No. 827,171. PATENTED JULY 31, 1906.

C. B. McKOWN.

SELF LUBRICATING PULLEY.

APPLICATION FILED AUG. 30, 1904.

Fig. 2.

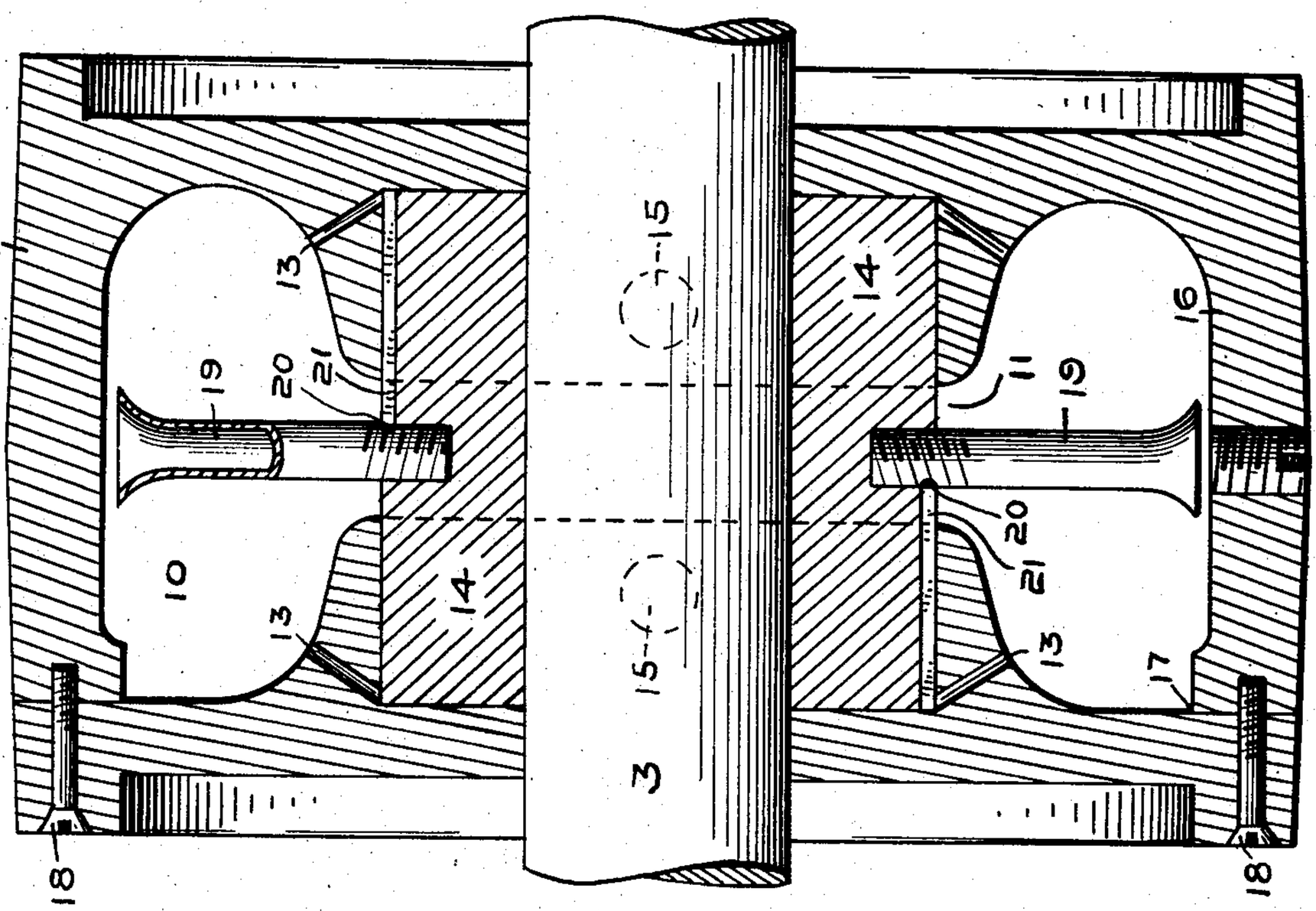
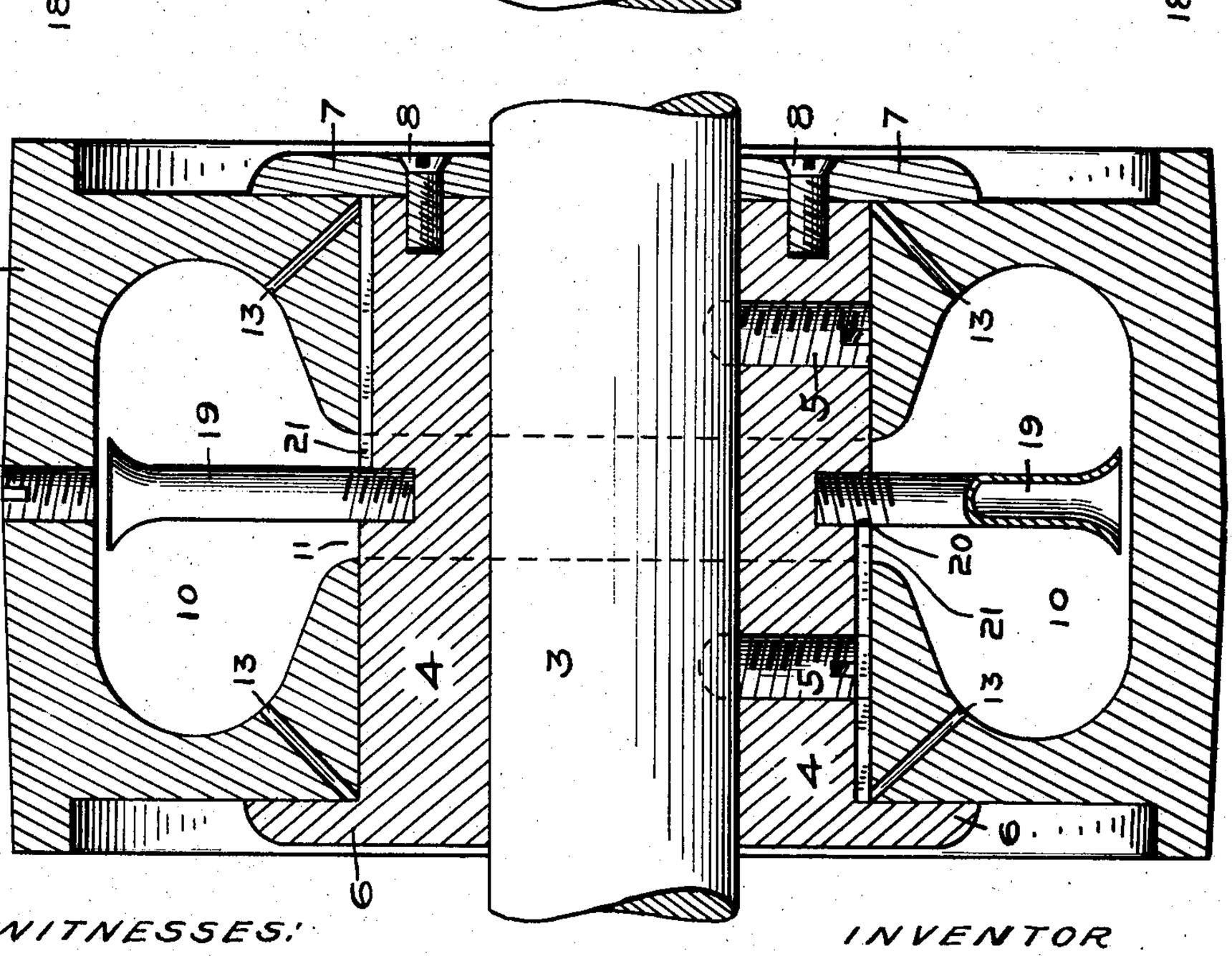


Fig. 1.



WITNESSES:

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SELF-LUBRICATING PULLEY.

No. 827,171. Specification of Letters Patent. Patented July 31, 1906.

Application filed August 30, 1904. Serial No. 222,744.

To all whom it may concern:

Be it known that I, CHARLES B. McKOWN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Self-Lubricating Pulleys, of which the following is a specification.

The object of this invention is to provide a supply of oil suitable for several days' run of the pulley without renewal and to provide an automatic means for distributing the oil from said place of supply to the rubbing parts, so as to reduce the friction at said places.

I accomplish the objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of my invention through the axis of rotation of the pulley, and Fig. 2 is a like view of a modified construction of same.

Like characters of reference indicate like parts throughout both views of the drawings.

3 is the shaft, on which the pulley is mounted, and 4 is a spool, which is mounted on the shaft and fixed thereto by any suitable means, the means here shown being the set-screws 5 5, which enter sockets in the shaft. The spool 4 will preferably have the integral flange 6 at one end and the removable flange 7 at the other, the latter flange being secured by screws 8, as shown.

9 is the pulley, which has a web of such thickness as to make a close fit between the flanges 6 and 7 on the spool 4, on which spool said pulley is mounted, the bore of the pulley being such as to make a close-running fit on said spool. As is obvious from the construction, the spools will first be fastened, by means of its set-screws, in the desired position on the shaft. Then the pulley will be placed in position on the spool, the flange 7 being removed for that purpose, and then the pulley is retained in position by means of the flange 7, which is fastened by its screws 8 to the spool. The web of the pulley will be cored out to form the receptacle 10, which extends in a continuous circuit around the pulley and communicates, through the inside slot 11, with the bore of the pulley. The lubricating-oil is deposited in this receptacle 10, being introduced through the hole 12, and the receptacle filled until it reaches the bearing line or joint between the bore of the pulley and the lower face of the spool. To fill it above that line would cause the oil to leak out through the joint. After the receptacle 10 has received its quota of oil the hole is closed by means of the screw-threaded plug, as shown.

The rotation of the pulley causes the oil to be distributed by centrifugal action over the entire outer wall of the receptacle 10, whence it runs when the pulley stops, as at noon, night, or at other times in the course of business, down upon the spool and is carried thence into the bearing-surfaces between the spool and pulley. In order to facilitate the distribution of the lubricant to the remote corners or friction-surfaces of the bearings, the oil-glands 13 are provided. These will preferably be drilled in from the corners of the web of the pulley.

In the modification shown in Fig. 2 the spool 14 is devoid of flanges; but the spool itself is secured by set-screws (shown by dotted lines 15) in the manner described for spool 4. The pulley 16 is split on the line 17 17, which enables the two parts to be molded and cast without coring and also enables the pulley and spool to be assembled before the two parts of the pulley are fastened together. This latter is accomplished by means of the screws 18. Radiating from the spool 14 are the tubes 19, which are open at their outer ends and are preferably expanded there to gather the oil collecting at the inside rim by centrifugal action and directs the oil inwardly toward the spool, upon the face of which it is discharged through suitable perforations 20 at the base of the tubes. These perforations preferably have the channels 21, leading off laterally to carry the oil into the joints or bearing-surfaces.

Other means may be employed to insure a deposit of oil upon the spool—such, for example, as a disk of wicking which would absorb the oil at the outer wall of the annular receptacle and conduct it by capillary attraction to the spool.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. A shaft, a spool fixed thereon, a pulley mounted loosely on the spool, means for holding it in position on said spool, said pulley having an annular oil-receptacle around its hub and an annular slot from the receptacle into the hub-bore intermediate of the hub ends and auxiliary conduits from the receptacle to the outer ends of the said hub-bore.

2. A shaft, a spool fixed thereon, a pulley mounted loosely on the spool said pulley having an annular oil-receptacle around its hub and an annular slot from the receptacle into the hub-bore and tubes seated in said spool and extending radially therefrom into the oil-receptacle through the said annular slot said tubes having perforations through their walls at their bases.

3. A shaft, a spool fixed thereon, a pulley mounted loosely on the spool said pulley having an annular oil-receptacle around its hub and an annular slot from the receptacle into the hub-bore and tubes seated in the spool and extending radially therefrom into the oil-receptacle through said annular slot said tubes having perforations at their bases and said spools having channels extending from said perforations.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 11th day of August, A. D. 1904.

CHARLES B. McKOWN. [L. S.]

Witnesses:

F. W. WOERNER,

J. A. MINTURN.