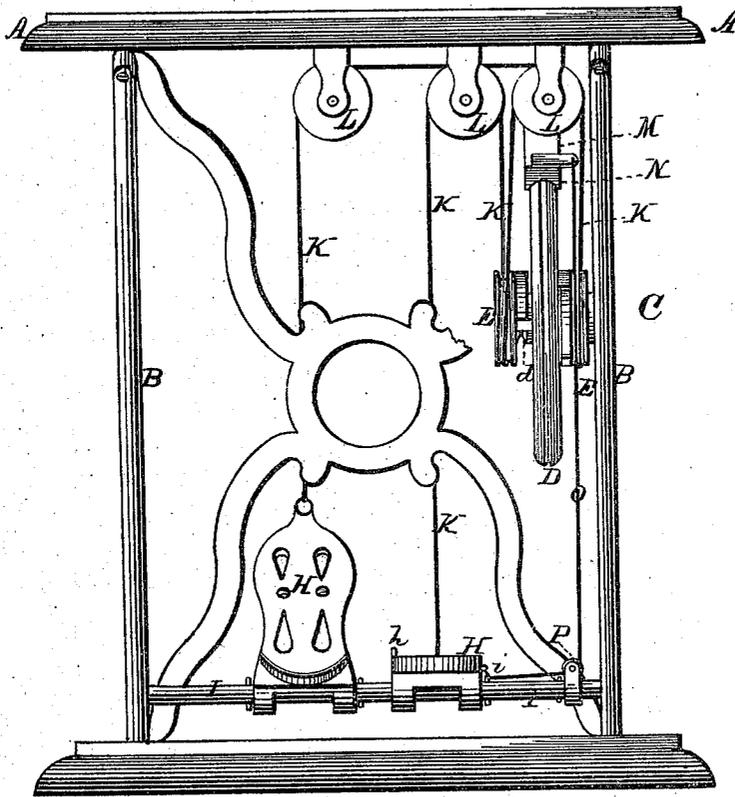


E. WRIGHT.
Modes of Operating Sewing-Machines.
No. 142,544. Patented September 2, 1873.

Fig. I.



WITNESSES:

Gaspar Hutchinson.
John R. Young

INVENTOR.

Edmund Wright, by
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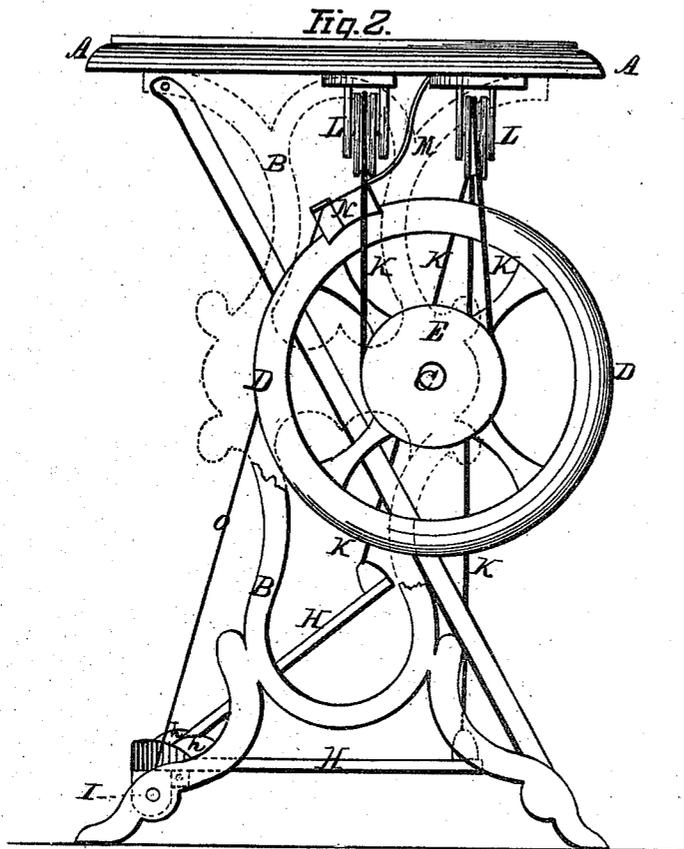
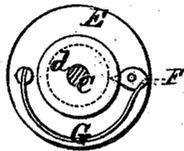


Fig. 3.



WITNESSES:

*Jas. Hutchinson
 John D. Young*

INVENTOR.

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UNITED STATES PATENT OFFICE.

EDMUND WRIGHT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN THE MODES OF OPERATING SEWING-MACHINES.

Specification forming part of Letters Patent No. 142,544, dated September 2, 1873; application filed July 23, 1873.

To all whom it may concern:

Be it known that I, EDMUND WRIGHT, of Chicago, in the county of Cook and in the State of Illinois, have invented certain new and useful Improvements in Mechanism for Operating and for Controlling the Movement of a Sewing-Machine; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a front elevation of my improved mechanism. Fig. 2 is a side elevation of the same; and Fig. 3 is an elevation of the inner side of one of the spring-clutches, its operating-pulley, and friction-wheel.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to enable the mechanism of a sewing-machine to be operated and controlled with greater ease than has heretofore been practicable; and it consists, principally, in the means employed for converting a vertically-reciprocating movement of the treadles into a continuous rotary motion of the driving-wheel, substantially as is hereinafter specified. It consists, further, in the peculiar construction of the spring-clutch and its combination with the friction-wheel, substantially as and for the purpose hereinafter shown. It consists, further, in the relative arrangement of the driving-wheel, cord, pulleys, and treadles, substantially as and for the purpose hereinafter set forth. It consists, further, in the construction of the brake and its combination with the driving-wheel, substantially as and for the purpose hereinafter shown and described. It consists, finally, in a sewing-machine brake operated by means of a sidewise movement of one of the treadles, substantially as and for the purpose hereinafter specified.

In the annexed drawings, A represents the table of a sewing-machine, resting upon and supported by means of two legs, B and B, of usual construction. Secured within one of the legs B, near its vertical center, is a stud, C, that extends horizontally inward, and furnishes a bearing for a driving-wheel, D, upon each end of the hub of which is secured a grooved pulley, *d*, that has substantially the

relative size shown in Fig. 1. Immediately outside of each pulley *d* is journaled a circular disk, E, which is grooved upon its periphery, and upon the side next said pulley has pivoted a pawl or clutch, F, that has the form shown in Fig. 3; and at one end bears upon or within the grooved periphery of said pulley *d*, the length of said pawl between its pivotal bearing and said pulley being such as to cause it to incline rearward from a radial line. A spring, G, secured at one end to the inner face of the disk E, and at its opposite end bearing upon the outer end and rear side of the pawl F, holds the inner end of the latter at all times in engagement with the periphery of the pulley *d*.

As thus constructed and combined, it will be seen that when the disk E is turned upon its bearing-stud in a forward direction the spring G will cause the pawl F to bear with sufficient force upon the grooved pulley to move the latter in the same direction; but when moved in an opposite or backward direction said pawl will slide over said pulley without engagement.

In order that the driving-wheel should be continuously driven, it is necessary that one of the spring-clutches should be turning forward at the same time that the opposite clutch is moving rearward, which result is effected by the following mechanism: Two treadles, H, are pivoted to or upon a rod, I, which extends between and is secured to the lower front portions of the legs B in such a manner as to permit their rear ends to be raised and depressed, as shown. From the rear end of the left-hand treadle a cord, K, extends upward to and around a pulley, L, that is attached to the lower side of the table A; from thence transversely over a similar pulley, L, placed above the rear side of the outer disk E, downward around said disk, and again upward over a pulley that coincides with the front edge of said disk; from thence downward and around the inner disk E, and again upward over another pulley, L, attached to said table, from whence said cord passes downward to and is secured upon the rear end of the right-hand treadle.

As thus arranged, it will be seen that by depressing either treadle one of the disks E will

be moved forward, so as to rotate the driving-wheel, and the other disk turned rearward, the opposite treadle being correspondingly elevated; while by depressing the latter the motions of said disks will be reversed, the first one turning rearward for a new engagement, and the second disk turning forward and moving with it the driving-wheel.

The alternately opposite movements of the treadles enable the operator to run the machine with less fatigue and injury than in case of machines where the treadles are connected together and have the same motion, while from the simplicity of construction of the operating-clutches and their driving-cords great efficiency and durability are insured.

It being desirable that the motion of the driving-wheel should be arrested, when desired, without the necessity for grasping its periphery with the hand, a flat spring, M, is secured at one end to or upon the lower side of the table A immediately above said driving-wheel, and at its opposite forward end is provided with a shoe, N, the lower face of which corresponds in shape to the like feature of the periphery of said wheel, so that when pressed downward upon the same said shoe shall operate as a brake, and create so much friction as to arrest its motion. A cord, O, is secured to the outer end of the brake, and from thence passes downward around a pulley, P, that is attached to the rod I, and has its opposite end secured to or upon the outer side and at the rear end of the right-hand treadle H. A stop, i, projecting upward from the rod I, limits the movement of the treadle H in an outward direction; but inwardly said treadle may be moved upon said rod to a sufficient distance to cause the brake to be thrown into engagement with the driving-wheel. A lug, h, secured upon and projecting upward from the inner side and rear end of said treadle, engages with the heel of the operator, and enables him

to readily operate the brake by a sidewise movement of his right foot. Upon releasing the treadle, the force of the spring M returns it to place and relieves the driving-wheel from the brake.

This method of applying the brake leaves the operator's hands free to attend to the work; but, if desired, the cord O can be grasped with the right hand, and the brake operated independent of the treadle.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The combination of the treadles H, the cord K, the pulleys L and L, and the journaled friction-clutches E, G, and F, with the driving-wheel D, provided within its hub with the grooves d, substantially as and for the purpose specified.

2. In combination with the grooved hub or pulley d of the driving-wheel D, the journaled disks E, provided with the pivoted pawls F, which fit into the grooves of said pulley d, and are held in engagement therewith by means of the springs G, substantially as and for the purpose shown.

3. The relative arrangement of the driving-wheel D, cord K, pulleys L, and treadles H, substantially as and for the purpose set forth.

4. The brake MN, constructed as shown, and combined with the driving-wheel D, in the manner and for the purpose described.

5. A sewing-machine brake operated by means of a sidewise movement of one of the treadles, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of July, 1873.

EDMUND WRIGHT.

Witnesses:

THOS. B. JEFFERY,
DANL. J. LANT.