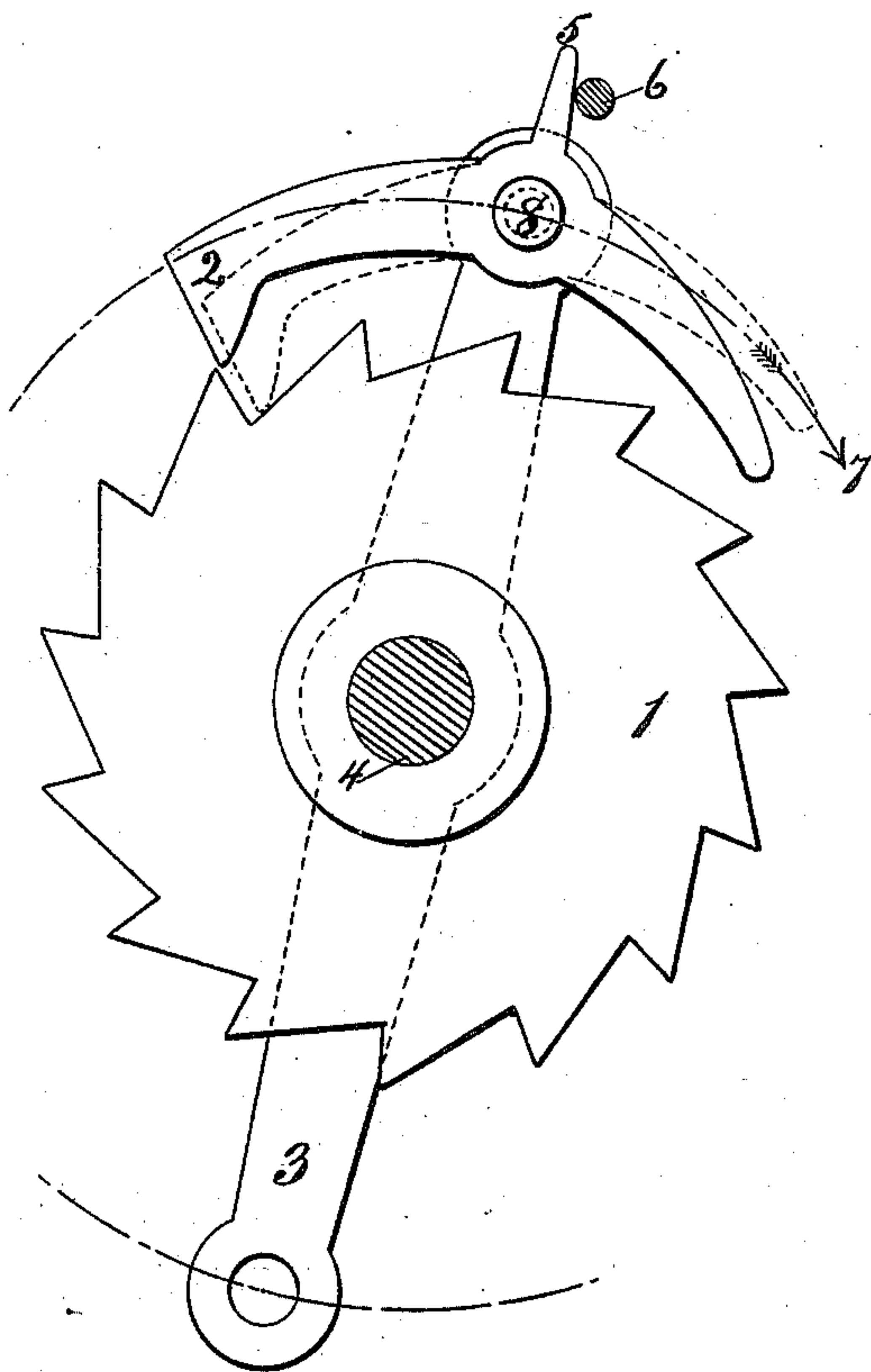


(No Model.)

J. THOMSON.
PAWL AND RATCHET.

No. 309,420.

Patented Dec. 16, 1884.



Witnesses:

Sheelhoff
J. A. Forecraft.

Inventor:

John Thomson

UNITED STATES PATENT OFFICE.

JOHN THOMSON, OF BROOKLYN, NEW YORK.

PAWL AND RATCHET.

SPECIFICATION forming part of Letters Patent No. 309,420, dated December 16, 1884.

Application filed April 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Pawl-and-Ratchet Movements, of which the following is a specification.

My invention relates to pawls and ratchets of that class in which the pawl acts as the driving and the ratchet as the driven mechanism.

The object of my invention is to dispense with springs or gravity when employed to re-instate the pawl in engagement with the ratchet, and to substitute therefor means whereby the pawl shall be positively forced into mesh.

To this end my invention consists in forming the pawl with a spur which is caused, during the return or "idle" movement of the pawl, to make contact with a fixture at the instant the point of the ratchet-tooth to be engaged will have been passed. The action of the said spur is such that by simply imparting to the arm which carries the pawl a degree of motion slightly greater than the pitch of the ratchet the said spur, in consequence of its impact against the said fixture, will cause the driving-face of the pawl to be forced positively into mesh with the ratchet.

The drawing is an elevation of a ratchet-wheel and pawl with my improved positive engaging device.

In the drawing, 1 is the ratchet, 2 is the pawl, 3 is the pawl-actuating lever, all mounted upon the shaft 4. 5 is the spur of the pawl, and 6 is the fixture against which the spur impinges.

The shaft and fixture are shown in transverse section, their means of support being any base upon which the apparatus may be mounted. It is assumed that the pawl is balanced, and therefore will not tend to gravitate into engagement with the ratchet. The full lines of the figure show the face of the pawl as having just passed the highest part of a tooth of the

ratchet and the spur 5 of the pawl in contact with the figure 6. It will now be seen that any further movement of the pawl-actuating lever in the direction of the arrow 7—that is, the "idle" movement of said lever—will cause the spur to force the face of the pawl into mesh with the ratchet, as assumed in dotted outline. Reverse the motion of the pawl-actuating lever and the pawl will drive the ratchet, the spur thereby being carried away from the fixture. Again reverse the motion of the pawl-actuating lever and the pawl will ride over a tooth of the ratchet and will again be forced into mesh by the spur and fixture as before, and so on. The relative location of the fixture, or its point of contact, as to the pivot 8, upon which the pawl vibrates, to the distance of the driving-face of the pawl from said point, is preferably such that a slight motion at the spur will multiply the movement at the face of the pawl to engage the ratchet; hence but a slight degree of idle or lost motion is required in the pawl-actuating lever to effect the desired result.

I claim—

1. In combination, the ratchet, the pawl-actuating lever, the pawl having a spur, as 5, and the fixed stop, as 6, substantially as shown and described.

2. The combination, with a shaft and a ratchet carried thereon, of a reciprocating pawl on which is formed a projection or spur, said pawl connected to an arm or lever carried on the shaft, and a fixed stop, the construction being such that upon the idle movement of the pawl the projection thereon will impinge against the stop and positively force the pawl into engagement with the ratchet, substantially as described.

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

JOHN THOMSON.

Witnesses:

WM. THOMSON,
F. L. FREEMAN.