

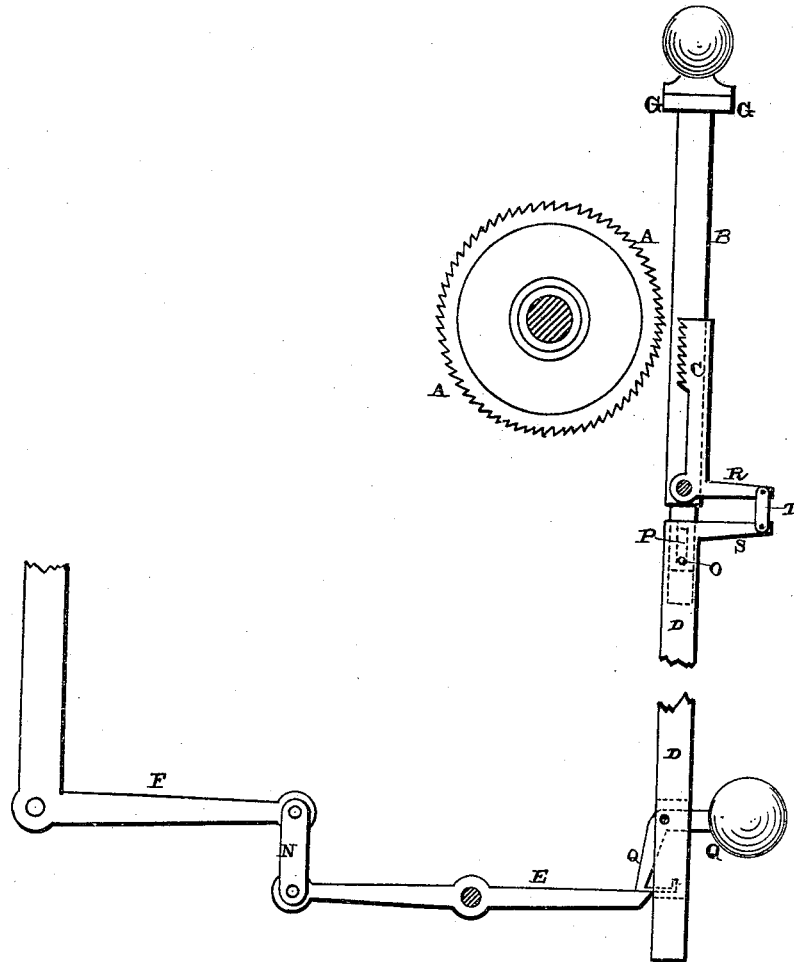
(No Model.)

M. WHEELER.

MECHANISM FOR OVERCOMING DEAD CENTERS.

No. 263,270.

Patented Aug. 22, 1882..



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## MECHANISM FOR OVERCOMING DEAD-CENTERS.

SPECIFICATION forming part of Letters Patent No. 263,270, dated August 22, 1882.

Application filed May 16, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, MARSHAL WHEELER, of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Mechanisms for Overcoming the Dead-Centers in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to an improvement in mechanisms for overcoming the dead-centers in sewing-machines; and it consists in the combination of two or more levers which are operated by a lateral pressure of the knee while the feet are upon the treadle, a suitable connecting-pawl, two rods or levers which are connected together and have a vertical movement, a toothed pawl, and a ratchet-wheel which is secured to the hub of the driving-wheel, whereby the machine can be started without the use of the hand, as will be more fully described hereinafter.

The object of my invention is to overcome the dead-centers in sewing and other machines, so as to enable the operator to start the machine from any point without the necessity of having to first move the wheel with one hand.

The figure on the accompanying drawing represents a side elevation of my invention.

Upon the hub of the driving-wheel I attach a ratchet-wheel, A, of any desired size.

Moving vertically through a suitable guide, G, which is secured to the frame of the sewing-machine, is a rod, B, which has pivoted to it near its lower end the pawl C. This pawl has teeth formed on its inner edge, of the same shape as the teeth formed upon the edge of the wheel A, so that the pawl will mesh with the wheel and cause it to revolve. The lower end of the rod B, which is slightly reduced in size, extends downward into a socket which is made in the top of the rod D, and this rod D has a pin, O, passed through it and the slot P, which is made in the lower end of the rod B, so that the rod D will first have a movement of its own before it operates the rod B.

Formed upon the lower end of the pawl C is

an extension, R, and this extension is connected to a smaller extension, S, on the upper end of the rod D by means of suitable connecting-plates, T.

Near the lower end of the rod D is pivoted or otherwise secured either a spring or a weighted pawl, Q, under which the inner end of the pivoted lever E catches. The outer end of this lever E is connected to the lever F by means of a connecting rod or plate, N, which is to be operated by a lateral pressure of the knee while the foot is upon the treadle. When the lever F is moved the motion is transmitted to the lever E through the connecting rod or plate N, and this motion is in turn imparted to the vertically-moving rod D. When the lever E has raised the rod D upward the extension S, through the connecting rod or plate T, causes the pawl C to engage with the ratchet-wheel A, and as the lever D is forced upward the pawl causes the wheel A to revolve. When the power is first applied to the rod D it rises upward far enough to throw the pawl C into contact with the wheel A before the vertical movement begins to affect the rod B, and after the pawl has been thrown in contact with the wheel A the vertical movement of the rod D is transferred to the rod B by means of the pin O, so as to cause the two to move together. After the lever E has raised the rod D sufficiently high to have caused the teeth of the pawl C to have passed by the ratchet A the lever slips from under the pawl Q and the two rods B and D drop downward from their own weight. The rod B falls only as far as its guide G will allow it, while the rod D continues to fall as far as the slot P in the lower end of the rod B will allow, thus causing the pawl C to be thrown outward out of contact with the wheel and placed into position ready to again operate the wheel A. As the rod D continues to move the pawl Q is forced inward by contact with the lever E until the pawl again catches over the top of the end of the lever, when the mechanism is again ready for use.

It very frequently happens that the machine stops upon a dead-center, and in order to enable the operator to start it one of the hands must be taken away from the work for the purpose of catching hold of the balance-wheel to

turn it partly around. Frequently the taking of the hand from the work causes the work to be displaced, which is a very great objection where fine and accurate work is to be done.

5 With my mechanism attached to a machine the operator has only to move the knee laterally, when the machine will be started, and by pressing upon the treadle with the foot the movement will be continued.

10 Having thus described my invention, I claim—

1. A combination of the ratchet-wheel A with the two rods B D, connected together, as shown, the pawl C, the pawl Q, and suitable operat-

ing-levers, E F, substantially as shown and 15 described.

2. The combination of the lever B, having a slot in its lower end, and the rod D, having a socket in its upper end, the pin O, and the pawl C, connected to the lever D, substantially as 20 set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MARSHAL WHEELER.

Witnesses:

H. CARTER,

W. W. DOUGHERTY.