

S. F. BURDETT.

DRIVING MECHANISM FOR SEWING-MACHINES.

No. 177,800.

Patented May 23, 1876.

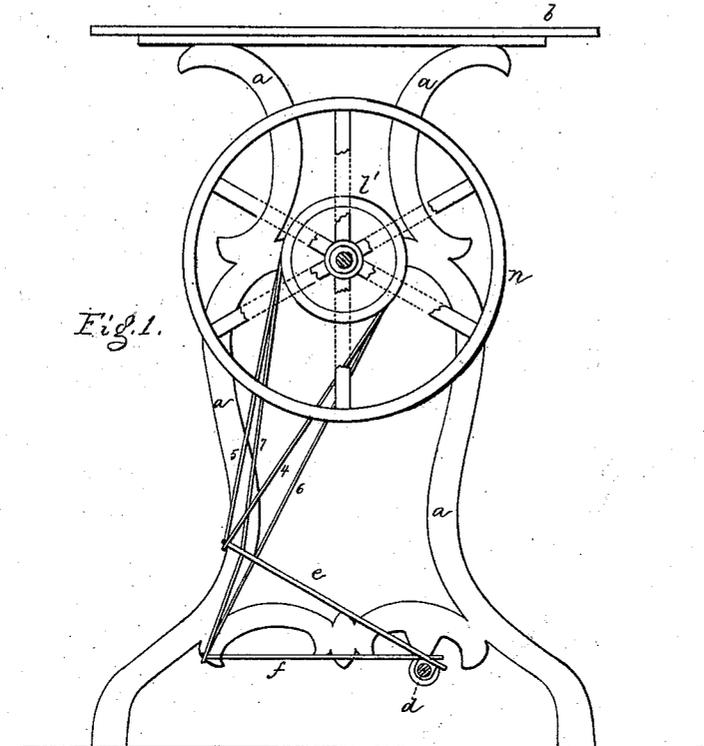


Fig. 1.

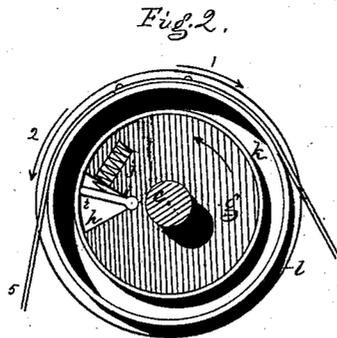


Fig. 2.

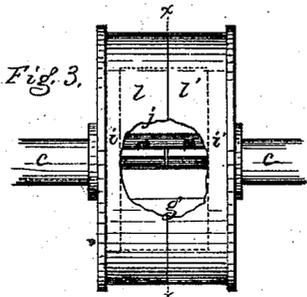


Fig. 3.

Witnesses.
L. W. Latimer,
W. J. Pratt.

Inventor.
Samuel F. Burdett
per Lewis & Gregory
Attys.

UNITED STATES PATENT OFFICE.

SAMUEL F. BURDETT, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN DRIVING MECHANISMS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 177,800, dated May 23, 1876; application filed April 10, 1876.

To all whom it may concern:

Be it known that I, SAMUEL F. BURDETT, of New Bedford, in the county of Bristol and State of Massachusetts, have invented an Improvement in Driving Mechanism for Sewing-Machines, of which the following is a specification:

This invention relates to mechanism for driving or operating sewing and other machines from a treadle.

In this invention I employ two treadles, each of which has two straps, one of which is extended in one direction over, and is connected with the periphery of one loose pulley or drum, and the other is extended in an opposite direction over, and is connected with a second adjacent loose pulley, these pulleys being adapted to move over, and closely fit, a cylindrical hub securely attached to the driven shaft, and provided with a transverse recess, in which are fitted two friction-dogs operated by springs; and the invention consists in the combination of these devices, when constructed and arranged as hereinafter described.

Figure 1 represents, in end view, a stand for a sewing-machine with my invention attached; Fig. 2, a section through the hub and shaft between the loose pulleys on line *x*, Fig. 3; and Fig. 3 is a side view of pulleys, but broken away in order to show friction-dogs.

Frame *a* and top *b* are of ordinary construction, and the former sustains in suitable bearings the driven shaft *c*, provided, as usual, with a band-wheel, *n*, to receive a belt, and drive the sewing or other machine, as usual; and it also sustains a shaft, *d*, on which are pivoted the treadles *e f*. A broad hub, *g*, secured to the driven shaft, has made in its periphery an opening, *h*, in which a friction-dog, *i*, is placed and seated, and a spiral spring, *j*, contained in a recess in the hub, acts to throw the dog away from that side of the opening in which the spring rests.

The outer end of the friction-dog engages the interior of the cylindrical portion *k* of the pulley *l*, and when the pulley is moved in the direction of the arrow 1 the dog is pressed toward the spring, and fails to engage and bind the pulley, and the hub is not

moved; but when the pulley is moved in the direction of the arrow 2, the dog then binds the pulley, and moves the hub and shaft in the direction of the arrow on the hub, Fig. 2.

The strap 5 of treadle *e* is connected with pulley *l*, and turns it in the direction of arrow 2; and strap 6 of treadle *f*, connected with pulley *l* from its opposite side, moves the pulley in the direction of arrow 1. The hub *g* has a second friction-dog, *i'*, at the side of dog *i*, and the ends of the hub are surrounded by the pulley *k l*, and a second pulley, *l'*, in every particular like pulley *k l*, is fitted to the hub, and adapted to be engaged in the same way as pulley *k l* by the second pawl *i'*. This pulley *l'* is turned in the direction of arrow 2 by the strap 7, connected with treadle *f*, and in the opposite direction by strap 4 of treadle *e*; and it will be obvious that, as one pulley is rotated in the direction of arrow 2 to engage the dog and turn the shaft *c*, the other pulley will be turned in the opposite direction, it then moving freely over the hub without being engaged by the dog.

The treadles are pivoted at the heel, and rise and descend alternately, and one pulley always acts to turn the shaft forward while the other pulley is being turned back; and the springs act to throw the friction-dogs quickly into operative engagement with the interior of the pulley, with which it acts whenever such pulley is started in the direction to drive the shaft *c*.

These devices operate positively and without noise. The interiors of the pulleys fit closely to the periphery of the hub, and the straight edges of the dogs, extended across the inner portions of the pulleys, engage the pulley more positively than a ball, and act more quickly.

The dogs have their lower ends thickened and rounded, and are fitted to a rounded seat in the hub. The rounded ends serve as a bearing, and prevent the dogs from moving away from the center of the hub in radial lines, and the dogs are so pivoted in the hub that the arcs described by their ends are different from the arcs of the interior of the pulleys against which the dogs work.

I claim—

The shaft *c*, the single fixed hub *g*, provided with a longitudinal recess, *h*, and two dogs, *i i*, arranged side by side on the same longitudinal line, and springs acting against the dogs, in combination with two loose pulleys, adapted to fit the hub closely, and with straps and treadles, all constructed, connected, and arranged substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL F. BURDETT.

Witnesses:

WENDELL H. COBB,
FRANK A. MILLIKEN.