

No. 731,646.

PATENTED JUNE 23, 1903.

P. C. WILSON, D. W. BASSETT & J. DRING.

FRICTION MECHANISM.

APPLICATION FILED DEC. 2, 1901.

NO MODEL.

FIG. 1.

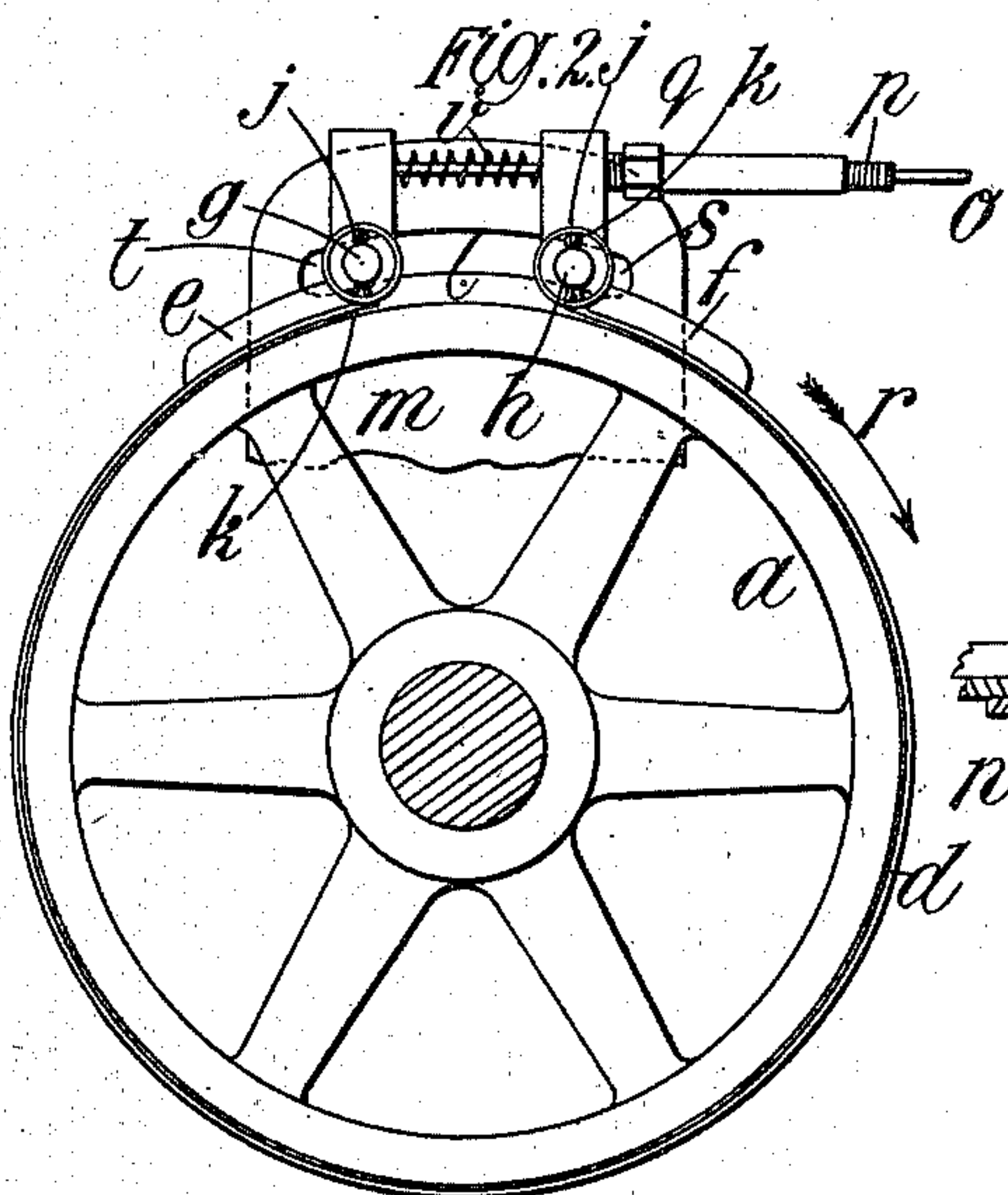
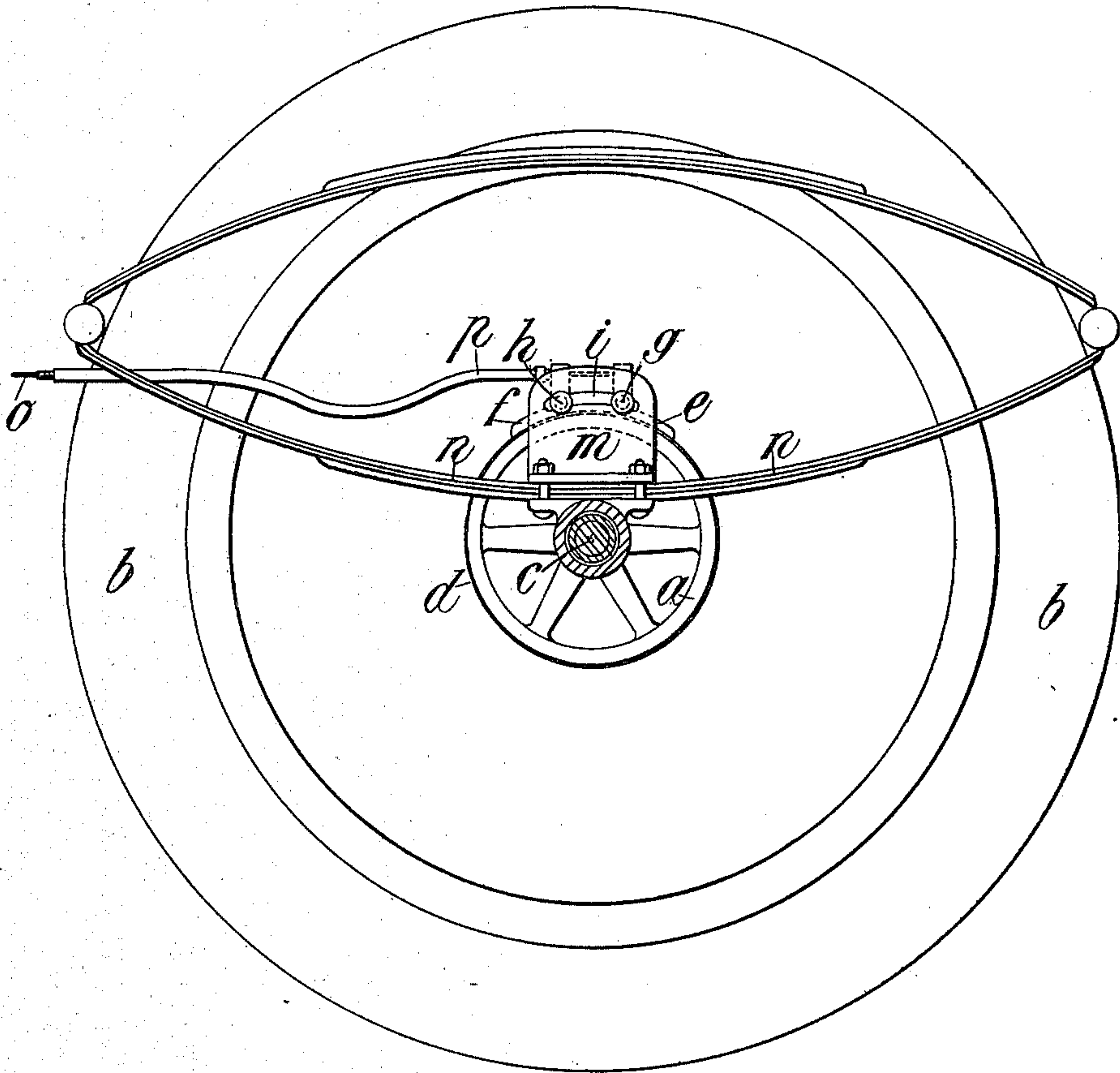


FIG. 3.

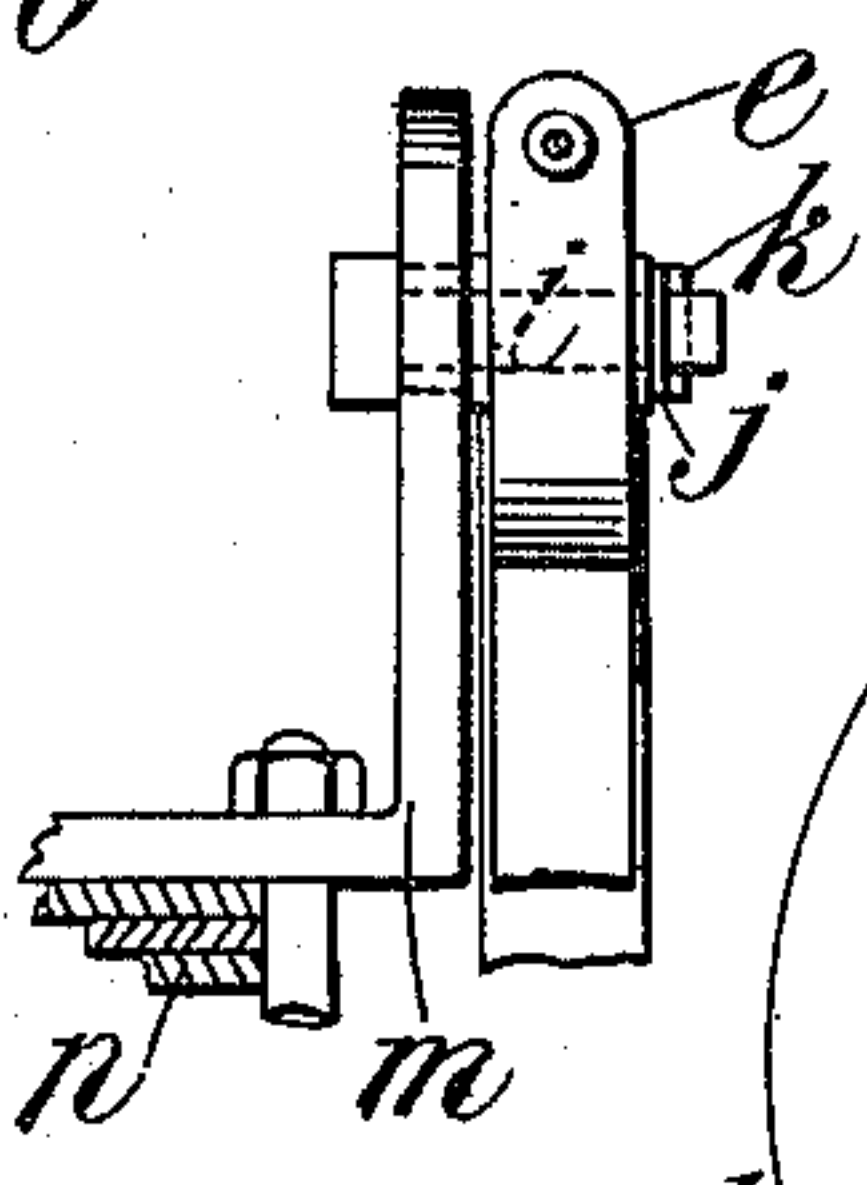
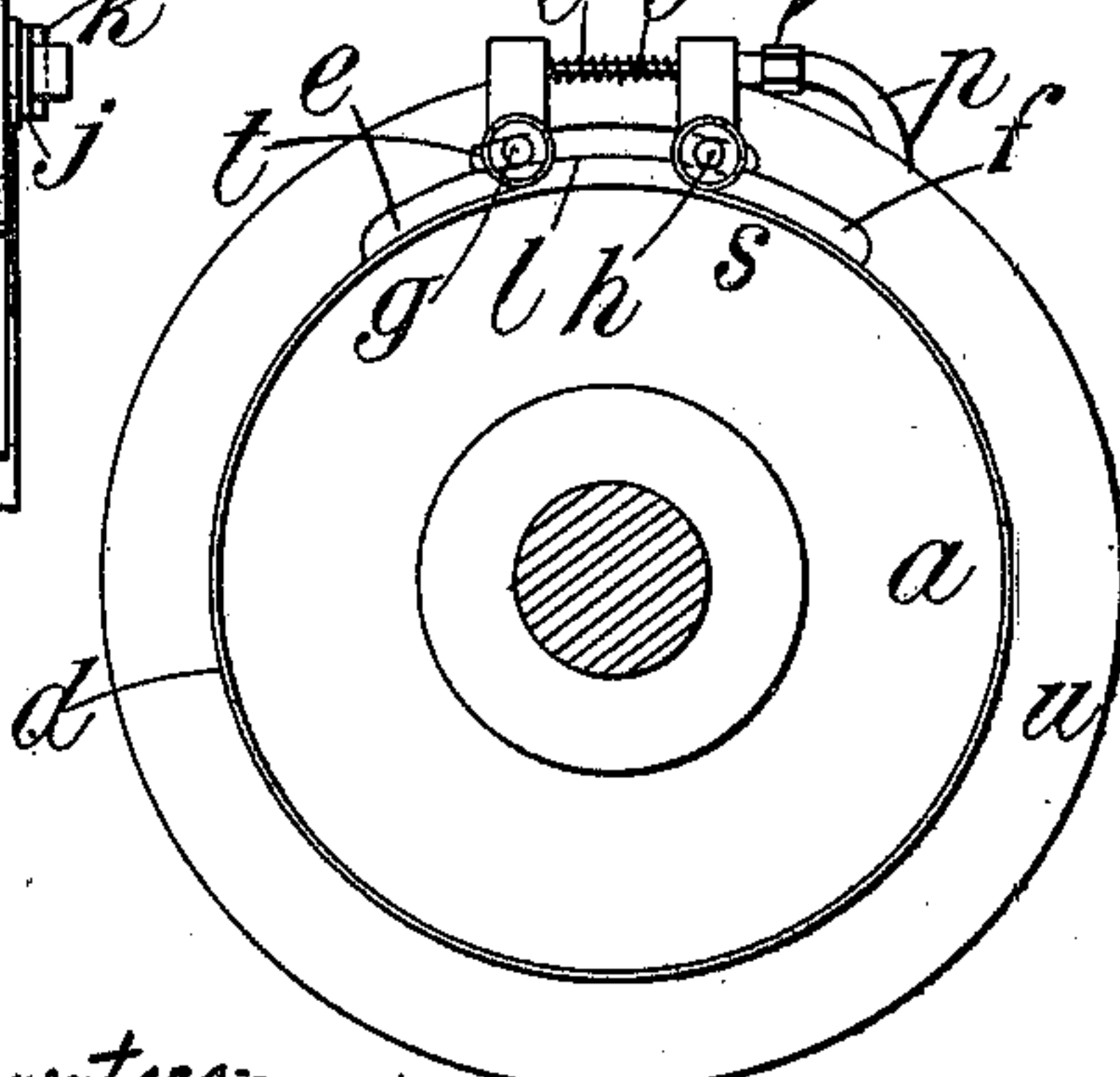


FIG. 4.



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# UNITED STATES PATENT OFFICE.

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## FRICTION MECHANISM.

SPECIFICATION forming part of Letters Patent No. 731,646, dated June 23, 1903.

Application filed December 2, 1901. Serial No. 84,394. (No model.)

*To all whom it may concern:*

Be it known that we, PERCY CARLISLE WILSON, DAVID WILLIAM BASSETT, and JOHN DRING, subjects of His Majesty the King of Great Britain, residing at London, in the county of Middlesex, England, have invented new and useful Improvements in Friction Mechanism for Brakes, Clutches, and the Like, of which the following is a specification.

Our invention relates to that class of band-brake or friction mechanism which is equally effective in stopping or coupling parts rotating in either direction; and it has for its objects to improve and simplify the said parts and to combine therewith improved means for operating the said parts.

Referring to the accompanying drawings, Figure 1 shows a rear view of our invention as applied to a vehicle-brake. Fig. 2 is a front elevation of the brake, drawn to a larger scale; and Fig. 3 is a partial side elevation thereof. Fig. 4 shows our invention as applied to a clutch.

*a* represents a brake or friction-drum made fast to the road-wheel *b* or a shaft or other part *c*.

*d* is a band of metal or other suitable material encircling the drum *a*. The band *d* is provided at its ends with brackets *e* and *f*, to which force is applied when it is desired to actuate the brake.

*g* and *h* are studs carried by the brackets *e* and *f*, respectively. These studs pass through holes *i* in the brackets *e* and *f*, wherein they are retained by washers *j* and split-pins *k*, while their opposite extremities engage the slot *l* of a plate or bracket *m*, which is made fast to any convenient adjacent relatively fixed part, such as the springs *n*, to which the wheel-axle or shaft-bearing is secured.

To operate the band *d*, we prefer to employ the transmitting mechanism described in the specification of Letters Patent of the United States granted to E. M. Bowden, No. 609,570, according to which power is transmitted from one point to another by means of a wire or member which while flexible is inextensible, and it is arranged within a tortuous guide tube or member formed of spirally-coiled wire which while flexible laterally is incompressible

longitudinally. By this arrangement a slight movement given to the operating part is transmitted to the part to be actuated no matter to what extent the transmitting-wire and its guide-tube may be coiled or bent. *o* denotes the inextensible member of such mechanism, and it is secured to the bracket *e* and tension is applied to it. *p* is the incompressible member of the said mechanism, and its extremity abuts against an internal shoulder in an adjustable stop *q*, screwed into the bracket *f*. As a result of the tension on the inextensible member *o* it will be pulled through the incompressible member *p*, which reacting on the bracket *f* will cause it and the bracket *e* to approach each other, drawing with them the ends of the band *d*, which will thus be caused to grip the drum *a*, whose rotation when in the direction of arrow *r* will in turn cause the stud *h* to travel to the end *s* of the slot *l* and there become the fixed point, whereas if the direction of rotation of the drum be reversed the band and its attachments will travel in the reverse direction until the stud *g* reaches the end *t* of the said slot *l*. In this way it will be seen that the frictional contact of the drum with the band always causes additional tension (resulting in additional braking force) to be applied to the said band irrespectively of the direction of rotation.

In applying our invention to the construction of clutches the drum *a* is made fast to one part and the disk *u* or an equivalent part, which is provided with a slot *l*, is secured to the other part. A band *d*, similar in all respects to that described with reference to the other figures of the drawings, is applied to the drum *a* in like manner, and its studs *g* *h* engage the slot *l*. The Bowden connection shown to operate the clutch is of similar construction to that previously described, the other end of the inextensible member *o* being preferably connected to a sleeve (not shown) adapted to slide along the shaft or equivalent part to which the disk *u* is secured. Springs *v* may be employed to open the band *d* when the brake is off or the clutch open, and the form of the slot *l* may be such as to hold the said band clear of the drum *a* when the former is in its normal position—i. e., not applied.



What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

5 In a friction mechanism, the combination, with a friction-drum and a band, of brackets located at the ends of said band, a slotted member, studs located on said brackets and adapted to engage the slot of said slotted member, and a power-transmitting mechanism comprising an inextensible member and an incompressible member the inextensible member being secured to one of said brackets and the incompressible member to the other of said brackets.

In testimony whereof we have hereunto subscribed our names.

PERCY CARLISLE WILSON.  
DAVID WILLIAM BASSETT.  
JOHN DRING.

Witnesses to the signatures of Percy Carlisle Wilson and John Dring:

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