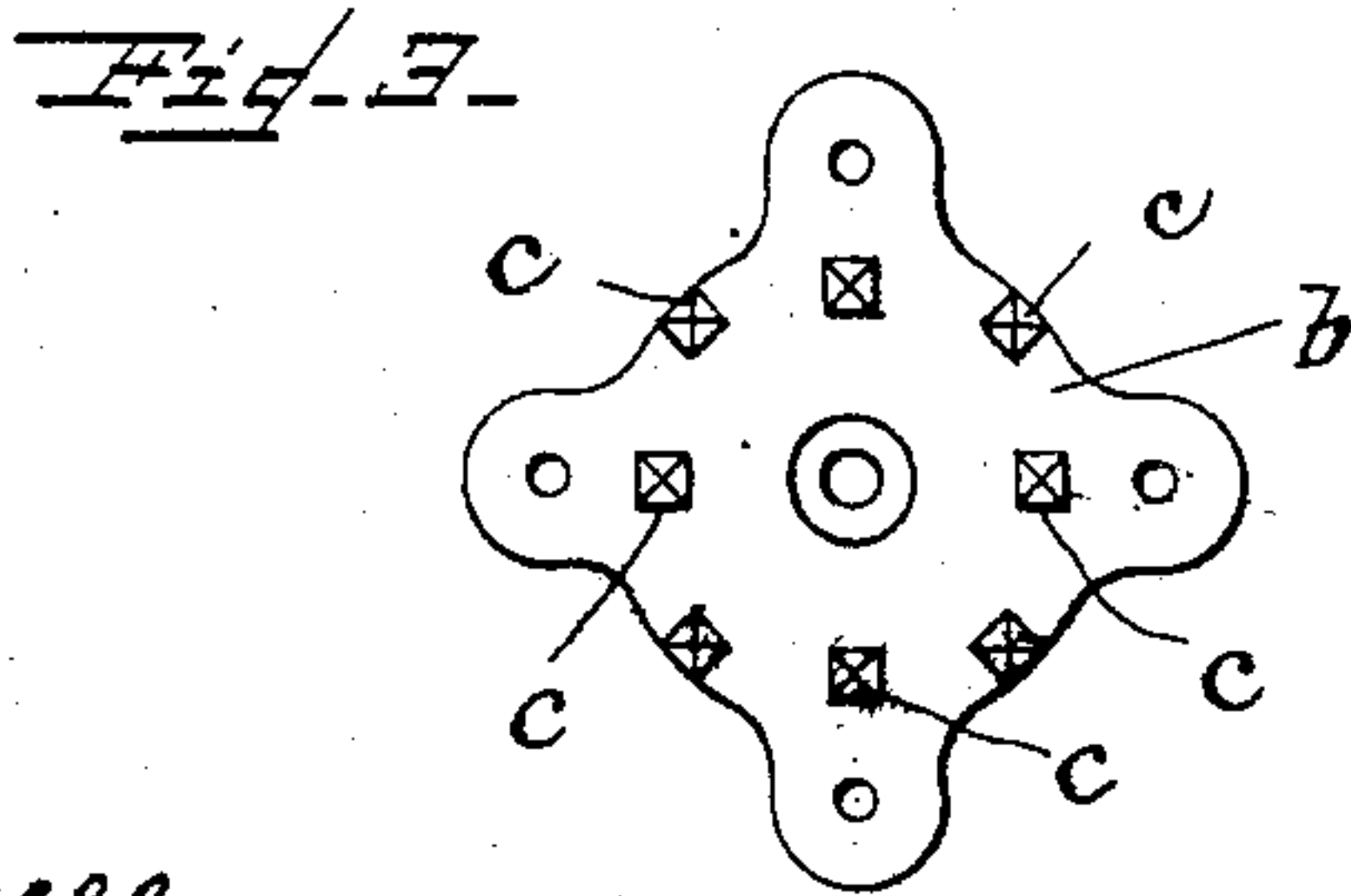
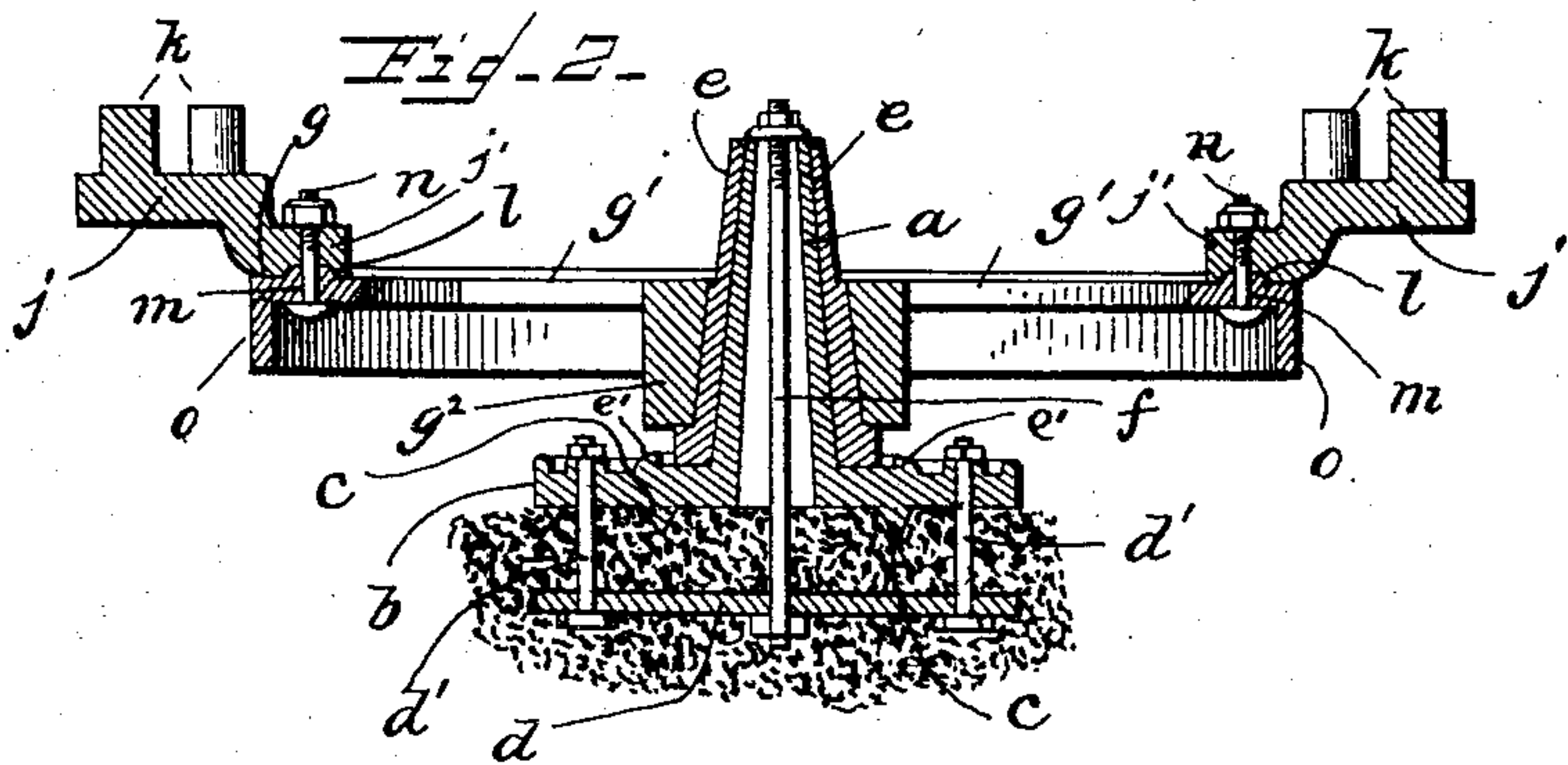
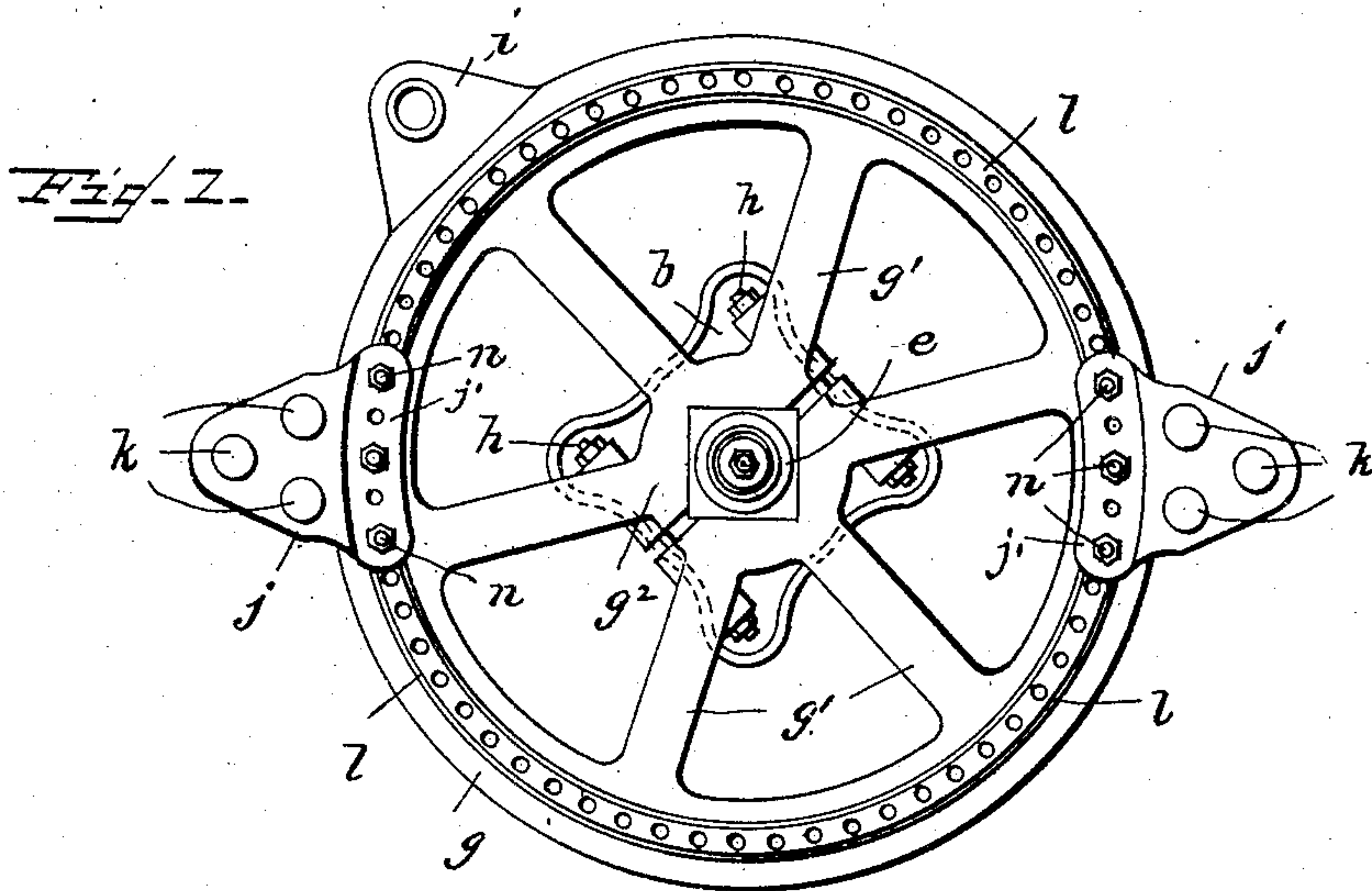


No. 786,399.

PATENTED APR. 4, 1905.

J. D. ANDERSON.
PULL WHEEL FOR OPERATING WELL PUMPS.
APPLICATION FILED JUNE 9, 1903.



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JOSEPH D. ANDERSON, OF ST. MARYS, OHIO.

PULL-WHEEL FOR OPERATING WELL-PUMPS.

SPECIFICATION forming part of Letters Patent No. 786,399, dated April 4, 1905.

Application filed June 9, 1903. Serial No. 160,672.

To all whom it may concern:

Be it known that I, JOSEPH D. ANDERSON, a citizen of the United States of America, and a resident of St. Marys, county of Auglaize, State of Ohio, have invented certain new and useful Improvements in Pull-Wheels for Operating Oil-Well Pumps, of which the following is a full, clear, and exact description, reference being had therein to the accompanying drawings, in which—

Figure 1 is a plan view of the wheel; Fig. 2, a vertical sectional view of the same, and Fig. 3 a detail bottom view of the supporting and anchoring plate.

This invention has relation to that class of devices covered by patent to C. F. Lufkin, dated May 21, 1895, and numbered 539,746, in which a disk-like structure is connected to the pitman of an engine or other motor, so that it shall rotate alternately in opposite directions and impart a reciprocating movement simultaneously to a number of oil-well-operating rods arranged tangentially to it and connected to pivots or journals carried by radial arms secured to the disk structure, these arms being adjustably secured in order that they may be attached to the disk at different points around its edge; and this invention has for its object to improve and simplify the apparatus, rendering it cheaper to manufacture and stronger and more durable, as more fully hereinafter set forth.

Referring to the drawings by letters, *a* designates the vertical upward-tapering hollow spindle, which is formed integral with a disk or flange adapted to rest upon a suitable concrete or other foundation. Upon the under side of this supporting-plate *b* is cast a series of depending lugs or wings *c*, which are located near the edge of the plate and are adapted to embed themselves in the concrete foundation, and thereby assist in preventing the spindle from rotating. To further anchor the base-plate, it is attached to an anchor-plate *d*, embedded in the concrete a suitable distance below said plate *b* and connected to it by a series of vertical bolts *d'*, said anchoring-plate being preferably of the same shape as the supporting-plate *b*.

Fitting the tapered spindle *a* is a sleeve or

bushing *e*, having its interior tapering to nicely fit the stationary spindle *a* and also having its exterior tapered. This sleeve is made square in cross-section, and its lower end is provided with an annular radial flange which rests and turns upon the flange *b*.

Formed in the upper surface of the supporting-plate *b* is an annular flange *e'* outside of the point where the bearing box or sleeve of the pull-wheel bears, this flange forming an oil cup or tray at the base of the vertical spindle *a*, the bearing-face in the oil cup or tray being below the upper edge thereof.

The pull-wheel proper is formed of a rim portion *g*, radial spokes *g'*, and a hub *g''*, all cast integral of iron. The hub is provided with a tapering socket square in horizontal section and is adapted to fit down snugly on the rotating sleeve *e* and rest upon the flange at the lower edge thereof. The rim *g* is solid and unbroken; but the hub *g''* is split vertically, the line of separation running diagonally of the squared socket, so that the adjacent faces of the separated parts of the hub shall come coincident with the vertical corners of the bushing or sleeve. Suitable horizontal bolts *h* connect the two parts of the hub at opposite sides of the socket to firmly clamp the hub upon the sleeve *e*, the resiliency of the spokes of the wheel affording sufficient elasticity to give the necessary adjustment to firmly clamp the wheel on the sleeve and to permit the wheel to be lifted off the sleeve when the bolts are loosened. The radial arm *i* for the attachment of the pitman of the engine is preferably cast integral with the wheel; but the radial hitching posts or arms *j*, carrying the journal-pins *k* for attachment to the reciprocating operating-rods, are detachably and adjustably secured to the upper face of the wheel by the following devices: Near the edge of the wheel on its upper face is formed a continuous annular flange *l*, which is flat on its upper face and beveled on its edges. Centrally of this flange is formed an annular series of bolt-holes *m*, extending down through the wheel-rim. These holes are equidistantly spaced, and a series of similar holes similarly spaced is formed in

the plate j' , formed on the inner end of each hitching post or arm. Formed in the under surface of each plate coincident with the holes therethrough is a curved groove adapted to fit down upon the annular flange l , its edges being beveled to correspond and nicely fit the beveled edges of said flange. Suitable removable bolts n , passing down through the registering holes of the plate and the rim, attach the arm to the wheel, clamping it down firmly to the face thereof. To adjust the arm around the wheel-rim, it is simply necessary to remove the bolts and slide it one way or the other.

It will be observed that an essential feature lies in the peculiar manner of fastening the arms to the wheels, the annular flange on the face of the wheel and the corresponding groove in the under side of the plate serving not only to take the shearing strain off the bolts, but also to rigidly and adjustably secure the arm to the wheel without the necessity of employing a second annular series of holes nearer the center of wheel. It will be observed that it is essential that the circular series of holes shall be concentric with the flange and also that it is important that the plate j' shall have a bearing on the upper face of the wheel both inside and outside of the flange. It will also be observed that by the construction shown the wheel may be made lighter and stronger and may be cast of a single piece of metal, with its hub divided for clamping to the bushing or sleeve. To give strength to the wheel, its rim may be provided with a depending flange o around its outer edge.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A pull-wheel structure comprising a vertical tapering spindle, a tapering sleeve fitted and adapted to rotate thereon and having its outer surface squared, a pull-wheel having its rim and spokes and hub cast integral, the hub being divided diagonally and having a square tapering socket adapted to fit down upon the sleeve, clamping-bolts connecting the divided parts to secure the hub removably to the sleeve, means

for connecting an operating-pitman to the wheel, and arms attached to the wheel for connection to the pump-operating rods.

2. In a pull-wheel structure, the combination of a supporting-plate provided with an upward-extending vertical spindle and an annular flange surrounding the same and forming therewith an oil-cup, a sleeve journaled on said vertical spindle and having its lower end working in said oil-cup, said sleeve being angular in cross-section, and a pull-wheel mounted on said sleeve, the socket in the hub of the pull-wheel being angular and fitting tightly down over the sleeve and said pull-wheel carrying means for attachment to a motor and to the pump-operating rods.

3. A pull-wheel structure, comprising a base-plate carrying an upright spindle and provided on its under side with a series of depending lugs or wings, a wheel mounted on said spindle, an anchoring-plate below the base-plate, and vertical bolts connecting the anchoring-plate to the base-plate.

4. A pull-wheel structure comprising a support, a vertical spindle, a sleeve journaled thereon and having its exterior angular in cross-section, and a pull-wheel mounted on said sleeve, the socket in the hub of the pull-wheel being square and fitting tightly down over the sleeve and said pull-wheel carrying means for attachment to a motor and to the pump-operating rods.

5. In a pull-wheel structure, the combination of a support, a vertical spindle tapering upward, a sleeve journaled thereon, and this spindle having its interior tapered to fit the sleeve and being rectangular in cross-section, and a pull-wheel carrying means for attachment to the pump-rods and to the operating-motor and having the socket of its hub made rectangular to fit down upon and bind tightly on the rectangular exterior of said sleeve.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 2d day of June, 1903.

J. D. ANDERSON.

Witnesses:

F. D. CLARK,
I. S. WHITE.