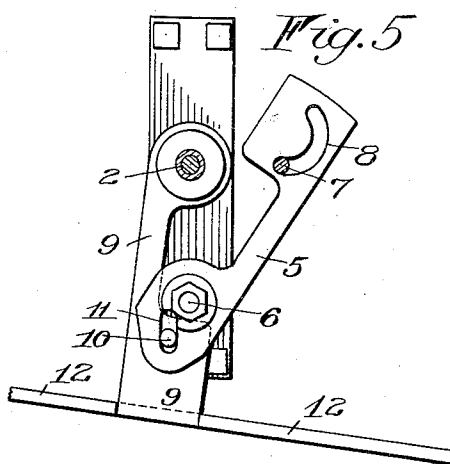
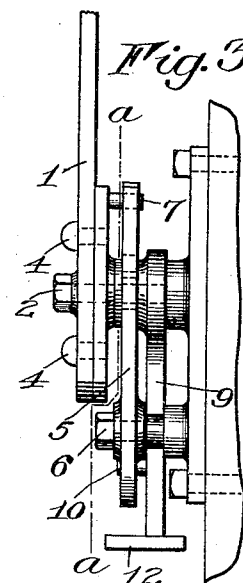
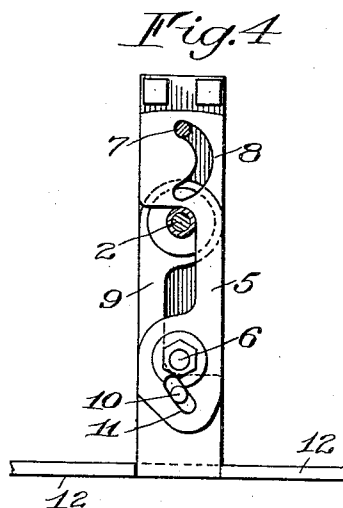
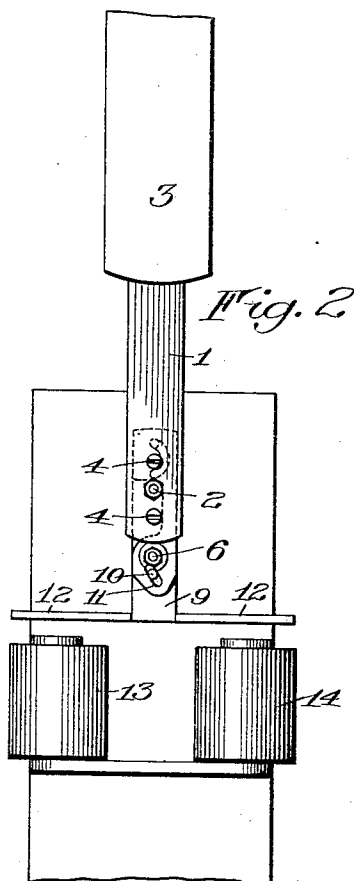
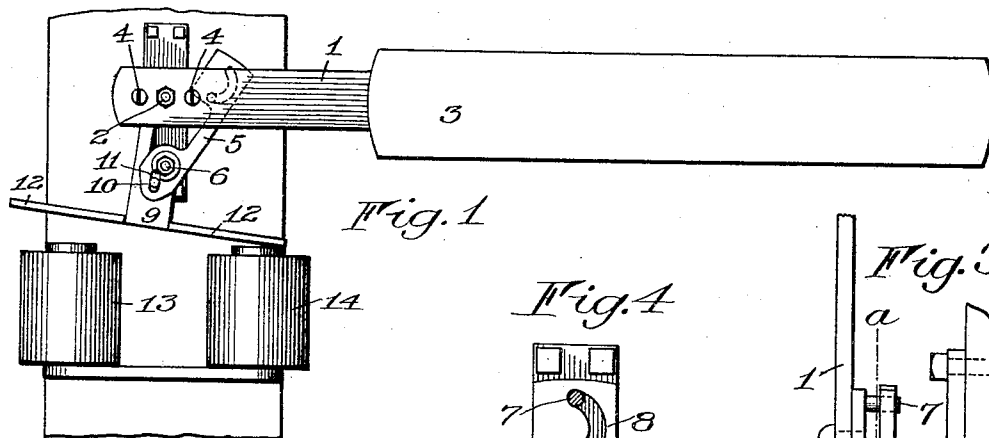


E. O. BRANINGTON.
MECHANICAL MOVEMENT.
APPLICATION FILED SEPT. 14, 1911.

1,053,969.

Patented Feb. 25, 1913.



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UNITED STATES PATENT OFFICE.

EDWHIN O. BRANINGTON, OF GATES, NEW YORK, ASSIGNOR OF ONE-HALF TO EMIL BOSHART, OF ROCHESTER, NEW YORK.

MECHANICAL MOVEMENT.

1,053,969.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed September 14, 1911. Serial No. 649,220.

To all whom it may concern:

Be it known that I, EDWHIN O. BRANINGTON, of Gates, in the county of Monroe and State of New York, have invented a new and useful Improvement in Mechanical Movements, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

The present invention relates to mechanical movements and the object thereof is to effect the movement of a swinging member, such as a semaphore, 90° with but small motive force.

To this and other ends the invention consists in certain parts and combinations of parts all of which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings: Figure 1 illustrates the invention embodied in a semaphore with the latter in one position; Fig. 2 shows the same parts in another position; Fig. 3 is a detail side view of the movement; Fig. 4 is a section on the line *a-a* Fig. 3, showing the parts in the position illustrated in Fig. 2; and Fig. 5 is a similar section with the parts in the position illustrated in Fig. 1.

According to this invention, there is provided a member 1 mounted to turn about an axis 2 and having, if desired, a semaphore arm 3 bolted thereto at 4. Connected to the member 1 is an intermediate operating member 5 pivoted at 6 vertically below the pivot or turning axis 2. The connection between the intermediate member 5 and the swinging member 1 may comprise a pin 7 on one of said parts and a slot 8 on the other part, the slot preferably being in the form of an arc which permits the members to aline one with the other as shown in Figs. 2 and 4 and at the same time provides cam surfaces which ease or facilitate the movement of the parts in swinging from the horizontal position to the upright position or vice versa. When in either of these two positions one of the ends of the slot serves to limit the swinging movement of the parts.

In order to obtain still greater leverage, an operating member 9 is provided and is preferably pivoted to turn or swing about the axis 2 which is common to the member 1. The member 9 has a pin and slot connection with the intermediate member at a

point nearer the pivot 6 of the member 5 than that at which the member 1 is connected to the member 5. In this instance, the pin 10 is on the member 9 and the slot 11 is in the member 5, said slot being at an angle to a radius struck from the axis 6 so that a cam slot is provided to facilitate the swinging action. The member 9 may have laterally extending arms 12 which may be controlled in any suitable manner such as by electromagnets 13 and 14 or other operating devices.

In the operation of the movement, assuming that the parts are in the positions shown in Fig. 2, the energizing of the magnet 14 will shift the parts to the positions shown in Figs. 1 and 5, the lever 9 shifting the lever 5 which in turn shifts the lever 1. The cam slots 11 and 8 are formed to facilitate these movements and one end of slot 8 serves to limit the movement of the member 1. Upon the energization of magnet 13 the parts are shifted to their original positions, the other end of the slot 8 serving to limit the movement.

According to this invention, there is provided means by which a very slight movement is greatly amplified so that an electromagnet or other motor in which there is but small movement or force may be utilized for swinging a semaphore or other device 90°.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination with a swinging member, of an intermediate pivoted operating-member movable about an axis extending transversely of the plane of movement of the swinging member and having a pin and slot connection with the swinging member, a second pivoted operating-member movable about an axis extending transversely of the plane of movement of the swinging member and having a pin and slot connection with the intermediate operating member, the second operating member having lateral arms extending therefrom, and operating devices for acting on said arms to swing the latter in opposite directions.

2. The combination with a swinging member movable 90°, of a pivoted intermediate operating member movable about an axis extending transversely of the plane of movement of the swinging member and having a pin and slot connection with the swinging

member, the slot being in the form of an arc, and a second pivoted operating member movable about an axis extending transversely of the plane of movement of the
 5 swinging member and having a pin and slot connection with the intermediate operating member, the slot of said connection being provided in the intermediate member and being at an angle to a radius struck from the
 10 axis of turning of said intermediate member.

3. The combination with a swinging member, of a pivoted intermediate operating member movable about an axis extending transversely of the plane of movement of the
 15 swinging member and having a pin and slot connection with the swinging member, the slot being in the intermediate member and in the form of an arc and the ends of said slot serving to limit the swinging member, a
 20 second operating member having a turning axis common to the turning axis of the swinging member and a pin and slot connection with the intermediate member at a point near the pivot of the latter at which
 25 the intermediate member is connected to the swinging member, arms extending laterally from the second operating device, and operating devices for coöperating with said arms.

30 4. The combination with a pivoted member, of a pivoted operating member for the first named member movable about an axis extending transversely of the plane of move-

ment of the first named member, the pivots of said members being fixed relatively to
 35 each other, one of said members being provided with a way and the other being provided with a projection operating in the way, a third pivoted member having a pin and slot connection with the pivoted oper-
 40 ating member and provided with oppositely extending arms, and electromagnets for acting with said arms to shift the third named pivoted member in opposite directions.

5. The combination with a pivoted mem-
 45 ber mounted to swing from an upright to a horizontal position or vice versa, of an operating member for the first named member pivoted below the pivot of the latter to turn about an axis extending transversely of the
 50 plane of movement of the first named member, the pivots of the members being fixed relatively to each other, one of said members having a pin and the other having a way in which the pin operates, a third piv-
 55 oted member mounted to turn about an axis common to the axis of turning of the first named member and having a pin and slot connection with the second named member in proximity to the pivot of the latter, and
 60 devices for operating the last named member in opposite directions.

EDWHIN O. BRANINGTON.

Witnesses:

HAROLD H. SIMMS,

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."