W. LOREY.

Mechanical-Movement.

No. 215,378. Patented May 13, 1879.

Fig.1.

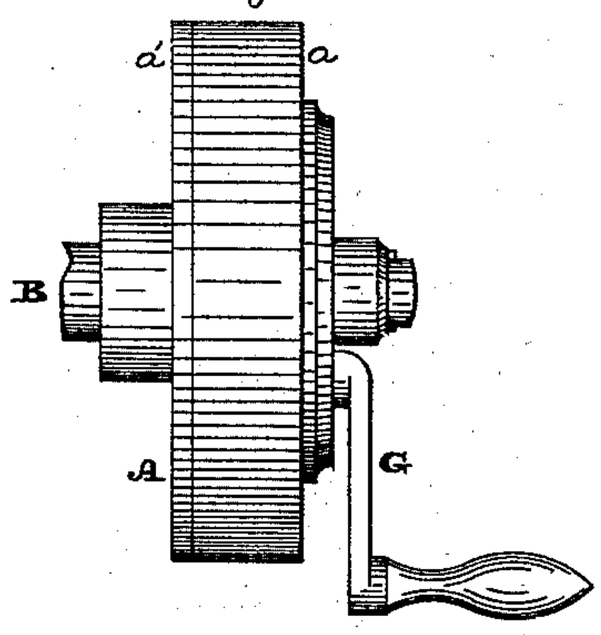


Fig.2.

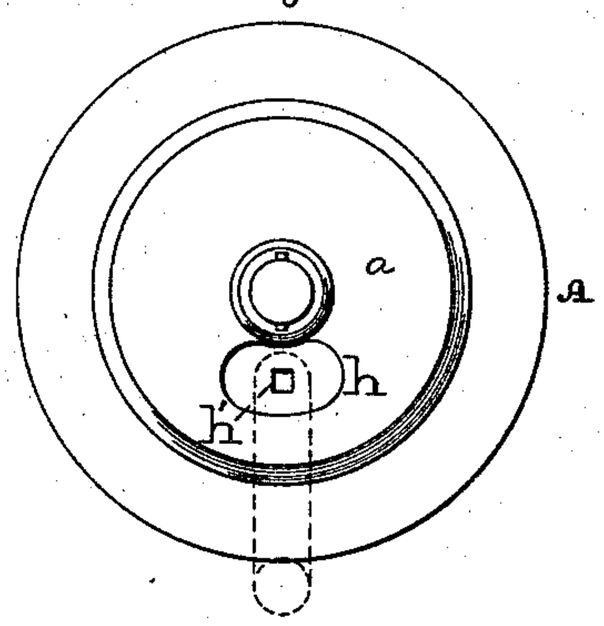


Fig.3.

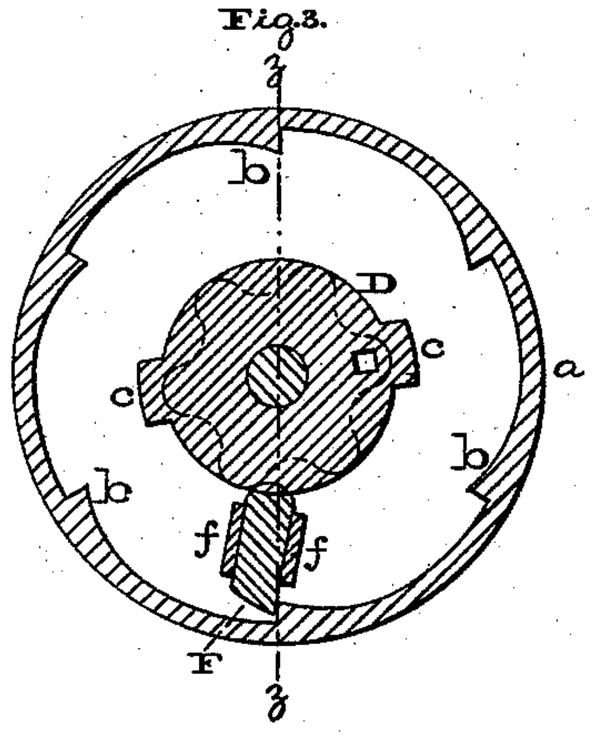


Fig.4.

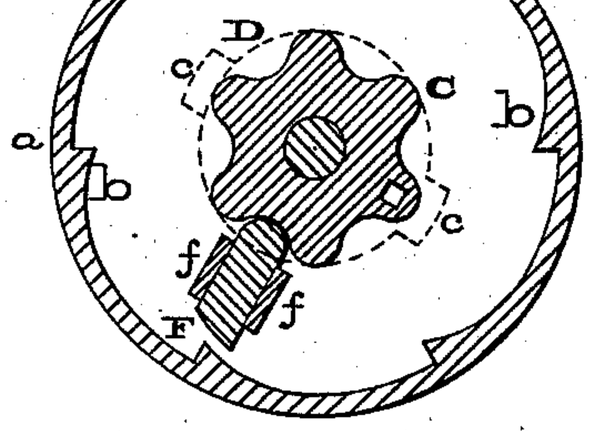


Fig.5.

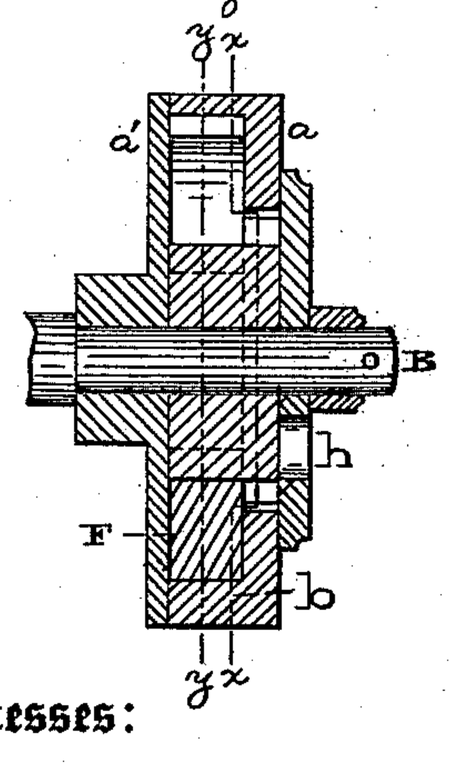
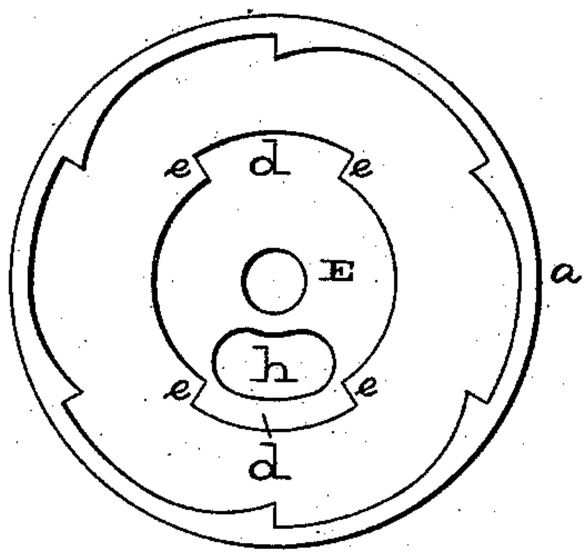


Fig.6.



Witnesses: zx

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UNITED STATES PATENT OFFICE.

WILLIAM LOREY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **215,378**, dated May 13, 1879; application filed April 15, 1879.

To all whom it may concern:

Be it known that I, WILLIAM LOREY, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Mechanical Movements, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the movement embodying my invention. Fig. 2 is a face view thereof. Fig. 3 is a section in line *x x*, Fig. 5. Fig. 4 is a section in line *y y*, Fig. 5. Fig. 5 is a section in line *z z*, Fig. 3. Fig. 6 is a view of the interior, certain parts being removed.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a pawl-and-ratchet mechanism so constructed that the wheel which carries the same may be coupled to the supporting-shaft, the power whereof is transmitted elsewhere, and uncoupled therefrom in order to render the shaft inoperative.

For this purpose I employ a star-wheel, which is provided with a shifting head or disk, the operation whereof will be hereinafter fully set forth.

Referring to the drawings, A represents a cylindrical casing or wheel, which is formed of separate parts *a a'*, the part *a* being fitted loosely on the shaft B, and the part *a'* firmly secured thereto.

On the inner face of the periphery of the part *a* there are ratchet-teeth *b*, which correspond in number with the teeth of a toothed or star wheel, C, which is fitted loosely on the shaft B between the parts *a a'* of the wheel A, and is of less diameter than said wheel.

Secured to or formed with the back of the wheel C is a head or disk D, which is formed with lugs *c* projecting from its periphery at opposite places, and on the inner face of the side of the part *a* of the wheel A is a cavity, E, which is of circular form, to receive the disk D, and extended, as at *d*, at opposite places to form shoulders *e*. The lugs *c* enter said extensions, and are adapted to abut against the shoulders *e*.

The width of the extensions *d* is greater than that of the lugs *c*, whereby the latter are permitted to play a limited extent in said extensions *d*.

On the inner face of the part *a'* of the wheel A are guides *f*, between which is fitted a pawl, F, whose heel is adapted to ride over the teeth of the star-wheel C, and whose nose is adapted to ride over the ratchet-teeth *b*.

In the side of the part *a* is an elongated opening, *h*, and in the wheel C is an opening, *h'*, for the attachment of a lever or crank, G, to said wheels C when required.

The operation is as follows: The star-wheel is the driver, and it is operated by a gear-wheel or other means connected to a proper part of the apparatus to which the device is applied, or by the crank or lever G inserted in the opening *h'*.

The relation of the teeth of the wheel C, ratchet-teeth *b*, and pawl F is such that when the star-wheel C is rotated in one direction the pawl is forced against a shoulder of one of the ratchet-teeth *b*, whereby the several parts are coupled and move as one, the shaft B being thereby rotated, and communicating its power to any desired object—such, for instance, as the rotary cutter of a lawn-mower, the shaft of a sewing-machine, &c.

Should the star-wheel C be run in the opposite direction, the disk D shifts, bringing the lugs *c* against the respective shoulders *e*, and so disposing the teeth of said wheel C that the pawl F will be forced in and out thereby, and ride freely over the ratchet-teeth *b* without binding or engagement therewith, whereby no motion is imparted to the shaft B.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The ratchet-wheel A *a a'*, shaft B, star-wheel C, and pawl F, combined and operating substantially as and for the purpose set forth.

2. The star-wheel C, with a head or disk, D, provided with lugs *c*, and the wheel A, having the cavity E *d*, substantially as and for the purpose set forth.

3. The wheel A, fitted on the shaft B, and formed of the separate parts *a a'*, the part *a* having ratchet-teeth *b*, in combination with the star-wheel C, head D, and pawl F, substantially as and for the purpose set forth.

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Witnesses:

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