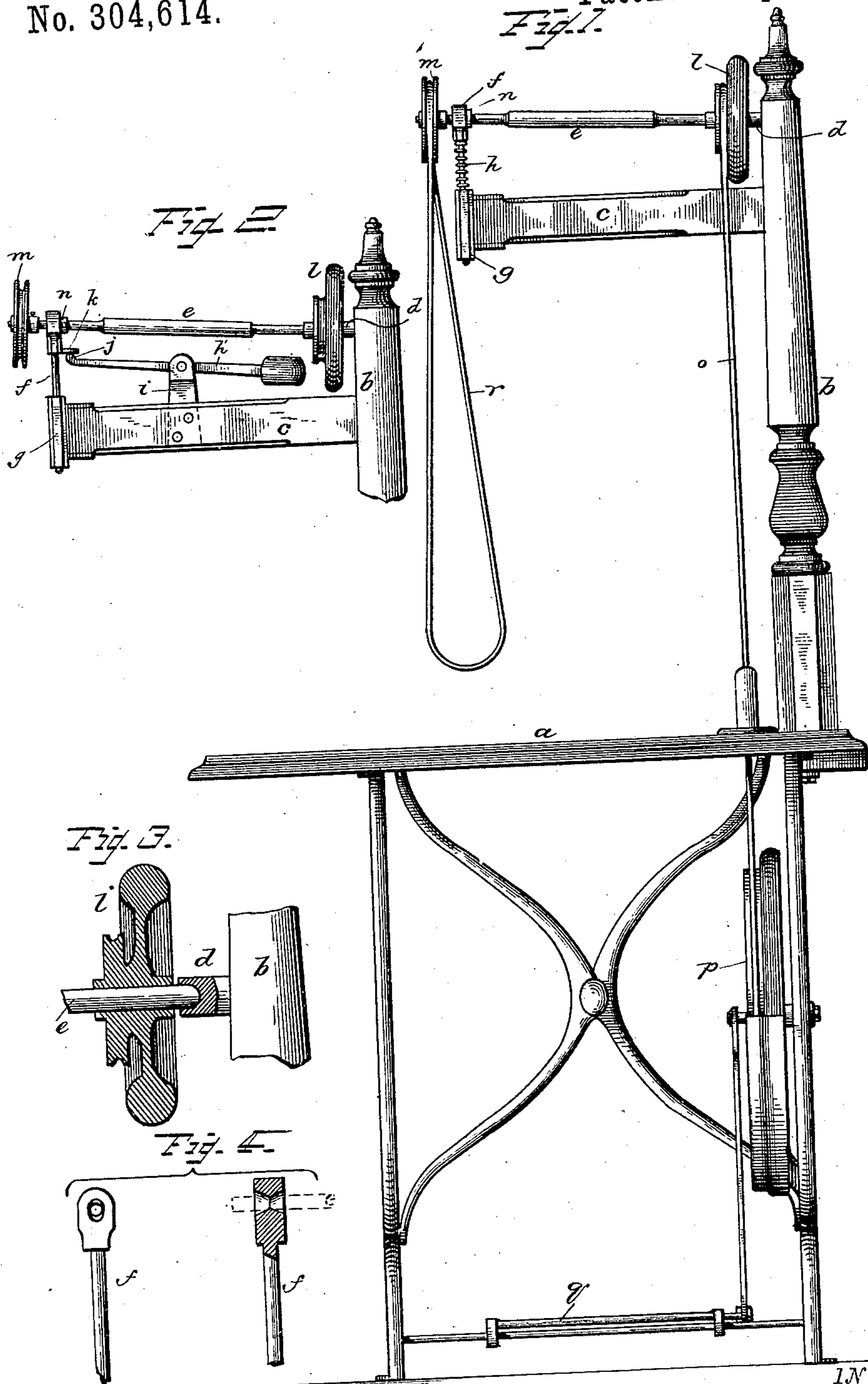


(No Model.)

A. C. CAREY.
MECHANICAL MOVEMENT.

Patented Sept. 2, 1884.

No. 304,614.



WITNESSES
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UNITED STATES PATENT OFFICE.

AUGUSTUS C. CAREY, OF BOSTON, MASSACHUSETTS.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 304,614, dated September 2, 1884.

Application filed May 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS C. CAREY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Mechanical Movements, of which the following is a full, clear, and exact description.

The object of my invention is to provide an efficient mechanical movement, which may be portable, if desired, for power driving light machinery, such as that class of hand-tools to which a rotary or reciprocating motion is to be imparted while the tool is guided by hand; and my invention has special reference to providing a light power for driving the mechanical pens shown in Letters Patent No. 215,792, and dated May 27, 1879, and my application for Letters Patent filed January 24, 1884, and numbered 118,607; but I wish it to be distinctly understood that the invention forming the subject-matter hereof is not limited in adaptation to these instruments or to any particular instrument, and is shown and claimed, broadly, as a mechanical movement, motor, or power device or transmitter.

The invention consists in a pivoted or swiveled rotary shaft yieldingly supported at one end, and provided with a power-transmitting medium to the tool to be operated, the said tool being suspended thereby from the said shaft, combined with suitable supports or standards, whereby a hand-guided tool which works rotarily or reciprocally may be suspended and power driven in such manner that the tool may be depressed by hand and so brought into operative position when it is to be used, and when released will be automatically lifted from and clear of the work, relieving the operator's hand very materially from the weight of the tool, and obviating the necessity of care in laying the tool aside when not in use.

In the accompanying drawings, illustrating my invention in the several figures, of which like parts are similarly designated, Figure 1 is a front elevation of a foot-power device embodying my invention. Fig. 2 is a similar view of the head, showing a modification. Fig. 3 is a sectional detail of the pivoted shaft on a larger scale, and Fig. 4 shows in face and cross-sectional views the moving bearing for the shaft.

The work bench or table *a* may be of suitable construction and dimensions, and when for use in connection with my pens referred to will be covered with cloth, baize, or other stuff of equivalent softness. Upon the table is made fast a vertical post, *b*, to which is secured, at say, a right angle, an arm, *c*. Above this arm, and parallel therewith, is attached to the post a socket-piece, *d*, (see Fig. 3 for details,) universal joint or the like, which socket receives pivotally the rounded end of a shaft, *e*, which is supported at its other end by a bearing-post, *f*, guided in a vertical hole or pipe, *g*, in the outer end of the arm *c*, a spring, *h*, Fig. 1, or a weighted lever, *h'*, Fig. 2, or other counterpoise for said shaft, being interposed between the shaft *e* and arm *c*, to hold said shaft normally elevated, and, in effect, make of the bearing for its free end a yielding or movable bearing which is always self-recovering. If a spring be employed it will be a coiled spring, encircling the stem of the bearing *f*, and interposed between the arm *c* and the head of the said bearing, and if a weighted lever be used it may conveniently have its fulcrum on a bracket, *i*, of the arm *c*, with its tail *j* engaging a projection, *k*, of the bearing *f*. The counterpoise, of whatever nature, must be sufficient to lift the shaft *e* out of and above a true horizontal plane when released from pressure in the opposite direction. The shaft *e* has a combined balance and belt-wheel, *l*, attached to it near its pivotal end, or the wheels may be separate, and at the free end said shaft is provided with a transmitting-pulley, *m*, detachably fast thereto. The bearing *f* has such a connection with the arm *c* that, while it may move freely up and down therein, and more or less, if need be, axially, it has no other movements. The shaft is held in its socket-piece *d* by a collar, *n*, held on the shaft by a set-screw, in such relation to the bearing as to preclude such an extent of longitudinal movement of the shaft as that it may escape from the said socket. Such collar will be unnecessary if the shaft be articulated or jointed or hinged to the post. In order to give the shaft the necessary play in said bearing *f* to permit it to move in an arc of a circle, the eye of said bearing may be in cross-section, of the shape of an hour-glass; but other constructions and devices are ob-

vions for obtaining the same result. Rotary motion is imparted to the shaft *e* by a belt, *o*, connecting its belt-wheel with a driven wheel, *p*, operated by a treadle, *q*, such as are usually employed in sewing-machines; but I do not limit the source of power to any particular motor, and may employ any of the well-known mechanisms. The rotary motion of shaft *e* is transmitted from wheel *m* by a belt, *r*, which may be of leather, rubber, coiled wire, or other material.

When the tool to be driven or operated is connected with the belt *r* and it is desired to use it, pressure upon it toward the table will overcome the counterpoise, bring the shaft into the horizontal or nearly such, and permit the tool to be manually guided or operated in performing the work for which it is designed. The tool will, when released from the hand, be drawn up out of the way by the counterpoise acting to throw the shaft up into the position of rest indicated in the drawings, it being understood that the tool is an element to be overcome by the counterpoise.

By my invention the tool is always handy for use and not liable, if it be delicate, to injury from careless or hurried workmen throwing it down.

Where numbers of tools—as in a factory or large office—are used, the series of pivoted

shafts—one for each tool—will be driven from power-driven shafting in any suitable manner.

What I claim is—

1. A shaft pivoted at one end, the yielding bearing therefor at its other end, a counterpoise, and means to rotate such shaft and transmit its motion, combined substantially as described.

2. The combination of the shaft pivoted or swiveled to a post at one end, a bearing for the other end of said shaft, an arm in which said bearing is free to move longitudinally, a counterpoise interposed between said arm and bearing, a driving pulley or wheel for said shaft, a transmitting-wheel, and a motor, substantially as described.

3. The driven shaft pivoted or articulated to a standard at one end, a bearing for its free end, whereby it may freely move in an arc of a circle, combined with a detent or stop, or collar co-operating with the bearing to prevent longitudinal movement of the said shaft, substantially as described.

In testimony whereof I have hereunto set my hand this 29th day of April, A. D. 1884.

AUGUSTUS C. CAREY.

Witnesses:

GEO. M. FINCKEL,
EDWIN A. FINCKEL.