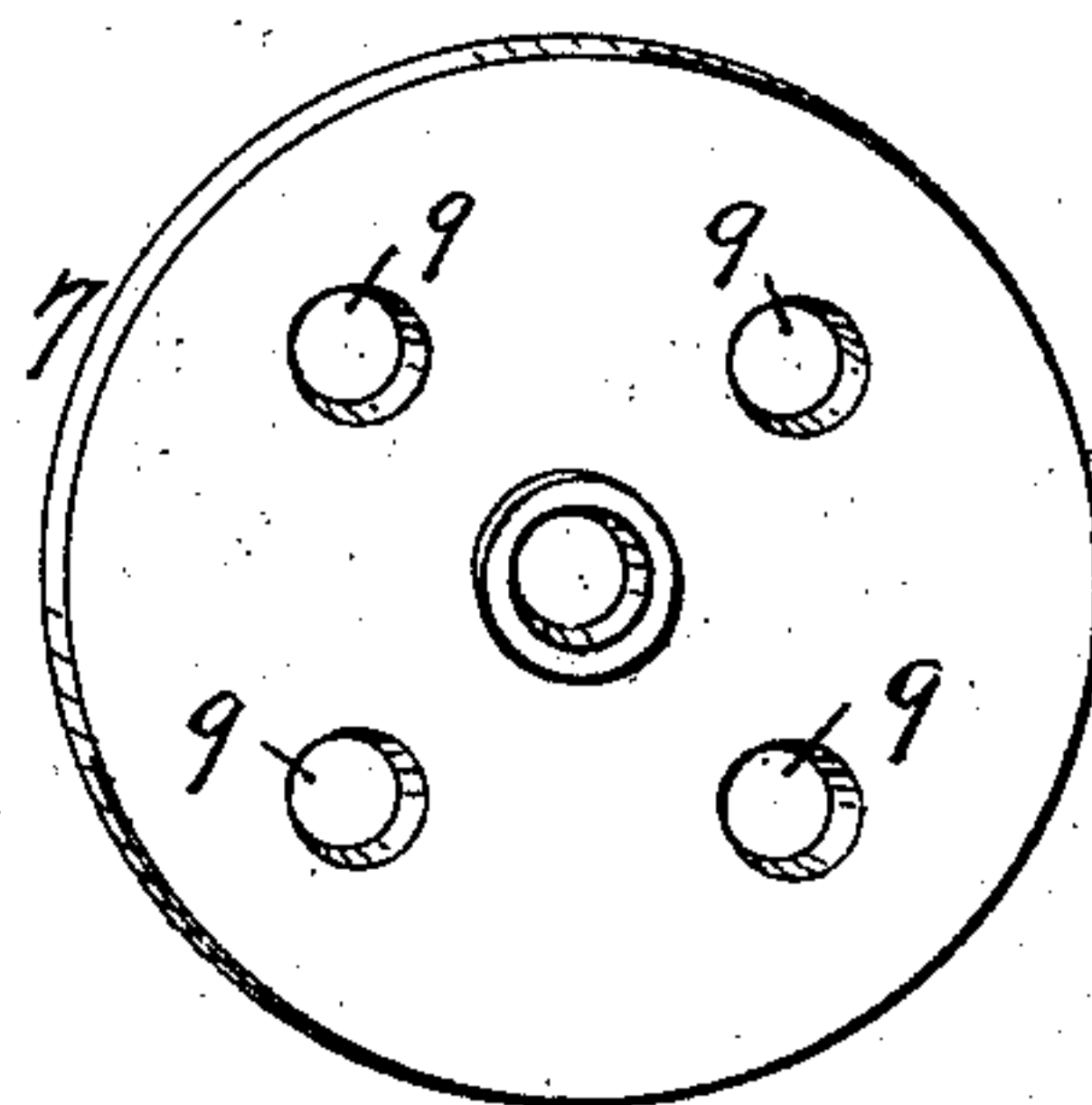


Fig. 4..

WITNESSES:

Harry Tracy

Russell M. Everett

INVENTOR:

Oliver J. Cadmus.

BY

Drake & Co.

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

OLIVER A. CADMUS, OF NEWARK, NEW JERSEY.

## CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 717,340, dated December 30, 1902.

Application filed April 18, 1902. Serial No. 103,487. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER A. CADMUS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

The objects of this invention are to provide a car-wheel which shall be more durable and which shall permit of an easier riding of the car, to avoid a grinding action of the car-wheel flange upon the rail in rounding a curve in the track and the consequent wear upon said parts, to eliminate the disagreeable noise attendant upon such grinding action, and thus conduce to the comfort of the passengers, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved car-wheel and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is an end elevation of a truck provided with wheels of my improved construction. Fig. 2 is an elevation of a wheel from its inner side, as on line *x*, Fig. 1. Fig. 3 is an edge view illustrating a modification of construction. Fig. 4 is a perspective view of a certain flange-disk. Figs. 5 and 6 show in edge and side view, respectively, my preferred construction in detail; and Figs. 7 and 8 are corresponding views of a modified construction.

In said drawings, 2 2 indicate the ordinary rails of a street-car track upon which wheels 3 3, arranged at or near the ends of an axle 4, are adapted to run, as shown in Fig. 1, a car-body (not shown) being supported on said wheels and axles in any usual manner.

Each wheel comprises an outer disk-like body portion 5, fast upon the axle 4 and providing at its periphery a broad tread-surface 6 to engage the rail. At the inner side of said outer portion 5 is an inner disk-like flange portion 7, which is thinner than the outer body portion 5 and of larger diameter, so as to project therebeyond at its edges and form a flange 8 to extend down over the inner edge of the tread-surface of the rail, as is common in railways. Said flange portion 7 is apertured at its center to loosely and slidably receive the axle 4, and out from its center, as at 9 9 9 9, are other apertures to receive studs or posts 10 on the body portion 5 of the wheel. These studs 10 are cast upon the said body portion 5 of the wheels, either integral therewith or inserted in process of casting, and project horizontally from its inner side to serve as supports for the flange portion 7. Obviously any number of these posts 10 can be employed. After the flange portion 7 of the wheel is placed upon said studs or posts 10 a stiff spiral spring 11 is slipped upon each post 10 to bear at one end against the said flange portion 7. At its opposite end the said spring is confined against escape by any suitable means adapted to the purpose, but preferably by thrusting the end 12 of the wire composing the spring, which end has been bent diametrically across the end of the spring, through a hole 13, bored through the post, all as is clearly shown in Figs. 1, 5, and 6. A key 14 is put through the extremity of said end 12 of the spring to prevent its inadvertent withdrawal.

Under some conditions an ordinary spiral spring without the bent end 12 may be employed and an independent retaining-pin 15 put through the end of the post to hold the said spring against escape, as shown in Figs. 7 and 8, or, again, the end of the post may be threaded and a retaining-nut 16 screwed on, as in Fig. 3.

The springs 11 are stiff enough to normally hold the flange portion 7 of the wheel against the body portion 5, so that the flange 8, formed by the peripheral margin of the said flange portions, occupies the proper relation to the tread-surface formed by the circumference of the body portion 5 of the wheel. At the same time when undue lateral pressure is brought



upon the flange 8, as when the car rounds a curve in the track, said springs 11 permit the flange to give or yield slightly, and thus relieve the binding and consequent wear upon both flange and rail. The grinding and jarring of a car around a curve is thus eliminated and quiet and easy movement secured. Preferably the range of compression and expansion of the springs 11 is so limited that under no conditions can the flange 8 be so far separated from the body portion of the wheel that either tread-surface 6 or flange 8 is carried out of operative running relation to the rail 2.

Having thus described the invention, what I claim as new is—

1. A car-wheel comprising a disk-like body portion, a similar flange portion of larger diameter laid flatwise against said body portion concentric therewith, means preventing edge-wise movement of either of said parts independent of the other, and means resiliently holding them flatwise against each other.

2. In a car-wheel, a disk-like body portion having lateral studs or posts projecting therefrom, a disk-like flange portion perforated to receive said posts and lie flatwise against the said body portion and being of larger diameter than said body portion and concentric therewith, and springs upon said posts outside said flange portion and pressing thereagainst.

3. In a car-wheel, a disk-like body portion, a flange portion of larger diameter arranged flatwise against said body portion concentric therewith, and springs normally pressing said parts flatwise together.

4. In a car-wheel, a disk-like body portion having at one side studs or posts projecting therefrom, an annular flange portion apertured to receive said posts and lie flatwise against the body portion, spiral springs upon said posts outside the said flange portion, and means for securing the outer end of said springs to the posts in fixed relation thereto.

5. The combination with an axle 4, of a car-wheel comprising a disk-like body portion 5, fast on said axle and having lateral studs or posts perforated at their ends, a disk-like flange portion 7, apertured to loosely receive the axle and said posts, and spiral springs on said posts each bearing at one end against the flange portion and at its other end having the wire of which it is composed bent radially inward and passed through the perforation in the post.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of April, 1902.

OLIVER A. CADMUS.

Witnesses:

CHARLES H. PELL,  
C. B. PITNEY.