

(No Model.)

M. O. & M. T. REEVES.
SPLIT PULLEY.

No. 403,859.

Patented May 21 1889.

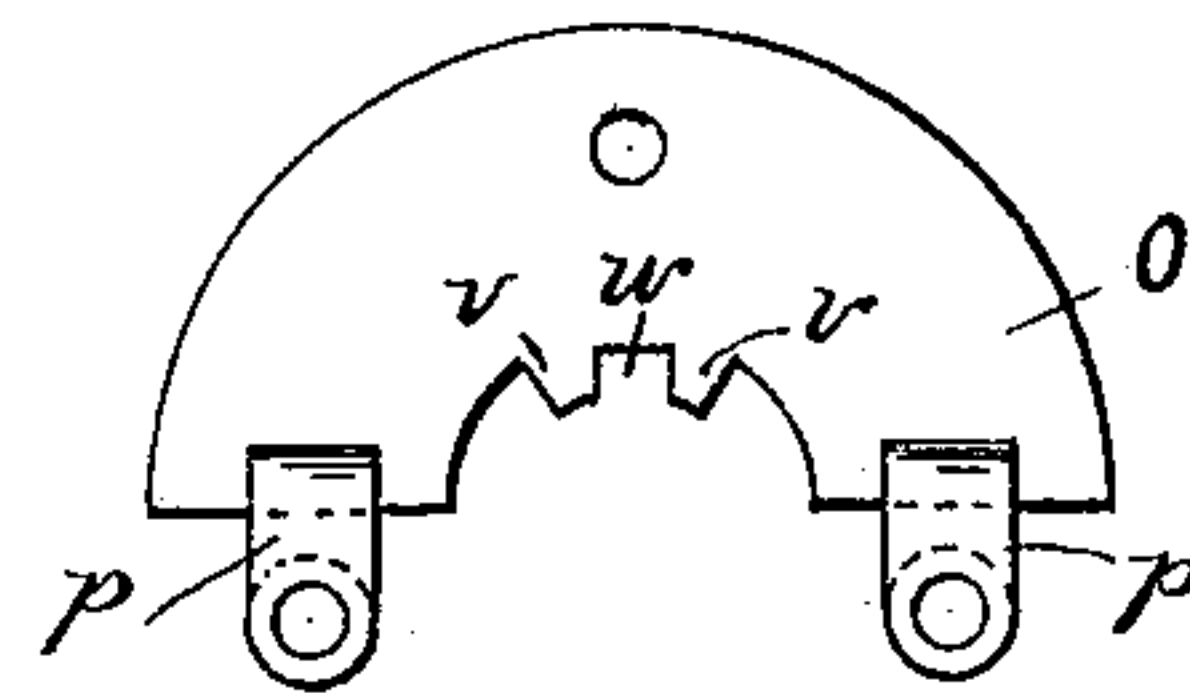
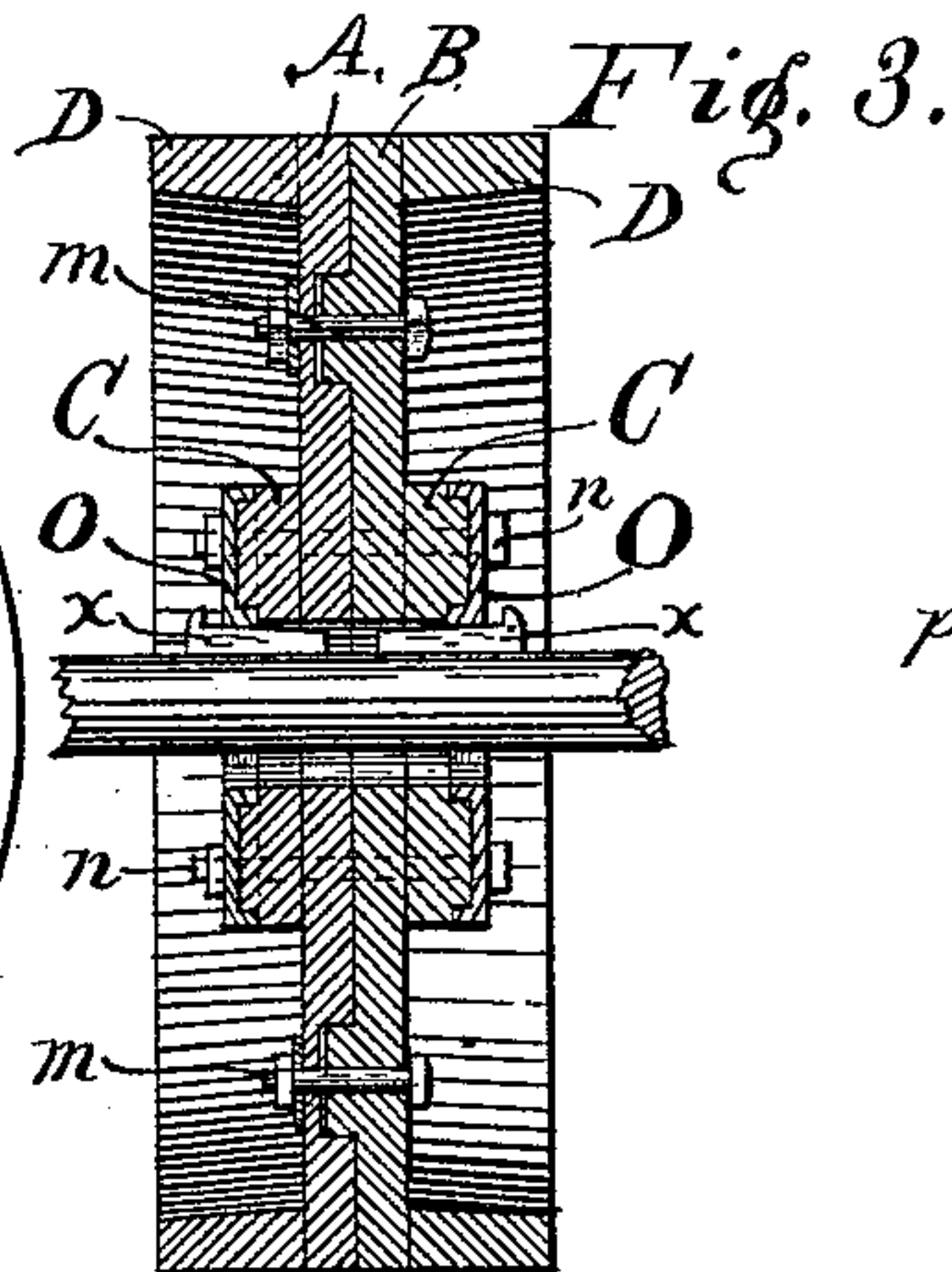
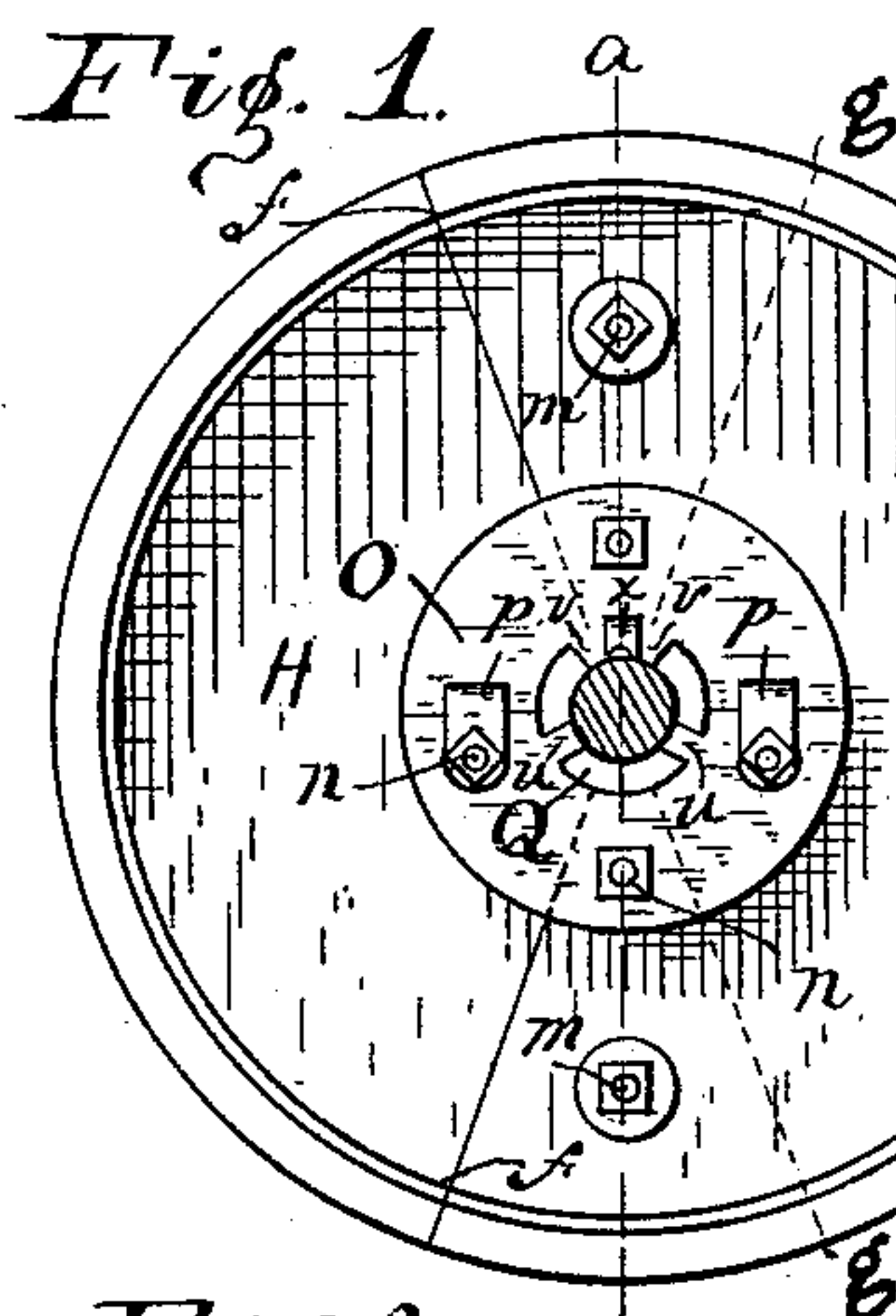


Fig. 5.

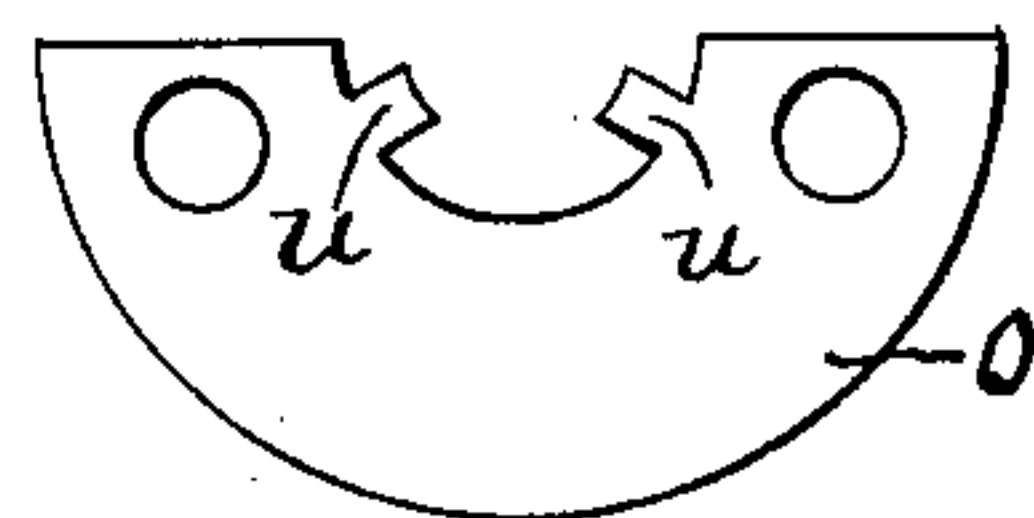


Fig. 6.

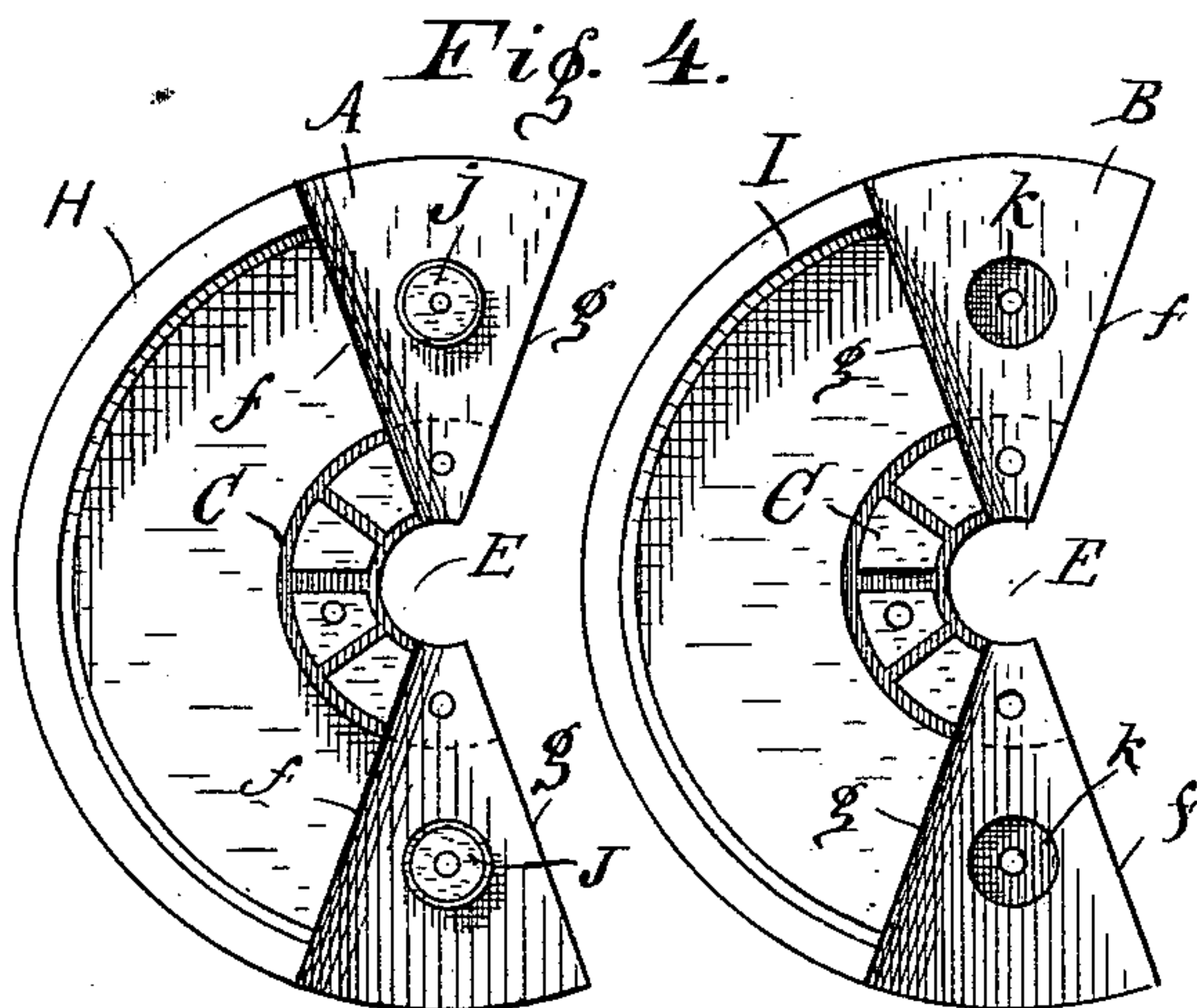
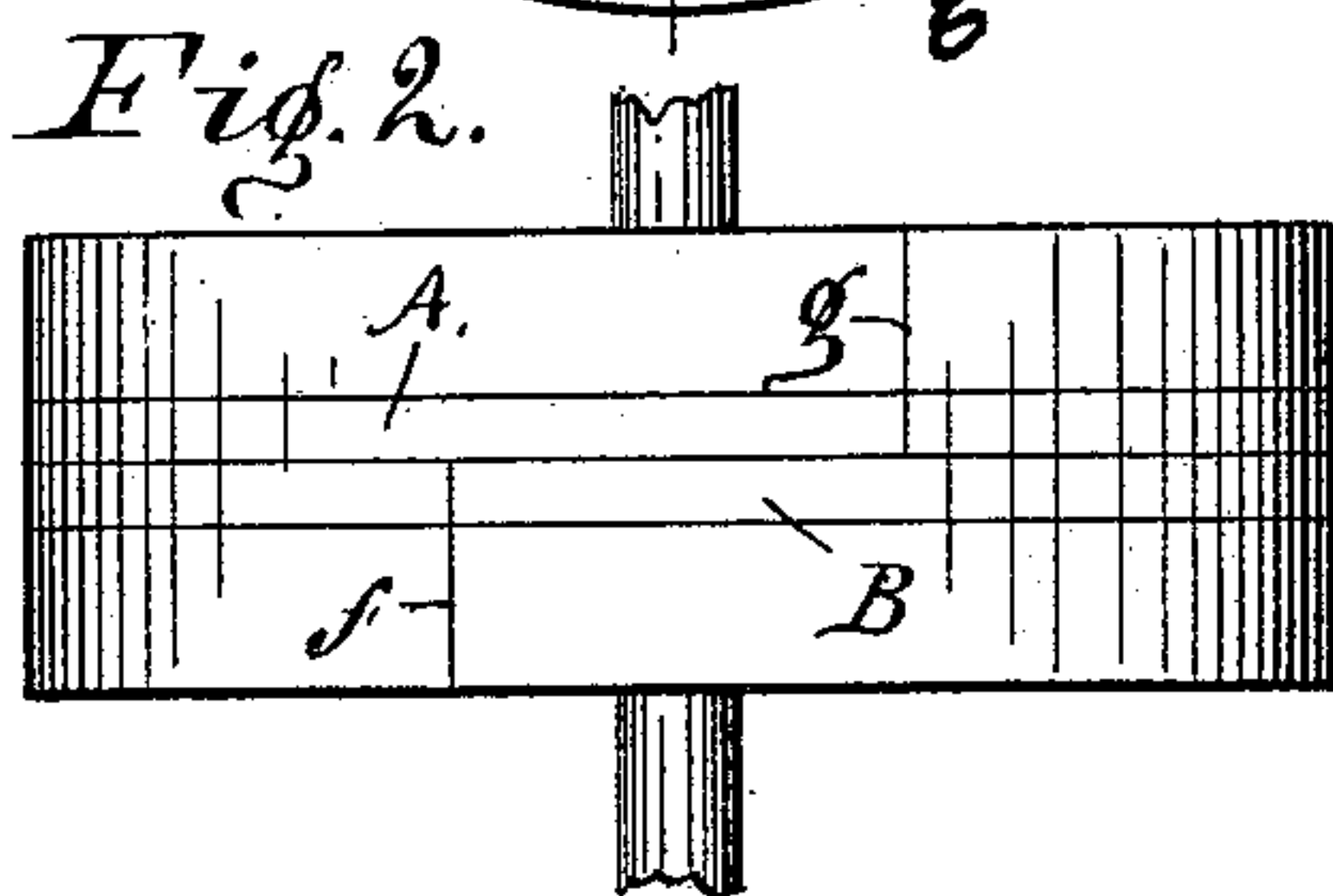
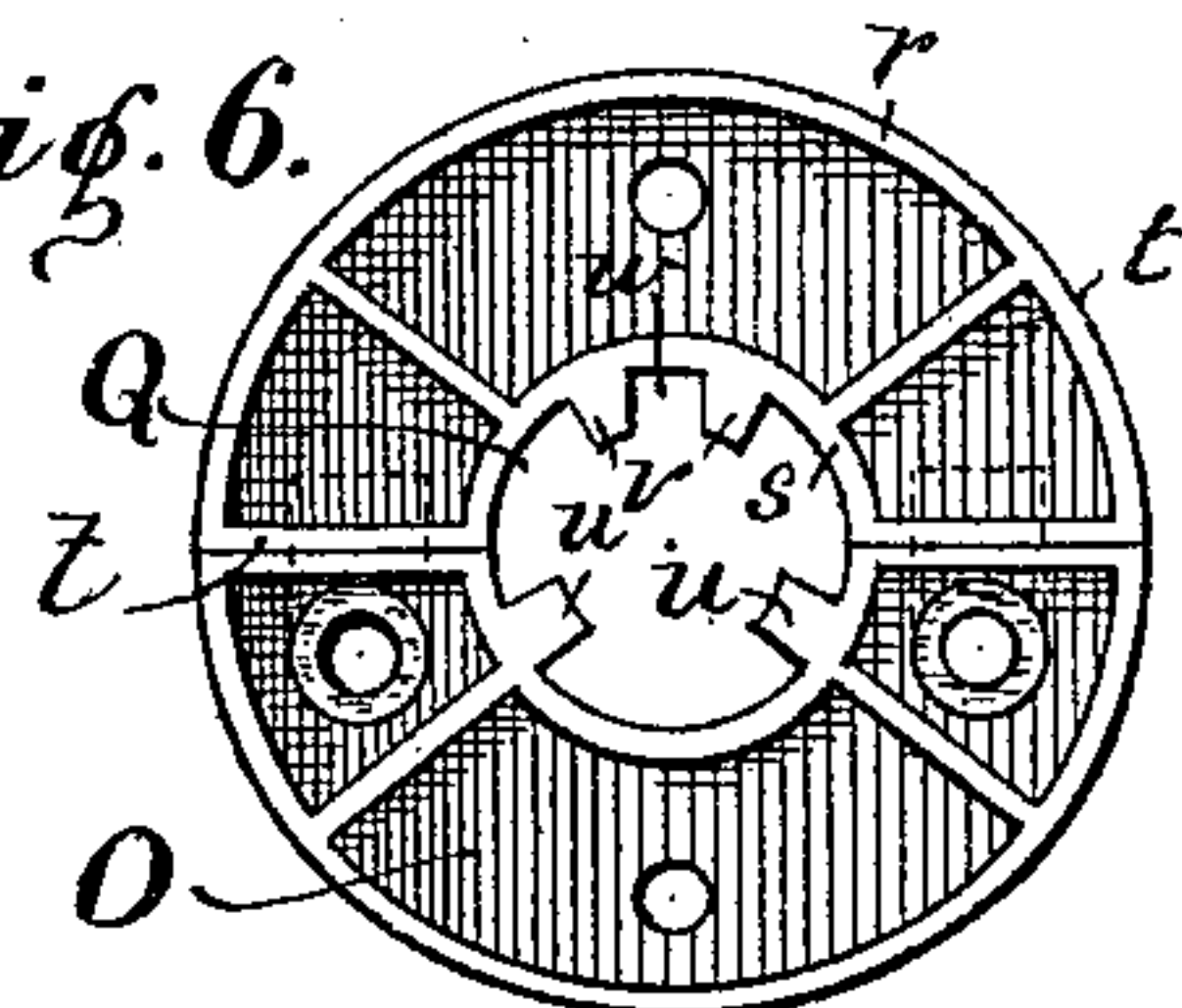
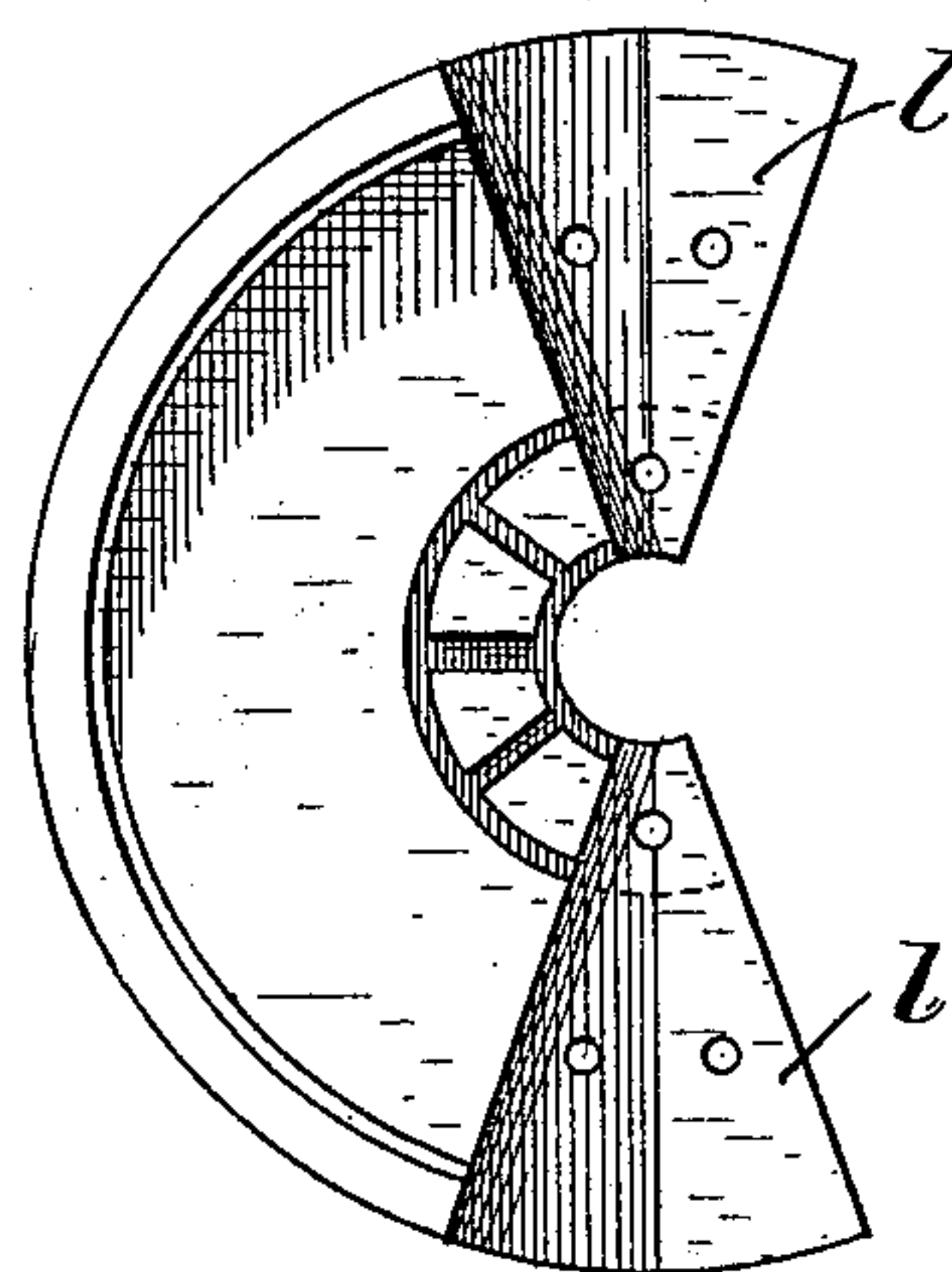


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

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SPLIT PULLEY.

SPECIFICATION forming part of Letters Patent No. 403,859, dated May 21, 1889.

Application filed November 24, 1888. Serial No. 291,751. (No model.)

To all whom it may concern:

Be it known that we, MILTON O. REEVES and MARSHAL T. REEVES, citizens of the United States, residing at Columbus, in the county of Bartholomew and State of Indiana, have invented a new and useful Improvement in Split Pulleys, of which the following is a specification.

Our invention relates to an improvement in that class of belt-pulleys which are usually built up of several thicknesses of wood to form two substantially semi-cylindrical sections which are adapted to interlock and to be secured together upon a shaft.

The objects of our improvement are, first, to so form the two sections of the pulley that they may be easily and cheaply constructed to overlap and interlock, and, second, to provide improved means for securing the pulley to a shaft, all as hereinafter fully described.

The accompanying drawings illustrate our invention.

Figure 1 represents a side elevation of the complete pulley mounted on a shaft; Fig. 2, a plan of the same; Fig. 3, a section at *a a*, Fig. 1; and Fig. 4, an end elevation showing the two sections separated, one of which is reversed, the hub-plates having been removed. Fig. 5 represents a plan, on an enlarged scale, of one of the hub-plates having the two sections of which it is formed separated. Fig. 6 represents a plan of the reverse side of the hub-plate having the sections together. Fig. 7 represents a modified form of the interlocking portions of the pulley-sections.

In constructing our pulley the web is built up of two wooden circular disks, A and B, of a little larger diameter than the proposed pulley. These disks are permanently secured together by glue or otherwise, one on top of the other, care being taken, however, to put no glue or other fastening at two opposite points on each side of the center, and embraced within angles of about forty degrees.

A joint is thus formed through the central plane of the pulley-web which may be separated at two points, as hereinafter explained. Circular pieces C C are next secured to both sides of the web thus formed in the center to form a hub. Narrow segments D D are then secured to each side of the web at its periph-

ery to form the required width for the face of the pulley, in the usual well-known manner. A central hole, E, is then bored of sufficient size to allow the free passage of the largest shaft upon which the pulley is ever likely to be used. Two radial cuts, *f f*, forming an angle of about one hundred and forty degrees, are now made at right angles to the plane of the web, through the rim and web, down to the joint through the central plane of the web between disks A and B at the points where said disks have not been fastened together. The pulley is then turned over and corresponding radial cuts, *g g*, are made through the other side of the rim and web diametrically opposite the cuts *f f* and down to the same central joint. Two like separable sections, H and I, are thus formed, each consisting of two disk-segments secured together one upon the other, one of said segments being less than a half-circle and the other being correspondingly more than a half-circle, so that when the two sections are placed together their larger segments overlap, and the smaller segment of each forms with the larger segment of the other a complete circle. Said sections are secured together, so as to prevent their lateral movement on each other, by means of raised pieces secured to the faces of the overlapping portions of one and corresponding recesses on the overlapping portions of the other, so as to interlock when the sections are put together to form a complete pulley. These projecting pieces and corresponding recesses may be of many forms, of which we have illustrated two, that shown in Fig. 4 being a large round dowel-pin, *j*, in section H, which fits a corresponding recess, *k*, in section I, and that shown in Fig. 7 being narrow segments *l*, covering half of the overlapping surfaces of each section and fitting into the remaining spaces on the opposite section. We prefer the form shown in Fig. 4.

The two sections H and I, when placed together, are prevented from separating longitudinally by bolts *m m*, passing through their overlapping portions, and also by bolts *n n*, passing through the hub-plates O O, as hereinafter more fully explained.

Each end of the hub is faced with a me-

tallic plate, O, which forms a bearing and point of attachment for the pulley to the shaft. The plates are just alike, and each consists of a circular metallic plate, which is separable diametrically for convenience in putting it on a shaft, the two parts being adapted to interlock by means of arms *p p* on one part, which enter corresponding holes in the other part, or by other similar means. Said plate is provided with a central hole, Q, of the same size as the hole in the pulley, and on one side with annular flanges *r* and *s* and radial flanges *t t*, all of which are embedded in the face of the hub, the purpose being to assist in locking the two sections of the pulley together and to prevent the plate from turning on the hub.

It is usual, in fitting pulleys upon shafts, to bore out the hub as near as may be to the same diameter as the shaft, and to then secure the pulley in position by a key or set-screw driven into the hub and bearing against the shaft on one side. In fitting up pulleys in this way, unless the hole is made of the exact diameter of the shaft, which is unusual, the shaft has a bearing at two points only—that is, at the key and at a point diametrically opposite—and the result is that where heavy work is done the pulley soon works loose and slips on the shaft. For the purpose of preventing this difficulty we provide in the central hole of each hub-plate on one side a pair of inwardly-projecting lugs, *u u*, and on the other side of said hole, at a point diametrically opposite the space between the lugs *u u*, we place another pair of inwardly-projecting lugs, *v v*, having a keyway, *w*, formed between them. In fitting the pulley to the shaft the inner ends of lugs *u* and *v* are dressed off sufficiently to allow the shaft to pass between them, and the key *x*, being fitted between the shaft and the inner side of the hub in the space between lugs *v*, the key being wedge-shaped, when driven in forces the shaft equally against the lugs *u*, thus giving a bearing on the shaft at three points and effectually preventing the rocking of the pulley on the shaft.

Another advantage of this construction is the ease with which the pulley may be fitted to the shaft if the opening is found to be too small. There being but little surface to the bearing portions of the lugs, they may be dressed with a file, thus saving the re-boring of the pulley in the lathe. The hub-plates, having been fitted to both ends of the hub, are secured in place by bolts *n n*, passing through both of the plates and the hub.

When the pulley has been put together, it is put on a mandrel and turned true.

We claim as our invention—

1. A split pulley having a web formed of two like sections, each consisting of two disk segments secured together one upon the other, one of said segments being less than a half-circle, and the other segment being correspondingly more than a half-circle, so that when the two sections are placed together their larger segments overlap and the smaller segment of each forms with the larger segment of the other a complete circle.

2. A wooden pulley provided with a pair of metallic plates secured to opposite ends of the wooden hub of the pulley, each of said plates having a central opening of larger diameter than the shaft, and two lugs projecting inward from one of the sides of said opening, a keyway arranged in the side of the opening opposite the space between said lugs, and a key, all arranged to co-operate to secure the pulley on a shaft, substantially as specified.

3. A pulley having a central opening of larger diameter than the shaft, a pair of radial lugs projecting inward from one side of said opening and engaging the shaft, and a key arranged on the opposite side of the shaft to force the shaft against the lugs, whereby the pulley is secured upon the shaft, substantially as specified.

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