(No Model.)

W. A. TUCKER.

MECHANICAL MOVEMENT.

No. 299,183. Patented May 27, 1884.

Fig 1.

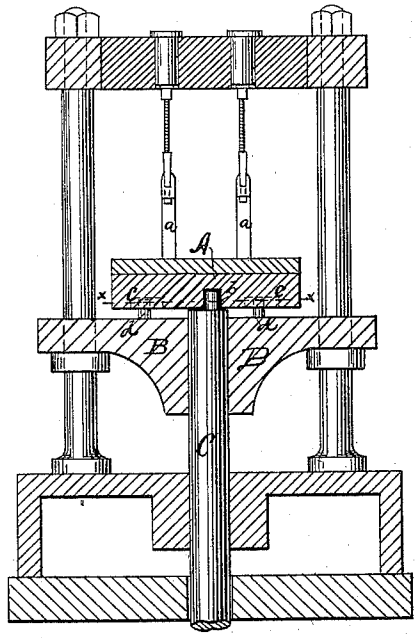
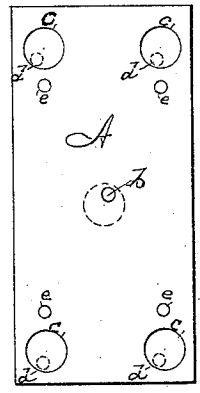


Fig 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM A. TUCKER, OF NEW YORK, N. Y.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 299,183, dated May 27, 1884.

Application filed November 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. TUCKER, of the city of New York, in the county and State of New York, have invented a new Mechanical Movement, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same, in which—

Figure 1 is a central vertical section of a machine of which my invention forms a part; and Fig. 2 is a cross-section of said machine on line *x x*, Fig. 1.

My invention relates to a mechanical movement in which motion is communicated to a plate or block of metal or other solid material, as hereinafter described, whereby all points in the plate or block are severally carried in the same plane around equal and independent circles with different centers; and it consists in the combination of devices, herein described, whereby said motion is produced.

I have represented in Figure 1 of the drawings, and will now describe, a machine in which the said combination of devices is embodied and employed, for the purpose of showing the utility of my movement; but I do not of course limit its use to the machine described.

The machine selected for exhibiting the utility of my invention is one for cutting or trimming gelatine capsules, and is substantially the same as that shown in the drawings and described in the specification filed with my application for a patent filed in the United States Patent Office July 20, 1883. In this machine there is a series of molds or pins, on which the capsules are formed, set in a flat plate, and a corresponding series of small circular cutters mounted to rotate on the ends of fixed arms or stems. The cutting of the capsules on the molds is accomplished by carrying the molds around the cutters—each around one of the cutters—and a motion is given to the plate in which the molds are set, so as to move all the molds simultaneously each around its cutter. The devices by which the requisite motion to accomplish this result is given to said plate are the following:

A is a flat metal plate, in which are fixed permanently a series of upright molds or pins *a*. This plate rests upon a bed-plate, B.

C is a rotary driving-shaft, properly journaled in the frame of the machine, and to which motion is given by any suitable means. The upper end of this shaft passes through an opening in the bed-plate B, and is provided with a crank-pin, *b*, projecting upward from the end of the shaft, the said pin being eccentric to the axis of the shaft, the eccentricity being equal to the radius of the circle which the molds describe in traveling around the cutters.

In the plate A are circular openings *c*, preferably one at each of its four corners, (shown in broken lines in Fig. 1 and in full lines in Fig. 2,) into which openings enter studs or pins *d*, that are fixed in the bed-plate B and project upward therefrom. The said pins *d* are severally of less diameter than the said openings in plate A by double the throw of the crank-pin, and the diameter of said openings is equal to double the throw of the crank plus the diameter of said pin *b*, and the pins are arranged to stand in said openings, so as to be constantly in contact with the sides or walls of the openings. Now, it is evident that when the shaft is rotated the point in the plate A at which is the axis of the crank-pin *b* will be carried by the crank-pin around a circle, and the plate being held at its corners by the pins *d*, working in the openings *c*, so as to cause said corners to be carried around in similar circles, each and every point in the plate, including of course the molds, will have a similar movement.

In order to lessen friction between the plates A and B and insure a true and uniform motion of the former on the latter, it is advisable to insert in the lower face of A several small studs, *e*, which fit down and slide upon B.

The described devices provide a simple, cheap, and effective means of imparting to the plate the specified movement, which movement is useful for many mechanical purposes.

What I claim, and desire to secure by Letters Patent, is—

The combination of the plate B, provided with the studs *d*, the plate A, provided with the openings *c*, into which said studs project, and the rotary shaft C, provided with a crank-pin, *b*, fitted into a sleeve or hole in the plate A, whereby when the said shaft is rotated all points in plate A are severally carried in the same plane around equal independent circles with different centers, as and for the purpose described.

WILLIAM A. TUCKER.

Witnesses:
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