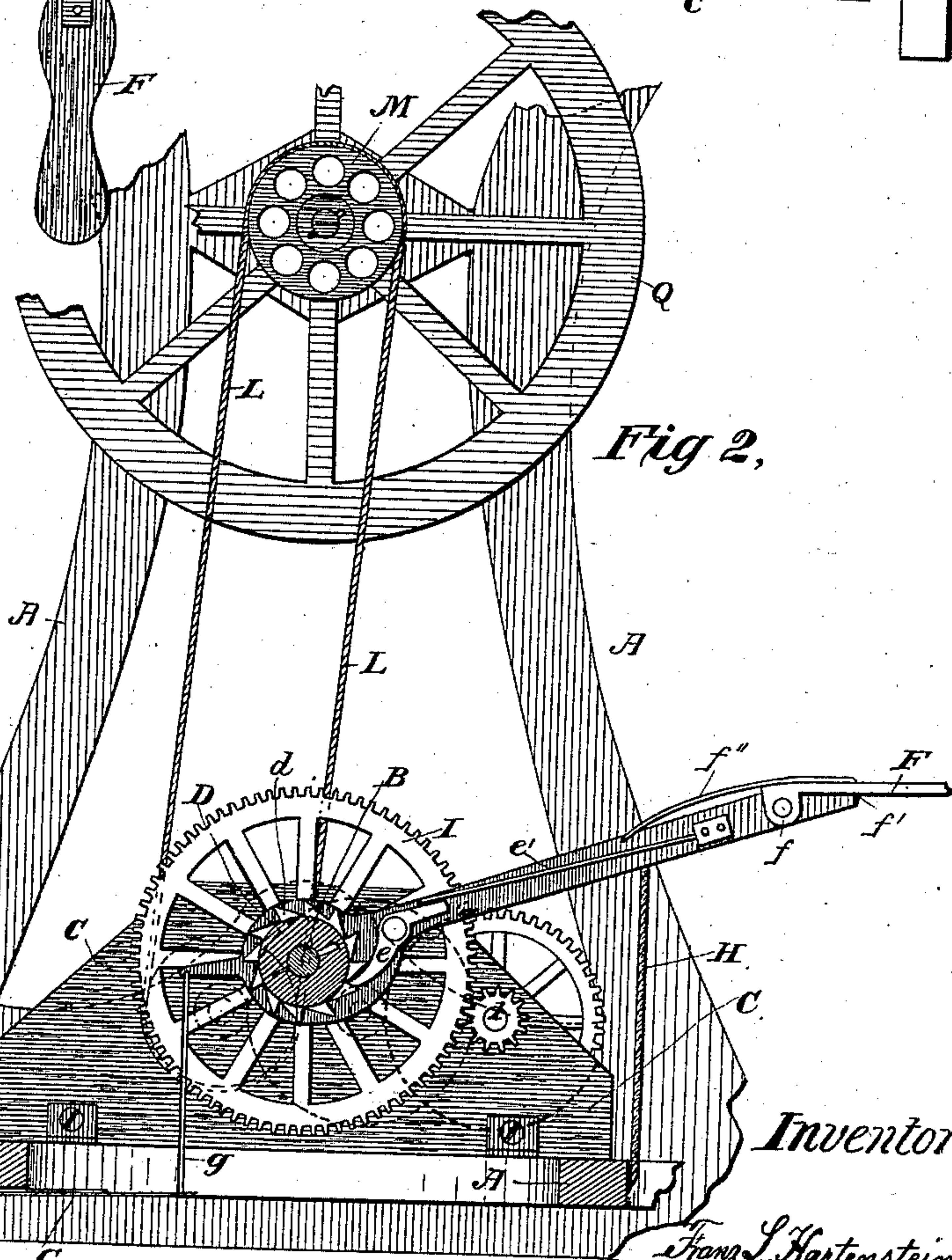
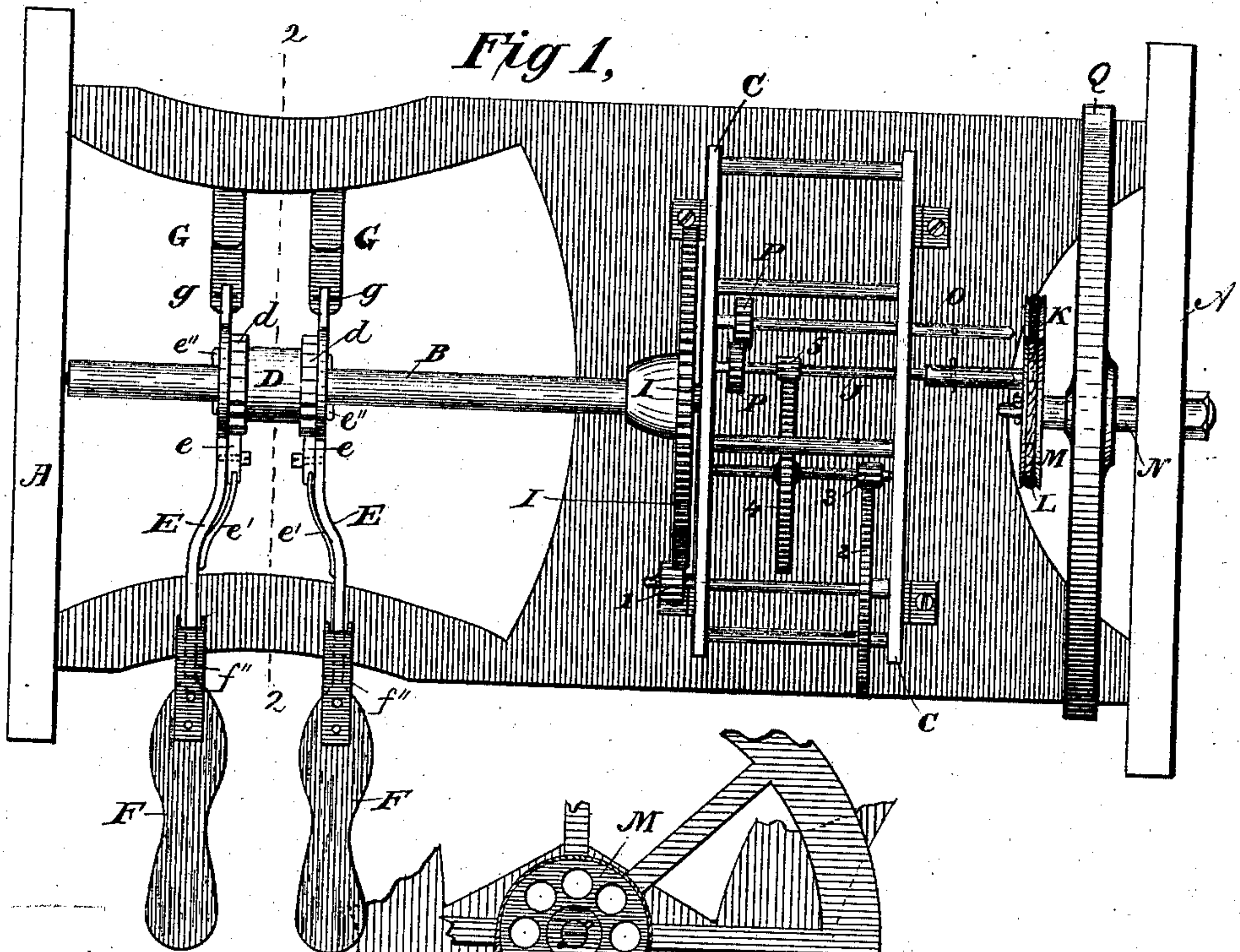


(No Model.)

F. L. HARTENSTEIN.
Driving Mechanism for Sewing Machines.
No. 232,491. Patented Sept. 21, 1880.



Attest:
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By *Knight Bros.* attys

UNITED STATES PATENT OFFICE.

FRANZ L. HARTENSTEIN, OF NASHVILLE, TENNESSEE.

DRIVING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 232,491, dated September 21, 1880.

Application filed August 23, 1880. (No model.)

To all whom it may concern:

Be it known that I, FRANZ LUDWIG HARTENSTEIN, of Nashville, in the county of Davidson and State of Tennessee, have invented
5 new and useful Improvements in Driving Mechanism for Sewing-Machines, of which the following is a specification.

The invention relates to means whereby the slow reciprocating motion of a pair of treadles
10 is converted into the rapid rotary motion required for the fly-wheel of a sewing-machine.

The device consists of a pair of treadles pivoted and supported by levers fulcrumed on a shaft journaled in the lower part of the
15 frame of the sewing-machine, the treadles having pawls engaging in circular ratchets on the shaft, and springs for elevating them after being depressed, the shaft communicating with a series of gear-wheels and pinions, by which
20 the necessary speed is obtained, and from which the power is communicated, by a pair of pulleys and a cord or belt connection, to the fly-wheel.

In order that my invention may be fully understood, I will proceed to describe it with
25 reference to the accompanying drawings, in which—

Figure 1 is a plan of a sewing-machine provided with my improved device, the cover or
30 table part of the machine being removed. Fig. 2 is a vertical transverse section on the line 2, Fig. 1.

A represents a sewing-machine frame of ordinary construction, in which is journaled one
35 end of the horizontal treadle-shaft B, the other end being supported by a frame, C, in which is journaled the gearing for multiplying the motion and communicating it to the fly-wheel pulley.

D is a hub rigidly secured to the treadle-shaft, on each end of which hub is a series of
40 ratchet-teeth, *d*, with which the pawls *e e* on the treadle-levers E E are caused to engage by springs *e' e'*.

45 The treadle-levers E E are fulcrumed to the shaft B at each end of the hub D. Said levers turn loosely on said shaft, and are held in juxtaposition with said hub by keys or pins *e'' e''*.

Near the forward ends of the levers E E are
50 pivoted the treadles F F, at *f f*, which are held down against the beveled ends *f' f'* of the levers by springs *f'' f''*.

The rear ends of the levers are connected by wires or rods *g* to springs G G, which act
55 to re-elevate the treadles, the upward motion being limited by chains or cords H, which extend downward from the forward ends of the levers E E and are secured to the frame A.

I represents a gear-wheel secured to the
60 shaft B, and communicating, through multiplying-gearing 1 2 3 4 5, with the shaft J, on the end of which is secured the grooved pulley K, from which a cord, L, communicates the power to the pulley M on the fly-wheel
65 shaft N.

O represents a shaft similar to the shaft J, to which it is connected by gear-wheels P P,
70 on which shaft O the pulley K may be secured in case motion should be required in the opposite direction.

The machine is driven by the operator pressing first on one treadle and then on the other, the springs G G operating to re-elevate the
75 treadles, so as to bring the pawls *e e* in contact with other ratchet-teeth. Thus by the slow up-and-down motion of the treadle a continuous rotation will be given to the shaft B, which, being transmitted through the gearing I 1 2 3 4 5, will impart the desired speed
80 to the pulleys K M and fly-wheel Q.

It will be seen that as the treadles have a nearly vertical movement, instead of the ordinary rocking motion, the power of the operator can be much more advantageously ap-
85 plied.

My improved motor is adapted for driving various other machines in the same manner as sewing-machines.

Having thus described my invention, the fol-
90 lowing is what I claim as new and desire to secure by Letters Patent:

1. The combination of the frame A, shaft B, hub D, having ratchet-teeth *d d*, levers E E, having pawls *e e*, treadles F F, springs G G,
95 with suitable multiplying-gearing, substantially as and for the purpose set forth.

2. The combination of the frame A, shaft B,

hub D, having ratchet-teeth *d d*, levers E E, having pawls *e e*, springs G G, connecting-rods *g g*, pivoted treadles F F, and chains or cords H, with suitable multiplying-gearing, as
5 and for the purpose set forth.

3. The combination of the frames A and C, shaft B, and treadle mechanism, having the

parts D *d* E *e* F G *g*, with the gearing I 1 2 3 4 5, and the two shafts J and O, geared together as shown, for the purpose set forth. 10

FRANZ L. HARTENSTEIN.

Witnesses:

C. W. KLAGES,

F. A. FALLER.