

No. 746,323.

PATENTED DEC. 8, 1903.

L. E. GAYLORD.

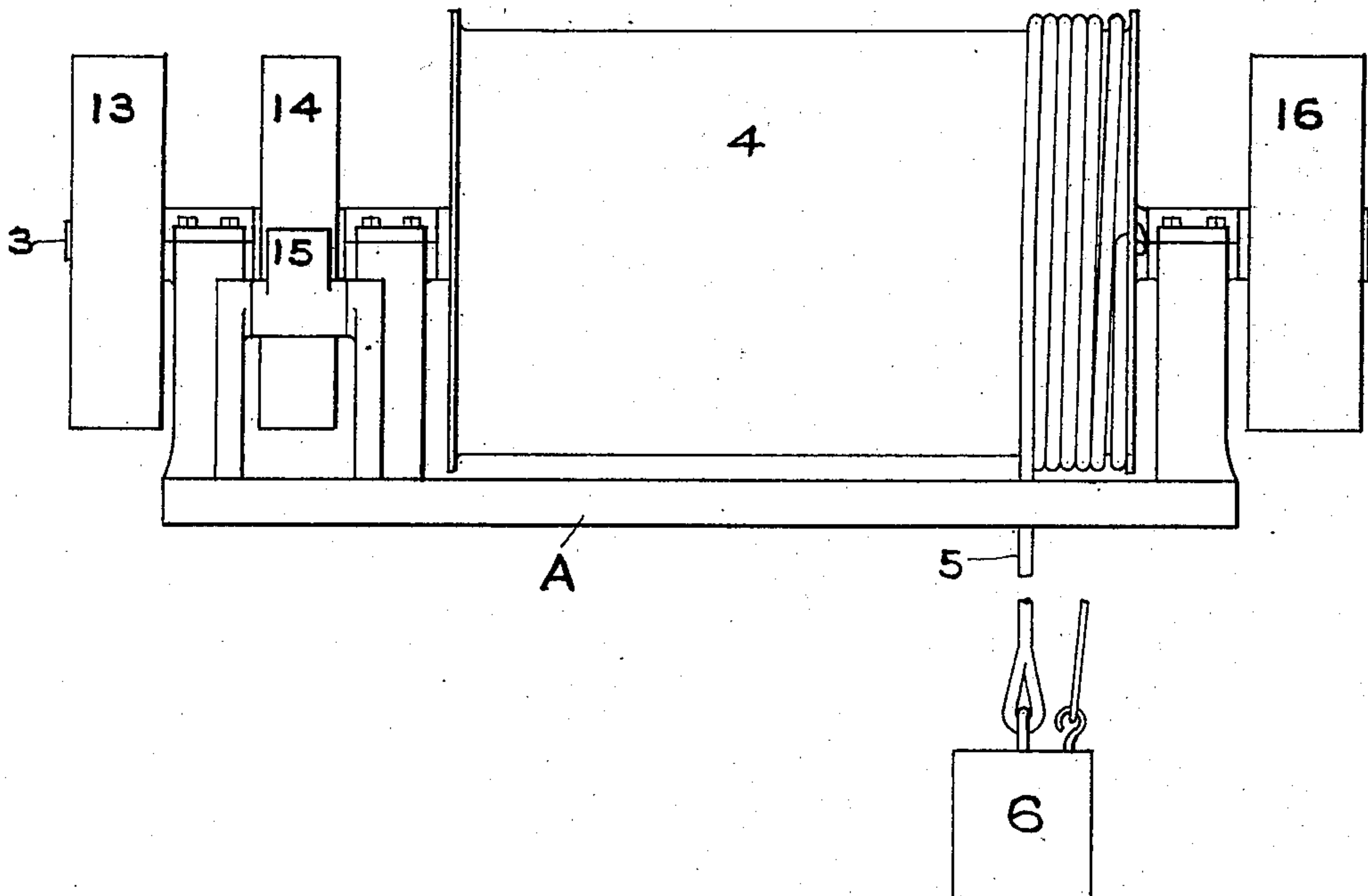
MEANS FOR TRANSMITTING AND EQUALIZING VARIABLE POWER.

APPLICATION FILED JAN. 20, 1903.

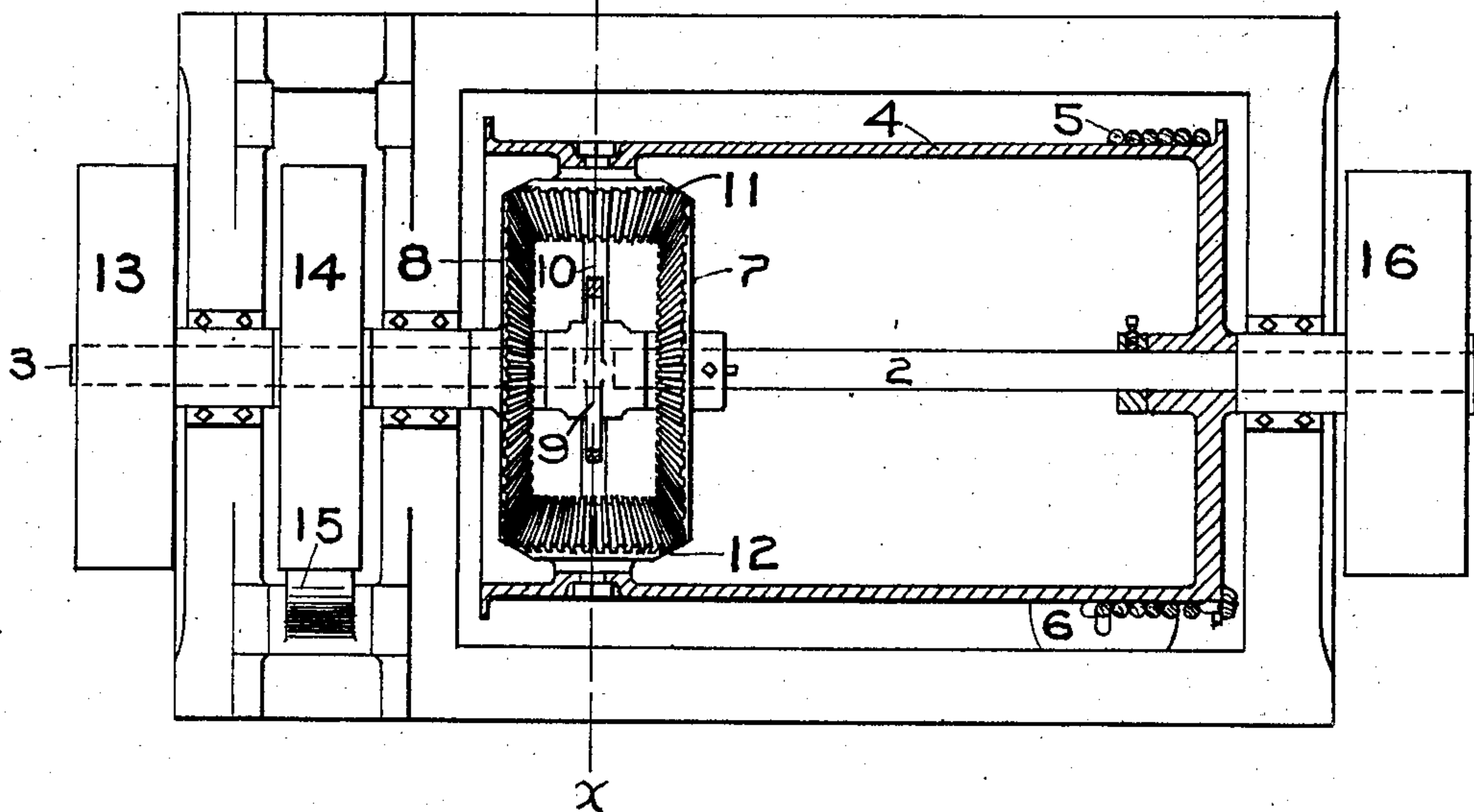
NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



x Fig. 2.



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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 3.

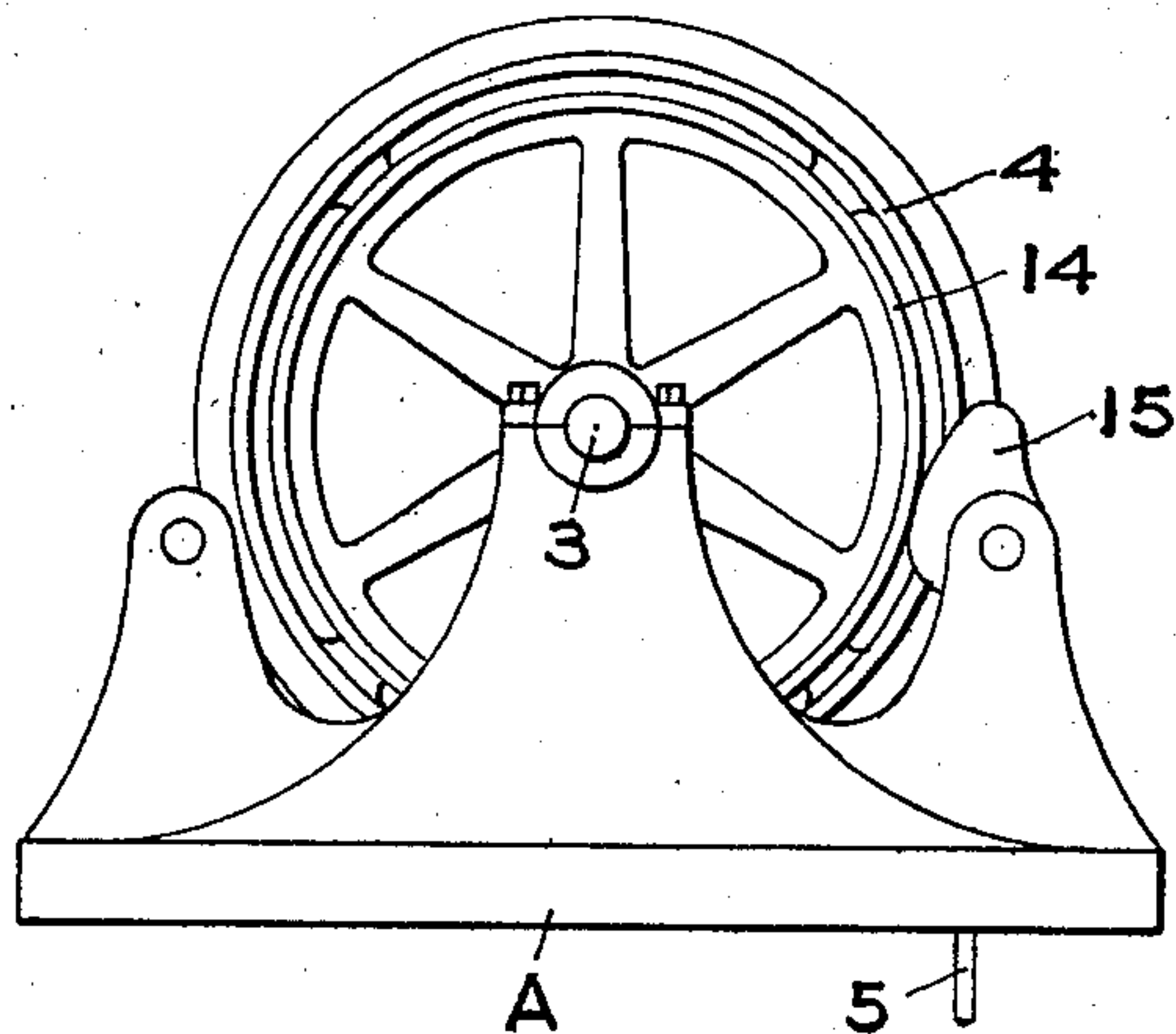
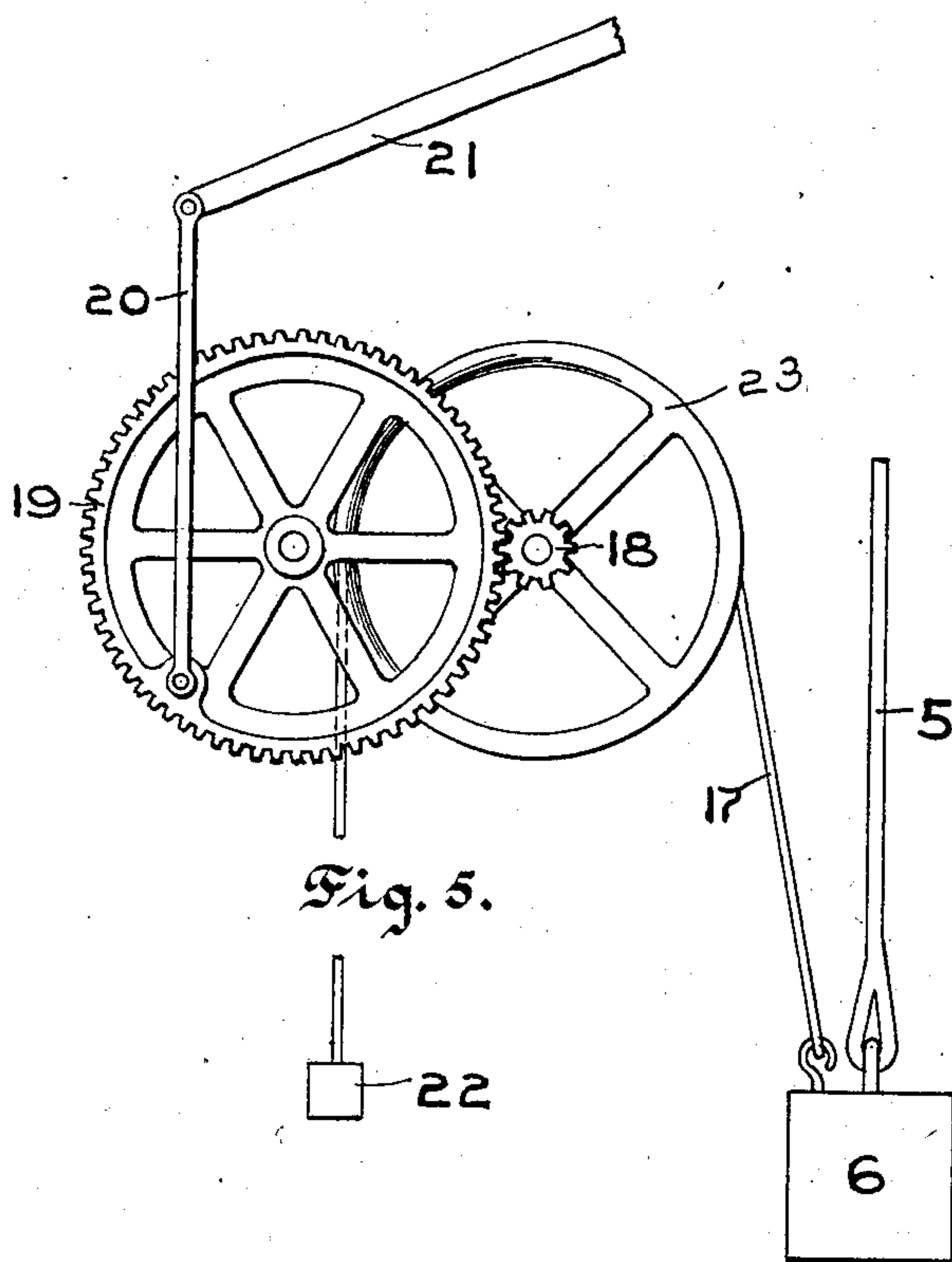
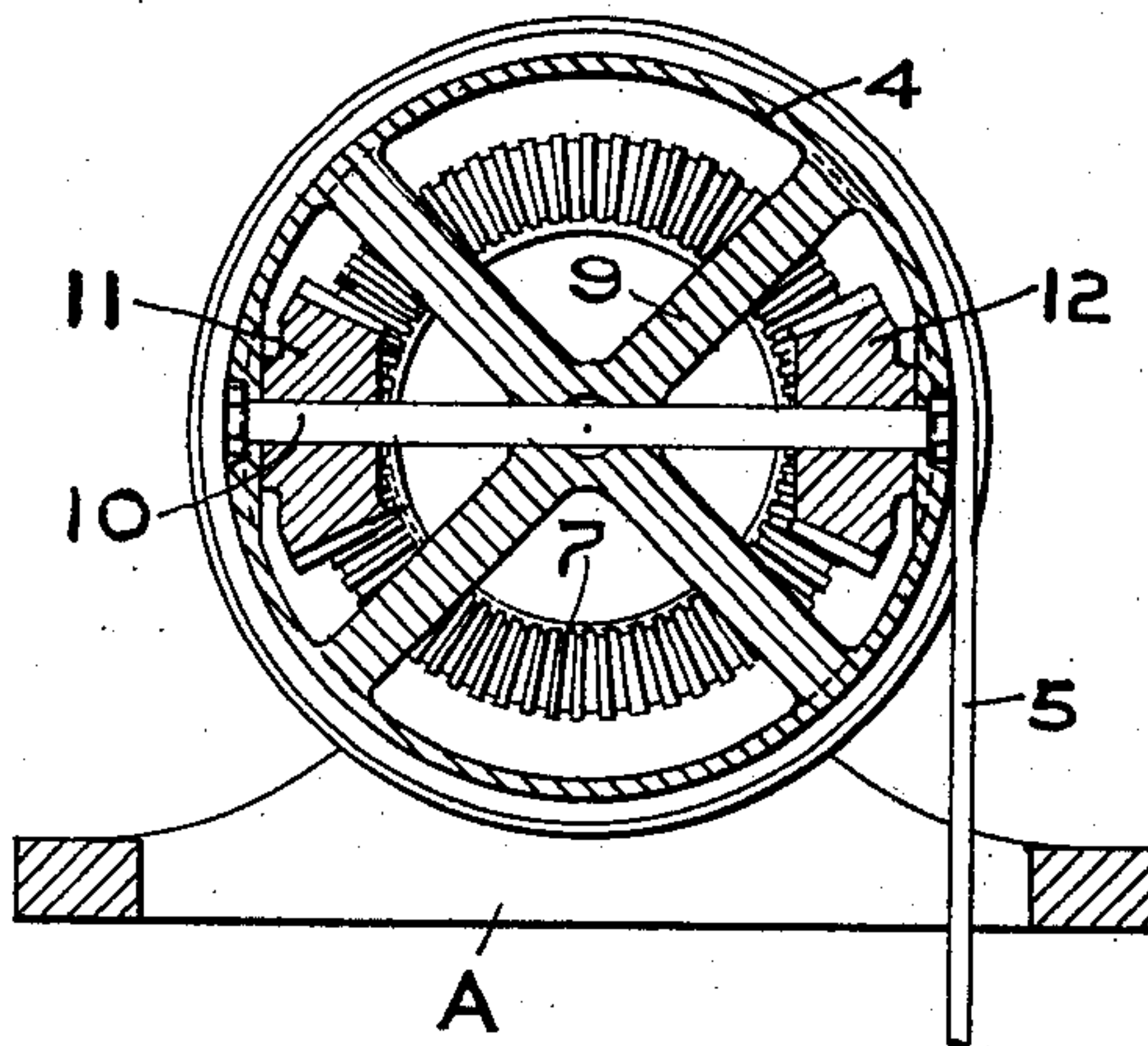


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MEANS FOR TRANSMITTING AND EQUALIZING VARIABLE POWER.

SPECIFICATION forming part of Letters Patent No. 746,323, dated December 8, 1903.

Application filed January 20, 1903. Serial No. 139,790. (No model.)

To all whom it may concern:

Be it known that I, LOT E. GAYLORD, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Means for Transmitting and Equalizing Variable Power, of which the following is a specification.

My invention relates to improvements in means for transmitting and equalizing variable power, and particularly for equalizing the variable power derived from a windmill.

To this end my invention consists in the features of construction and combination herein after particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of a drum and connected parts forming part of my invention. Fig. 2 is a top view of the same with the drum in section. Fig. 3 is an end view thereof. Fig. 4 is a section on line *xx* of Fig. 2, and Fig. 5 is a section of connected mechanism for regulating the windmill.

In the drawings, A represents the framework, within which are journaled horizontal shafts 2 and 3, said shafts being arranged in alinement. Loosely mounted upon the shaft 2 is a drum 4, around which is wound a cable 5, carrying on its free end a weight 6. Secured upon the inner end of the shaft 2 is a beveled gear 7, and secured upon the inner end of the shaft 3 is a similar gear 8. The drum intermediate of said gears is constructed with a spider 9, forming a support for a transverse shaft 10, upon the opposite ends of which are loosely journaled the beveled pinions 11 and 12, intermeshing with the gears 7 and 8, as shown in Fig. 2. Upon the outer end of the shaft 3 is secured a pulley 13, adapted to be connected with a source of variable power, as a windmill. In order to prevent any backward rotation of the shaft 3, I secure thereon a pulley 14, with the periphery of which engages a suitable pivoted shoe 15. Upon the outer end of the shaft 2 is secured a pulley 16, which serves as a transmission-pulley.

In order to regulate the source of power when a certain speed is reached, I provide the mechanism shown in Fig. 5. This consists of a drum 23, having suitable journal-

support (not shown) and carrying a cable 17, the outer end of which is connected, as shown in Fig. 5, with the weight 6. The drum 16 carries a pinion 18, which intermeshes with a gear 19, connected by rods 20 and 21 with the cut-off mechanism (not shown) of the windmill or other suitable source of power. In order to actuate the drum 16 to wind up the cable when the weight 6 is lifted, I provide the drum with the weight 22 depending from the side of the drum opposite to the main weight 6.

In operation the windmill or other source of variable power will drive the pulley 13, together with its shaft 2 and gear 8. As said gear 8 is revolved, the intermeshing pinions 11 and 12 will be rotated upon their supporting-shaft 10, actuating the gear 7 and transmitting power through the shaft 2 and transmission-pulley 16. The weight 6, carried by the drum, is such that when the windmill is running at normal speed all of the power will be transmitted from the shaft 3 through the gearing to the shaft 2, allowing the drum to remain stationary; but when running at greater than normal speed the beveled pinions 11 and 12 will turn at a greater relative speed than the gear 7, causing the drum 4 to be rotated to wind up the cable 5. When, on the other hand, the windmill travels at less than normal speed, the weight will begin to unwind the cable and accelerate the rotation of the gear 7 and transmission-shaft 2. As the weight 6 is lifted by the winding of the cable 5 the drum 23 will actuate the gear 19 and connecting-rods 20 and 21, so that as the weight 6 is lifted the cut-off mechanism of the windmill (not shown) will be actuated to decrease the power. As the weight 6 lowers, the reverse operation of the drum 23 and connected parts takes place to increase the power. In other words, the load represented by the driven parts counterbalances the winding-drum when the gear is driven at a certain speed, so that the winding-drum remains stationary. Consequently when the speed of the gearing increases part of its power will be transmitted to the drum, winding up the cable to maintain the equilibrium of the drum and load, and when the speed of the gearing decreases the cable will be unwound by its weight to maintain such equilibrium.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Means for transmitting variable power, consisting of a shaft connected with the parts to be driven, a drum loosely mounted upon said shaft, a weighted cable carried by said drum, gearing interposed between the drum and source of power, said gearing being so constructed, arranged and weighted that said drum will remain stationary when the gearing is driven at a certain speed, but will be actuated by said gearing to wind up the cable when the speed of said gearing increases.
2. Means for transmitting and equalizing variable power, consisting of a shaft having means of connection with the parts to be driven, a drum loosely mounted upon said shaft, a weighted cable carried by said drum, a pair of gears operatively connected with the source of power and with said shaft, said gears being so constructed, arranged and weighted that when driven at a certain speed they will actuate said shaft and allow said drum to remain stationary, and will actuate said drum to wind up said cable when driven at a greater speed.
3. Means for transmitting and equalizing variable power, consisting of a shaft connected with the parts to be driven, a drum loosely mounted upon said shaft, a weighted cable carried by said drum, gearing connecting said drum and shaft with the source of power, said gearing being so constructed, arranged and weighted as to actuate said shaft when driven at a certain speed, and to actuate both the shaft and drum when driven at a greater speed, and means actuated in the winding of said cable for shutting off the source of power.

4. Means for transmitting and equalizing variable power, consisting of a shaft connected with the parts to be driven, a gear carried by said shaft, a drum loosely mounted upon said shaft, a weighted cable carried by said drum, a pair of rotatable gears carried by said drum and normally intermeshing with the gear mounted upon said shaft, and means for driving said gears from the source of power, substantially as described.

5. Means for transmitting and equalizing variable power, consisting of a shaft connected with the parts to be driven, a gear carried by said shaft, a drum loosely mounted upon said shaft, a weighted cable carried by said drum, a pair of beveled pinions supported upon a transverse shaft carried by said drum, said pinions intermeshing with said gear, and a second gear intermeshing with said pinions and connected with the source of power.

6. Means for transmitting and equalizing variable power, consisting of a shaft connected with the parts to be driven, a beveled gear carried by said shaft, a drum loosely mounted upon said shaft, a weighted cable carried by said drum, a pair of beveled pinions loosely mounted upon a transverse shaft carried by said drum and intermeshing with the gear carried by the drum-supporting shaft, a second shaft connected with the source of power, and a gear carried by said shaft and intermeshing with said pinions.

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

LOT E. GAYLORD.

Witnesses:

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EMILY F. OTIS.