J. D. WRIGHT.
Sewing-Machine.

No. 212,581. Patented Feb. 25, 1879.

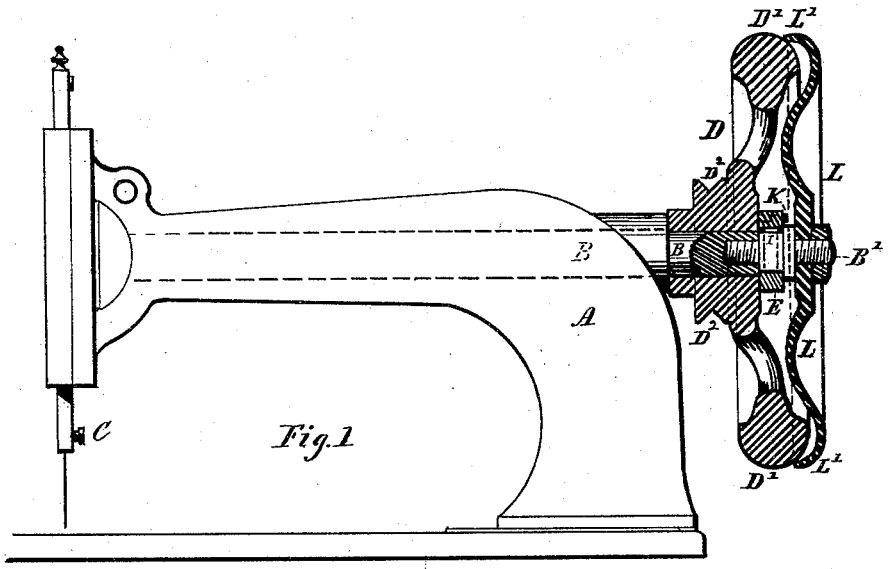

Fig. 1

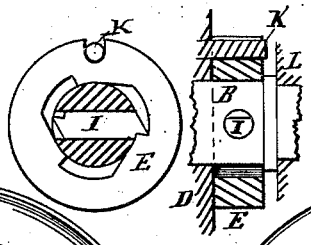

Fig. 4 Fig. 5

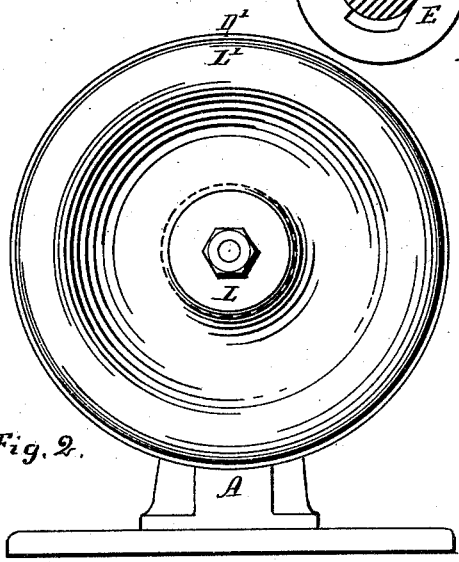

Fig. 2.

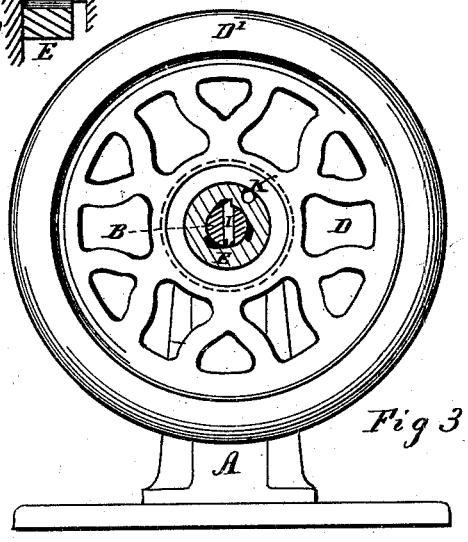

Fig 3

Witnesses,
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UNITED STATES PATENT OFFICE.

JACOB D. WRIGHT, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **212,581**, dated February 25, 1879; application filed October 12, 1878.

To all whom it may concern:

Be it known that I, JACOB D. WRIGHT, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a front view of a portion of a sewing-machine, showing a vertical section of the balance-wheel mechanism constructed in accordance with my invention. Fig. 2 is an end view of the same. Fig. 3 is an end view with the disk removed, showing the ratchet devices; and Figs. 4 and 5 are sectional views, showing the details of construction of the pawl-and-ratchet devices.

This invention relates to certain improvements in mechanism for operating and controlling the action of the shaft in a sewing-machine; and consists in the combination, with the shaft and balance-wheel or pulley, of a hand-disk and a pawl-and-ratchet mechanism constructed and arranged for operation as hereinafter described.

In the drawings, A denotes the goose-neck; B, the operating-shaft, and C the needle-bar, which parts, together with those not herein shown and described, may be of the ordinary construction.

D indicates the balance and pulley wheel, with rim D^1 and band-groove D^2. Said wheel D is mounted to turn loosely on the shaft B, and is locked to said shaft, when rotated in one direction, by a ratchet device suitably arranged for that purpose. In the present instance said ratchet is arranged upon the shaft-extension B^1 at the outer end of the balance-wheel hub, and consists of a ring or sleeve, E, having teeth or notches on its inner surface, which engage with the ends alternately of a pawl-pin, I, working loosely through a transverse opening in the shaft or its extension-piece B^1, as indicated in the drawings, said ratchet-and-pawl mechanism operating substantially similar to that described in my Letters Patent No. 203,519, dated May 7, 1878. A pin or lug, K, projects from the end of the wheel-hub into a notch or opening in the side of the ring E, and causes said ring to rotate with the wheel D when the latter is operated by the driving-belt.

L indicates a disk or plate-wheel, arranged upon, and rigidly secured to, the shaft B, (or its extended end piece, B^1,) with its periphery or outer rim, L′, adjacent to the rim D^1 of the balance-wheel D, or curved over the side of such rim D^1, or bearing such relation thereto that both or either can be grasped or pressed by the hand of the operator with a natural and convenient movement of the hand placed on the wheel-rim in the usual manner.

The operator, by grasping the wheel-rim and disk-rim, has as perfect control of the machine as with a rigidly-attached balance-wheel, while deriving all the benefits of a loose-running wheel for winding bobbins and for similar purposes, and this, too, without the trouble of adjusting locking devices or clamps for holding and releasing the wheel.

The operating parts of the machine can be run only in one direction, or forward, by the treadle mechanism and belt, the ratchet permitting the pawl to pass without actuating the shaft when the wheel moves in a backward direction.

The disk L may be cast or struck up from sheet metal, and may be modified to adapt it to the different kinds of sewing-machines in use; and it may be applied to old machines as well as new without departing from the spirit of my invention. The present instance illustrates the invention as adapted for use on the Singer and similarly-constructed machines; but in some sewing-machines the disk or rim L would be required to be placed at the opposite side of the wheel, and the size and shape of said disk somewhat modified, in order to present its rim in suitable manner to be grasped at the same time as the balance-wheel. The ratchet device can also be arranged at either end of the wheel-hub, as required, or be formed in the hub, as preferred.

In applying my invention to sewing-machines now in use, the shaft B can be extended to the required length by means of the extension-piece or stud B^1, screwed into the end of the shaft in the manner shown, the pawl-pin I being arranged through said stud B^1, and the

disk L secured to its end; but in new machines the shaft B may be formed of sufficient length to obviate the necessity of the piece B^1, the disk and ratchet being placed directly on the end of the shaft B.

It will be observed that this mechanism is simple and inexpensive, and can be applied to sewing-machines now in use at but slight cost, and without material change in the original parts of the machine.

I am aware that balance-wheels formed in two portions—one fast upon the shaft and the other running loose thereon, with clutching mechanism—have heretofore been used on sewing-machines, and I do not herein make claim, broadly, to such features.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, substantially as hereinbefore described, the shaft B, balance-wheel D, loose upon said shaft, the disk L, rigidly secured to said shaft, the ratchet-ring E, pin K, and pawl I, for the purposes set forth.

2. In combination with the shaft B and balance or pulley wheel in a sewing-machine, the extension-stud B^1, the ratchet-ring E, the pawl-pin I, and locking-pin K, as and for the purposes set forth.

Witness my hand this 8th day of October, A. D. 1878.

JACOB D. WRIGHT.

Witnesses:
CHAS. H. BURLEIGH,
F. A. HUMPHREY.