(No Model.)

O. M. MORSE.

MECHANICAL MOVEMENT.

No. 263,717. Patented Sept. 5, 1882.

Fig. 1.

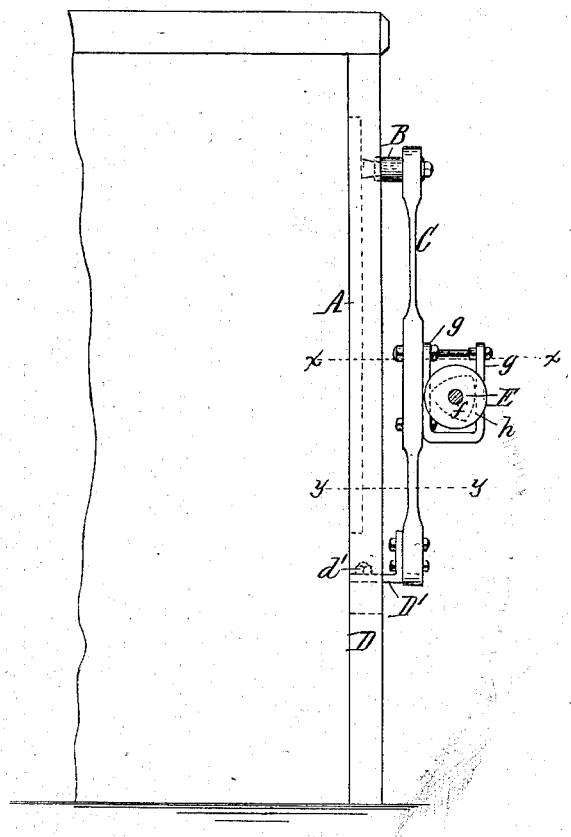


Fig. 4.

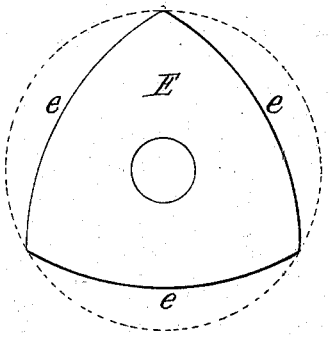


Fig. 5.

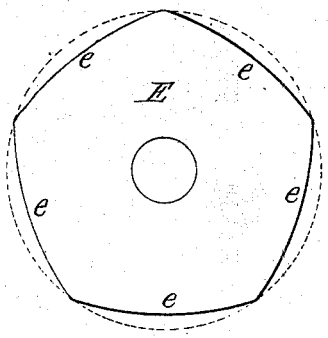


Fig. 2.

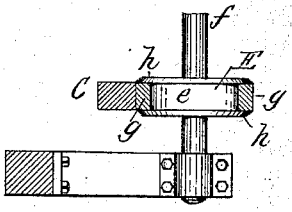
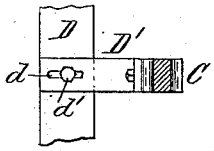


Fig. 3.



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UNITED STATES PATENT OFFICE.

ORVILLE M. MORSE, OF SPRINGVILLE, NEW YORK.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 263,717, dated September 5, 1882.

Application filed February 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, ORVILLE M. MORSE, of Springville, in the county of Erie and State of New York, have invented new and useful Improvements in Mechanical Movements, of which the following is a specification.

This invention has for its object the production of a simple mechanism whereby several reciprocating movements are imparted to a rock-arm, sliding bar, or other part by a single revolution of a shaft.

My invention consists to that end, principally, of a cam rotating about its center and constructed with an odd number of faces, each face being curved from the diametrically-opposite corner of the cam as a center, and the cam being confined between two fixed jaws, which are attached to the rock-arm, sliding bar, or other part to which a reciprocating motion is to be imparted; also, of certain details of construction of the cam and rock-arm, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of the end of a mill sieve or bolt to which my invention is applied for actuating the knocker. Fig. 2 is a horizontal section in line *x x*, Fig. 1. Fig. 3 is a horizontal section in line *y y*, Fig. 1. Figs. 4 and 5 are side elevations of cams having respectively three and five faces.

Like letters of reference refer to like parts in the several figures.

A represents the end of a mill-sieve, which is struck or jarred at regular intervals by a knocker, B. The latter is attached to a slender arm, C, which is secured with its opposite end to the frame D of the separating-machine by means of an adjustable plate, D′, and which is sufficiently elastic to enable it to be deflected. The plate D′ is provided with a longitudinal slot, *d*, through which passes the fastening-bolt *d′*. By adjusting the plate D′ on the bolt *d′* the adjacent end of the knocker-arm C can be drawn toward the frame of the machine or be removed therefrom at desire.

E represents the rotating cam by which the knocker-arm is actuated. This cam, as shown in Fig. 1, is constructed with three equal faces, *e*, arranged around the center of rotation of the cam, and each curved in the arc of a circle described from the diametrically-opposite corner of the cam as a center. In other words, the three corners of the cam lie in the corners of an equilateral triangle, and are connected by faces curved parallel with the arcs of circles described from these corners. The cam is secured to a rotating shaft, *f*, which passes centrally through the cam, so that the corners of the cam are equidistant from its axis of rotation. A greater number of faces than three may be employed—for instance, five, as represented in Fig. 5—but the number must be uneven and the faces must be curved in the arcs of circles described from the diametrically-opposite corner as a center.

g g represent two fixed jaws between which the cam is confined, the width of the space between the jaws being made equal to the radius of the curved faces of the cam. When the cam and the jaws are constructed as herein described the space between the jaws will be entirely filled by the cam in all positions of the latter, whereby all lost motion will be avoided and a steady and quick reciprocating motion will be imparted to the rock-lever or other part by the cam, since each revolution of the cam imparts as many double strokes to the actuated part as there are faces on the cam. The actuated part will be moved in both directions by the cam and jaws without the employment of springs, which latter are objectionable, as they are liable to lose their power. The cam is provided with projecting circular flanges *h*, which overlap the jaws *g* and prevent lateral displacement of the parts.

By adjusting the lower end of the knocker-arm C toward the machine-frame the intensity of the blow delivered by the knocker upon the sieve-frame A is decreased, and by a reverse adjustment the intensity of the blow is increased.

The cam may be connected with a sieve-frame when it is desired to actuate a reciprocating sieve, or to any other movable part which it is desired to actuate in the above-described manner.

I claim as my invention—

1. The combination of a cam, E, rotating about its center and having an uneven number of equal faces, *e*, each curved in the arc of a circle described from the diametrically-opposite corner of the cam as a center, and two

jaws, *g*, between which the cam is confined, and which are attached to the part to be actuated, whereby each revolution of the cam imparts as many double strokes to the actuated part as there are faces on the cam.

2. The combination, with a cam, E, provided with faces *e*, constructed as described, and having marginal circular flanges *h*, of the jaws *g*, bearing against opposite sides of the cam, between the circular flanges of the same, and attached to the part to be actuated, substantially as set forth.

3. The combination, with a cam, E, provided with faces *e*, constructed as described, of a rock-arm, C, provided with jaws *g*, bearing against opposite sides of the cam, and an adjustable plate, D′, whereby the rock-arm C is attached to the machine, substantially as set forth.

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