(No Model.)

D. MILLS.

MECHANICAL MOTION.

No. 286,215. Patented Oct. 9, 1883.

FIG. 1

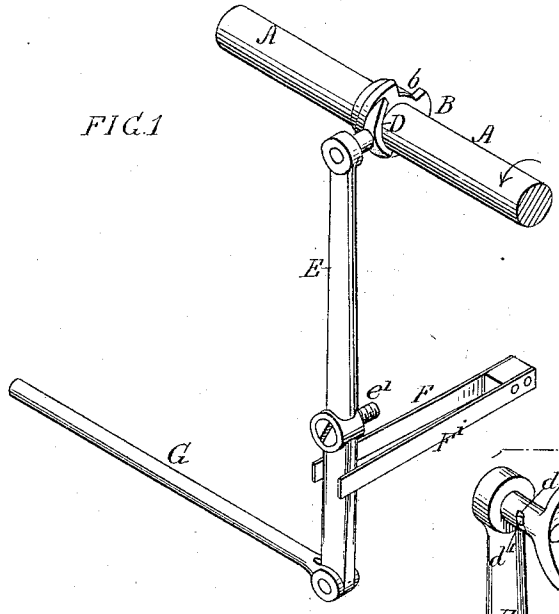


FIG. 2

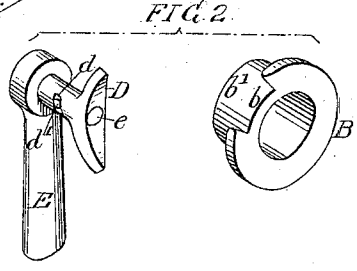


FIG. 3.

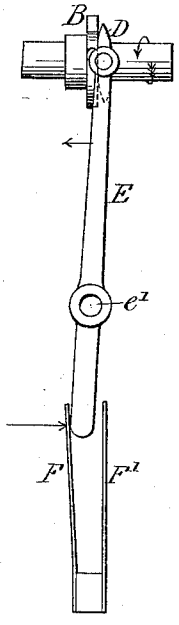


FIG. 4

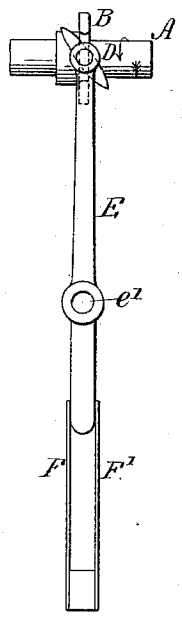
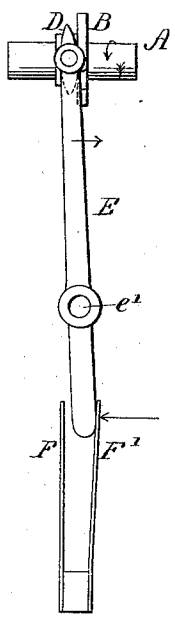


FIG. 5.



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DANIEL MILLS, OF PHILADELPHIA, PENNSYLVANIA.

MECHANICAL MOTION.

SPECIFICATION forming part of Letters Patent No. 286,215, dated October 9, 1883.

Application filed March 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, DANIEL MILLS, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented an Improved Mechanical Motion, of which the following is a specification.

The object of my invention is to construct an improved mechanical movement whereby the motion of a rotating shaft may be converted into an intermittent oscillating or vibrating motion, my improvement being somewhat in the nature of a switch-cam, as more fully described hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of my improvement; Fig. 2, enlarged and detached perspective views of portions of the device, and Figs. 3, 4, and 5 views or diagrams showing the parts in the different positions they assume.

A is the shaft, which has a rotary motion imparted to it—say in the direction of the arrow, Fig. 1—and on this shaft is mounted or formed a rib or collar, B, having a notch, *b*, in its circumference. In the present instance this rib B forms part of a collar, *b'*, secured to the said shaft A.

A rod or lever, E, pivoted to some fixed part of the machine at *e'*, carries at its upper end a curved double-ended shoe, D, which is preferably mounted on a pivot-pin, *e*, fixed in the end of the rod or lever. This shoe D may turn on its pivot to an extent limited by suitable stops, consisting, in the present instance, of a projection, *d'*, on the pivot-pin *e*, adapted to a segmental slot, *d*, in the stem of the said shoe. This lever E is so pivoted in relation to the shaft A that the shoe D comes into the path of the rib B, and the lever is so acted on, either above or below its pivoting-point *e'*, by springs F F' that the latter always tend to bring the pivoting-center of the shoe in line with the rib B, as shown in the diagram, Fig. 4, and consequently on whichever side of the rib B, Figs. 3 and 5, the shoe D may happen to be, one or other of the springs F F' will be exerting its action on the lever to press the shoe against that side of the rib and tend to bring it toward the center. Thus, supposing the parts to be in the position shown in Fig. 1, and the shaft A rotating in the direction of the arrow, the spring F will keep the shoe in contact with the side of the rib as the shaft rotates (Fig. 3) until the edge of the notch *b* passes the center of the pivot *e*, when the pressure of the spring F on the lever E will throw the pivot into the center and throw the shoe diagonally across the notch *b* to the position indicated in Fig. 4. As the shaft continues its rotation the rib on the other side of the notch *b* will then bear on the shoe and throw it over onto the other side of the rib (see Fig. 5) against the action of the spring F', which, when the notch *b* comes opposite the shoe again, will once more reverse the positions of the lever and shoe.

Owing to the construction described, I am enabled to dispense with the uncertain crossed cam-grooves which are employed in ordinary switch-cams, and more particularly to get rid of the sharp points at the intersections of these grooves, for it is the breakage and wearing of these points that make the switch-cams unreliable. In my device the edges of the ribs at the notch are quite blunt, though preferably rounded, as indicated in Fig. 2.

G indicates a connecting-rod, by which the intermittent vibrating motion of the lever E may be transmitted to any suitable point.

Instead of using two springs, F F', one may be used, provided it is so connected to the lever as to tend to bring the center of the pivot in line with the notched rib. The construction of the rod or lever E and the point of application of the spring or springs may be varied without departing from my invention.

I claim as my invention—

1. The combination of a rotary shaft carrying a notched rib with a rod or lever carrying a shoe in contact with the rib, and a spring or springs acting on the said lever, as and for the purpose set forth.

2. The combination of a rotary shaft carrying a notched rib with a lever, a shoe mounted on a pivot on said lever, and devices for limiting the motion of the shoe on its pivot, and springs acting on said lever, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANL. MILLS.

Witnesses:

HARRY L. ASHENFELTER,

HUBERT HOWSON.