No. 808,560. PATENTED DEC. 26, 1905.

W. R. MAY.

POWER TRANSMITTING MECHANISM.

APPLICATION FILED MAR. 1, 1905.

Fig. 2.

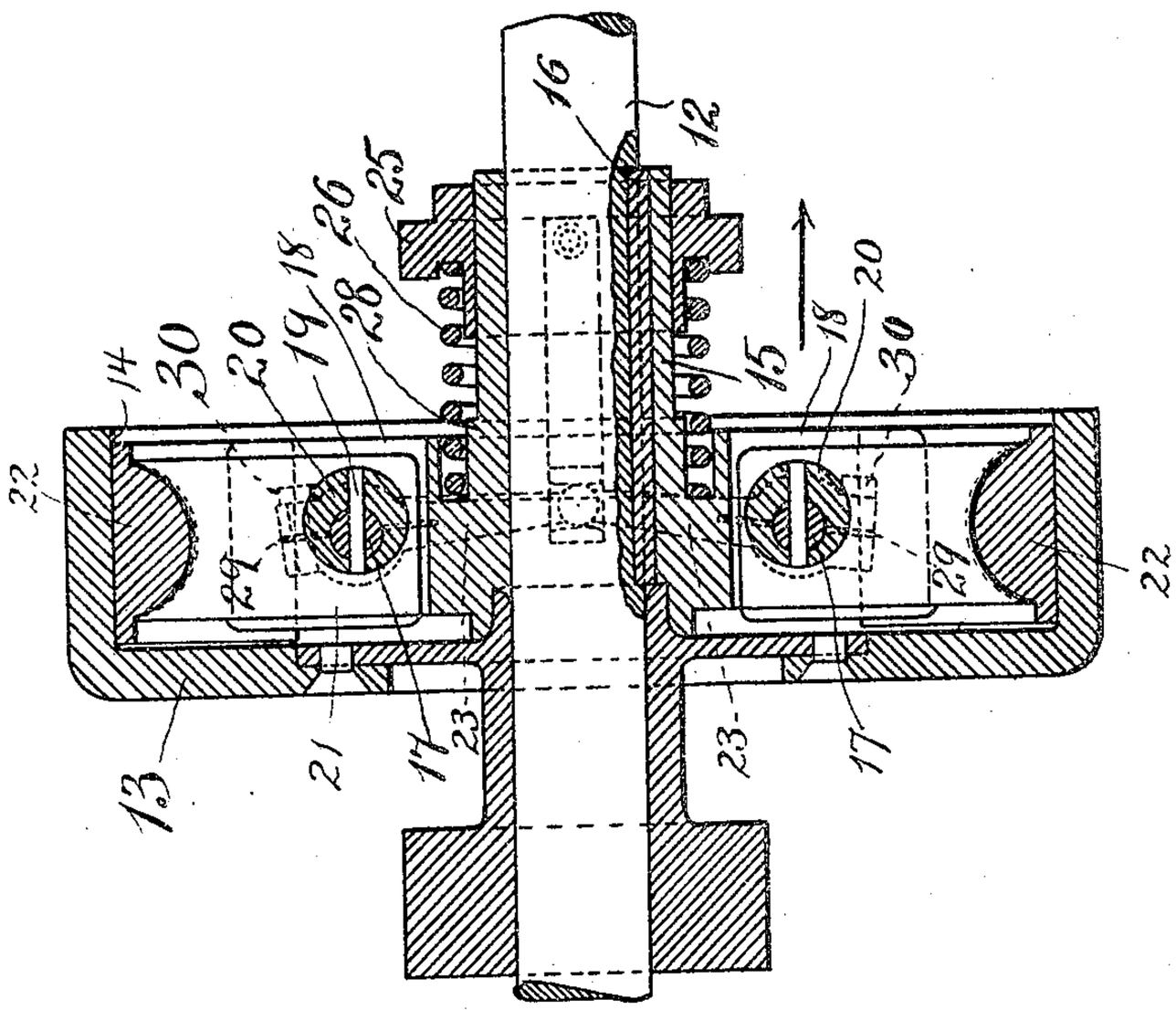
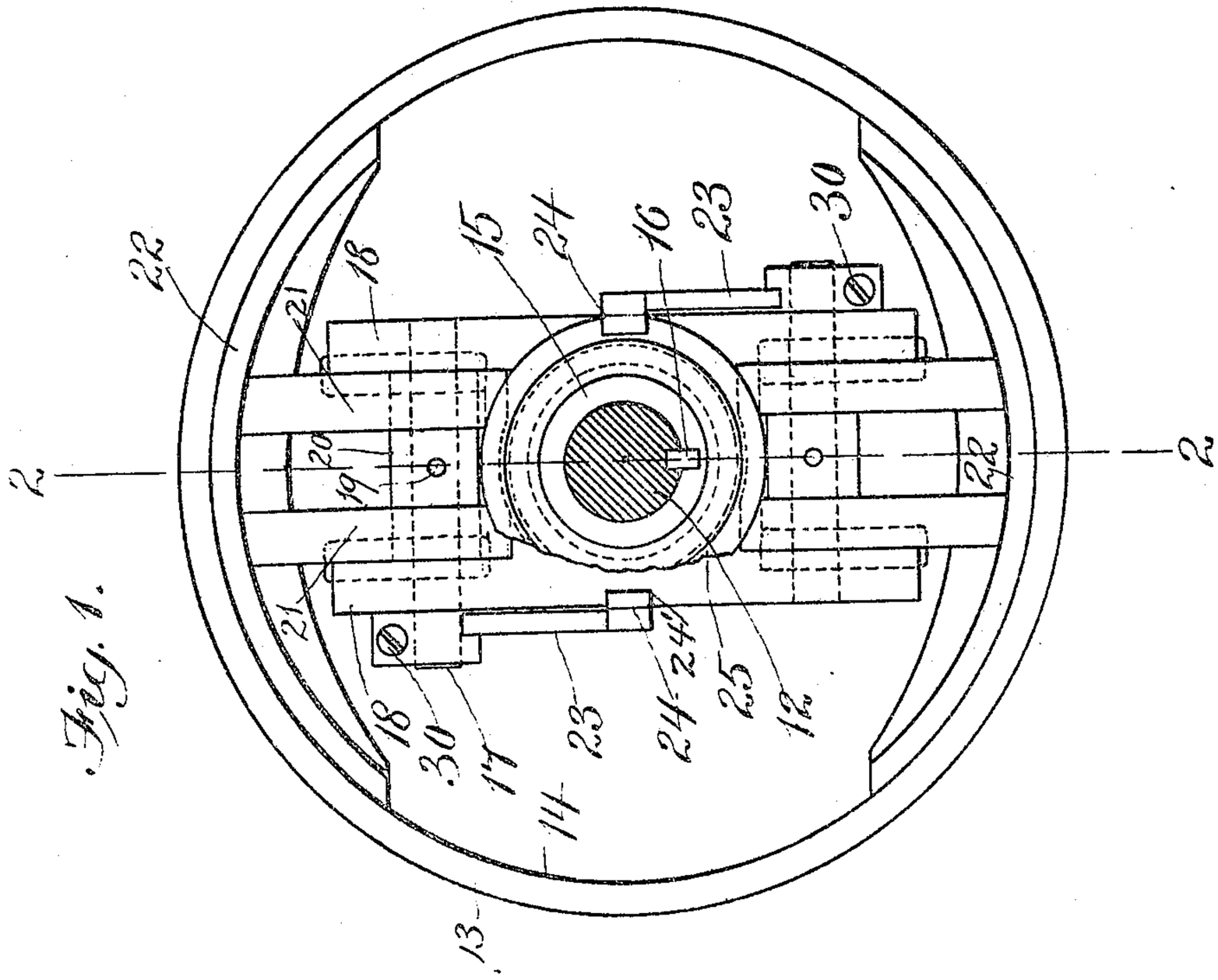


Fig. 1.



Witnesses.
P. H. Pezzetti.
E. Batchelder

Inventor.
W. R. May
by Wright Brown & Quinby
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM R. MAY, OF NEWTON, MASSACHUSETTS.

POWER-TRANSMITTING MECHANISM.

No. 808,560. Specification of Letters Patent. Patented Dec. 26, 1905.

Application filed March 1, 1905. Serial No. 247,854.

To all whom it may concern:

Be it known that I, WILLIAM R. MAY, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Power-Transmitting Mechanism, of which the following is a specification.

This invention relates to power-transmitting mechanism of the friction-clutch type, and has for its object to enable two opposed friction-clutch members to be operatively connected by a relatively light spring-pressure which automatically holds the members in engagement and to be separated or unclutched by power, such as can be readily applied by the foot acting through a suitable treadle, the invention being intended particularly for use in motor-vehicles.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a power-transmitting mechanism embodying my invention, the shaft upon which the said mechanism is mounted being shown in transverse section. Fig. 2 represents a section on line 2 2 of Fig. 1.

The same reference characters indicate the same parts in both the figures.

In the drawings, 12 represents a shaft, and 13 represents an annular member, such as a pulley or a gear-wheel, mounted upon the shaft and having an internal friction-face 14, which is concentric with the shaft.

15 represents a sleeve also adapted to be mounted on the shaft 12, said sleeve being in this case rigidly secured to the shaft by a key 16, while the annular member 13 is loose. This arrangement may be reversed, however, the annular member 13 being affixed to the shaft and the sleeve 15 mounted loosely thereon without departing from the spirit of my invention.

17 represents a rock-shaft which is journaled in bearings formed in ears 18 18 on the sleeve 15. Between the ears 18 there is affixed to the rock-shaft by means of a pin 19 an eccentric 20. This eccentric is fitted to turn in sockets formed for its reception in ears 21 21, formed on and projecting inwardly from shoes 22 22, having segmental outer faces which are opposed to the internal friction-face 14 and are adapted to be engaged therewith by the rotation of the eccentric, as hereinafter described. To the rock-shafts 17 are affixed levers 23, the outer ends of which are connected by rods or links 24 with a collar 25, which is adapted to slide upon the sleeve 15.

26 represents a spring interposed between the collar 25 and an annular recess in sleeve 15, forming a spring-support. Said spring normally presses the collar 25 in the direction indicated by the arrow in Fig. 2, and thus causes the collar, through the rods or links 24, levers 23, and rock-shafts 17, to turn the eccentric 20 in the direction required to force the shoes 22 outwardly into engagement with the internal friction-face 14. The shoes 22 are therefore automatically engaged and held in engagement with the annular member 13. Pressure may be applied to the collar 25 in any suitable way, as by means of a foot-treadle and suitable connections, to overcome the pressure of the spring 26 and turn the eccentric in the direction required to retract the shoes.

It will be seen from the foregoing that the eccentrics, rock-shafts, and levers, arranged as shown in the drawings, enable the shoes to be held in engagement with the annular member by a relatively light spring-pressure, which can be readily overcome to permit the disengagement of the shoes from the annular member by pressure applied by the foot to a treadle. It will also be seen that ample clearance of the shoes from the internal friction-face is afforded by a relatively short movement of the collar 25 and that the friction of the rubbing parts is reduced to the minimum.

Any suitable means for supporting the eccentrics may be substituted for the sleeve 15, and any other suitable means may be employed to turn the eccentrics to cause them to project and retract the shoes.

The collar 25 may be actuated by any other suitable means to cause the application of the shoes to the friction-face, my invention not being limited to the employment of a spring for this purpose. The collar 25 is found to abut against a stop-shoulder 28 on the sleeve 15 when the eccentrics have been turned to cause the maximum separation between the shoes and the internal friction-face, this preventing the rods 24 from striking the hub portion of the annular member 13. The rods 24 are fitted to slide in guide-grooves founded for their reception in the sleeve 15.

The levers 23 are adjustably secured to the

rock-shafts, so that they may be adjusted to compensate for wear of the friction-faces and to vary the power of the spring. To this end each lever has a hub portion which is split at 29, its parts being connected by a screw 30, the adjustment of which either tightens or loosens the split hub portion, thus either securing the lever firmly to the rock-shaft or loosening it to permit its adjustment.

I claim—

1. A power-transmitting mechanism comprising an annular member adapted to receive a shaft, and having an annular friction-face, a sleeve also adapted to receive a shaft and provided with longitudinal guide-grooves, movable shoes having segmental friction-faces opposed to said annular face, eccentrics journaled in bearings on the said shoes, rock-shafts affixed to said eccentrics and journaled in bearings on the sleeve, levers affixed to the rock-shafts and eccentrics and arranged to operate said shoes, a collar mounted to slide on said sleeve, and rods connecting said collar and said levers and sliding in said guide-grooves.

2. A power-transmitting mechanism comprising an annular member adapted to receive a shaft, and having an annular friction-face, a sleeve also adapted to receive a shaft and provided with an annular recess or chamber, movable shoes having segmental friction-faces opposed to said annular face, eccentrics journaled in bearings on the said shoes, rock-shafts affixed to said eccentrics and journaled in bearings on the sleeve, levers affixed to the rock-shafts and eccentrics and arranged to operate said shoes, a collar mounted on said sleeve, connections between said collar and said levers, and a spring encircling said sleeve and interposed between said collar and said annular recess or chamber.

3. A power-transmitting mechanism comprising an annular member adapted to receive a shaft, and having an annular friction-face, a sleeve also adapted to receive a shaft, said sleeve being provided with longitudinal guide-grooves and an annular recess or chamber, movable shoes having segmental friction-faces opposed to said annular face, eccentrics journaled in bearings on the said shoes, rock-shafts affixed to said eccentrics and journaled in bearings on the sleeve, levers affixed to the rock-shafts and eccentrics and arranged to operate said shoes, a collar mounted to slide on said sleeve, rods connecting said collar and said levers and sliding in said guide-grooves, and a spring encircling said sleeve and interposed between said collar and said annular recess or chamber.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM R. MAY.

Witnesses:
C. F. BROWN,
E. BATCHELDER.