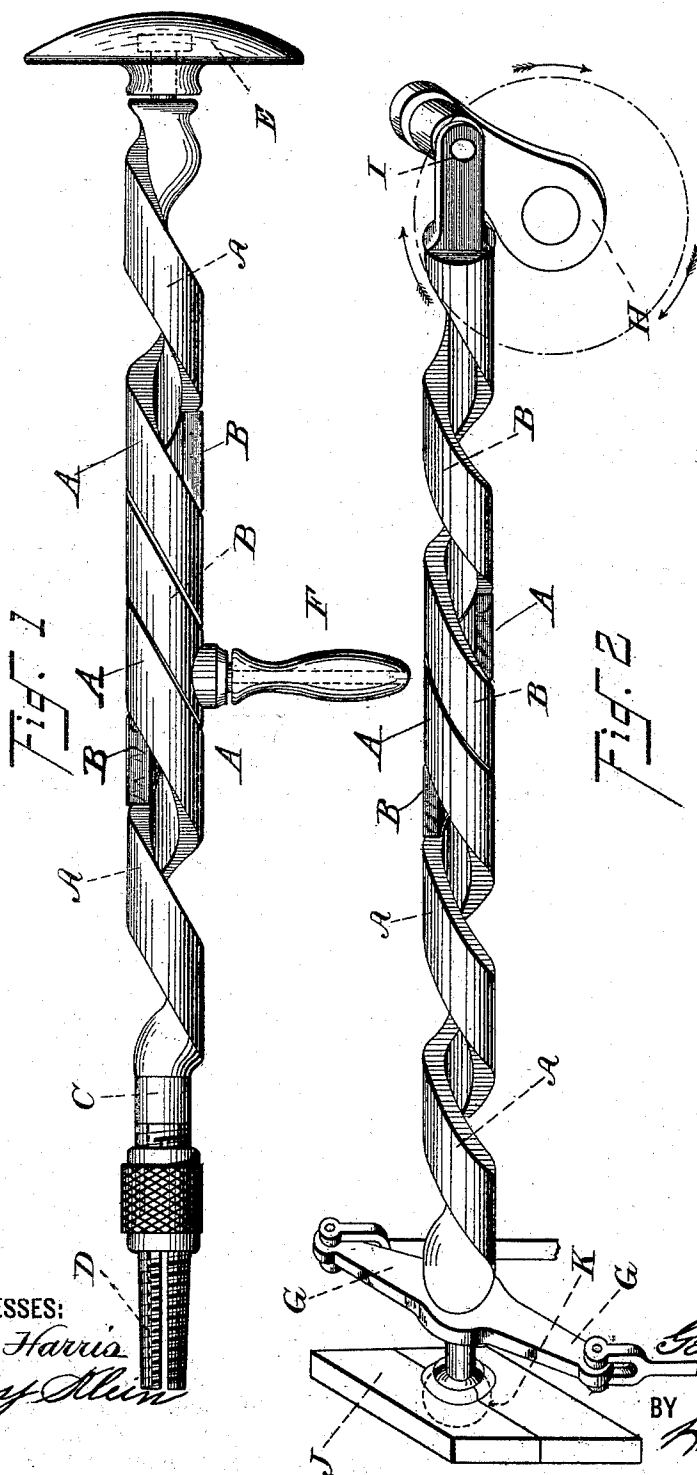


(No Model.)

G. BEEKMAN.
MECHANICAL MOVEMENT.

No. 495,656.

Patented Apr. 18, 1893.



WITNESSES:
M. B. Harris
Henry Klein

INVENTOR
Gerard Beekman
BY
Henry F. Wilkes
ATTORNEY

UNITED STATES PATENT OFFICE.

GERARD BEEKMAN, OF NEW YORK, N. Y.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 495,656, dated April 18, 1893.

Application filed December 29, 1892. Serial No. 456,651. (No model.)

To all whom it may concern:

Be it known that I, GERARD BEEKMAN, a citizen of the United States, residing in the city, county, and State of New York, have invented a certain new and Improved Mechanical Movement, of which the following is a specification.

The object of this invention is to produce in the most direct manner, and with the least friction, a reversible rotary motion; or, in other words, an oscillatory motion of a shaft upon its own axis, by the reciprocatory motion of a part along the length of said shaft.

Said invention consists in a mechanism composed of two interlocking spiral coils or parts, the one movable with reference to the other, constructed as hereinafter described and claimed.

Referring to the accompanying drawings: Figure 1, represents a side view, embodying the invention, applied to a drill stock or screw-driver stock; and Fig. 2, a perspective elevation illustrating the invention embodied in a mechanism for converting a crank motion into a vibratory motion, in a plane parallel to the axis about which the crank revolves.

A, in each figure, indicates the longitudinally stationary spiral part, while B, indicates the longitudinally movable spiral part, interlocking, or fitting, between interspaces of the convolutions of A.

By the reciprocating motion of B, which is moved longitudinally without permitting its rotation, the part A, which is permitted to rotate, but sustained against longitudinal motion, is caused to revolve to and fro.

In Fig. 1, the principle is applied to a screw-driver stock C, having a suitable clamp D, at one end, and a suitable hand-rest E, at the other, while the spiral part B, is provided with a handle F, for moving it longitudinally upon the part A. The part A, being swiveled in the hand-rest E, and resting upon the work through the agency of the tool inserted therein at D, is free to revolve when the handle F, is moved, as described.

In Fig. 2, the principle is embodied in a mechanism wherein it is desired to vibrate the double rock-arm G, which may be em-

ployed to move any connected parts with a reciprocatory motion by the continuous rotary motion of the crank H, attached to the spiral part B, of the device. The part B is pivoted to the pin I, of the crank H, so that it may operate in alignment with the part A, at all positions of the crank, but shall remain sustained against rotary motion upon its own axis.

The part A, is connected to a suitable supporting frame J, at its outer extremity by means of a ball and socket joint, K, which permits its angular vibration, in order to accommodate the crank H, and also its oscillatory motion upon its own axis when the rock-arm G, is caused to oscillate.

It will be obvious that in some instances the rotary spiral A, may constitute the driving part and the reciprocating spiral B, the driven part.

It will be observed that in the construction of Fig. 2, the interlocking arrangement of the parts A, B, cause them to be self-sustained in axial alignment, requiring no additional support, interior or exterior, to the cylindrical spirals.

It will be seen that in construction, one part is, in contour, substantially the counterpart of the other, and each part may, in fact, be cut from one piece of metal having a uniform spiral throughout its length.

When the parts are interlocked, their outer surfaces will be in substantially the same longitudinal planes, so that, if desired, the device may be operated in a casing closely surrounding it.

I claim—

1. In a mechanical movement, the two parts, each consisting of a spiral coil, the said two parts interlocking, and one having a longitudinal movement relatively to the other for transmitting a rotary motion thereto, substantially as specified.

2. In a mechanical movement, the two interlocking cylindric spiral coils, the outer surfaces of the two parts being in substantially the same longitudinal planes, and each part having a width substantially equal to its own interspaces, and one of said parts having a longitudinal movement relatively to the other

for transmitting a rotary motion thereto, substantially as specified.

3. In a mechanical movement, the combination of two spirally coiled interlocking
5 parts, the said two parts being in contour substantially counter-parts, and one of said parts having a longitudinal movement rela-

tively to the other for imparting rotary motion thereto, substantially as specified.

GERARD BEEKMAN.

Witnesses:

EUGENE LUCAS,
KATIE D. VAN PELT.