

(No Model.)

A. MARCK.
MOTOR.

No. 323,943, *A'*

Patented Aug. 11, 1885.

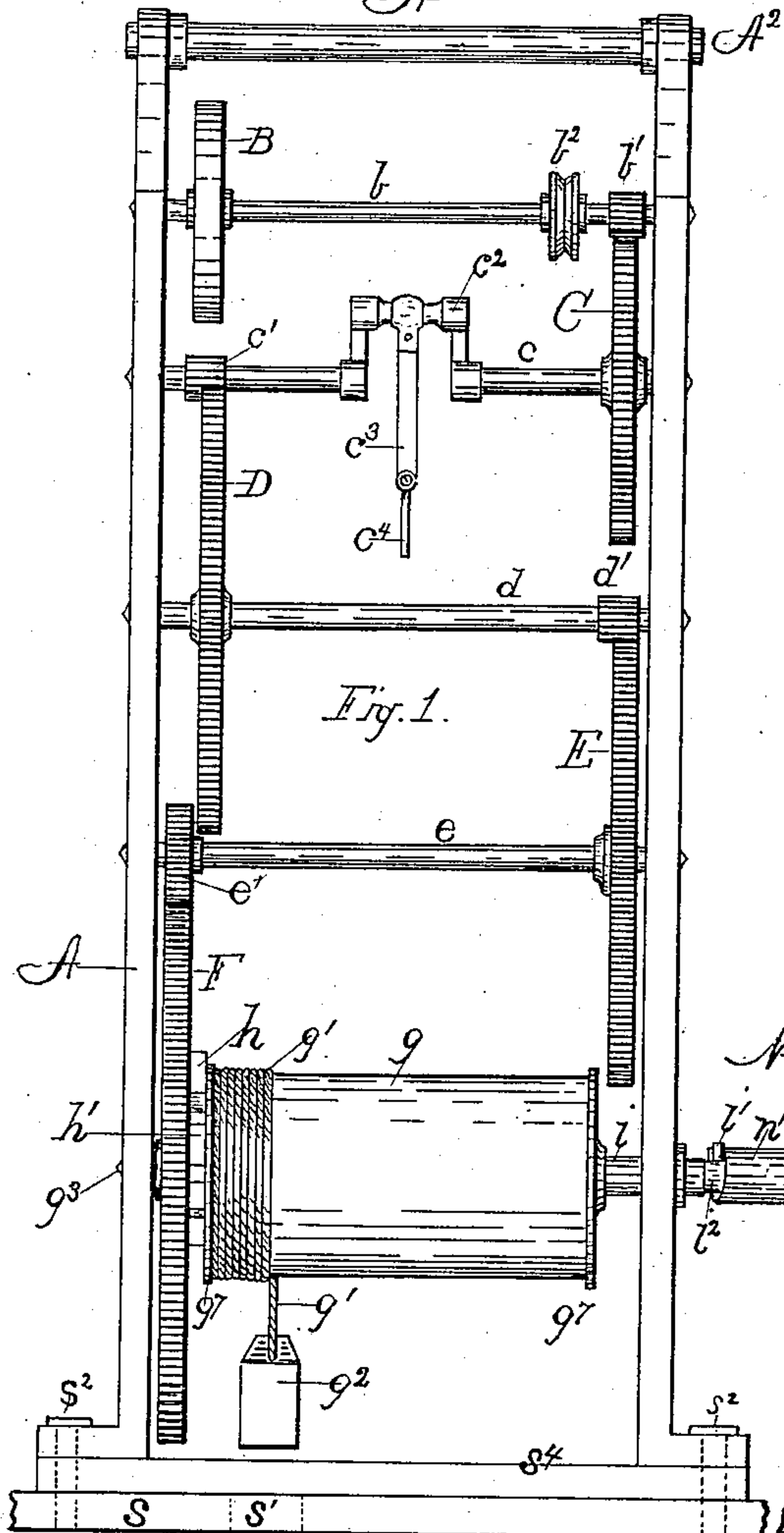


Fig. 1.

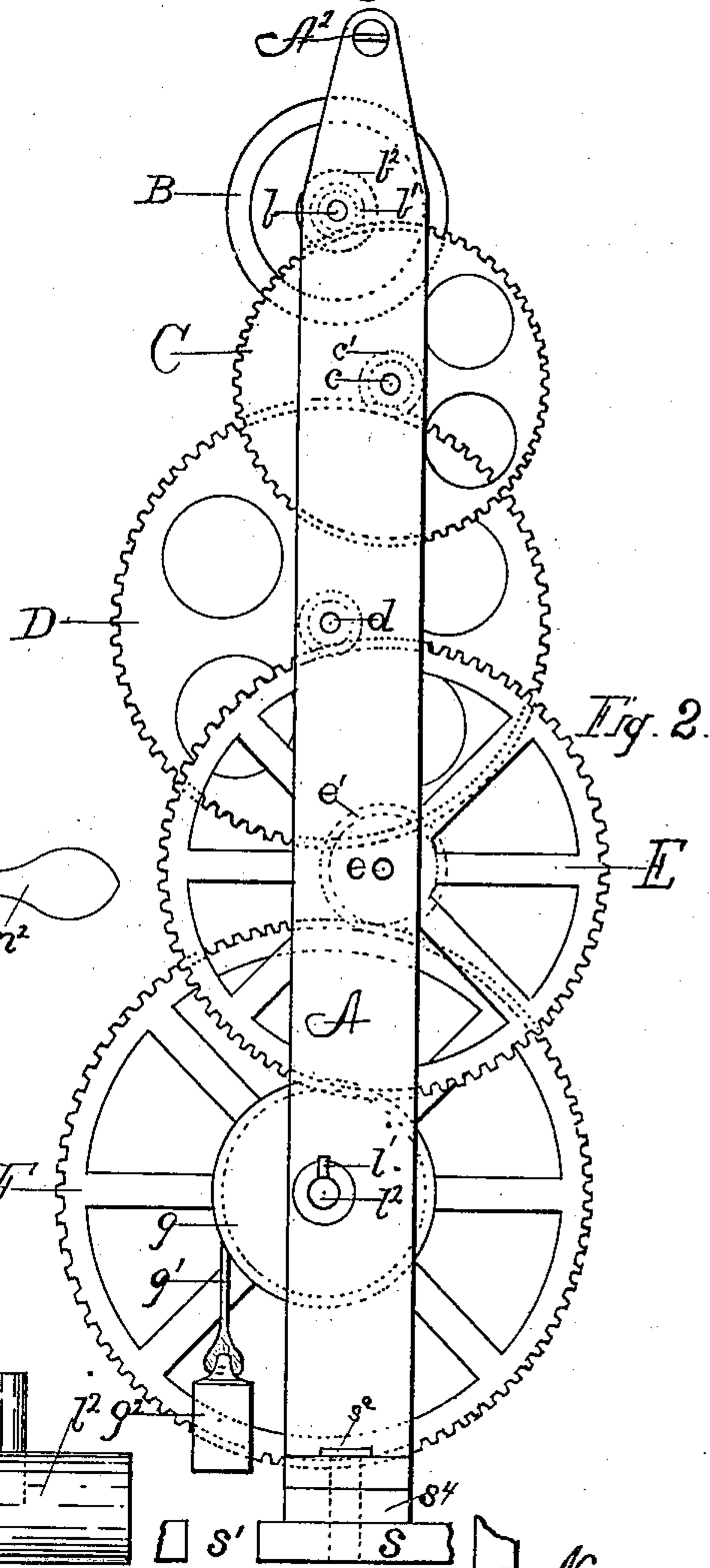


Fig. 2.

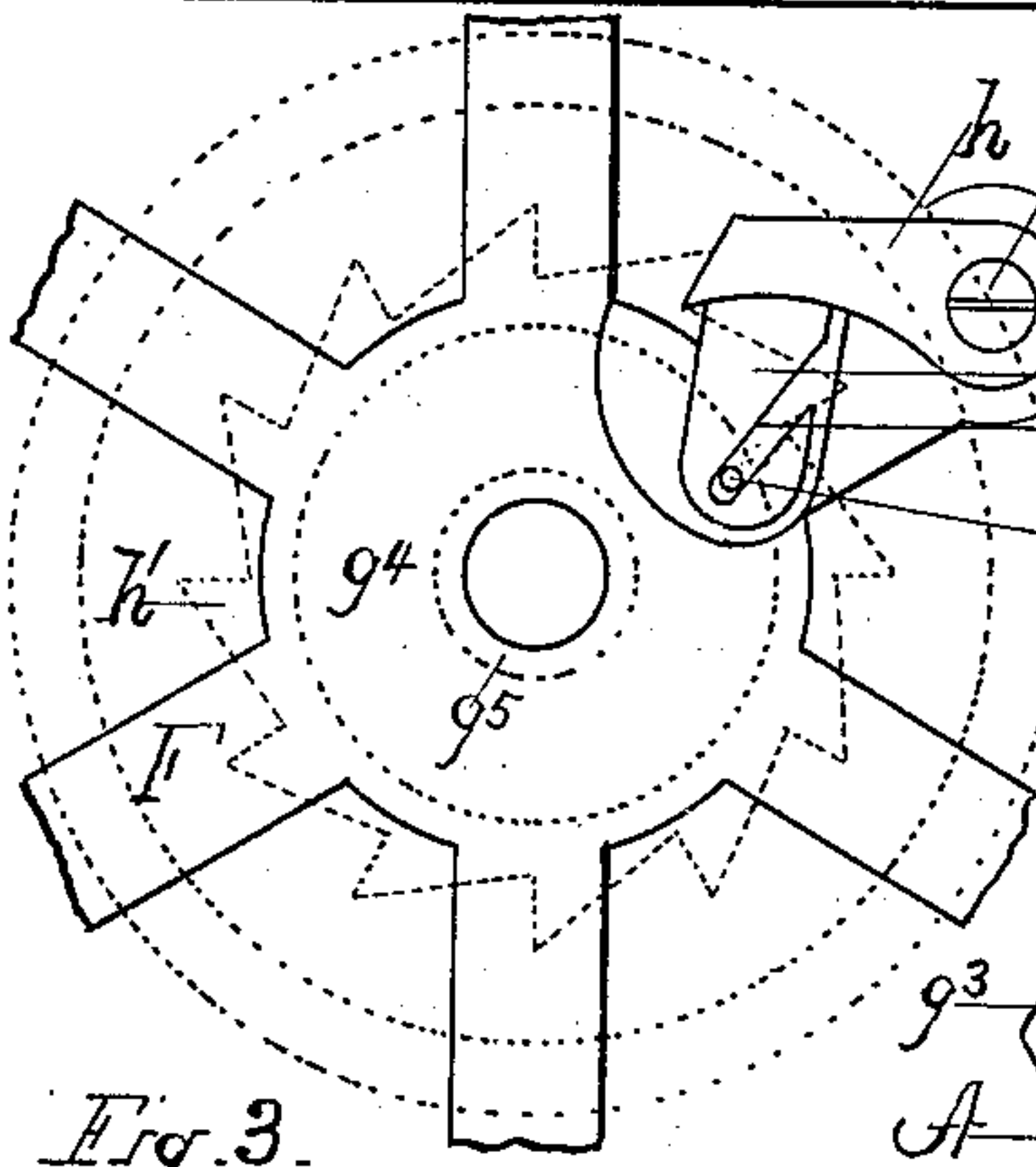


Fig. 3.

WITNESSES

Samuel Platt,
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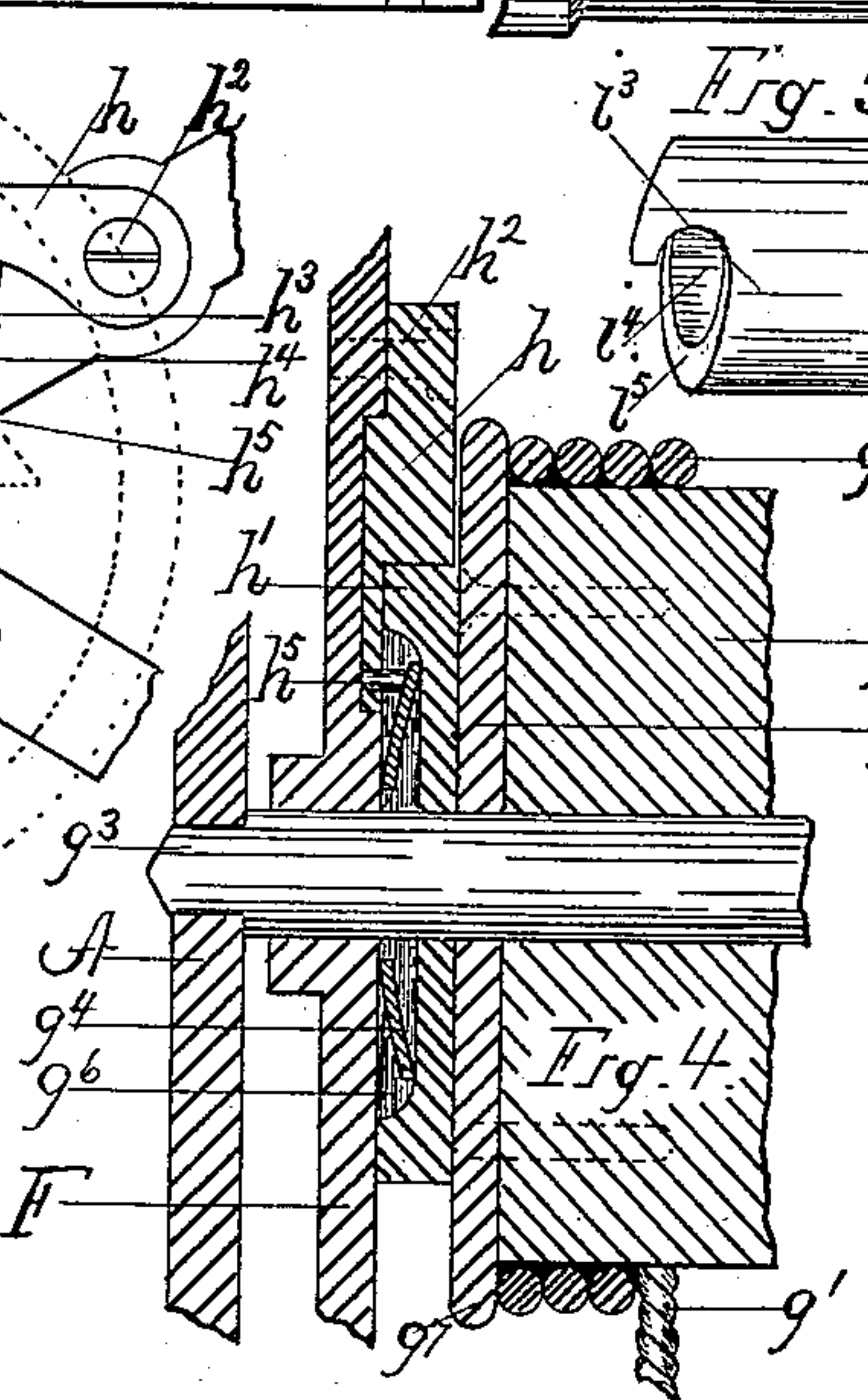


Fig. 4.

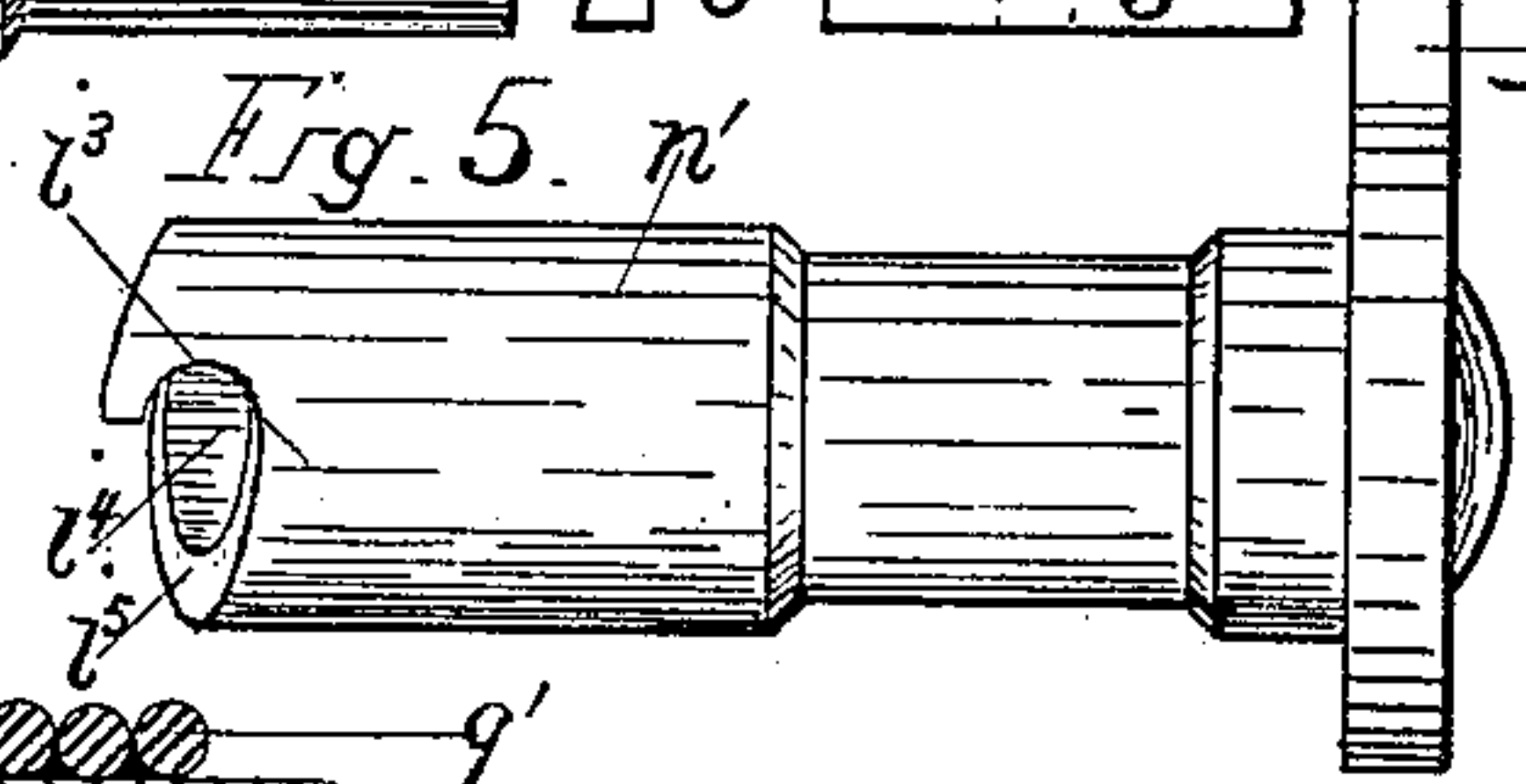


Fig. 5.

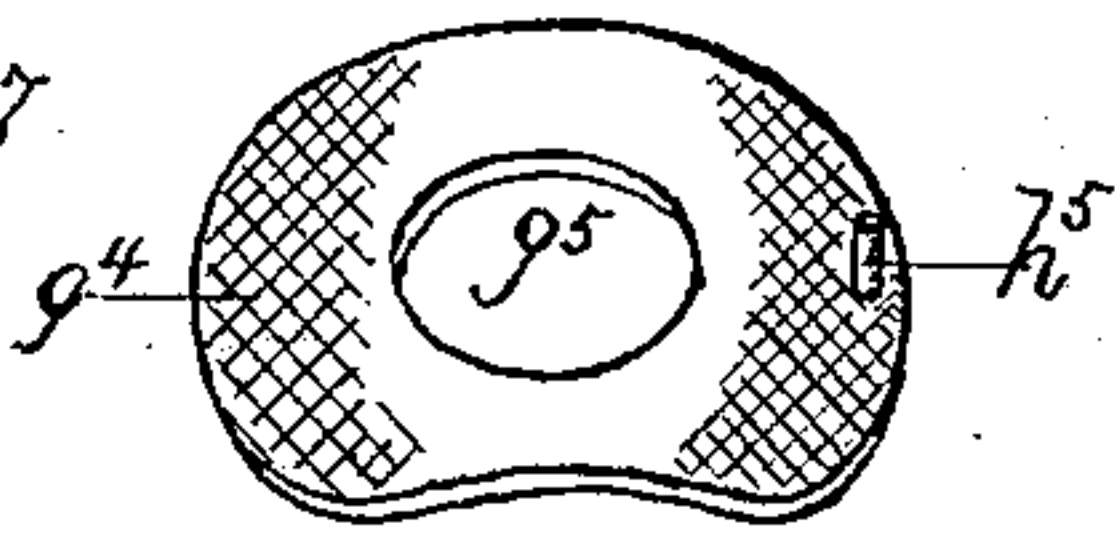


Fig. 6.

INVENTOR,

Andrew Marck

By *J. C. Higdon*

UNITED STATES PATENT OFFICE.

ANDREW MARCK, OF LEXINGTON, MISSOURI.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 323,943, dated August 11, 1885.

Application filed June 26, 1885. (No model.)

To all whom it may concern:

Be it known that I, ANDREW MARCK, of Lexington, Lafayette county, Missouri, have invented certain new and useful Improvements in Mechanical Motors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to certain improvements in light motors adapted for actuating fans, sewing-machines, &c., the object being to provide a noiseless, compact, and efficient motor of this class.

The invention consists more particularly of a novel combination and arrangement of winding mechanism with the other parts, substantially as hereinafter set forth.

In the drawings, Figure 1 is a front elevation of a motor embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a view of the inner side of the main gear-wheel, having a portion of the noiseless ratchet mechanism affixed thereto. Fig. 4 is a longitudinal section through the ratchet mechanism and a portion of the winding-drum. Fig. 5 is an enlarged view of a portion of the winding-drum journal and the crank which engages the same; and Fig. 6 is a perspective view of a flexible disk employed in making up the ratchet mechanism.

The letter A indicates a pair of vertical plates, in which are formed bearings for the various shafts. A rod, A', is located between the upper ends of these plates, and is removably held in position by a screw, A², passing through the plates into the end of the rod. The lower ends of the plates A are bent outward at a right angle to form feet, whereby they are securely affixed to a base-plate, S^t, and to any desirable support.

I prefer to inclose the motor in a dust-proof box, so that it may be protected from injury that it might otherwise receive, and in such case the letter S would represent the bottom of the box.

Bolts S² pass through the feet of the vertical plates and the base-plate, and securely fasten the motor to the support S.

Upon the main shaft *i* is rigidly located a winding-drum, *g*, and a ratchet-wheel *h'*. The said drum is provided at each end with a disk,

g', and the ratchet-wheel *h'* may be either attached to one of these disks or it may be formed integral therewith, as desired.

Mounted loosely upon the end *g*³ of the main shaft, and between the ratchet-wheel and the framing, is the main gear-wheel F, having a pawl, *h*, pivoted at *h*² to one of its spokes.

The ratchet-wheel *h'* is formed with a recess, *g*⁶, upon its outer face, and a washer, *g*⁴, made of spring metal, is located in the recess. The washer *g*⁴ is bent in one direction across its diameter, so that when the main gear F is pressed against its convex side its periphery will press upon the bottom of the recess *g*⁶, as shown.

A pin, *h*⁵, projects outward from near the periphery of the washer *g*⁴, and an arm, *h*³, forming a part of the pawl *h*, has an oblique slot, *h*⁴, running a portion of its length, which is engaged by the said pin.

The operation of the ratchet mechanism when thus constructed will be as follows: Upon turning the main shaft toward the left hand in Fig. 3, the friction of the washer *g*⁴ against the bottom of the recess in the ratchet-wheel *h'* will be sufficient to cause the washer to revolve therewith, and the pin *h*⁵, acting upon the slotted arm of the pawl *h*, raises the same and holds it clear of the ratchet-wheel teeth until the direction of movement is reversed. The pin in this latter case causes the pawl to engage the teeth, and the main gear-wheel will be rotated with the drum. The opening *g*⁵ through the washer should be somewhat larger than the diameter of the main shaft, so that after the pawl has been lifted the washer will remain stationary with the main gear until movement of the drum shall be reversed.

The end *i*² of the main shaft *i* is circular in cross-section, and projects sufficiently far to allow movement of a crank, N, which is to be used in winding the rope *g'* upon the drum, and thereby raising the weight *g*². The letter *n*² represents the handle of the crank N. The crank is removable from the main shaft, and the inner end of its body *n'* is formed with a socket, *i*⁴, and with a spiral surface, *i*⁵, for engaging a pin, *i'*, inserted transversely of the main shaft.

When the crank is in place upon the main

shaft, as shown in Fig. 1, it is obvious that by turning it in one direction the concave shoulder i^3 , formed at the base of the spiral surface i^3 , will engage the pin i' upon said shaft, and the weight g^2 will be wound up; also, that by turning the crank in an opposite direction the spiral surface i^3 will simply glide over the pin without turning the shaft, thereby preventing any accidental strain being thrown upon the ratchet mechanism.

From the main gear F power is communicated to the shaft e , carrying pinion e' and gear E, thence to the shaft d , carrying pinion d' and gear D, thence to the crank-shaft c , having the crank c^2 at about the center of its length, and carrying the pinion c' and the gear C, and thence to shaft b , carrying pinion b' , belt-pulley b^2 , and fly-wheel B.

The crank c^2 may be connected to any style of light machine requiring an oscillating movement by means of a connecting-rod, as $c^3 c^4$, and the pulley b^2 can be used to connect the motor to such machines as require rotary motion.

The letter S' represents an opening in the support S for the passage of the weight g^2 .

Having thus described my invention, what I claim is—

1. In combination with the winding mech-

anism and the intermediate motive train crank-shaft c , having crank c^2 located at about the center of its length, and carrying pinion c' and gear C, shaft b , located above the entire train, and carrying fly-wheel B, belt-pulley b^2 , and pinion b' , substantially as described, and for the purposes herein set forth.

2. In a motor, the combination of the drum g , rigidly connected to the main shaft, a ratchet-wheel, h' , revolving with said drum, and provided with a recess, g^6 , upon its outer face, washer g^4 , located in said recess and fitted with a pin, h^5 , main gear F, having a pawl, h , pivoted thereto, and an arm which projects from said pawl and is engaged by said pin, substantially as described.

3. The combination, with the main shaft provided with a transversely-projecting pin, i' , of the crank N, formed with a socket, and with a spiral surface and a shoulder, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW MARCK.

Witnesses:

JOHN W. NORTON,
JAMES F. MISTER.