A. L. AKINS.

Treadle-Motion.

No. 206,914. Patented Aug. 13, 1878.

Fig. 1.

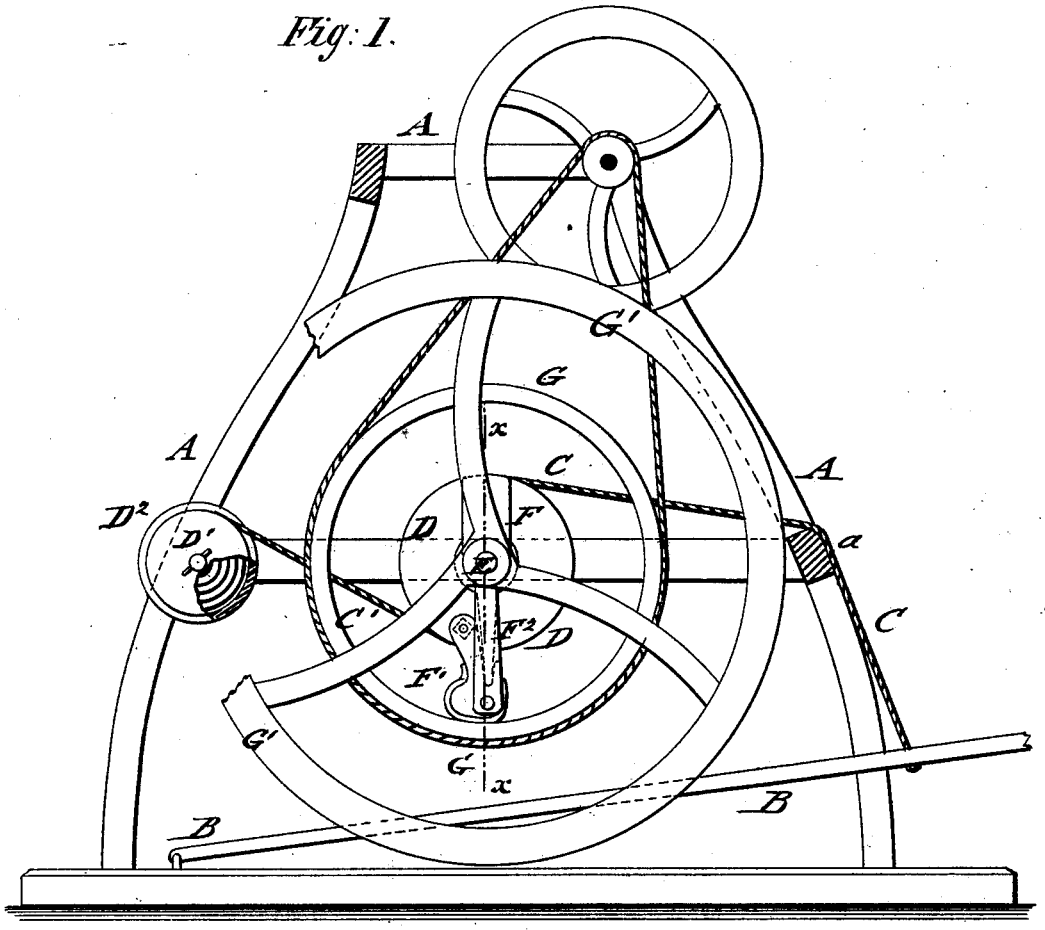


Fig. 2.

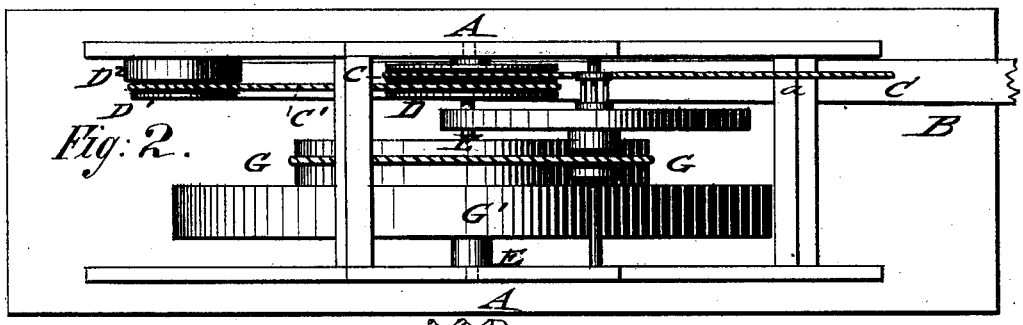
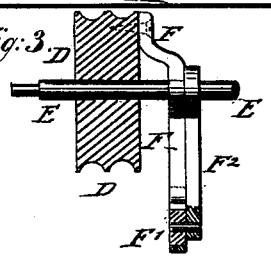


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ABRAHAM L. AKINS, OF GREENSBURG, PENNSYLVANIA.

IMPROVEMENT IN TREADLE-MOTIONS.

Specification forming part of Letters Patent No. **206,914**, dated August 13, 1878; application filed July 22, 1878.

To all whom it may concern:

Be it known that I, ABRAHAM L. AKINS, of Greensburg, in the county of Westmoreland and State of Pennsylvania, have invented a new and Improved Treadle-Motion, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a sectional side elevation of my improved treadle-motion; Fig. 2, a top view of the same; and Fig. 3, a detail vertical transverse section on line *x x*, Fig. 1, showing the connecting of the oscillating arm of the double-cord pulley with the oscillating eccentric-cam arm of the revolving transmitting-wheel.

Similar letters of reference indicate corresponding parts.

This invention has reference to an improved treadle-motion for sewing-machines, circular saws, lathes, and other light machinery, in which the reciprocating motion of a treadle is changed in connection with a spiral spring and intermediate oscillating parts into continuous rotary motion; and the invention consists of the alternating action of a treadle and spring-barrel on a double-cord pulley, to which a fixed arm is applied, that engages intermittently an oscillating arm with eccentric cam or jaw, the jaw imparting rotary motion to a transmitting-wheel in connection with a fly-wheel.

Referring to the drawings, A represents the supporting-frame of my improved treadle-motion, and B the operating-treadle, which is hinged at the rear end to the base plate or floor, and connected at the front end by a cord, C, that passes over a guide groove or pulley, *a*, of frame to a double-cord pulley, D. Pulley D turns loosely upon a transverse shaft, E, that revolves in suitable bearings on frame A.

The cord C is attached to one of the grooves of the double pulley D, while a second cord, C′, is attached to the second groove of the pulley, and runs in opposite direction to cord C around the same and to the fixed pulley D^1 of a spring-barrel, D^2, to which the end of cord C′ is firmly secured. The downward stroke of the treadle carries thus the pulley D in one direction, while during the upstroke of the treadle the spring-barrel acts on the pulley so as to return it again to its former position. The alternating action of the treadle and spring-barrel imparts thus a rotary reciprocating motion to the double pulley D. This motion is changed to a continuous rotary motion by means of a fixed arm, F, of the pulley D, which arm turns by a sleeve-shaped portion on the shaft E, and engages the fork-shaped end of an eccentric cam or jaw, F^1, that is pivoted to the lower end of a loosely-oscillating arm, F^2.

The eccentric-cam F^1 is preferably faced with rubber or other elastic material, so as to act, when thrown in one direction by the oscillating motion of the arm F, like a jaw on the inner surface of a wheel, G, while clearing the same during the opposite or return motion of the arm F. The wheel G is keyed to shaft E, and also provided with a heavy fly-wheel, G′, that is applied to the radially-extended arms of wheel G, and sidewise of the same.

The intermittent action of the eccentric cam or jaw on the wheel G produces, in connection with the fly-wheel G′, the continuous rotary motion of wheel G, which again transmits rotary motion, by belt-and-pulley connection, to the driving-shaft of a sewing-machine, lathe, saw, or other light machinery. A considerable power may thus be exerted by the treadle-motion, while but a small effort is required in working the treadle.

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

The combination, in a treadle-motion, of a rotary reciprocating double-cord pulley, operated by a treadle and spiral spring, and having a fixed arm with an oscillating arm carrying a pivoted eccentric cam or jaw, and with a continuously-rotating transmitting-wheel and fly-wheel, substantially as and for the purpose set forth.

ABRAHAM LAPP AKINS.

Witnesses:

EDGAR COWAN,

H. S. ACKERMAN.