

No. 871,822.

PATENTED NOV. 26, 1907.

E. RHODES.

APPLIANCE FOR FIXING AND CUTTING OFF THE UPPER OR WEARING PORTIONS OF COMPOUND TRAMWAY RAILS.

APPLICATION FILED FEB. 9, 1907.

FIG. 1

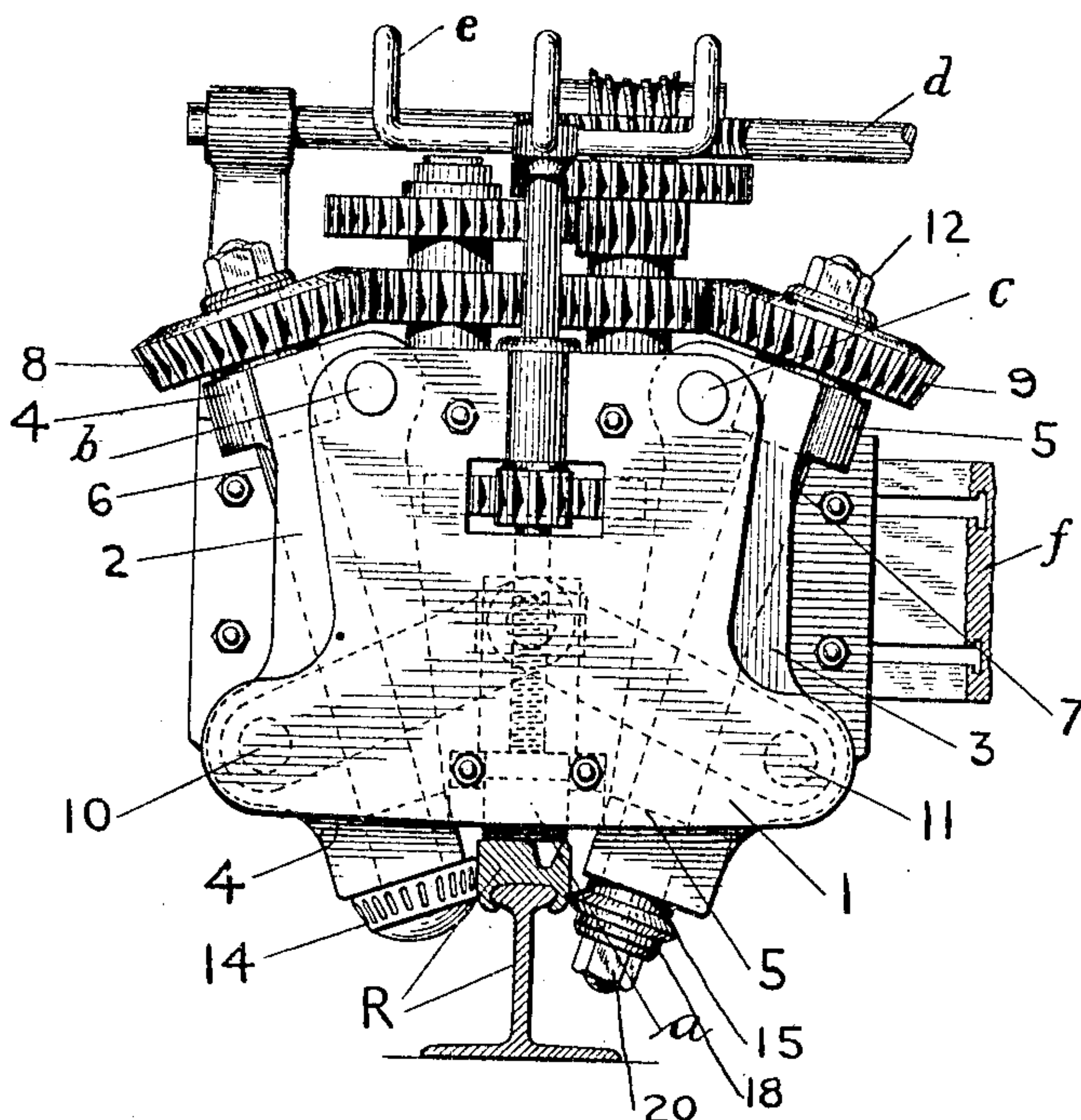


FIG. 3

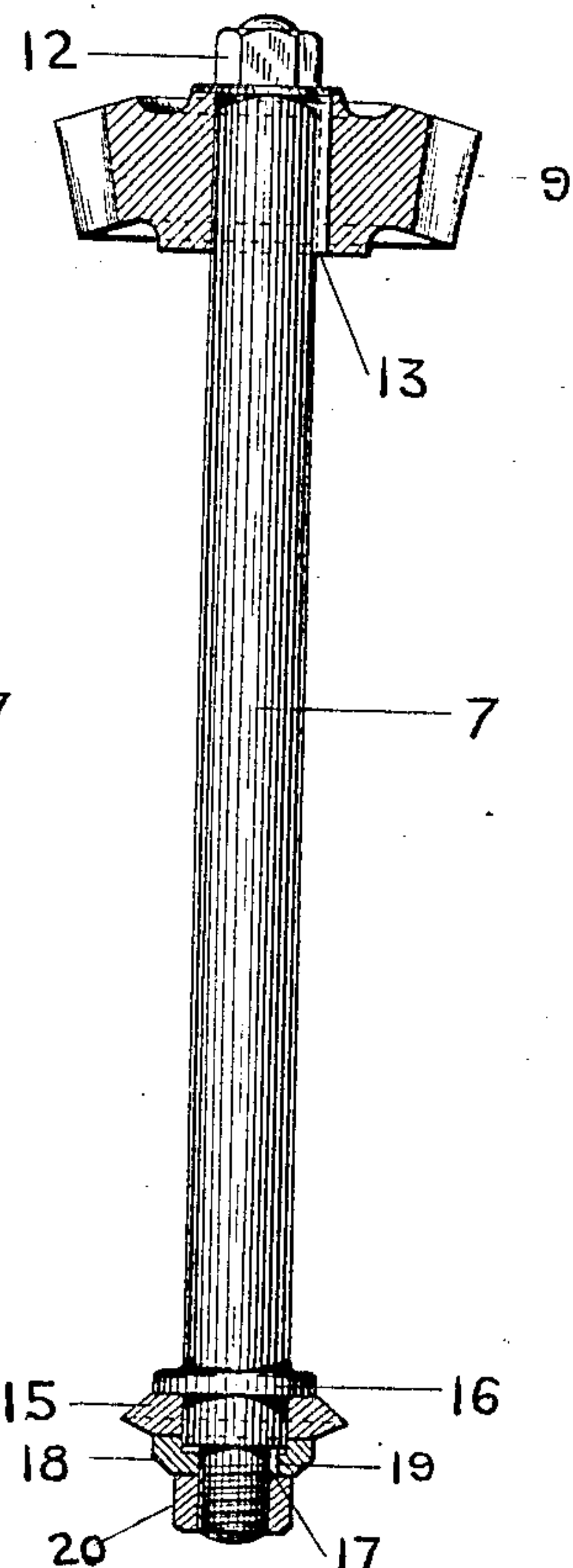


FIG. 2

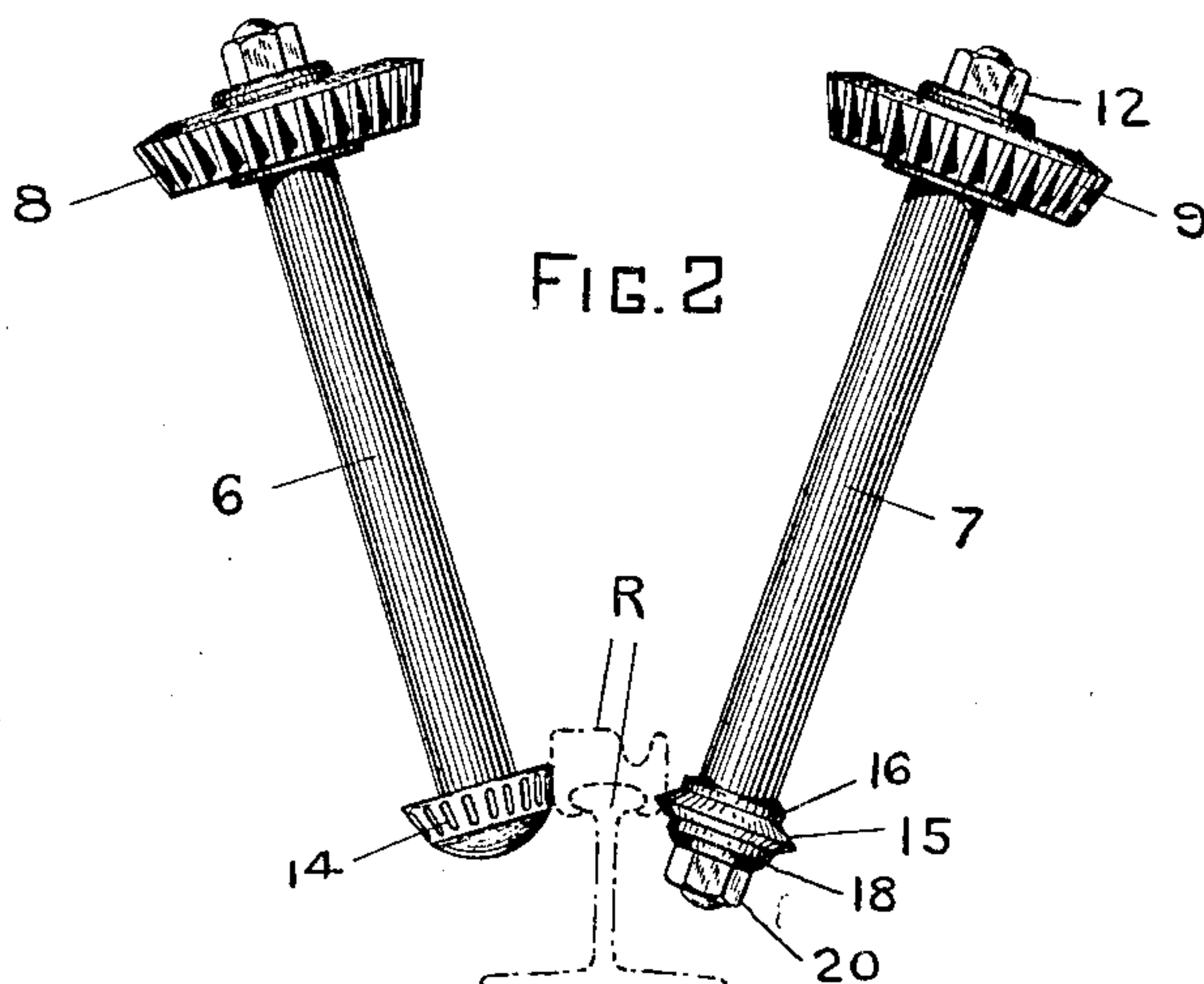
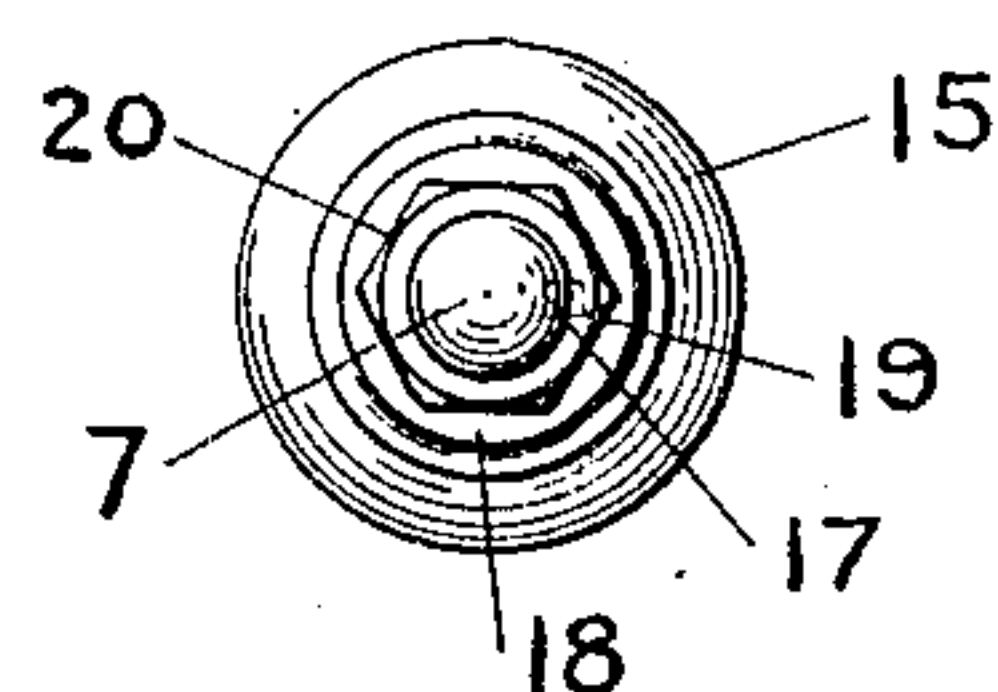


FIG. 4



Inventor

Witnesses

W. H. Evans.

M. E. Smoot.

Edgar Rhodes

 \mathfrak{F}_1

W. L. Brown

Attorney

UNITED STATES PATENT OFFICE.

EDGAR RHODES, OF SCHOLLES, NEAR LEEDS, ENGLAND.

APPLIANCE FOR FIXING AND CUTTING OFF THE UPPER OR WEARING PORTIONS OF
COMPOUND TRAMWAY-RAILS.

No. 871,822.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed February 9, 1907, Serial No. 356,649.

To all whom it may concern:

Be it known that I, EDGAR RHODES, a subject of the King of Great Britain, residing at Scholles, near Leeds, in the county of York, England, have invented certain new and useful improvements in appliances for fixing and cutting off the upper or wearing portions of compound tramway-rails, of which the following is a specification.

This invention has reference to the appliance for fixing the upper or wearing portions of compound tramway rails on to their base or girder portions described and shown in the specification of United States Patent No. 717,224, dated Dec. 30, 1902, and also to the appliance for cutting off the upper or wearing portions of compound tramway rails described and shown in the specification of United States Patent No. 718,362, dated Jan. 13, 1903; the leading object of the present invention being to combine the two arrangements in one machine, or, in other words, to so arrange the machine hitherto employed for fixing or rolling on the upper portions of compound tramway rails that the same machine may be readily transformed and employed for cutting off the upper portions of compound tramway rails, and vice versa.

Another object of the invention is to effect the cutting-off operation in a new and better way by means of a cutter which is caused to rotate with its shaft by frictional contact, whereby the cutting of a key way in the small cutter is avoided, and the danger of fracturing said cutter by torsional driving strain is obviated.

The invention consists in certain novel combinations of parts hereinafter described and claimed.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 represents a front elevation of the appliance adjusted for the cutting off operation; Fig. 2 is a like view of the removable parts of the cutting-off mechanism detached; Fig. 3 represents the cutter shaft on a larger scale, with its gear, the cutter and the cutter clamp in section; and Fig. 4 is an end view projected from Fig. 3.

Like reference characters refer to like parts in all the figures.

The appliance when adjusted for the rolling-on or "fixing" operation, may, for the

purposes of this invention be of the construction described in the specification forming part of said United States Patent No. 717,224; that is to say, it may have a suitable carrying frame, 1, provided with a roller, *a*, adapted to run in contact with the upper surface of the top portion of the rail R; a pair of arms, 2 and 3, pivoted in said frame at their upper ends on studs, *b* and *c*, parallel with the rail, and provided with bearings, 4 and 5, for a pair of downwardly converging shafts, similar to those shown at 6 and 7; power-driven gearing including a horizontal worm-carrying shaft, *d*, and worm and spur gearing transmitting rotation therefrom and terminating in spur gears, 8 and 9, which are removably keyed and clamped upon the upper ends of said shafts at 6 and 7, respectively, the lower ends of the shafts carrying the fixing rollers; a hand wheel, *e*, and mechanism actuated thereby terminating in a pair of toggle links, 10 and 11, pivoted at their outer ends to the respective arms 2 and 3; and, finally, suitable means including a face plate, *f*, Fig. 1, for supporting the frame 1, and the parts carried thereby, in juxtaposition to the driving shaft *d*, which is part of a motor or engine mounted on a traveling bogie.

In order to adapt the machine for cutting off as well as for rolling on, it is provided with a second pair of shafts, 6 and 7, adapted to be substituted for said shafts of the fixing rollers and to be driven by the same gearing. The gears 8 and 9 may for this purpose be removably attached in any approved way, as, for example, by screw-nuts 12 and keys 13, Fig. 3.

The shafts 6 and 7 carry at their lower ends respectively a downwardly tapered supporting and propelling roller, 14, having a suitably roughened periphery to contact with one of the flat sides of the cap or top portion of the rail R, and a steel disk cutter, 15, having a sharp (V-shaped) peripheral edge opposed to the depending flange at the opposite side of the top portion of the rail, said cutter being of substantially the same diameter as said roller so as to be driven in common therewith by spur gears of one and the same size. In this way, the appliance hitherto employed for rolling on is rendered equally applicable for cutting off; the transforming of the machine, by simply removing the two

shafts carrying the fixing rollers employed for rolling on, and inserting the two shafts 6 and 7 carrying the supporting roller 14 and the disk cutter 15 employed for cutting off, and vice versa, being easily and quickly performed.

The roller 14 may be integral with the lower end of its shaft 6 or fixedly attached in any approved way.

As shown in Figs. 3 and 4, the steel disk cutter 15 is preferably clamped against the lower side of a collar, 16, fast on its shaft, 7; the lower protruding end of this shaft being reduced and screw-threaded, and provided with a key, 17, a loose collar, 18, having a key way, 19, engaging said key 17, and a clamping nut, 20, contacting with said loose collar 18. In this way the cutter 15 is caused to rotate with its shaft 7 by frictional contact; the cutting of a key way in the small cutter 15 is avoided, and thus the danger of fracturing said cutter or rendering the same liable to fracture under torsional driving strain is obviated.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a fixing and cutting off appliance for the purpose specified, the combination with a pair of driving gears of a pair of downwardly converging rotary shafts attached respectively thereto and respectively provided at their lower ends with a downwardly tapered supporting and propelling roller having a roughened periphery adapted to contact with one of the flat sides of the top portion of a compound tramway rail, and a disk cutter of substantially the same diameter as said roller, having a peripheral cutting edge to contact with the depending flange of such top portion at the opposite side of the rail, substantially as hereinbefore described.

2. In a fixing and cutting-off appliance for the purpose specified, the combination of a pair of pivoted arms having bearings for a

pair of rotatable shafts, means for driving such shafts, means for pressing their lower ends toward each other, a pair of downwardly converging shafts mounted in said bearings and furnished respectively with a supporting and propelling roller having a roughened periphery adapted to contact with one side of the top portion of a compound tramway rail and with a disk cutter of substantially the same diameter as said roller having a peripheral cutting edge to contact with the depending flange of said top portion at the opposite side of the rail, and means whereby said cutter is caused to rotate with its said shaft by frictional contact, substantially as hereinbefore described.

3. In a cutting-off appliance for the purpose specified, the combination of a pair of pivoted arms having bearings for a pair of rotatable shafts, means for driving such shafts, means for pressing their lower ends toward each other, a pair of downwardly converging shafts mounted in said bearings one of them furnished with a supporting and propelling roller having a roughened periphery adapted to contact with one side of the top portion of a compound tramway rail and the other shaft constructed with a fast collar and a reduced screw-threaded protruding portion at its lower end, a disk cutter of substantially the same diameter as said roller, contacting frictionally with the lower side of said fast collar, a loose collar keyed to the shaft and contacting frictionally with the lower side of the cutter, and a clamping nut contacting with the lower side of the loose collar, substantially as hereinbefore described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

EDGAR RHODES.

Witnesses:

GRIFFITH BREWER,
JOHN JOWETT.