(No Model.) 2 Sheets—Sheet 1.

P. F. JONTE.

TREADLE MOVEMENT FOR SEWING MACHINES.

No. 265,099. Patented Sept. 26, 1882.

Fig. 2.

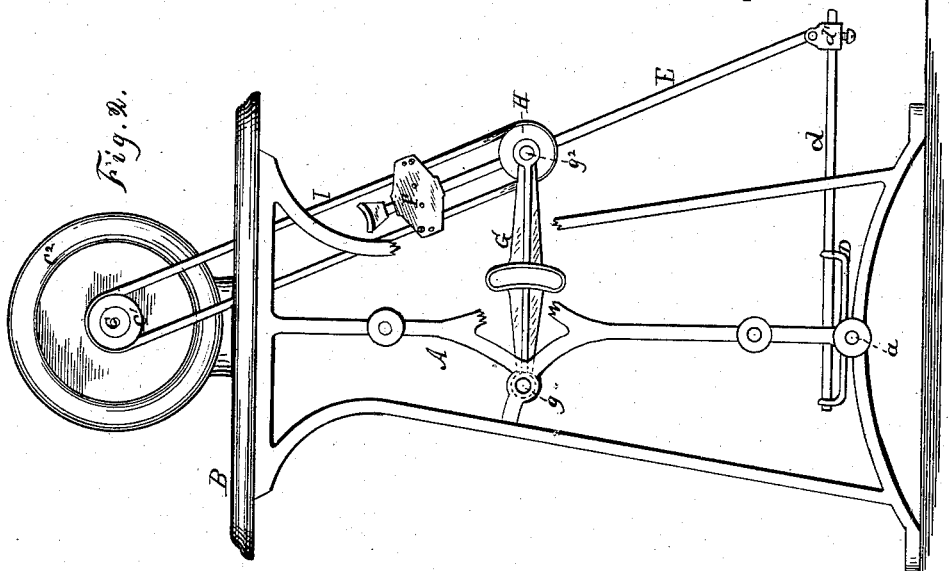
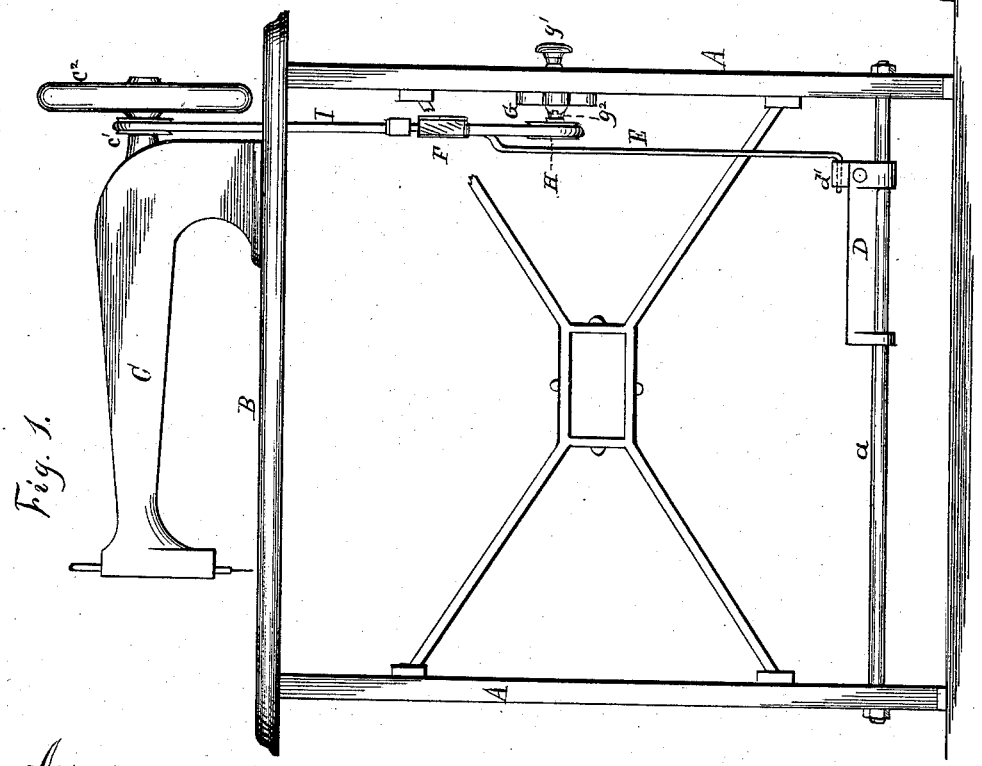


Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

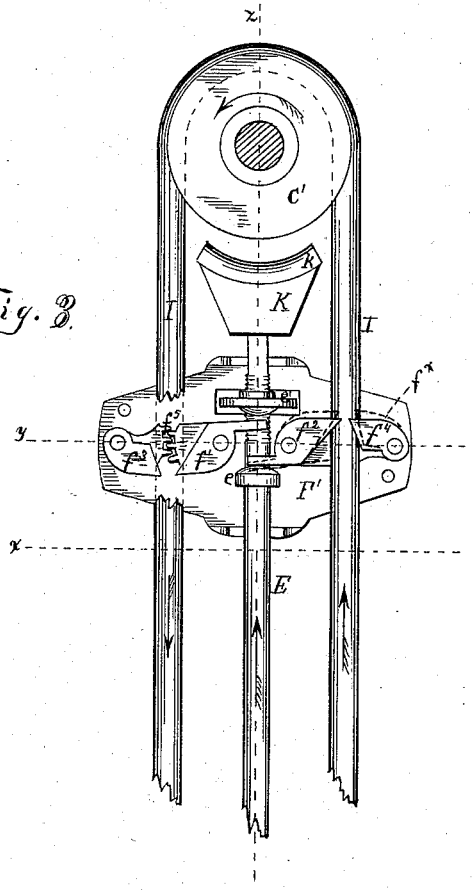


Fig. 4.

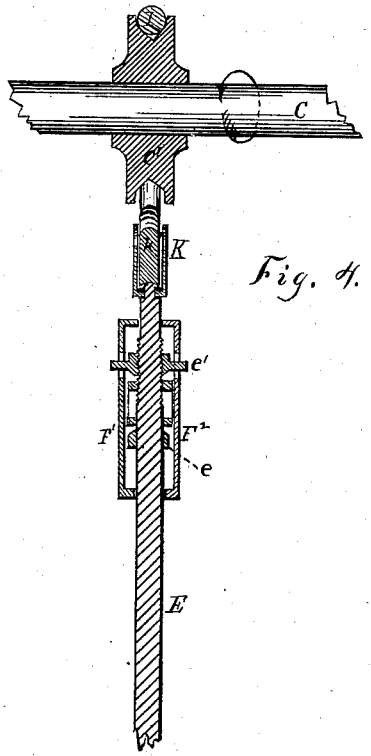


Fig. 5.

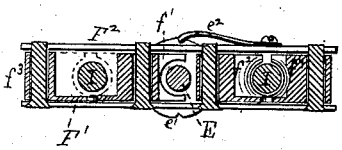
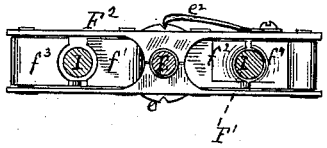


Fig. 6.



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UNITED STATES PATENT OFFICE.

PIERRE F. JONTE, OF CINCINNATI, OHIO.

TREADLE-MOVEMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 265,099, dated September 26, 1882.

Application filed May 9, 1881. Renewed June 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, PIERRE F. JONTE, of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and Improved Treadle-Movement for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1, Sheet 1, is a front elevation of a sewing-machine, showing the attachment of my improvement to the same. Fig. 2, Sheet 1, is a side elevation of the same. Fig. 3, Sheet 2, is an enlarged front view of the belt-clutch having its cap removed. Fig. 4, Sheet 2, is a vertical section taken in line *z* of Fig. 3. Fig. 5, Sheet 2, is a horizontal section taken in line *y* of Fig. 3. Fig. 6, Sheet 2, is an under view of the belt-clutch taken from a line, *x*, of Fig. 3.

Similar letters of reference indicate like parts.

The nature of my invention relates to certain improvements in a treadle-movement for sewing-machines, having special reference to my patent, dated October 7, 1879, and numbered 220,385.

It relates more particularly to a device whereby the action of the pitman carrying the belt-clutch gives a positive motion to the two actuating-pawls, and through the latter a positive motion is transferred to the two resisting-pawls.

My improvement also relates to a device for tightening the belt.

In construction my invention is as follows:

A is the frame of a sewing-machine, surmounted by the table B. The machine-arm C carries the main shaft *c*, to which the small grooved pulley *c'* and also the fly-wheel c^2 are permanently fastened. The lower part of the frame carries the longitudinal rod *a*, on which the treadle D freely oscillates. An arm, *d*, extends from the treadle, and has an adjustable pivot-fastening, *d'*, to receive the lower end of the pitman E, with which it forms a joint.

F in Figs. 1 and 2 represents the clutch, and is carried by the upper extremity of the pitman E. It is more fully shown in Figs. 3 to 6, and will be fully described hereinafter.

To one leg of the frame A is attached the belt-tightener G, consisting of a suitable lever, having its fulcrum at *g*. It is provided with a transverse slot made concentric with fulcrum *g*, and receives a thumb-screw, *g'*, which, when tightened, holds lever G rigidly to frame A in any adjusted position. The outer end of G is provided with a short stud, g^2, permanently attached, carrying the grooved loose pulley H, which is of a diameter equal to that of *c'*. An endless belt, I, preferably round in form, encircles the two pulleys last mentioned.

The belt-clutch F is constructed substantially as follows:

F' is the base-plate, to which all the working parts are attached. This plate, as well as cap F^2, has lips turned inward, which are recessed so as to receive the pitman E, allowing the same a short vertical reciprocating motion on plate F'. The pitman E has attached to it permanently a collar, *e*, at a point shown in the drawings, also an adjusting screw-collar, *e'*, as shown. These two collars *e* and *e'* engage with the forked ends of the two actuating-pawls *f'* and f^2, which are pivoted to the base-plate F', as represented. The other extremities of pawls *f'* and f^2 are given a conformation corresponding to the shape of the belt, the cavity or groove being somewhat enlarged in the direction of the approaching belt. The two resisting-pawls f^3 and f^4 are pivoted also on the base-plate F', and all are in a straight line with each other. These resisting-pawls are also grooved similarly to the actuating-pawls already described, so that the cavity formed between the two pawls *f'* and f^3 presents the shape of a frustum.

In Fig. 3 is seen the device for connecting pawls *f'* to f^3, also f^2 to f^4. This is done by forming a series of gear-teeth, f^5, on the part of the pawls nearest plate F', so that the teeth of one pawl enter the spaces left between the teeth of the other. These teeth are made concentric with the center of motion of each pawl and keep them constantly in engagement, but also permit a free oscillating motion of the several pawls. The degree of opening permitted between each pair of pawls is regulated by the adjusting-collar *e'*, which may be moved to or from the actuating-pawl *f'* by rotating the collar which is screwed on the pitman E. The small catch-spring e^2 engages with collar *e'* by dropping into a series of notches cut into its periphery. This spring may, however, be

substituted by an ordinary lock or jam nut or any of the many devices known to prevent the collar e' losing its adjustment. The pitman and the four pawls are held in position by the cap F^2, which is held to base-plate F' by means of machine-screws or otherwise.

K is a brake, which is formed as shown in the drawings, conforming to the periphery of the grooved pulley c'. This brake is permanently attached to the pitman E, and is lined or faced by a rubber piece, k, or other suitable material may be used.

The operation of my invention is as follows: On giving the usual oscillating movement to the treadle the pitman receives a vertical reciprocating motion, the belt-clutch F being guided by the belt I. In Fig. 3 the pitman is shown as moving in an upward direction. This causes pawl f^2 to take the position shown in the drawings, and, as resisting-pawl f^4 is in engagement (by means of a segmental gear) with the former, the two pawls will always have a like motion, both opening and closing at the same time. As the pitman is pushed upward the collar e, pressing on the forked arm of pawl f^2, causes it to swing its upper side, which is some distance above the pivot, against the belt; and, as already stated, pawl f^4 obeying the motions of f^2, it is evident the two pawls will firmly grasp the belt I, as the entire force exerted on the pitman is communicated to the pawls, and through them to the belt, so as the clutch is moved upward it carries with it that part of the belt, resulting in a rotary motion being given the grooved pulley above in the direction indicated by the arrow marked thereon.

It will be observed that the same motion that has fastened pawls f^2 and f^4 on the ascending part of the belt has also completely released pawls f' and f^3 from that part descending. This is an important feature in my improved device and prevents all undue wearing of the belt, as well as loss of power from friction.

The dotted lines in Fig. 3, marked f^+, show the position of pawls f^2 and f^4 when they are released on the downstroke. On the operator reversing the motion of the treadle, the pitman descending, the pawls will all take reversed positions—*i. e.*, f^2 f^4 will release their hold on the belt and stand open, while f' f^4 will grasp the belt by the lower sides of these pawls moving against the belt by the force exerted through collar e'. Thus by giving the pitman a vertical reciprocating motion each pair of pawls alternately releases and grasps the belt, as shown, giving the pulley c' a continuous forward motion.

When it is desired to adjust the degree of opening of the two pairs of pawls on the belt the adjusting-collar e' is raised or lowered on the pitman to a point where one pair of pawls allow a free passage of the belt when the other has clasped it. The catch-spring e^2, as above described, retains the collar e' in any adjusted position.

The operator can bring the motion of the machine to rest at will by simply extending the upstroke of the treadle, thus moving the brake with some force against the pulley c', whereby the friction resulting will bring the machine to a stop without undue shock.

It will be observed that the strain caused by this movement is not borne by the pawls, but by the pitman, as the brake is attached to the pitman and not to the clutch.

The device described for tightening the belt requires no further attention under this head, the operation of which becomes evident from the description above given.

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

1. The belt-clutch F, having actuating-pawls f' and f^2 engaging with pitman E, as shown, and also with resisting-pawls f^3 f^4 by means of segmental gear f^5, as and for the purpose set forth.

2. The permanent collar e and adjusting-collar e', in combination with pawls f' f^2 and f^3 f^4 for adjusting the degree of their opening around the belt, substantially as described.

3. The pawls f' f^2 f^3 f^4, in combination with the pitman, and so arranged that when one pair grasps the belt the other will simultaneously release the same, substantially as and for the purpose set forth.

4. The brake K, placed directly on the pitman, in combination with pulley c', as set forth.

5. Endless belt I, pulley e on the driving-shaft, and mechanism for actuating said belt, in combination with tightening devices independent of said mechanism, and consisting of pulley H, arm G, and clamping-screw g', substantially as and for the purpose set forth.

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