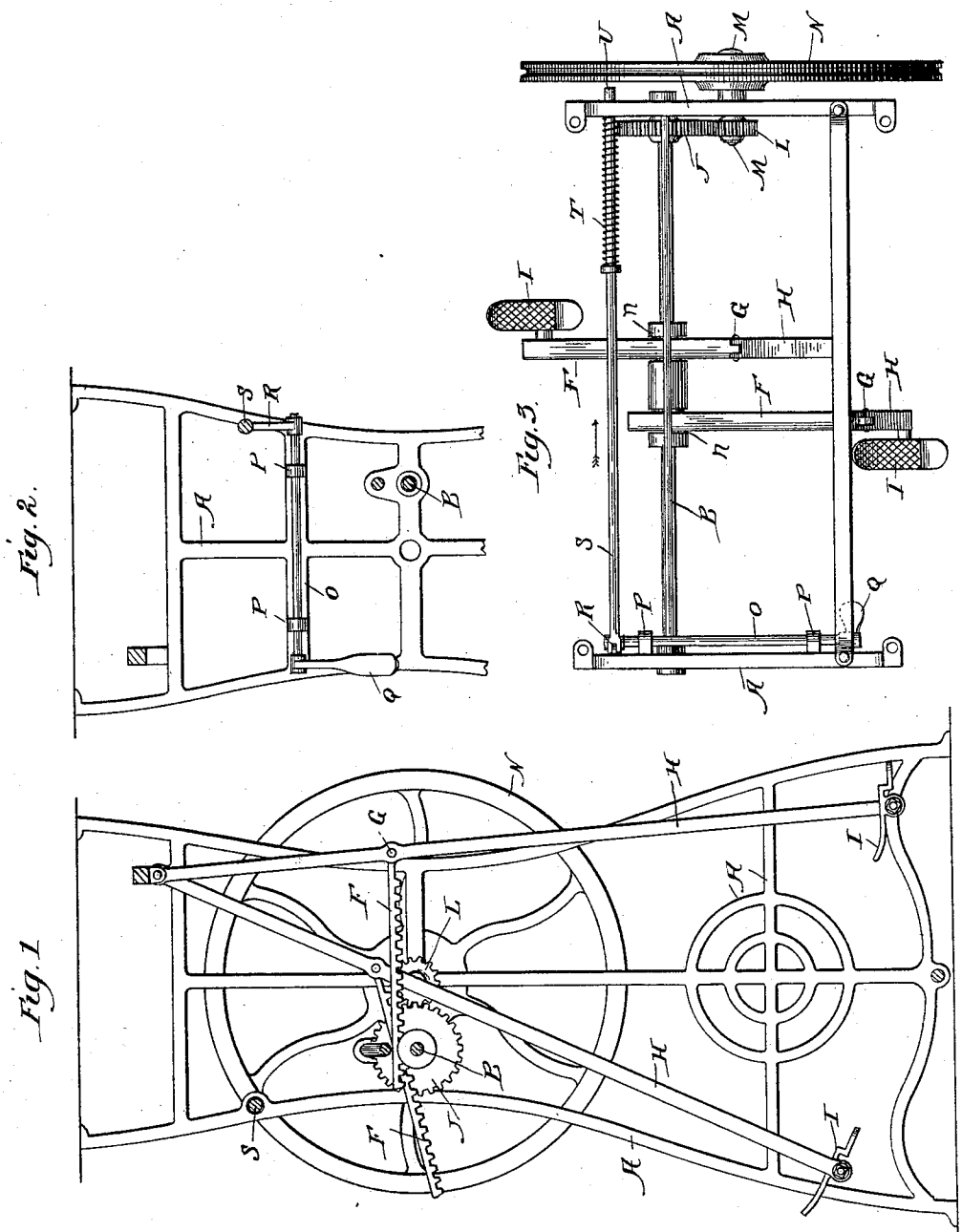
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# M. FREEDMAN.

## OPERATING MECHANISM FOR SEWING OR OTHER MACHINES.

No. 588,973. Patented Aug. 31, 1897.




Witnesses:
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G. G. Williamson

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 6

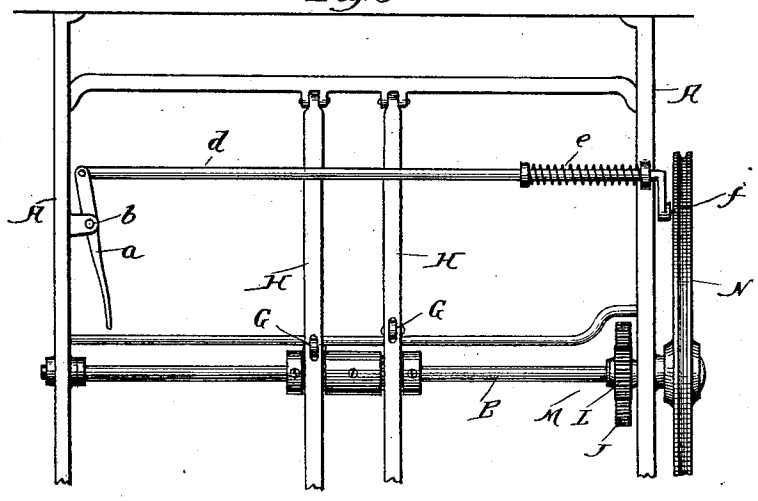



Fig. 4.

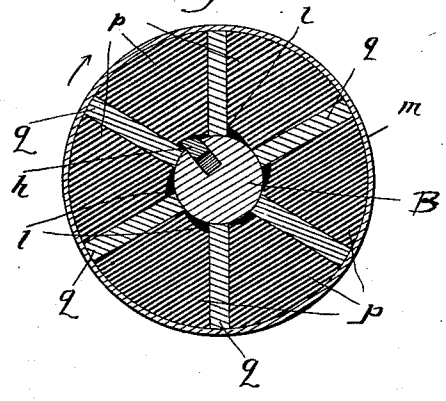
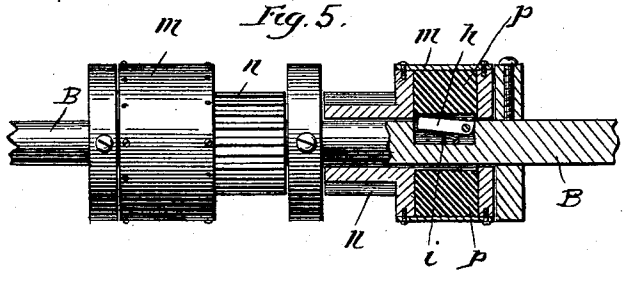



Fig. 5.




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# UNITED STATES PATENT OFFICE.

MARRES FREEDMAN, OF TRENTON, NEW JERSEY.

## OPERATING MECHANISM FOR SEWING OR OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 588,973, dated August 31, 1897.

Application filed September 18, 1896. Serial No. 606,248. (No model.)

*To all whom it may concern:*

Be it known that I, MARRES FREEDMAN, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented a certain new and useful Improvement in Operating Mechanism for Sewing or other Machines, of which the following is a specification.

My invention relates to a new and useful improvement in motors for sewing-machines and the like, and has for its object to so construct such a device as to increase the facility with which the foot-power may be transmitted to such machines and obviate the necessity of an ankle movement and instead to permit the power to be generated from a movement of the whole leg.

A further object is to increase the speed of a sewing-machine, thereby permitting the accomplishment of more work in a given time and instantly to stop a machine at less loss of time than is now occasioned.

With these ends in view the invention consists in the details of construction and combination of elements hereinafter set forth and then specifically claimed.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of a stand having the balance-wheel thereon and fitted with my improvement. Fig. 2 is a similar view of the upper portion of the stand, looking in an opposite direction from Fig. 1. Fig. 3 is a plan view. Fig. 4 is an enlarged transverse section of the ratchet mechanism. Fig. 5 is an elevation of two of these mechanisms, one being partly broken away and sectioned to disclose its internal arrangement; and Fig. 6 is a front elevation of the upper portion of a stand, fully illustrating a modified form of the brake mechanism.

In the drawings, A represents the framework of the stand, which not only serves for the legs of the support of said stand, but also for the support of the several operative parts thereof. Journaled within this frame is the drive-shaft B, carrying ratchet mechanisms, each composed of a pawl *h*, pivoted within a slot of the shaft and adapted to be operated by the spring *i* therebeneath to engage the shoulders *l* of the radial ribs *q*, which are secured within a circular housing *m*, mounted upon the shaft and having a reduced portion formed into a pinion *n*. Blocks of rubber or like material are fitted within the sections of the casing formed by the ribs *q*, as clearly shown in Fig. 4, and have their inner ends cut away so as to accommodate the pawl *h* when springing outward into engagement with the shoulders. The object of these blocks is to deaden the sound incident to the action of the pawl thereon, thus causing the mechanism to act noiselessly.

Rack-bars F, having teeth upon their under sides, are arranged to mesh with the pinion of the ratchet mechanism and are pivoted at G to the levers H, said levers carrying at their lower ends the treadles I, from which it will be seen that when the treadles are moved back and forth by the feet of the operator the rack-bars will cause the pinions to revolve first in one direction and then in the other, and when said pinions are being revolved in the direction of the arrow in Fig. 4 the pawls will engage the teeth of the ratchets, so as to revolve the shaft B in the same direction, and when the pinions are revolved in the opposite direction by the reversed movement of the rack-bars the pawls will pass over the teeth of the ratchets without effecting the movement of said shaft, so that by the continual alternate operations of the levers this shaft will be caused to maintain a constant rotation in one direction. Also secured on the shaft B is a gear-wheel J, arranged to mesh with the pinion L on the balance-wheel shaft M, and the relative diameter of this gear-wheel and pinion is such as to cause the shaft M to revolve at the desired speed, and the balance-wheel N serves as momentum perpetuator. The wheel N also serves as a belt-wheel to transmit motion from the driving mechanism to the cam-shaft of the sewing-machine in the usual manner.

From this description it will be seen that great speed can be acquired by the operation of the levers H and that less exertion will be necessary to operate the machine than if the ordinary form of treadle were used, since the

strength of the leg is utilized for forcing said levers to and fro, as against only the ankle movement necessary to drive the ordinary treadle. When a machine is driven at a high rate of speed, it is necessary to supply the same with a powerful and quick-acting brake or otherwise a large amount of time would be lost in stopping said machine when occasion requires, and in the case of a sewing-machine this will amount to a large percentage of the total time in which the sewing-machine is in use, since it is essential to stop and start such a machine at short intervals. I therefore arrange a brake which may be applied by the leg of the operator, thereby utilizing as much of the operator's strength to stop the machine as had previously been used to propel the same. This brake consists of a rock-shaft O, journaled in the bearing P, and having secured on the outer end a lever Q, which is so arranged and placed as to permit its being operated by a sidewise movement of one knee of the operator, and this sidewise movement will turn the shaft and force the lever R in the opposite direction from that in which the lever Q moves, which in turn will move the rod S in the direction of the arrow marked next adjacent thereto to compress the spring T and apply the brake U to the balance-wheel N, and when the lever Q is released the spring T will return the rock-shaft to its normal position, thereby releasing the brake from the wheel. By this arrangement the momentum of the balance-wheel may be instantly arrested, which will bring the machine to a sudden stop and save the time which would otherwise be consumed in slowing down the movements of the machine before changing the work.

Instead of the brake just described the arrangement may be as that shown in Fig. 6, which consists of a lever *a*, pivoted at *b* and connected to the brake-rod *d*, which is provided with the springs *e* and brake *f*. The operation of this brake will be identical with the one before described.

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

1. In a device of the character described, a frame, vertical levers pivoted thereto, horizontal rack-bars hinged to the levers, a power-shaft journaled in the frame, pinions mounted on the power-shaft to engage the rack-bars, circular housings carried by the pinions, radial ribs forming ratchet-teeth within the housings, elastic pads secured between the ribs, a spring-pressed pawl pivoted to the power-shaft, a balance-wheel and shaft journaled within the frame and a pinion secured thereon meshing with the gear-wheel, as and for the purpose described.

2. In a device of the character described, a casing, ribs therein, elastic material located between the ribs having cut-away portions adjacent to the ribs forming teeth therewith and means for engaging the teeth, as and for the purpose described.

3. In a device of the character described, a shaft having a longitudinal slot therein, a spring-pressed pawl within the slot, a circular casing journaled on the shaft, radial ribs secured within the casing, and elastic material between the ribs having cut-away portions adjacent to the ribs forming teeth therewith to be engaged by the pawl, as and for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of the subscribing witnesses.

MARRES FREEDMAN.

Witnesses:
S. S. WILLIAMSON,
DAVIS ABRAMS,
LEWIS L. CONSOLLOY.