B. F. PENN.

Mechanical Movements.

No. 205,976. Patented July 16, 1878.

FIG.1.

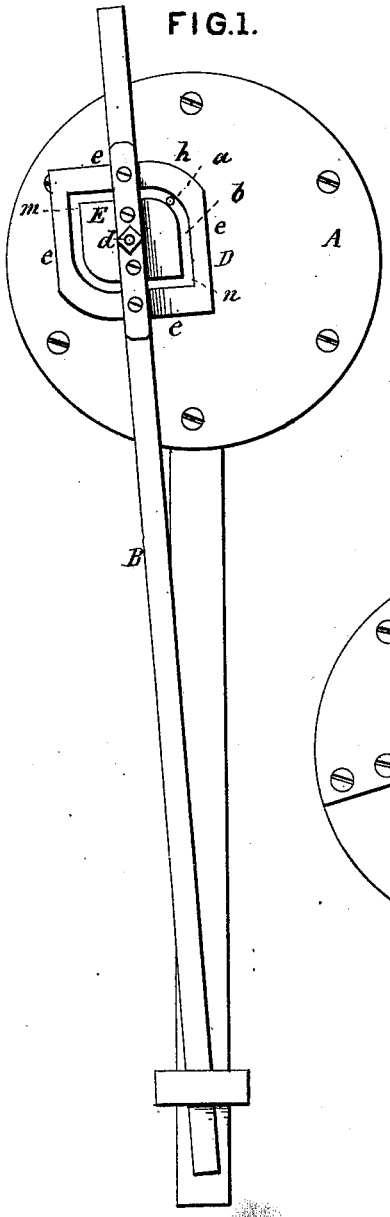


FIG.2.

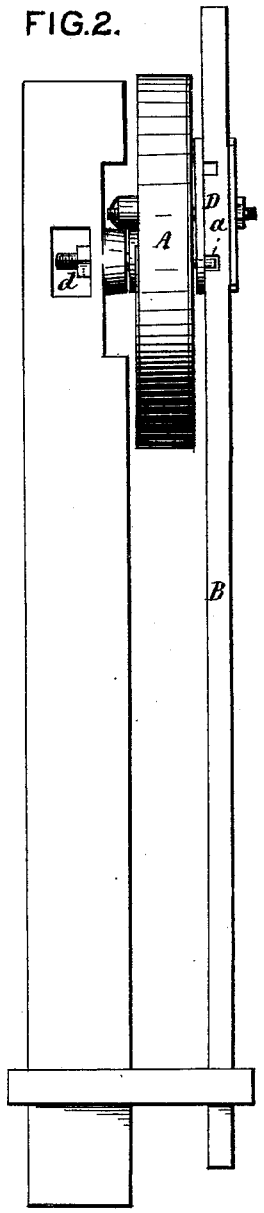
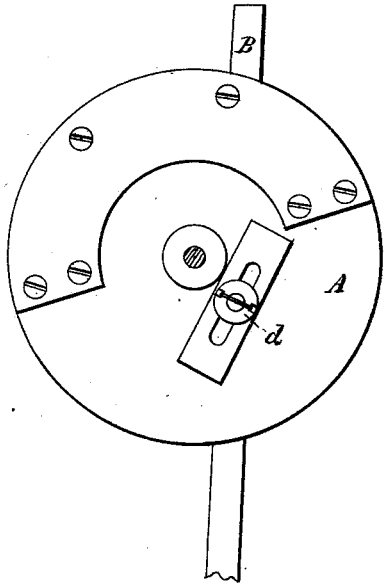


FIG.3.



WITNESSES

T. M. L. Durand

Saml. R. Turner

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per

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UNITED STATES PATENT OFFICE.

BENJAMIN F. PENN, OF CARLISLE, OHIO.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **205,976**, dated July 16, 1878; application filed September 10, 1877.

To all whom it may concern:

Be it known that I, BENJAMIN F. PENN, of Carlisle, county of Noble, and State of Ohio, have invented certain Improvements in Mechanical Movements, of which the following description, taken in connection with the accompanying plate of drawings, hereinafter referred to, forms a full and exact specification, wherein are set forth the nature and principles of the invention, by which the same may be distinguished from others of a similar class, together with such parts thereof as are claimed as new and are desired to be secured by Letters Patent of the United States.

My invention relates to that class of mechanical movements which are made use of for converting reciprocating into rotary motion; and the nature thereof consists in certain novel combinations of parts, hereinafter shown and described.

In the accompanying plate of drawings, in which corresponding parts are designated by the same letters, Figure 1 is a front elevation of a revolving disk having my improvements applied thereto. Fig. 2 represents the side of the disk which is opposite to the side shown in Fig. 1; Fig. 3, detached view of disk.

In the said drawings, A designates the revolving disk or wheel, which is provided with a crank-wrist, *a*, and an elongated opening, *b*. A pin, *d*, is rigidly attached to the connecting-rod B, which passes through the elongated opening *b*, and transfers the force of the connecting-rod to the said disk in such a manner as to cause it to revolve.

D is a slotted yoke rigidly attached to the connecting-rod, having the straight sides *e e e e* and the curvilinear sides *h*. E is a plate arranged within the said yoke, and rigidly attached to the said connecting-rod. The edges of the said plate are parallel to the said sides *e e e e* and *h* of the said yoke, and form therewith the opening for the reception of the crank-wrist *a*. The forward movement of the said connecting-rod causes the edge *m* of the said plate E to press upon the said crank-wrist *a*, and the backward motion of the said connecting-rod causes the edge *n* of the said plate E to press upon the said crank-wrist *a*, and thereby impart continuous rotary motion to the disk. Motion is also transferred from the said connecting-rod to the said disk through the medium of the pin *d*, in such a manner as to impart continuous rotary motion thereto.

It will be observed that a crank or mechanical movement of the construction described will have no "dead-center" or "dead-point," as when one of the points in the orbit of the crank at which the force is applied is in a line with the connecting-rod, the other point at which the force is applied will be at an angle therewith.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

A mechanical movement consisting of the disk A, provided with a crank-wrist, *a*, and an elongated opening, *b*, the connecting-rod B, provided with a pin, *d*, the slotted yoke D, and the plate E, all combined and arranged as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of September, 1877.

B. F. PENN.

Witnesses:

C. S. WHITMAN,

S. F. AUSTIN.