

H. D. WEED & H. CASLER.
MECHANISM FOR ACTUATING CYCLOMETERS.
APPLICATION FILED MAY 22, 1907.

905,612.

Patented Dec. 1, 1908.

3 SHEETS—SHEET 1.

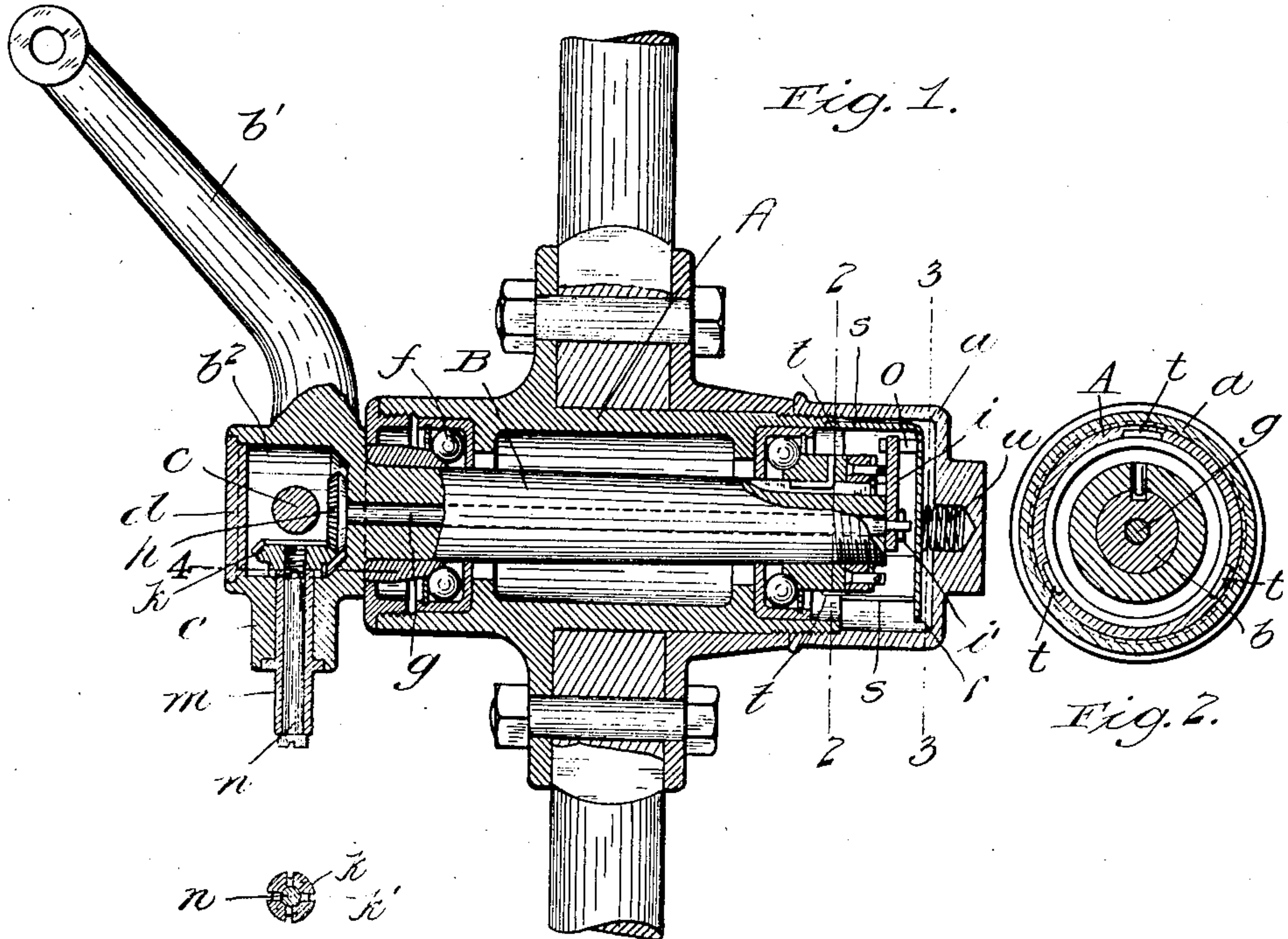


Fig. 4.

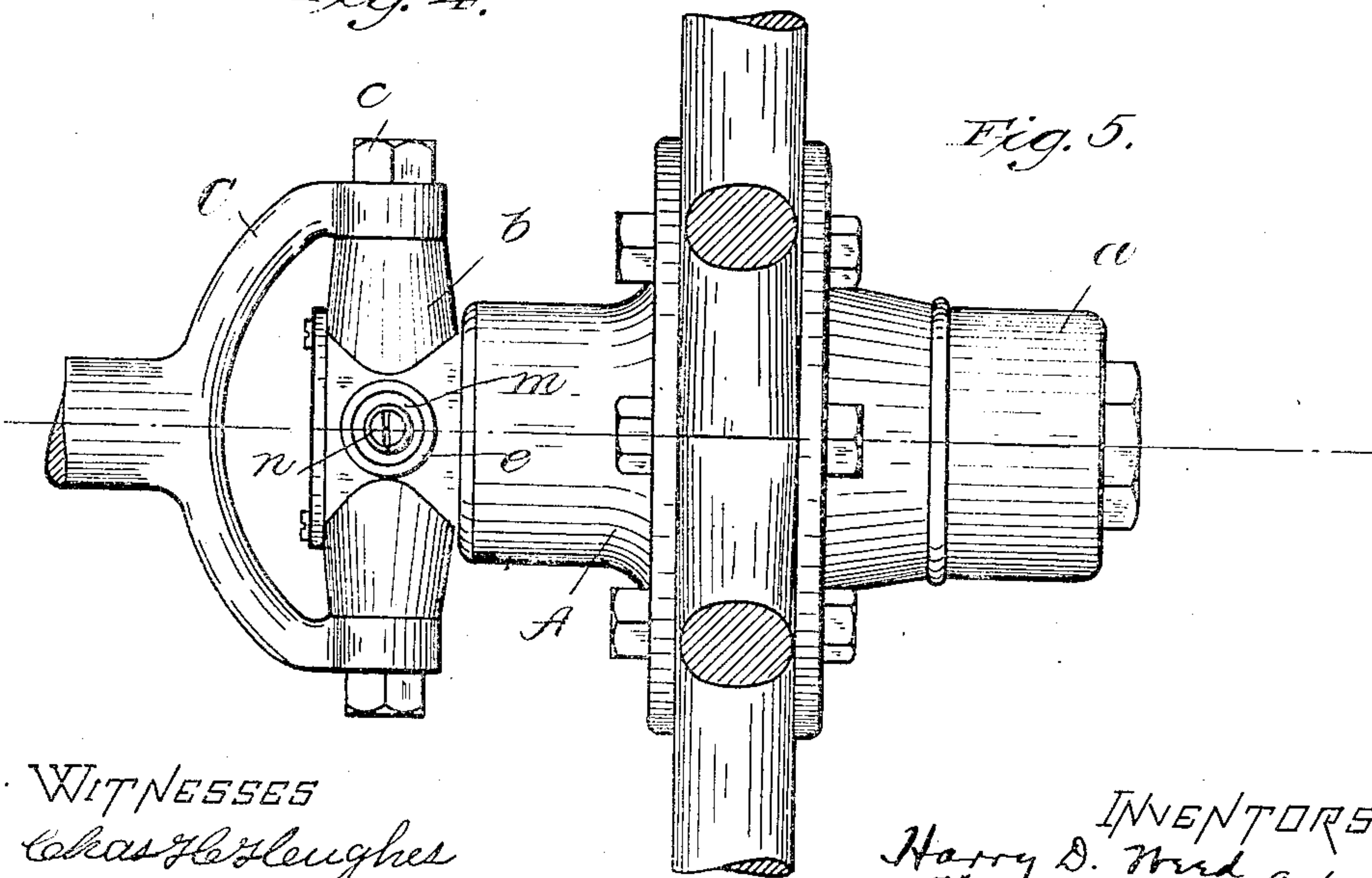


Fig. 5.

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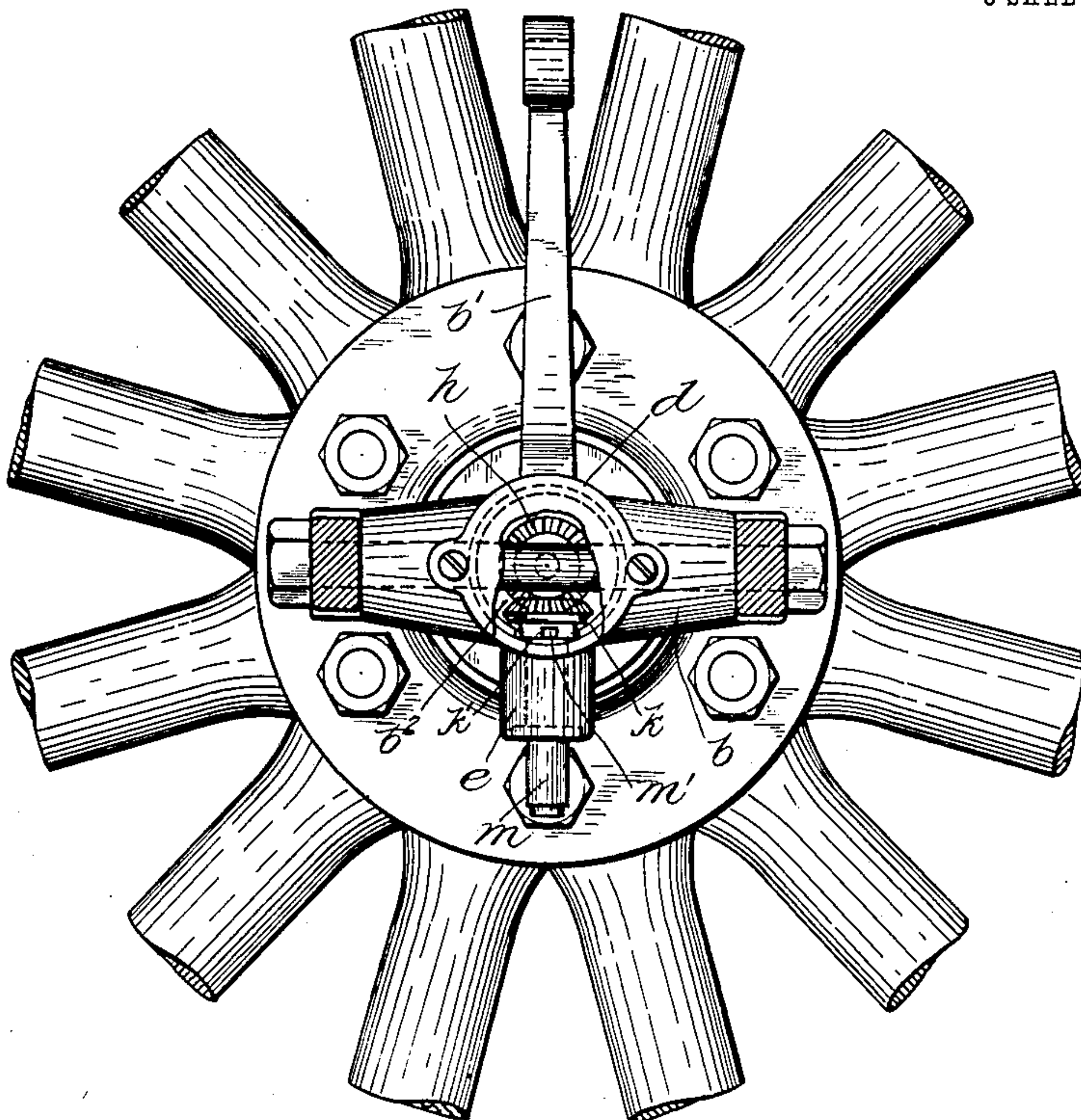


Fig. 6.

Fig. 7.

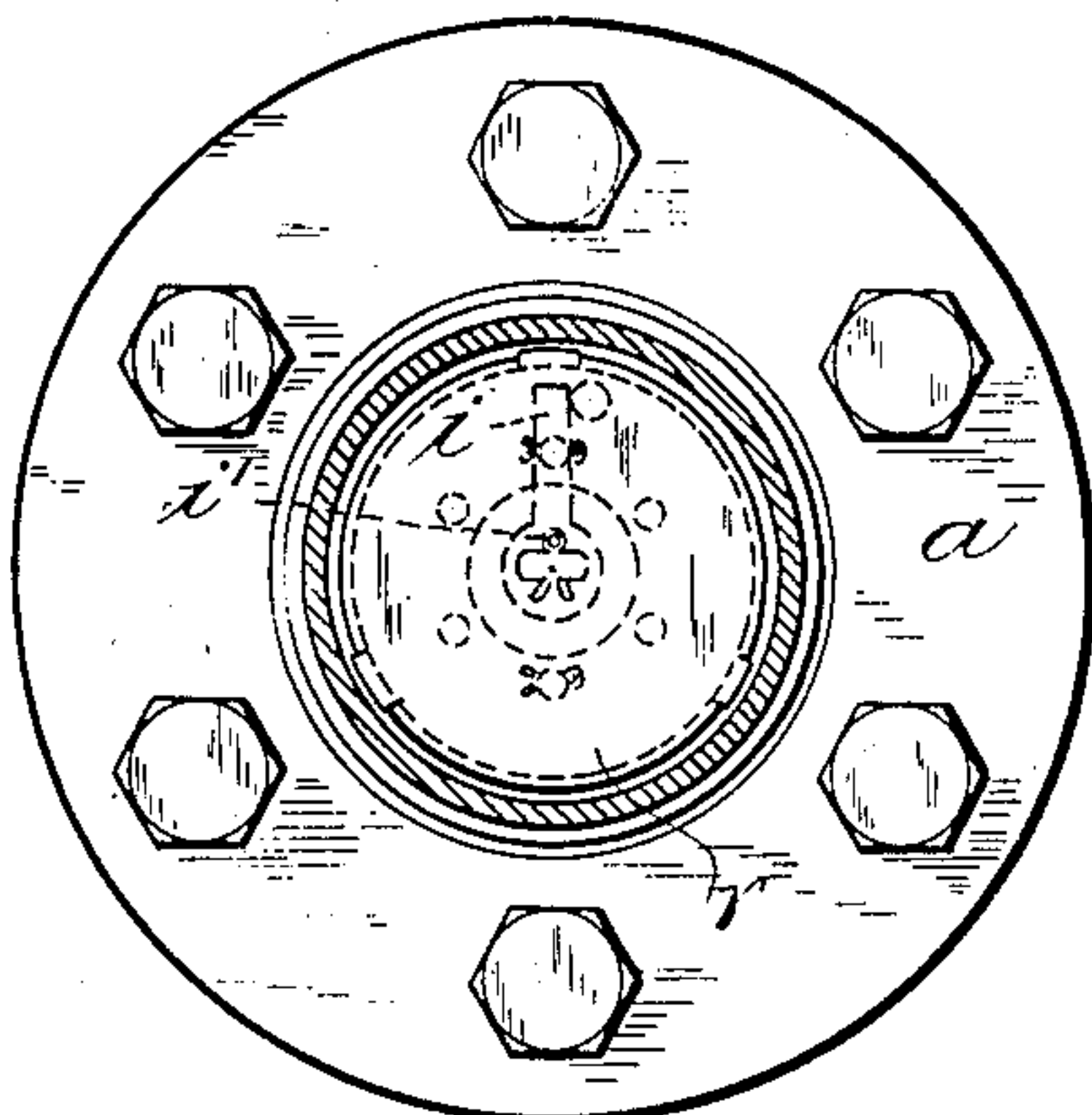
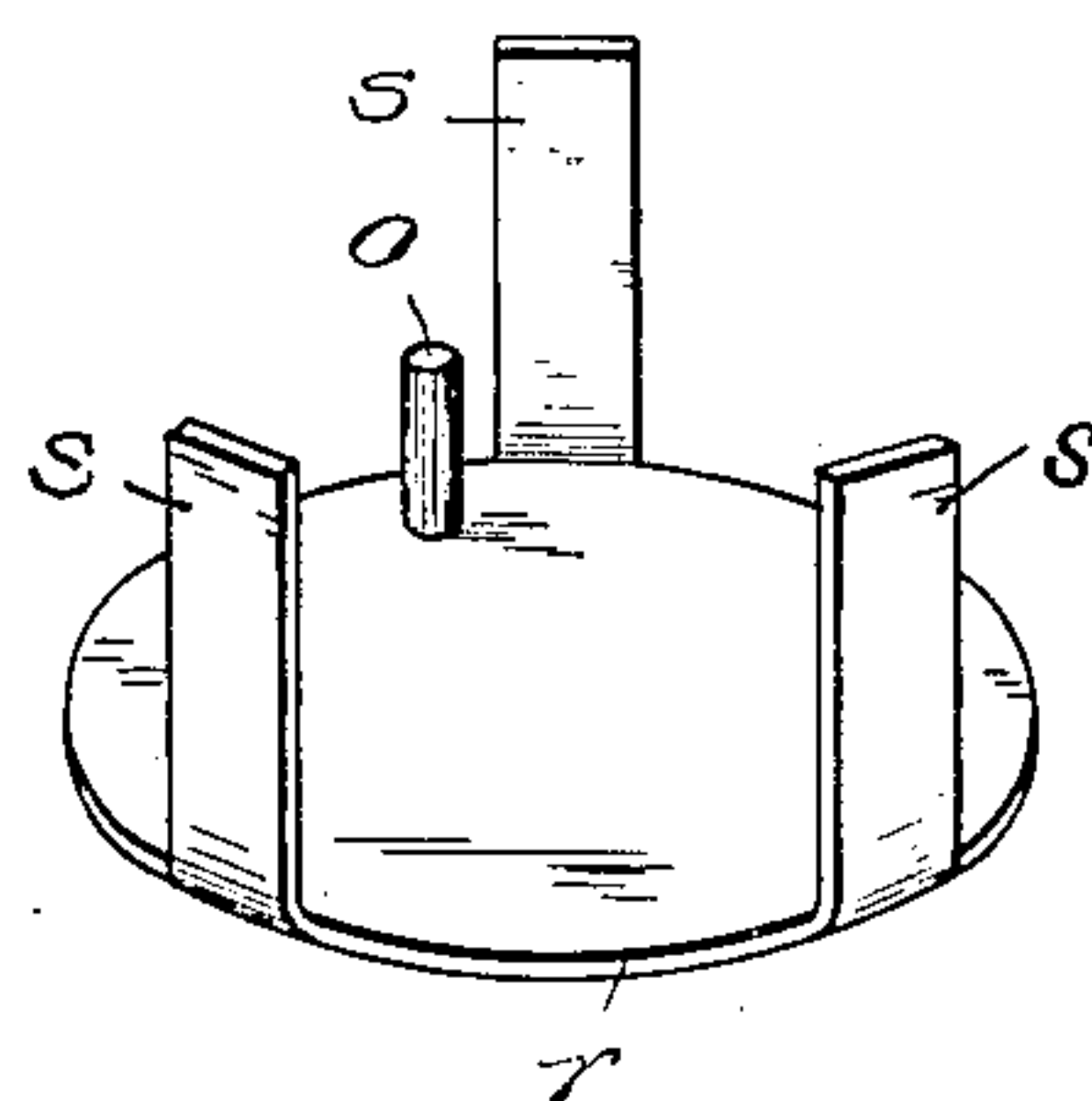


Fig. 3.



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3 SHEETS—SHEET 3.

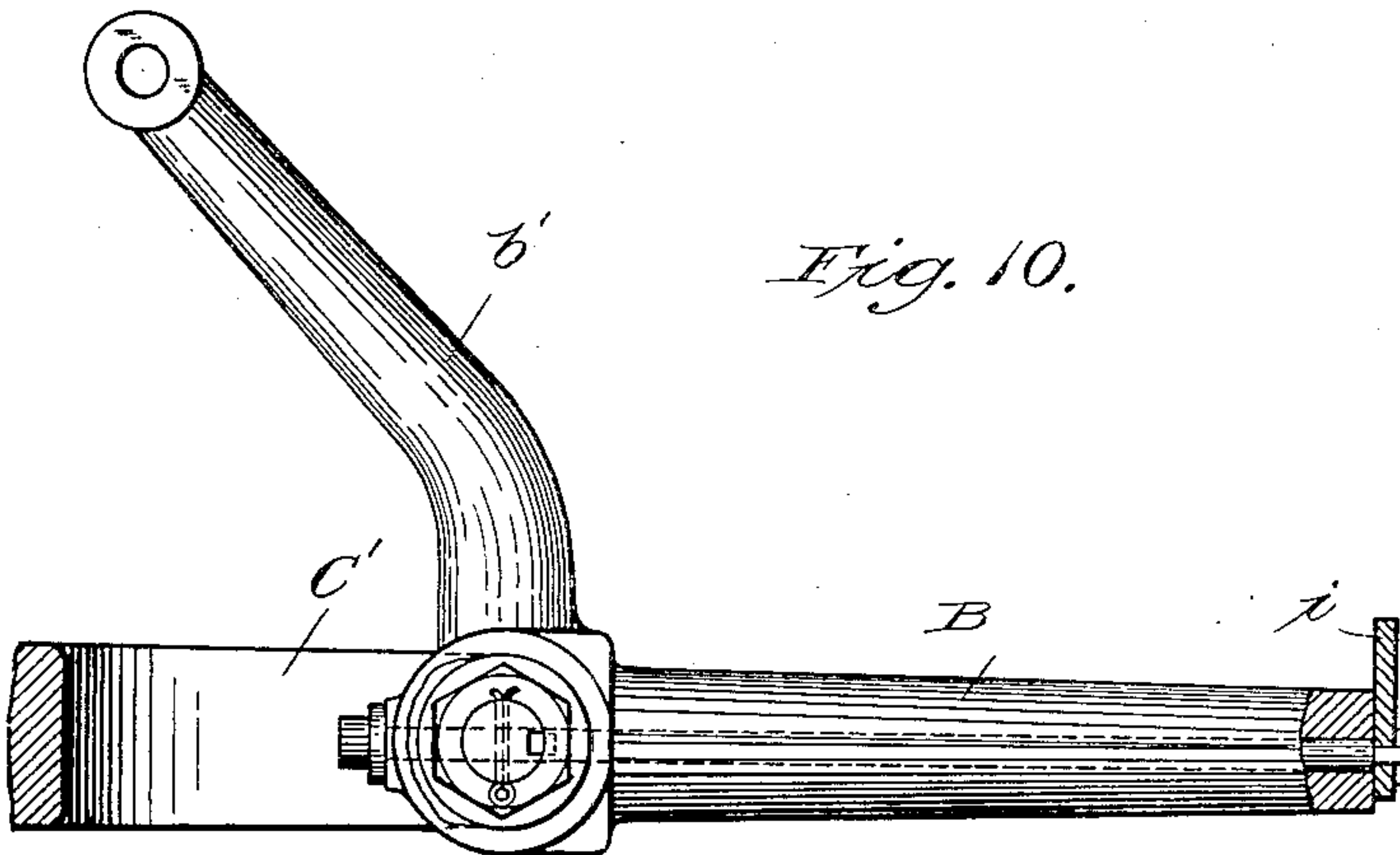


Fig. 10.

Fig. 11.

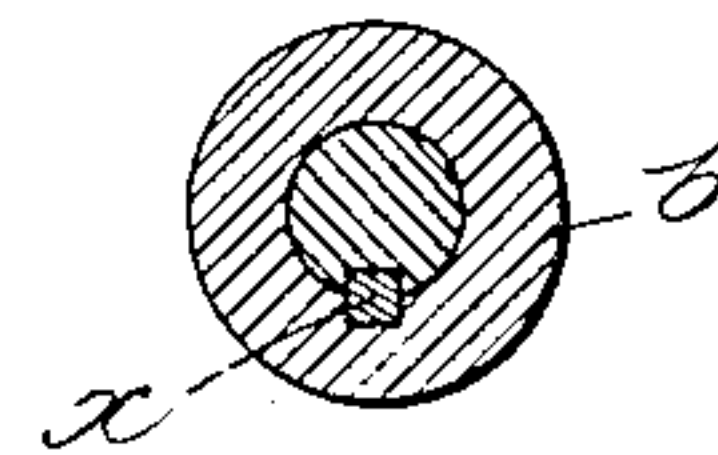


Fig. 12.

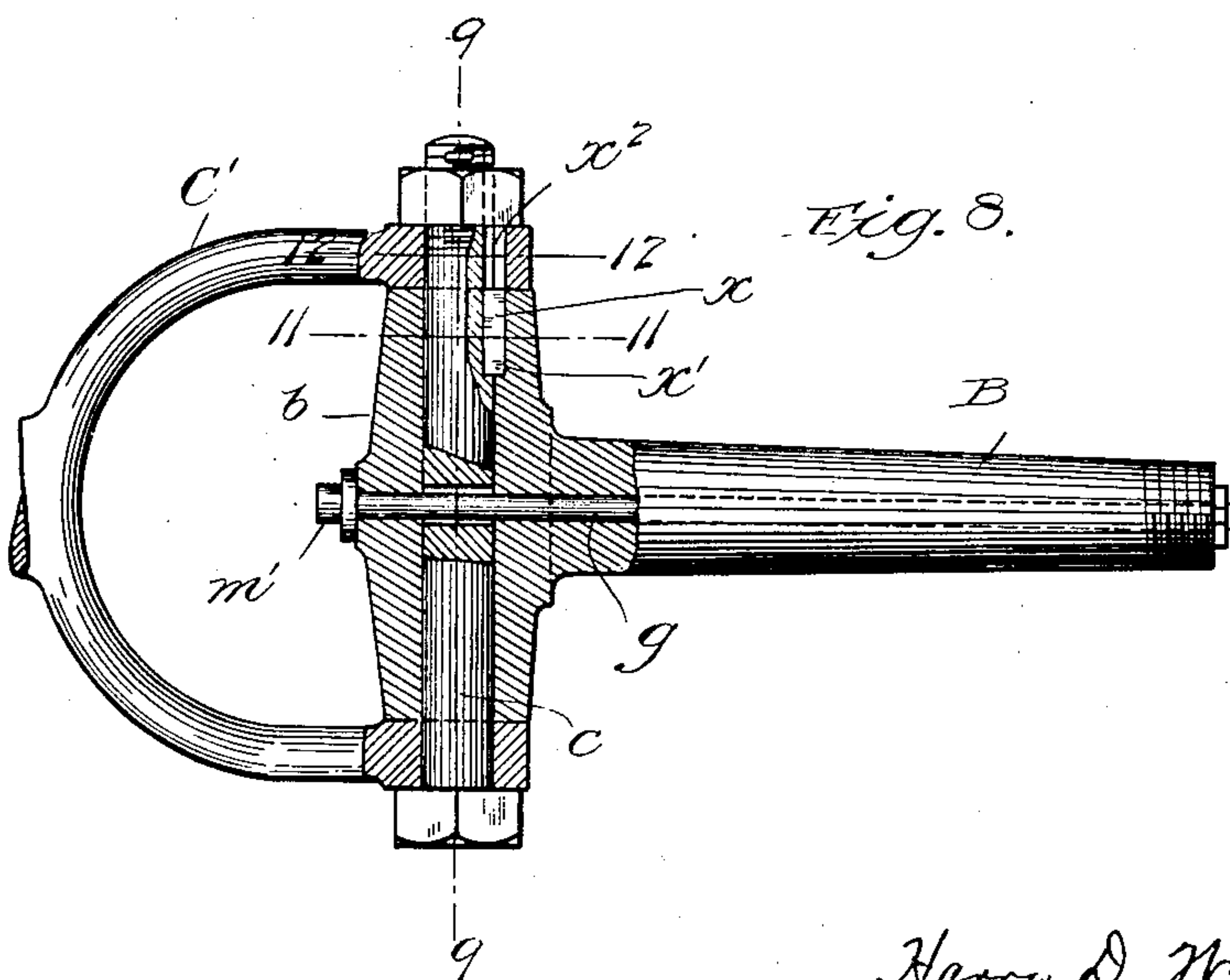
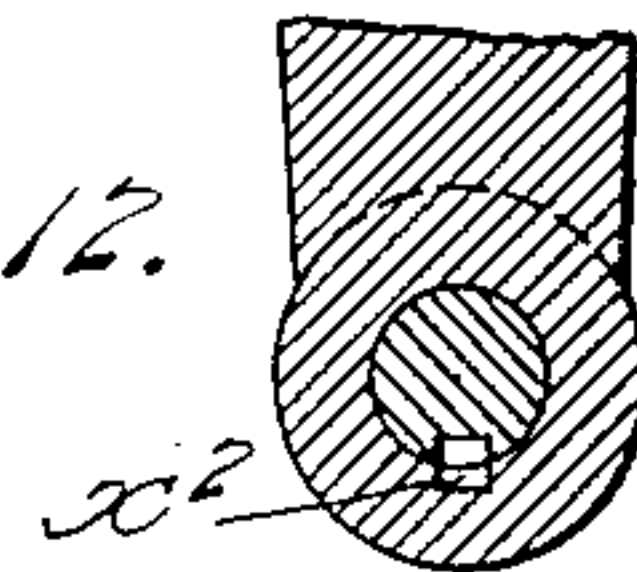
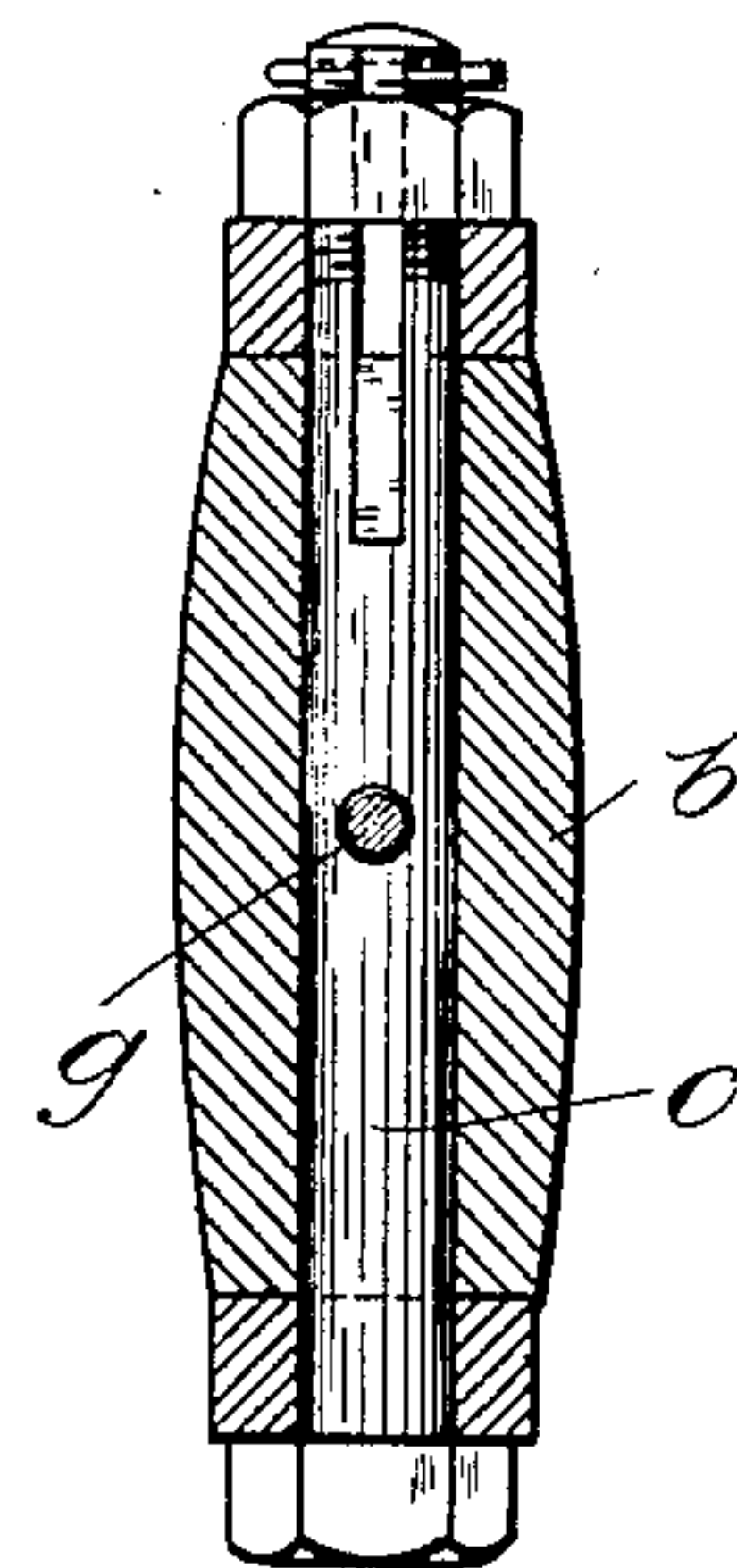


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

HARRY D. WEED AND HERMAN CASLER, OF CANASTOTA, NEW YORK.

MECHANISM FOR ACTUATING CYCLOMETERS.

No. 905,612.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed May 22, 1907. Serial No. 375,052.

To all whom it may concern:

Be it known that we, HARRY D. WEED and HERMAN CASLER, citizens of the United States, residing at Canastota, in the county of Madison and State of New York, have invented a new and useful Mechanism for Actuating Cyclometers, of which the following is a specification.

Our invention relates to cyclometers or similar instruments or devices for indicating the movement of vehicles through the rotation of one of the running wheels thereof and more particularly to the mechanism which is primarily actuated by the rotation of the wheel and from which movement is imparted to the indicating instrumentalities proper which, in so far as our invention is concerned, may be of any improved or well known construction such, for instance, as the veeder odometer or tachodometer.

One of the objects of our invention is to provide a construction in which the primary actuating mechanism may be completely housed and thus protected from the elements as well as from the dust and dirt encountered in the use of the vehicle to which it is applied.

Another object is to provide a construction of steering knuckle and wheel hub adapted to contain and house the primary actuating mechanism and a further object is to provide a construction of actuating mechanism and housing therefor which is simple in construction and highly efficient in use and in which the parts of the actuating mechanism are readily accessible for adjustment, replacement or similar purposes.

The invention includes the combination and arrangement of parts to be hereinafter described and particularly pointed out in the claims.

For the purpose of clearly disclosing the invention to those skilled in the art we have illustrated in the accompanying drawings and shall hereinafter particularly describe in connection therewith a preferred embodiment of our invention but it will be understood that the various parts may be changed or re-arranged, so long as the combination recited in any of the appended claims are not departed from, without departing from the principle or scope of our invention.

In the accompanying drawings Figure 1 is a longitudinal sectional view. Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1. Fig. 3 is a sectional view on line 3—3 of Fig. 1. Fig. 4 is a detail view of one of the gears on line 4 of Fig. 1. Fig. 5 is a bottom plan view. Fig. 6 is an elevation of the inner end of the hub with parts broken away. Fig. 7 is a detail perspective view. Fig. 8 is a side view, partly in section, of a modified construction. Fig. 9 is a section on line 9—9 of Fig. 8. Fig. 10 is a top plan view of Fig. 8, with the axle yoke in section, and Figs. 11 and 12 are sections on lines 11—11 and 12—12, respectively, of Fig. 8.

In the exemplification of our invention disclosed in the accompanying drawings the primary actuating mechanism is associated with the steering knuckle and hub of one of the front wheels of a vehicle.

The steering knuckle shown comprises a stud-axle B having a head *b* at one end which is pivoted in a yoke C, at one end of the front axle of the vehicle, and from which extends an arm *b'* which is connected to any suitable steering mechanism in any well known or improved manner. The head *b* is provided with a pocket *b²*, in alinement with the stud axle which is normally closed by a removable cap *d*, and is further provided with a depending boss *e* having a lengthwise bore disposed radially in reference to the axis of the axle.

Anti-friction bearings *f* of any suitable construction are interposed between the hub and the stud axle but as such structure constitutes no part of our invention it is unnecessary to particularly describe the same.

The construction of hub illustrated comprises a barrel A having a channel for the reception of the spokes and a hub cap *a* threaded upon the outer end of the hub barrel.

The actuating mechanism comprises an abutment carried by the hub and rotatable therewith and driven mechanism, mounted in the steering knuckle, actuated by the abutment and suitably connected to the indicating or recording mechanism to transmit thereto the movement of the running wheel.

The driven mechanism illustrated comprises a shaft *g* journaled in a bore extending axially through the stud-axle having one end projecting beyond the outer end of the stud-axle and having its opposite end extending into the pocket *b*². A suitable beveled gear *h* is secured to the latter end of the shaft *g* and a radially extending arm *i* is suitably secured to the opposite end of the shaft. As illustrated, the last named end of the shaft is of reduced rectangular shape and the end of the arm *i* is provided with an opening of similar shape through which the reduced end of the shaft extends, and for retaining the arm in position a cotter pin *i'* is provided. A second beveled gear *k*, also located in the pocket *b*² and intermeshing with the gear *h*, is suitably coupled or geared to a sleeve or hollow shaft *m* which has a part, projecting on the exterior of the steering knuckle which is adapted to be coupled to the indicating or recording device. The sleeve or shaft *m* is journaled in the boss *e*, is provided intermediate of its length with a flange seated in the end of the boss and is provided at its inner end with lugs *m'* which interfit transverse slots *k'* in end of the hub of the gear *k*. A bolt *n* is provided for connecting the sleeve or shaft to the gear *k*, this bolt having a shank extending through the bore of the sleeve or shaft and threaded into the gear and a head abutting against the outer end of the sleeve or shaft. By screwing up this bolt the end of the hub of the gear, and the bolt, are drawn together, bringing the lugs *m'* into the slots *k*. At the same time, the parts are so proportioned that the flange on the sleeve or shaft then lies in the groove or rabbet in the lower end of the boss.

The abutment for coöperating with the arm *i*, for transmitting the rotation of the wheel thereto and to the shaft *g*, is so constructed and mounted as to permit of its movement relative to the arm in order to compensate for disalignment of the wheel, or the wobbling thereof upon the stud-axle, due to imperfect bearings or to the imperfect adjustment of the latter. As here illustrated, the abutment comprises a pin *o* carried by a disk *r* located within the hub cap, the disk having a plurality of inwardly extending arms *s* the ends of which are adapted to fit within recesses *t* in the end of the hub barrel for the purpose of coupling the abutment to the hub. A spring *u*, held in a pocket formed axially of the hub cap, bears upon the disk and tends to hold the ends of the arms within the recesses.

It will be understood that a suitable flexible shaft may be coupled at one end to the exposed part of the sleeve or shaft *m* for transmitting the rotation of the latter to the indicator or recorder or said sleeve or shaft may be directly geared or coupled in any

other suitable way to the recording or indicating instrument which may be located on the dash board of the vehicle or placed in any other desired position. It will be further understood that as the arm *i* is located within the path of movement of the abutment the rotation of the hub will be imparted to the shaft *g* and through the gears *h—k* to the sleeve or shaft *m*.

In the modified form shown in Figs. 8 to 12, the shaft *g* extends straight through the part *b* to the rear of the same, where it is provided with a head *m'* for connection with the flexible shaft, the bracket or yoke *C'* being enlarged, as shown, to accommodate the bend of the said flexible shaft. Since the part *b* must not turn relatively to the pivot *c* which carries it, the two are rigidly connected by means of a short key *x*, a groove *x'* being provided in the aperture in the top of the bracket or yoke *C'* to register with the key groove *x*² and permit the key to be driven into place after the parts are assembled. To separate the parts the vertical pivot or journal *c* is simply drawn down and out, as will be readily understood.

We claim:

1. In a cyclometer actuating mechanism, the combination of a steering knuckle, a wheel carried thereby having a hub, a shaft adapted for connection with a cyclometer to actuate the same, and mechanism housed within the steering knuckle and wheel hub for transmitting the rotation of the wheel to the said shaft.
2. In a cyclometer actuating mechanism, the combination of a steering knuckle, a wheel carried thereby having a hub, a shaft adapted for connection with a cyclometer to actuate the same, driving mechanism carried by the steering knuckle to rotate the said shaft, and mechanism movable with the wheel housed within the hub thereof for actuating the first mentioned mechanism.
3. In a cyclometer actuating mechanism, the combination of a stud axle, a wheel mounted thereon having a hub, a shaft journaled in the stud axle, a radial arm on said shaft, an abutment carried by the wheel hub co-acting with said arm to rotate the same, a shaft adapted for connection with a cyclometer, and gearing between the said shafts.
4. The combination with a steering knuckle having an axle, and a wheel mounted on said axle and having a hub, of a shaft journaled in the axle of the steering knuckle, means at the outer end of the axle and housed within the hub of the wheel for imparting the rotation of the wheel to the shaft, a shaft carried by the steering knuckle and adapted for connection with a cyclometer, and gearing interposed between the said shafts.
5. The combination with a steering knuckle having a stud axle, and a wheel having a

hub, rotatably mounted on said axle, of a shaft journaled in the axle, means at one end of the axle and housed within the hub for imparting the rotation of the wheel to the shaft and mechanism adapted for connection with a cyclometer, geared to the opposite end of the shaft.

6. In a mechanism for the purpose described, an axle having a head provided with a recess or pocket, a shaft journaled in the axle having one end extending into the pocket and its opposite end projecting through the outer end of the axle, a radially extending arm secured to the latter end, a shaft adapted to be connected to the indicating instrument, gearing located in the pocket interposed between the said shafts, and an abutment carried by the hub cooperating with the radial arm.

7. In a mechanism for the purpose described, an axle having a head provided with a pocket, a shaft journaled in the axle having one end extending into the pocket, a boss on the head having a bore radial to the axis of the said axle, a shaft journaled in said bore, gearing interposed between the shafts, and means for transmitting the rotary movement of the hub to the shaft journaled in the axle.

8. In a mechanism for the purpose described, an axle having a head provided with a pocket, a shaft journaled in the axle having one end extending into the pocket and its opposite end projecting through the outer end of the axle, a boss on said head having a bore radial to the axis of the axle, a shaft journaled in said bore, a gear detachably coupled to the sleeve, an intermeshing gear carried by the first named end of the shaft, a radially extending arm secured to the opposite end of the shaft, and an abutment carried by the hub co-acting with said arm.

9. In a cyclometer actuating mechanism, the combination with a steering knuckle, including a stud-axle, and a wheel hub journaled thereon, of a shaft journaled in the stud-axle and provided with a striker arm, an abutment cooperating with said arm, a disk carrying the abutment having a part adapted to engage the hub barrel, means for yieldingly holding the said parts in engagement with the hub barrel and the abutment in the plane of the striker arm, and mechanism geared to the said shaft and adapted for connection with a cyclometer to actuate the same.

10. The combination with a steering knuckle including a stud-axle, and a wheel hub journaled on the stud-axle, of a shaft journaled in the stud-axle, means geared to one end thereof adapted for connection with a cyclometer to actuate the same, a radial arm secured to the other end of said shaft, a disk housed within the hub and provided with parts designed to interengage with the

hub barrel, a spring co-acting with the disk, and an abutment carried by the disk designed to cooperate with the radially extending arm.

11. In combination, a steering knuckle including a stud-axle, a wheel hub journaled thereon including a hub barrel having recesses in the outer end thereof, and a hub cap secured upon the outer end of the hub barrel, a shaft journaled in the stud-axle, means geared to one end of said shaft and adapted for connection with a cyclometer to actuate the same, a radial arm secured to the other end of the shaft, an abutment co-acting with said arm, a disk carrying the abutment provided with arms adapted to extend within the recesses in the hub barrel, and a spring interposed between the hub cap and said disk.

12. In combination, a steering knuckle having a stud-axle, and having a head provided with a pocket opening outwardly, a cap for normally closing the pocket and a boss having a bore radial to the axis of the axle, a sleeve or shaft journaled in the bore having a flange abutting against the end of the boss, an exposed part adapted for connection with a cyclometer to actuate the same and having an inner end extending within the pocket and provided with lugs; a gear having slots in the end of its hub to receive the lugs; a bolt for coupling said gear and sleeve or shaft together; a shaft journaled axially of the stud-axle; a gear on one end thereof intermeshing with the first named gear; the opposite end of said shaft projecting beyond the end of the stud-axle; a radial arm mounted thereon; a disk interposed between the end of the stud-axle and the end of the hub, and provided with arms engaging the hub; and a pin, constituting an abutment, projecting from the disk into the plane of the radial arm.

13. The combination with an axle and a wheel journaled thereon, of a shaft journaled in the axle, means at one end of the axle for transmitting the rotation of the wheel thereto, an element adapted for connection with a cyclometer to actuate the same, and gearing interposed between said element and the shaft.

14. The combination with an axle and a wheel having a hub journaled thereon, of a shaft journaled in the axle, means at one end of the axle housed within the hub of the wheel for transmitting the rotation of the wheel to the shaft, an element adapted for connection with a cyclometer to actuate the same, and gearing at the opposite end of the axle and housed within the same for transmitting the rotation of the shaft to said element, substantially as described.

15. The combination with an axle, and a wheel having a hub rotatable thereon, of a shaft arranged in an aperture in the axle and

extending through the hub of the said wheel, and means at one end of the shaft for communicating thereto the motion of the wheel.

16. The combination with an axle, and a
5 wheel having a hub rotatable thereon, of a shaft arranged in an aperture in the axle and extending through the hub of the said wheel, means at one end of the shaft for communi-

cating thereto the motion of the wheel, and means at the other end of the shaft for con- 10
nection with a flexible shaft.

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Witnesses:

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