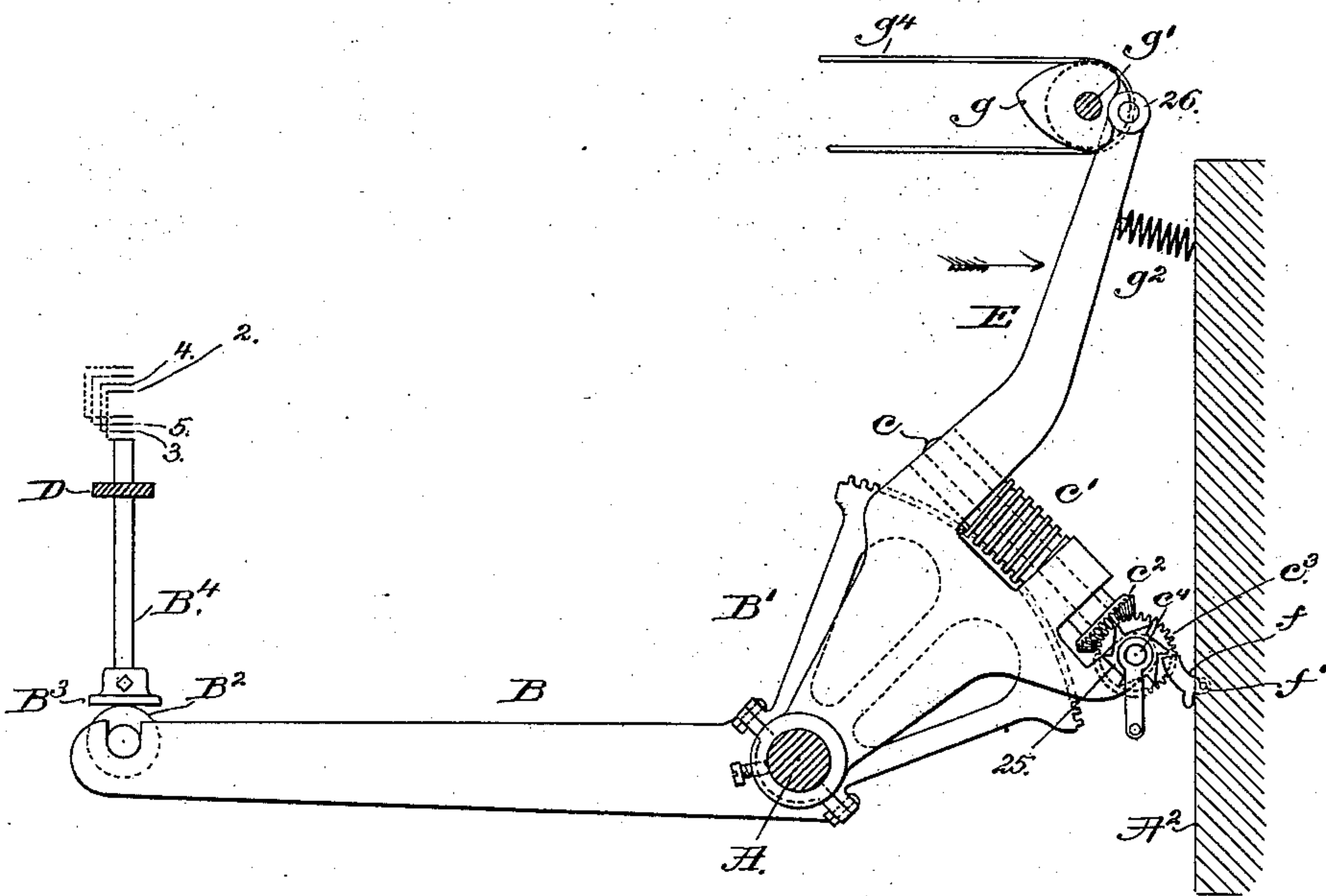


(No Model.)

W. C. BRAMWELL.
MECHANICAL MOVEMENT.

No. 334,341.

Patented Jan. 12, 1886.



Witnesses.

John F. C. Printz

Fred L. Emery.

Inventor,

William C. Bramwell.

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UNITED STATES PATENT OFFICE.

WILLIAM C. BRAMWELL, OF HYDE PARK, MASSACHUSETTS.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 334,341, dated January 12, 1886.

Application filed December 7, 1885. Serial No. 184,928. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. BRAMWELL, of Hyde Park, county of Norfolk, and State of Massachusetts, have invented an Improvement in Mechanical Movements, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawing representing like parts.

10 This invention has for its object the production of a novel mechanical movement, whereby the extremes of the throw of one lever may be varied constantly, while the extremes of the throw of another lever remain constant.

15 My invention consists, essentially, in a lever provided with a segmental gear having worm-teeth, and a lever having an attached worm in engagement with the teeth of the said segmental gear, combined with means to rotate the said worm to change the positions of the said levers with relation the one to the other, whereby the uniformly-moving worm-carrying lever through the worm is enabled to actuate the lever having the attached worm-toothed segment, the mechanism when employed operating to leave the acting end of the latter lever at each ascent a little higher up and at each descent not quite so low down as at the previous ascent and descent of the said lever.

30 The drawing in side elevation and partial section shows my improved mechanical movement.

The shaft A and the arms B B', attached to it, the latter having a series of worm-teeth, 2, constitute the worm-toothed lever. The free end of the worm-toothed lever is shown as provided with a roller, B², that receives upon it the foot B³ of a rod, B⁴, placed and guided in a suitable rail, D, in or with relation to which the said rod B⁴ is to be reciprocated for uniform distances, but with constant variations in its throw-points. At one side of the worm-toothed lever, and held in place loosely on the said shaft A, between the said lever and a suitable collar, is a lever, E, having suitable bearings, which receive the shaft c, provided with the worm c', and with a bevel-gear, c², which is engaged and rotated by a bevel-gear, c³, on the shaft c⁴, provided with a ratchet, 25, which is acted upon by a pawl, f, pivoted at f' to some sta-

tionary part of the frame-work A², the said pawl acting upon one tooth of the ratchet-wheel at each backward movement of the lever E, such engagement of the ratchet-wheel by the pawl intermittingly rotating the worm-gear c', and causing it to turn the segmental lever in such direction that the long or free end of the arm B of the worm-toothed lever will at its upstroke rise gradually at each ascent a little higher, and at each descent will descend not quite so far, thus varying the high and low points reached by the worm-carrying lever, and consequently of the rod B⁴, in each direction of its movement, but without altering the length of throw of said lever or of the said rod. The lever E, carrying the worm, is moved in one direction about the shaft A as its fulcrum by the heart-cam g on a suitable rotating shaft, g', a spring, g², as herein shown, keeping the roll or other stud, 26, at the upper end of the said lever in contact with the heart-cam. The shaft c⁴ will in practice have fastened to one end of it a handle, by which to rapidly turn it and the worm-shaft in either direction, whenever desired.

The shaft g' will have upon it a pulley, as shown by dotted lines, which will be driven by a belt, g⁴, driven in any usual manner.

In the drawing the rod B⁴ is down. The first rotation of the cam g will cause the rod to be lifted to 2, and as the rod reaches the point 2 the pawl f will operate to effect the rotation of the worm, and so change the relative position of the arm B' and lever E that the rod will descend only to the point 3. The next movement of the lever E in the direction of the arrow on it will raise the rod to the point 4, a little above the point 2, and it will descend to the point 5, not quite so low down as the point 3.

Among other things this mechanism may be applied to machines for building cops.

I claim—

1. The shaft A, its attached arms B B', the latter having a worm-toothed segment, and a lever mounted loosely upon the said shaft and provided with a worm in engagement with the said segment, combined with means to intermittingly rotate the said worm and to vibrate the lever carrying it, substantially as described.

2. The shaft A, the attached arms B B', the
latter having a segmental series of worm-
teeth, and a vibrating lever mounted loosely
upon the said shaft and provided with a shaft
5 having a worm, and a bevel-gear, combined
with a ratchet, and with means to move the
worm-carrying lever, whereby the worm is
rotated one step at each throw of the lever in
one direction, substantially as described.

In testimony whereof I have signed my name 10
to this specification in the presence of two sub-
scribing witnesses.

WILLIAM C. BRAMWELL.

Witnesses:

GEO. W. GREGORY,
F. CUTTER.