

No. 871,387.

PATENTED NOV. 19, 1907.

J. BURTIN.

WATCH.

APPLICATION FILED MAY 24, 1905.

3 SHEETS—SHEET 1.

Fig. 3.

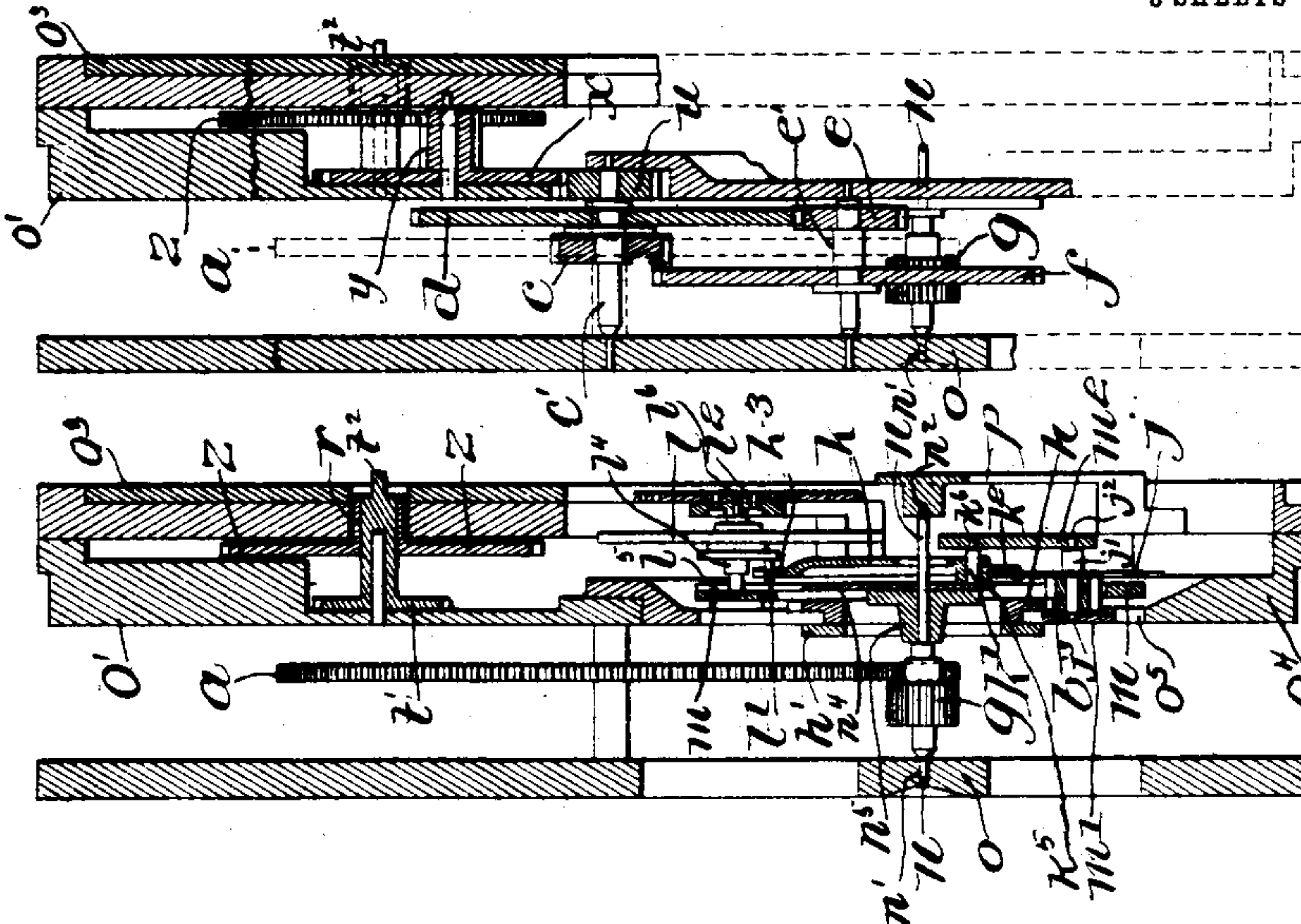


Fig. 2.

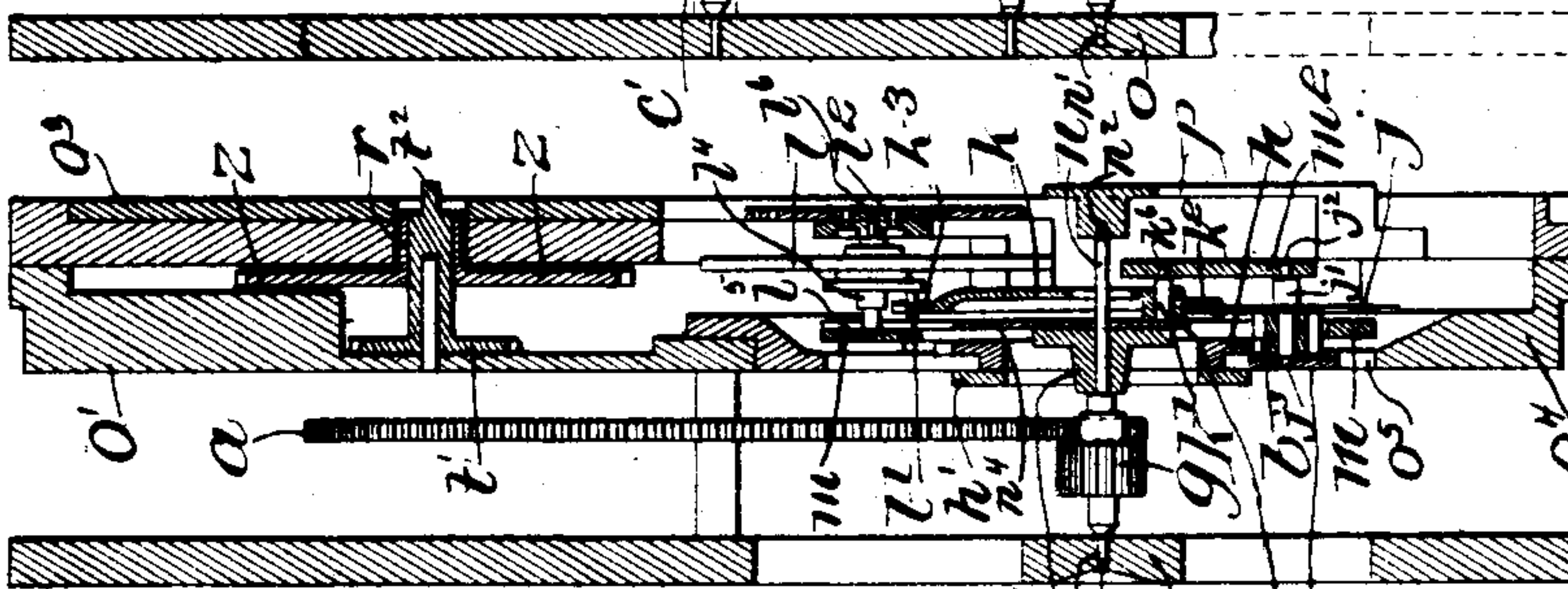
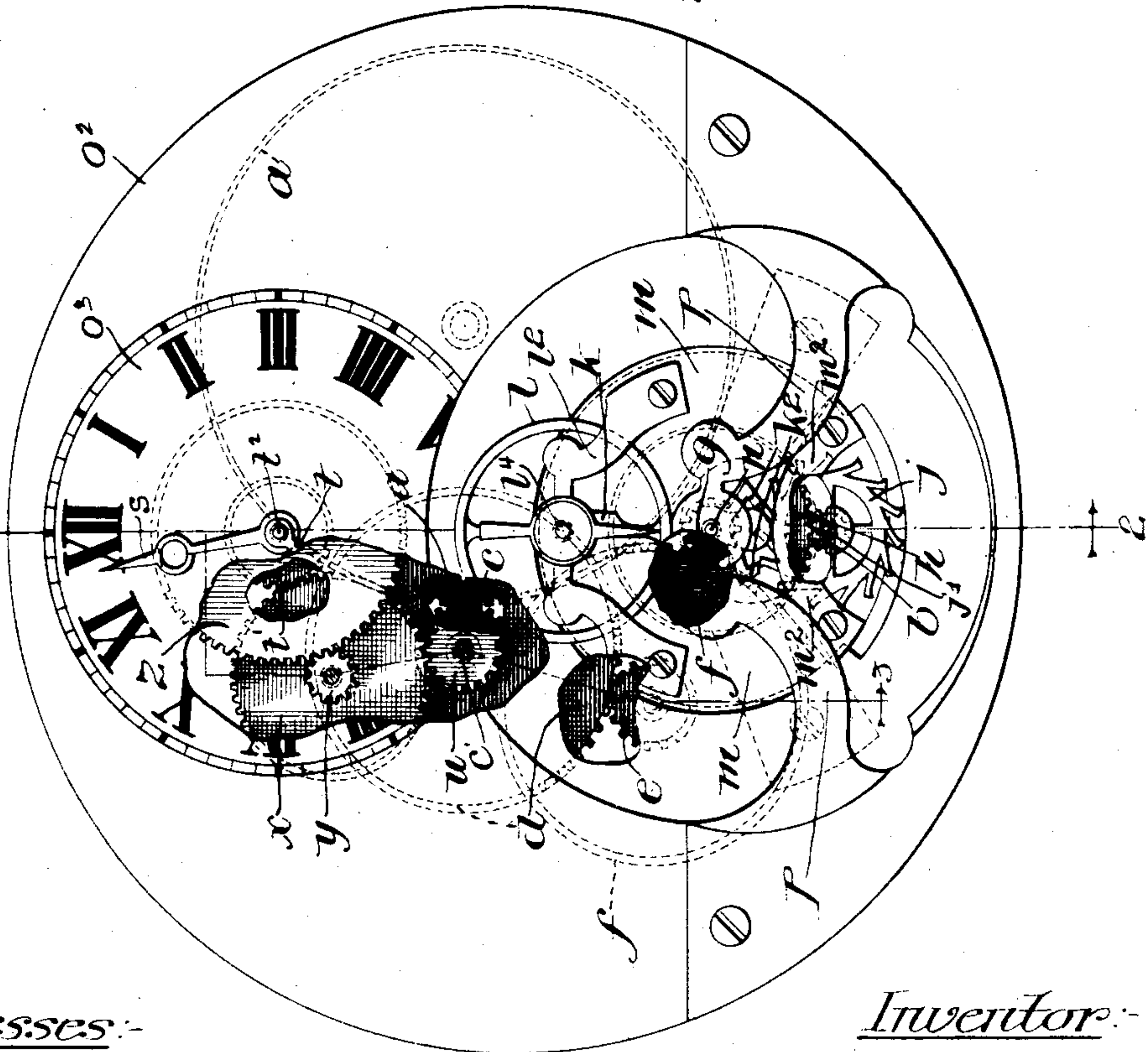


Fig. 1.



Witnesses:-

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C. M. Crawford

Inventor:-

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By: B. Singer

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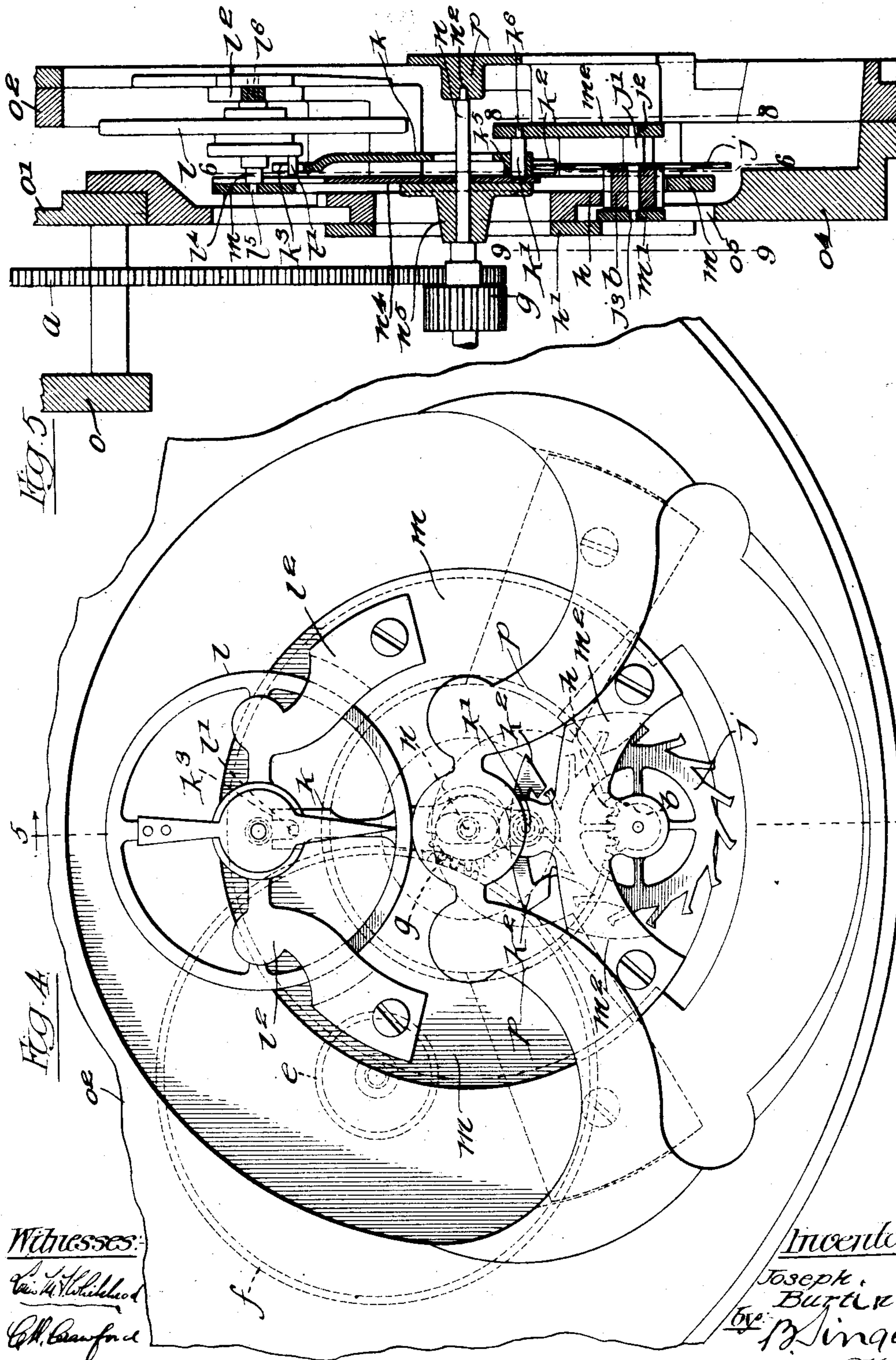
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3 SHEETS—SHEET 2.



Witnesses:
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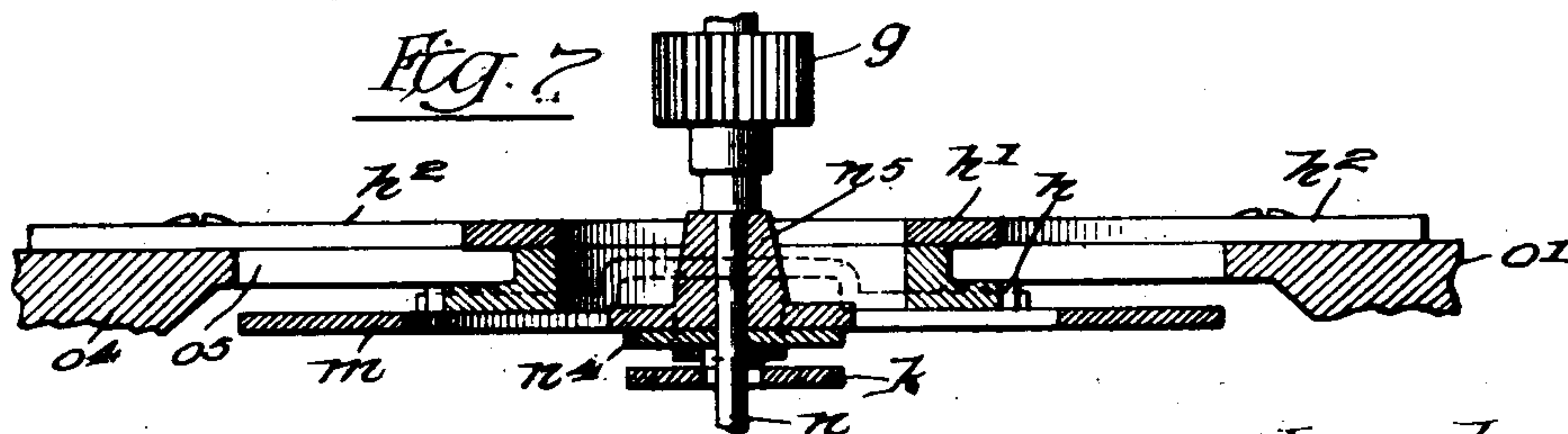
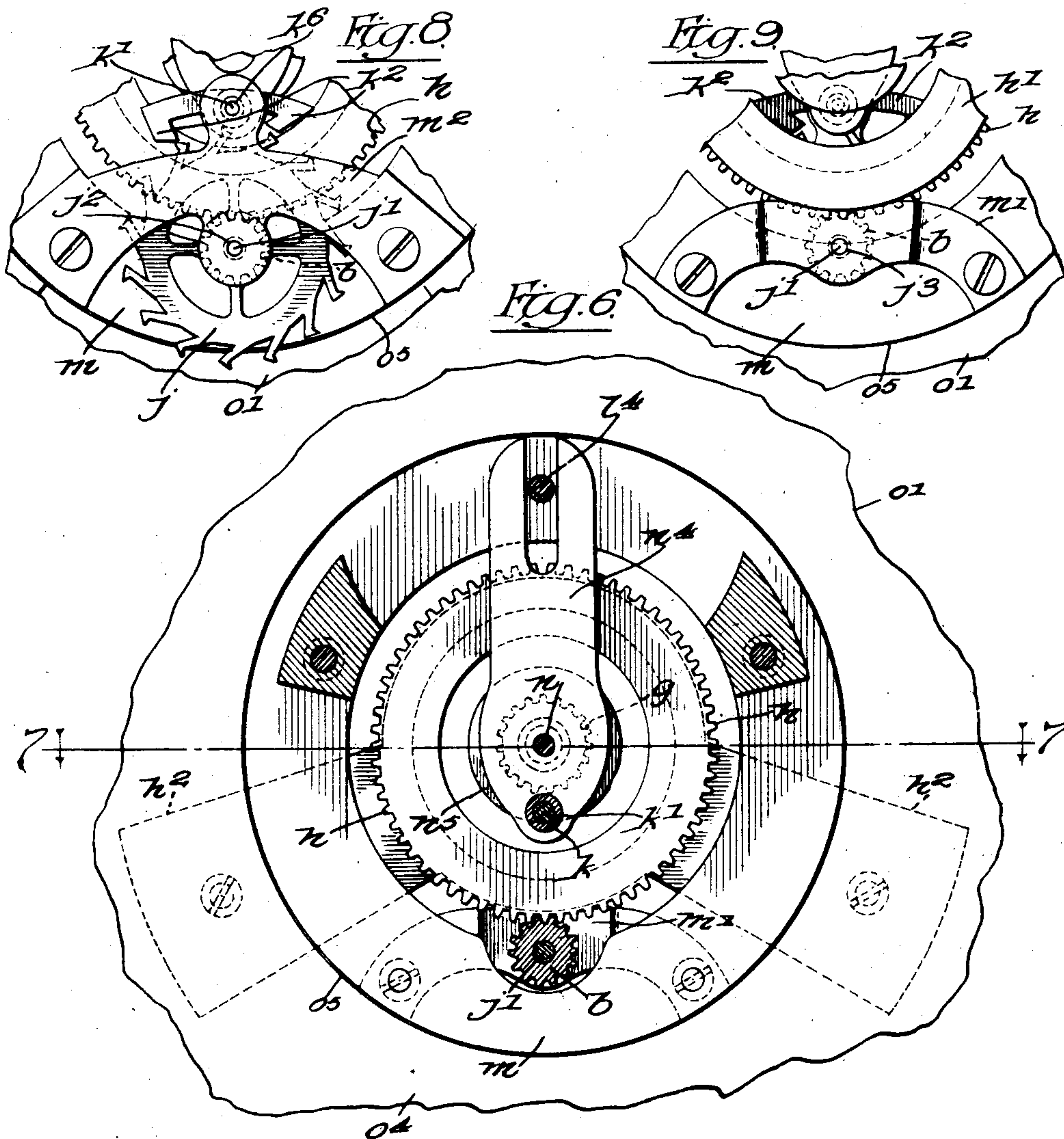
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH BURTIN, OF CHARQUEMONT, FRANCE.

WATCH.

No. 871,387.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed May 24, 1905. Serial No. 261,975.

To all whom it may concern:

Be it known that I, JOSEPH BURTIN, watchmaker, a citizen of France, residing at Charquemont, Department of Doubs, France, have invented new and useful Improvements in and Relating to Watches, of which the following is a specification.

This invention relates to improvements in watch or clock movements of that class in which the balance and escapement wheels are mounted upon a rotatable member and wherein rotation of the member causes bodily movement of the escapement and balance wheels and wherein such bodily movement serves to impart axial movement to said wheels and the usual mechanism associated therewith.

The invention has for its object the provision of a movement of this character wherein the construction is simplified and the efficiency is increased and whereby the renewal of parts in case of repair and breakage and original assembling is facilitated and simplified.

The invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawings:—Figure 1 is a view in side elevation of a watch movement embodying the main features of my invention. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a sectional view on the indirect line 3—3 of Fig. 1. Fig. 4 is an enlarged elevation of a portion of the movement to which the device of my invention is applied. Fig. 5 is a sectional view on line 5—5 of Fig. 4. Fig. 6 is a sectional view on line 6—6 of Fig. 5. Fig. 7 is a sectional view on line 7—7 of Fig. 6. Fig. 8 is a sectional view on line 8—8 of Fig. 5. Fig. 9 is a sectional view on line 9—9 of Fig. 5.

Like characters of reference designate similar parts throughout the different figures of the drawings.

The device of my invention will now be described in detail with reference to the specific embodiment shown but it will be understood that I do not wish to be limited to such specific showing except for such limitations as the claims import.

As shown *o* designates a pillar plate disposed in parallel relation with a watch plate *o'*. A dial plate *o²* is mounted upon the watch plate *o'* and is recessed to receive a

dial *o³* forming the face of the watch or clock and upon which the hours and minutes are indicated in the usual manner. The watch plate *o'* is cut away or recessed at its lower portion which cut away or recessed portion is occupied by a removably mounted section *o⁴* provided with a centrally disposed opening *o⁵* adapted to accommodate portions of the device of my invention hereinafter described.

The hour and minute hands *s* and *t* respectively are operated from the spring barrel by a train of gears which will now be described in detail. The hour hand *s* is mounted on a cannon *v* provided with a wheel *z* adapted to mesh with and be driven from a pinion *y*. The pinion *y* is fixed to a pinion *x* which latter meshes with a pinion *u*. A pinion *t'* to the shank *t²* of which the minute hand *t* is secured meshes with and is driven from the pinion *x*. The pinion *u* is fast with a pinion *c* upon an arbor *c'* and the pinion *c* meshes with the spring barrel pinion *a* from which it is driven. The arbor *c'* also carries a pinion *d* adapted to mesh with a pinion *e* mounted on arbor *e'* and the latter carries a gear wheel *f* which meshes with a main pinion *g* mounted upon the main arbor *n* which latter is mounted at one end at *n'* in the pillar plate *o* and at its other end at *n²* in a fixed bridge *p*.

The main arbor *n* carries a rotatable supporting and operating member preferably in the form of a ring *m* which as shown is secured by a support *n⁴* to a hub *n⁵*. From the foregoing it will be clear how power is transmitted from the spring barrel pinion *a* to the hands *s* and *t* and to the operating member or ring *m*. I will next describe the relation of the operating ring *m* to the balance and escapement mechanisms and the disposition of the latter with respect to said ring *m*.

The balance wheel, which is designated by *l* is provided with an impulse pin *l'* and is mounted upon an arbor *l⁴*. Said balance wheel is mounted that one side of the main arbor *n* at one end in the ring *m* at *l⁵* and at its other end at *l⁶* in a balance wheel arbor bridge *l²* mounted upon the ring *m*. An escapement lever *k* is mounted upon an escapement arbor *k'* disposed with respect to the main arbor *n*, and mounted at one end at *k⁵* in the support *n⁴* and at its other end at *k⁶* in an escapement bridge *m²* which latter is mounted on the front face of the ring *m*. At its upper end the escapement lever is

provided with the usual fork k^3 and at its lower end it is provided with pallets k^2 adapted to cooperate with an escapement wheel j . The escapement wheel j is mounted upon an arbor j' which finds a bearing at one end at j^2 in the escapement bridge m^2 and at its other end at j^3 in a supporting bridge m' which latter is mounted upon the rear face of the ring m . The arbor j' carries an escapement pinion b which latter like the escapement wheel j , is rigidly secured to said arbor j' . A rack h provided with peripheral teeth and preferably of circular formation is rigidly mounted to any suitable stationary part such as h' having arms h^2 fixed to a suitable stationary part, and is concentrically disposed with respect to the main arbor n . The pinion b which is also disposed on the ring m at one side of the main arbor is located in a manner to mesh with the rack h when the ring m is rotated.

The operation will be obvious from the foregoing. As power is applied to the main arbor n the ring m will be rotated and will bodily rotate the pinion b which latter meshing with the rack h will be axially rotated on the arbor j' . Such rotation will be imparted to the escapement wheel j and movement of the latter through the escapement lever and balance wheel will be intermittently effected in the usual manner.

I claim:—

1. A watch movement comprising in combination, a barrel pinion, a main arbor driven from said pinion, stationary parts in which said arbor is mounted, a ring mounted on said main arbor, a balance wheel bridge mounted on said ring, a balance wheel provided with an arbor and an impulse pin, said arbor being mounted in said plate and balance bridge concentrically with respect to said main arbor, an escapement lever provided with an arbor, an escapement lever bridge mounted on said ring, said escapement lever arbor being mounted in said escapement bridge and said ring, said escapement lever being provided with a fork engaging said impulse pin and having pallets, an escapement wheel adapted to cooperate with said pallets and concentrically disposed

with respect to said main arbor, an arbor for said escapement wheel, an escapement pinion mounted on said escapement arbor, a supporting bridge mounted on said ring, said escapement arbor being mounted in said supporting and escapement bridges, and a circular stationary rack provided with peripherally disposed teeth adapted to engage said escapement pinion, said rack being concentrically disposed with respect to said main arbor and located within the path of bodily movement of said escapement pinion.

2. A watch movement comprising in combination, a barrel pinion, a main arbor driven from said pinion, fixed bearings for said arbor a ring mounted on said main arbor, a balance wheel carried by said ring, an escapement lever carried by said ring and cooperating with said balance wheel, an escapement wheel carried by said ring and cooperating with said escapement lever, an escapement pinion for said escapement wheel, and a stationary rack meshing with said escapement pinion and located inside the path of bodily movement of said escapement pinion.

3. A watch movement comprising in combination, a barrel pinion, a main arbor driven from said pinion, fixed bearings for said arbor an operating member carried by said main arbor, escapement and balance mechanisms mounted on said operating member, and stationary means operatively associated with and located inside the path of bodily movement of the escapement mechanism.

4. A watch or clock movement comprising in combination, a main arbor, fixed bearings therefor, means for driving said arbor, an operating member carried by said arbor, movement mechanism mounted on said operating member, and stationary means operatively associated with said mechanism to drive the same when said member is operated.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH BURTIN.

Witnesses:

ERNEST STRUCHEN,
PAUL JACQUOT.