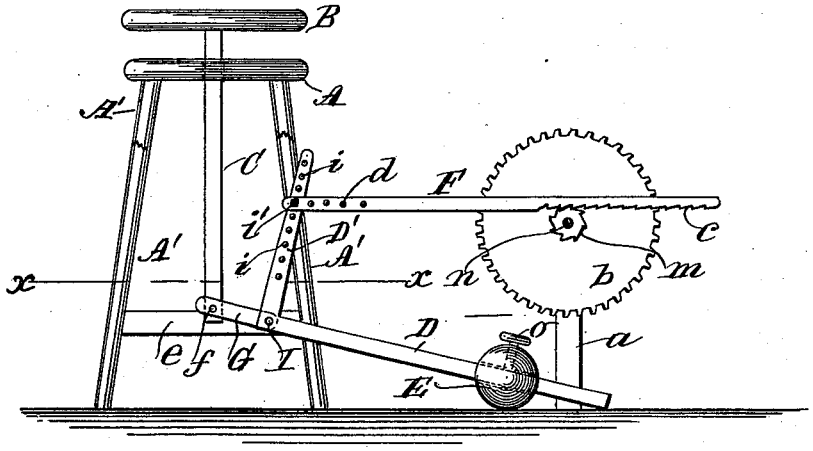
(No Model.)

F. L. GILBERT.

MOTOR.

No. 429,379. Patented June 3, 1890.

Fig. 1.



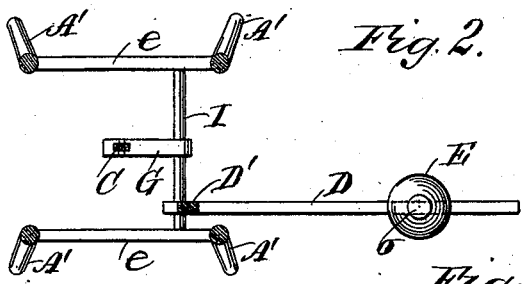
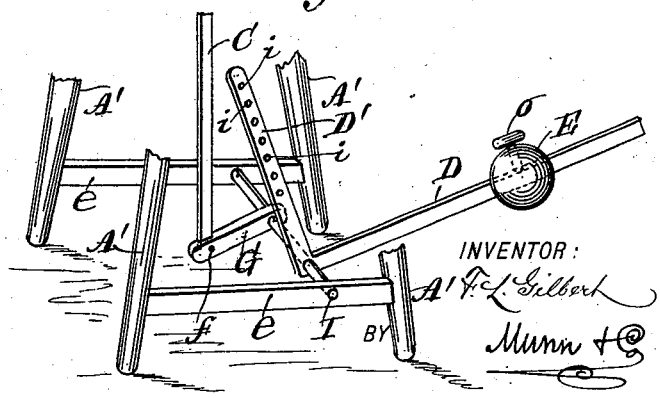


Fig. 2.

Fig. 3



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FRANK L. GILBERT, OF CONROE, TEXAS,

MOTOR.

SPECIFICATION forming part of Letters Patent No. 429,379, dated June 3, 1890.

Application filed September 28, 1889. Serial No. 325,348. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. GILBERT, a resident of Conroe, in the county of Montgomery and State of Texas, have invented a new and useful Improvement in Motors for Sewing-Machines and for other Purposes, of which the following is a full, clear, and exact description.

The objects of my invention are to provide a simple, cheap, convenient, and practical motor, whereby the weight of an operator will be utilized to run a sewing-machine, churn, or other device requiring a light power to actuate it.

With these ends in view my invention consists in certain features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the device, parts being broken away. Fig. 2 is a top plan view in section, taken on the line *x x* in Fig. 1; and Fig. 3 is a view in perspective of the motor with the top portion removed to show the construction of important features.

The essential features of the device consist in provision of actuating-lever mechanism, which is attached to a loose seat-board mounted on an ordinary stool or high chair and adapted to convert the slow downward movement of the loose seat when it is occupied by an operator into rapid rotary motion for the actuation of a sewing-machine, dental lathe, or similar mechanism requiring but little power and that are usually run by manual force.

A represents the seat-block of an ordinary stool or high chair. Four legs A′ are inserted at equal distances from each other in the seat-block, and opposite pairs of the same are firmly braced near their lower extremities by the attachment thereto of the parallel horizontal stretcher-bars *e*, which lie in the same plane.

The seat-block A is centrally perforated for the reception of a vertical pusher-bar C, on the upper end of which the loose seat-piece B is mounted and fastened, the bar being so adjusted that it may slide vertically while the seat-piece B is held parallel to the fixed seat-block A. A transverse shaft I is journaled at its ends in the stretcher-bars *e* and rocks therein. Near the center of length of the rock-shaft I a crank-arm G is affixed so as to project its free end in alignment with the vertical pusher-bar C, to which it is pivotally secured, as at *f*, the length of the crank-arm being proportioned to afford the bar C a free vertical movement, whereby the crank-arm G is vibrated and the shaft I rocked on its journals.

Upon the rock-shaft I, near to one journal end, a bell-crank is affixed, the lower limb D of which is located in the same plane parallel to the crank-arm G, but projected from the opposite side of the shaft on which they are secured. The upright limb D′ of the bell-crank is perforated at spaced intervals *i i* for reception of a pivot-bolt *i′*, which connects the ratchet-bar F loosely thereto. Said ratchet-bar is also furnished with a series of spaced holes *d* to permit it to be adjusted for length.

The ratchet-bar F is toothed on its lower edge near its outer end at *c*, thus adapting it to engage a ratchet-wheel *m* and rotate it when the bar is drawn toward the pusher-bar C.

On the upright *a*, which may be a portion of a sewing-machine frame or lathe-support, the ratchet-wheel *m* is supported upon a shaft *n*, that is loosely mounted on the upright or frame, and on said shaft a gear-wheel *b* is secured, which can be made to mesh with a gear-train, (not shown,) and thus produce rapid rotary motion for actuation of the sewing-machine or lathe.

A weight E, preferably in the form of a ball, is placed on the limb D of the bell-crank and made adjustable by provision of a set-screw *o* to adapt the ponderance of the weight to that of the occupant of the seat-piece B by a longitudinal adjustment of the ball upon the limb.

In operation the motor is placed a convenient distance from the machine which is to be driven and geared connection established therewith, as previously mentioned, the series of holes *d* affording means for the correct location of the motor with regard to the sewing-machine, so as to accommodate a large or small person. The several connected parts

will by gravity of the weight E be caused to assume the relative positions shown in Fig. 1, which is the normal adjustment of the working parts when at rest. When the operator is seated on the movable seat-piece B, the weight thus applied will gradually elevate the arm D and attached weight E, at the same time transmitting the motion of the limb D′ to the ratchet-bar F, the latter causing the wheel *m* to revolve as the bar is drawn inwardly, the attached machine being made to operate by the gear-wheel *b*. The power may be increased or diminished by adjustment of the pivoted connection of the ratchet-bar F upon the upright limb D′ of the bell-crank, it being evident that its connection near to the shaft I will increase the power and a removal therefrom diminish the same, while the rate of speed will be correspondingly affected. By constructing and connecting the parts of the motor as described the slow limited motion of the seat-piece B and attached pusher-bar C will drive at regular speed an attached machine within its capacity to operate. When the seat-piece B is nearly in contact with the block A, this will be indicated by the elevation of the limb D at its outer end. A slight rise of the operator to relieve the seat B of superimposed weight will permit the gravity of the ball E to adjust the parts, as shown in Fig. 1, when work may again be resumed.

In case it is desired to arrest the attached machine suddenly, this can be effected by the operator placing his foot on the limb D near the weight E and pressing on the same, so as to throw an equal portion of his own weight on each side of the upright limb D′ of the bell-crank. The act of rising from the seat will also stop the motor.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a seat supported to move in a vertical plane and a pusher-bar, of a crank-arm, a rock-shaft, a bell-crank, a ratchet-bar, and a revolubly-supported ratchet-wheel, substantially as set forth.

2. The combination, with a seat supported to move in a vertical plane and a pusher-bar attached to this movable seat and depending therefrom, of a rock-shaft journaled in supports at its ends, a crank-arm, a bell-crank, a ratchet-bar, a revolubly-supported ratchet-wheel, a shaft on which the ratchet-wheel is mounted, and a gear-wheel affixed to said shaft, substantially as set forth.

3. The combination, with a stool having its seat-block perforated centrally, a loose seat, and a depending pusher-bar attached by one end to the loose seat, of a rock-shaft journaled in parallel stretcher-bars, which are secured to legs of the stool, a crank-arm, a bell-crank, an adjustable weight, a ratchet-bar, and a ratchet-wheel revolubly supported, substantially as set forth.

FRANK L. GILBERT.

Witnesses:
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