

E. E. ECKER.  
TROLLEY WHEEL.  
APPLICATION FILED AUG. 18, 1908.

930,275.

Patented Aug. 3, 1909.

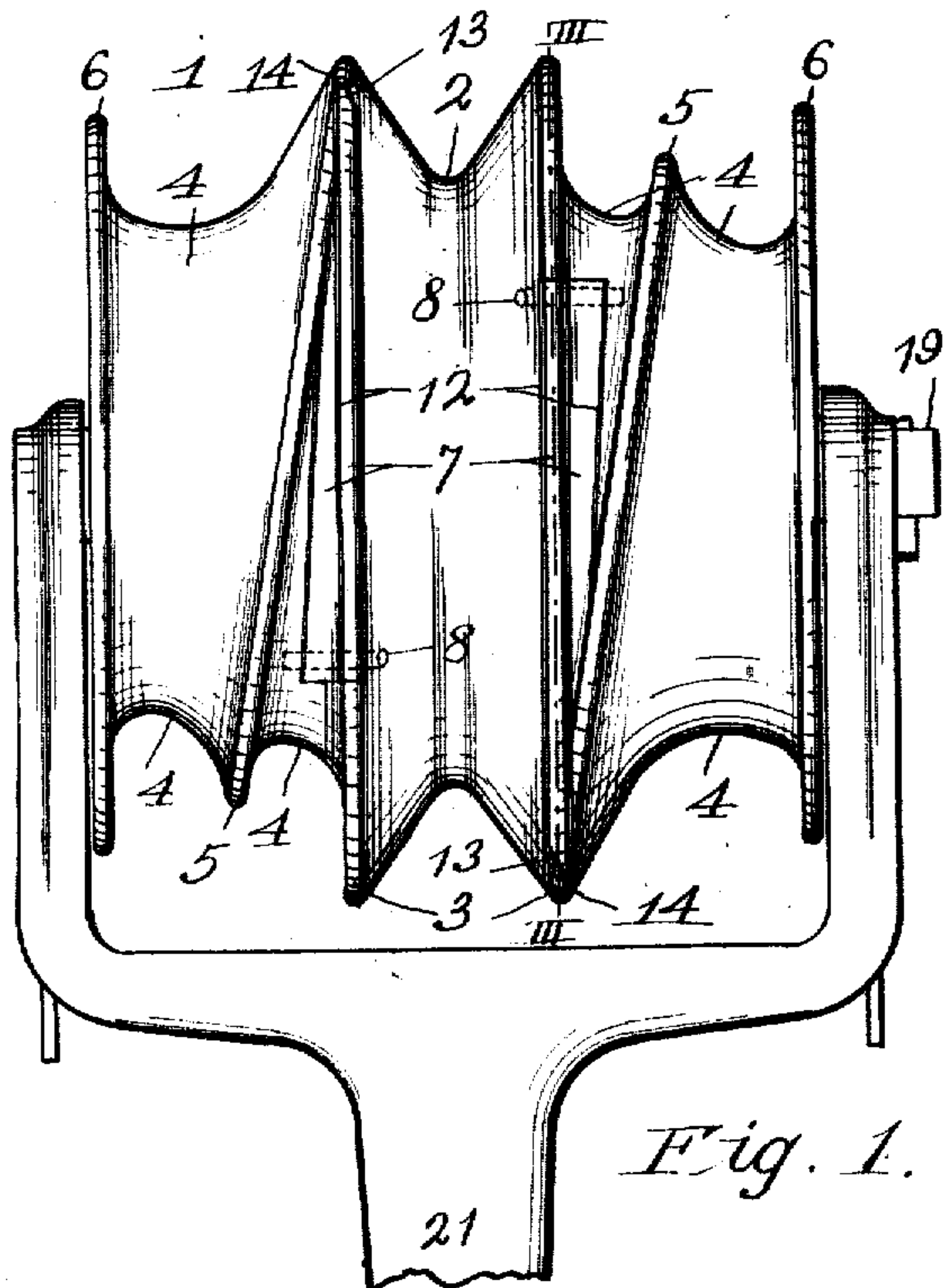


Fig. 1.

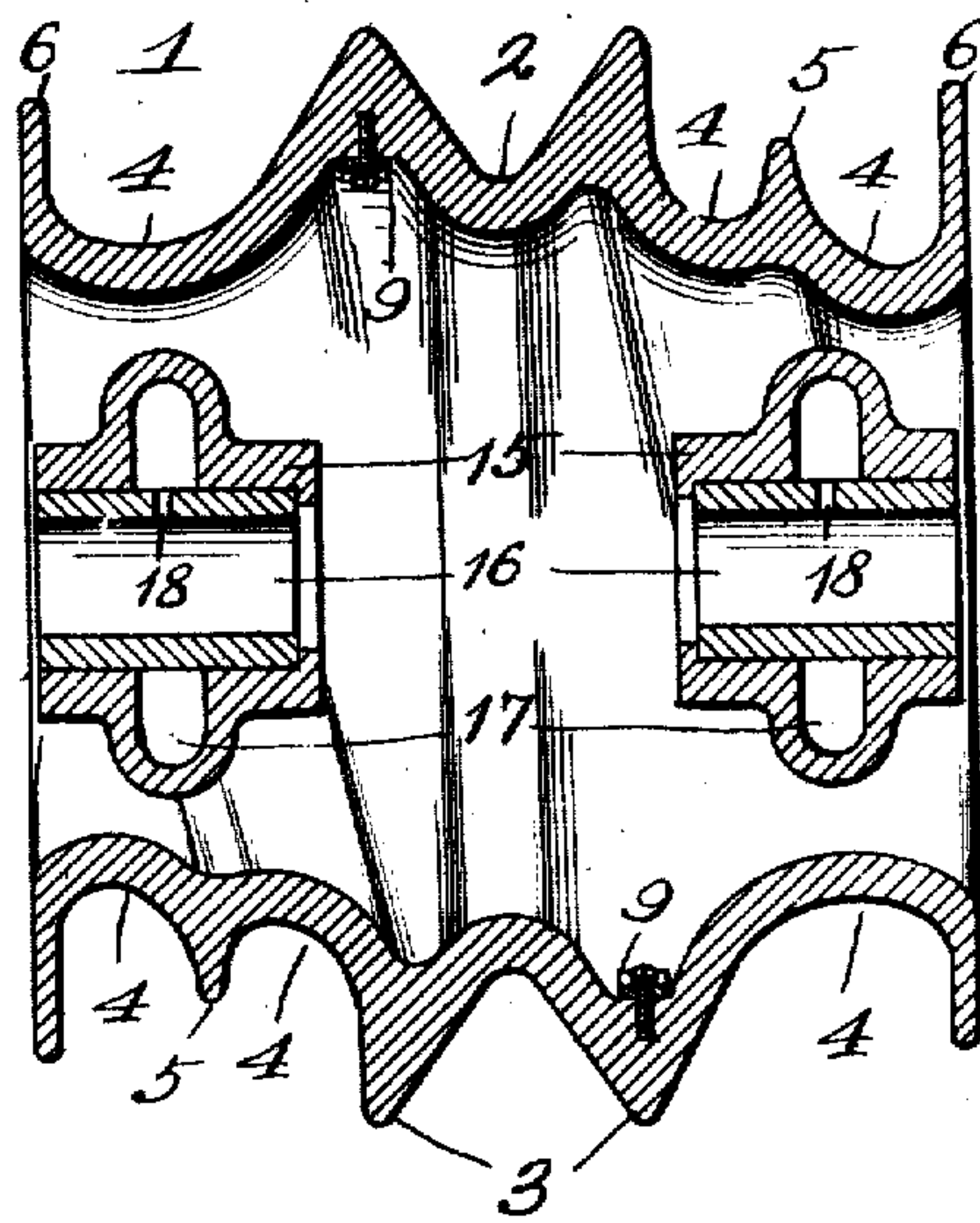


Fig. 2.

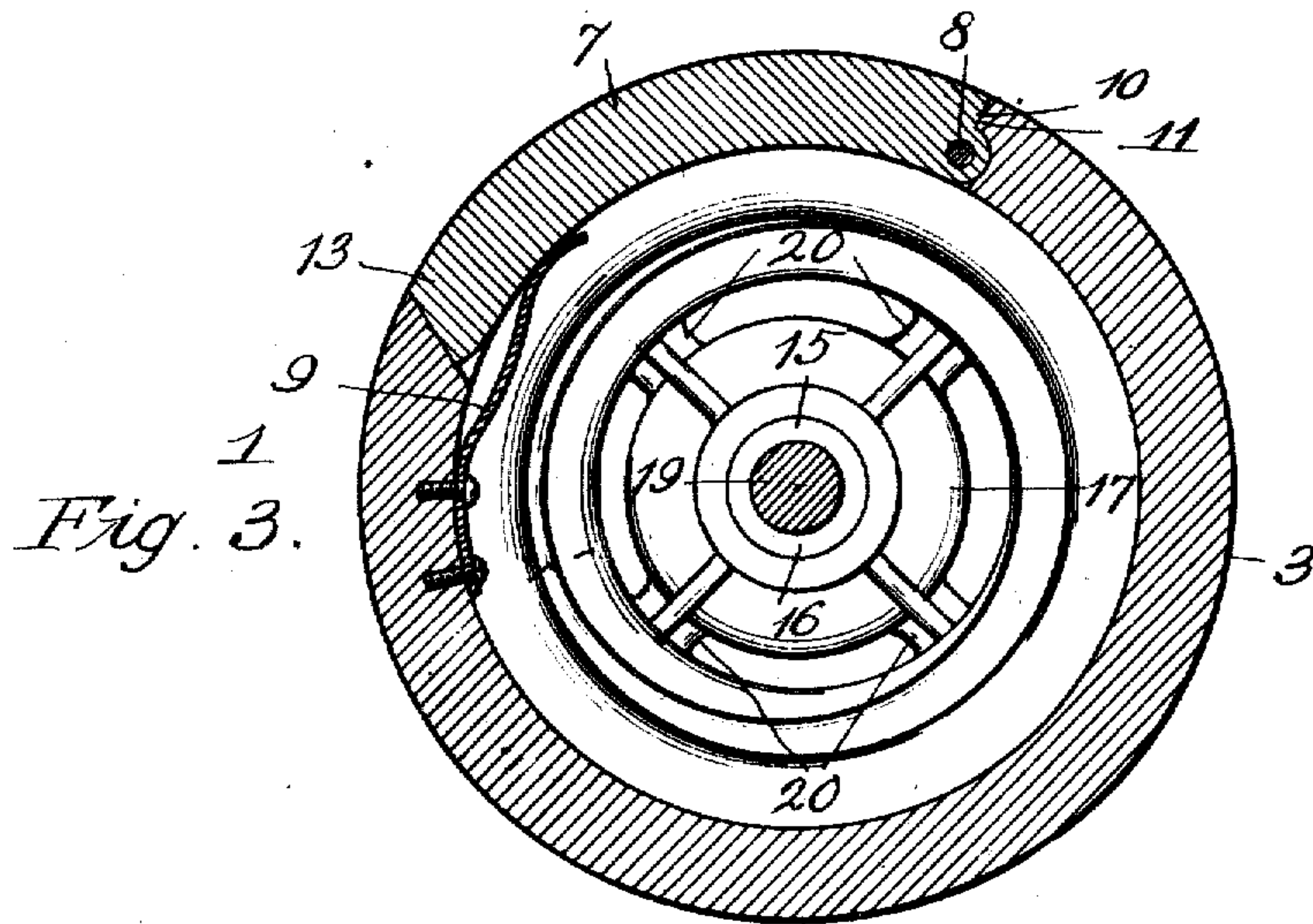


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## TROLLEY-WHEEL.

No. 930,275.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed August 18, 1908. Serial No. 449,074.

To all whom it may concern:

Be it known that I, ERASTUS E. ECKER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Trolley-Wheels, of which the following is a specification.

My invention relates to improvements in trolley-wheels, and one of my objects is to avoid the annoyance, danger, and loss of time caused by the trolley-wheel leaving the trolley-wire.

I avoid the above difficulties by providing a trolley-wheel which if its main central groove leaves the wire, will, during the forward travel of the car automatically replace the wire in said central groove without interruption of the electric current or necessitating stoppage of the car.

Another object of the invention is to surround both sides of the main central groove with continuous walls which have a tendency to retain the trolley-wire in said groove.

A further object of the invention is to provide means for lubricating the hub of the trolley-wheel and the spindle upon which said wheel is mounted.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter described, illustrated in the accompanying drawing, and pointed out in the claims, it being understood that various changes in form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

In the accompanying drawing: Figure 1 represents an elevation of my improved trolley-wheel. Fig. 2 is a vertical longitudinal section of the trolley-wheel. Fig. 3 is a vertical section on line III—III of Fig. 1.

1 designates my improved wheel which is provided with a main central peripheral groove 2, the sides of which are partly surrounded by two oppositely-disposed peripheral flanges 3, which tend to hold the trolley-wire in said groove.

4 designates two oppositely-disposed thread-like grooves extending spirally around the rim of the wheel from the ends thereof to the central groove 2, with which they communicate, as shown in Fig. 1. Said

grooves are formed by two spiral flanges 5 and two marginal flanges 6, any of which are adapted to engage the trolley-wire and conduct it to the main central groove 2, should said wire accidentally become displaced therefrom. This replacing of the wire in the main central groove 2, may take place without stopping the car or interrupting the current between the trolley-wheel and said wire. Flanges 6 are almost equal in diameter to flanges 3 so they will reliably engage the wire should the latter, from any cause, leave the main central groove 2.

7 designates two switch-points which normally close the openings in flanges 3 where grooves 4 communicate with groove 2, said switch-points being provided to overcome any tendency which the wire might have to leave groove 2 and enter one of the grooves 4 while the car is rounding a curve or backing. Switch-points 7 are pivotally secured to the trolley-wheel by pins 8 while their opposite free ends are yieldingly-supported by springs 9 secured to the interior of the trolley-wheel. Springs 9 are prevented from raising the free ends of the switch-points above the adjacent ends of flanges 3 by shoulders 10, which abut against the adjacent ends 11 of flanges 7, as shown in Fig. 3. The free ends of the switch-points, however, are free to swing downward through slots 12 in the periphery of the wheel, so that the switch-points may swing inward and permit the trolley-wire to pass from either of the grooves 4 into the main central groove 2. For instance, should the trolley-wire leave groove 2 and enter one of the grooves 4, it will be conducted thereby against one of the switch-points 7, which is immediately depressed by the pressure exerted thereon by the wire, so that the latter will be free to reënter groove 2. The free ends 13 of the switch-points are beveled and fit against shoulders 14 on flanges 3, so there will be no danger of their contacting with and damaging the wire.

As shown in Figs. 2 and 3, the trolley-wheel is hollow, I prefer this construction as it lightens the wheel, so that its weight will approximate the weight of the ordinary trolley-wheels now in use. I also make the hub of the wheel in two parts or sections, to reduce the weight as much as possible, and in order to prevent said hubs from wearing out, and thus rendering the trolley-



wheel useless, I provide them with bushings 16, made of any suitable material, and which are removably mounted in the hub, so they may be readily removed and replaced with others when they become too badly worn for further use. I, however, provide means for constantly lubricating said bushings in order to prolong their wearing qualities, by forming lubricant-chambers 17 in the hub sections 15 and providing bushings 16 with small apertures 18, which communicate with said lubricant-chambers so that oil from the latter will flow through the bushings upon the spindle 19 on which they are journaled. Sections 15 of the hub are connected to the interior of the trolley-wheel by spokes 20. Spindle 19 is mounted in a harp 21 which may be secured to a trolley-pole (not shown) in the customary manner.

Having thus described my invention, what I claim is:—

1. A trolley-wheel having a main central groove and right and left hand grooves communicating with opposite sides of said main

grooves, peripheral flanges partly surrounding the opposite sides of the main groove, said flanges being cut away where the right and left grooves communicate with the main groove, and yielding means for normally closing the openings formed by the cut away portions of the peripheral flanges. 25 30

2. A trolley-wheel having a main central groove and right and left hand grooves communicating with opposite sides of said main groove, peripheral flanges partly surrounding the opposite sides of the main groove, said flanges being cut away where the right and left grooves communicate with the main groove, and switches for normally closing the openings formed by the cut away portions of the peripheral flanges. 35 40

In testimony whereof I affix my signature, in the presence of two witnesses.

ERASTUS E. ECKER.

Witnesses:

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M. Cox.