

(Model.)

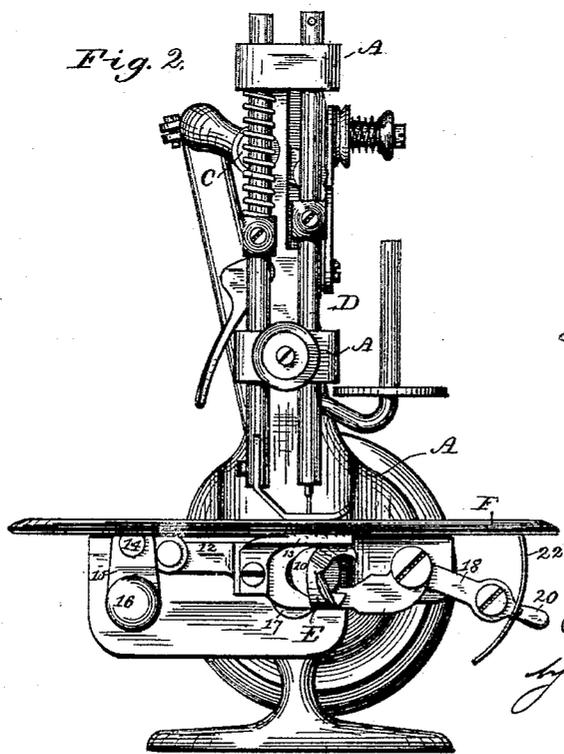
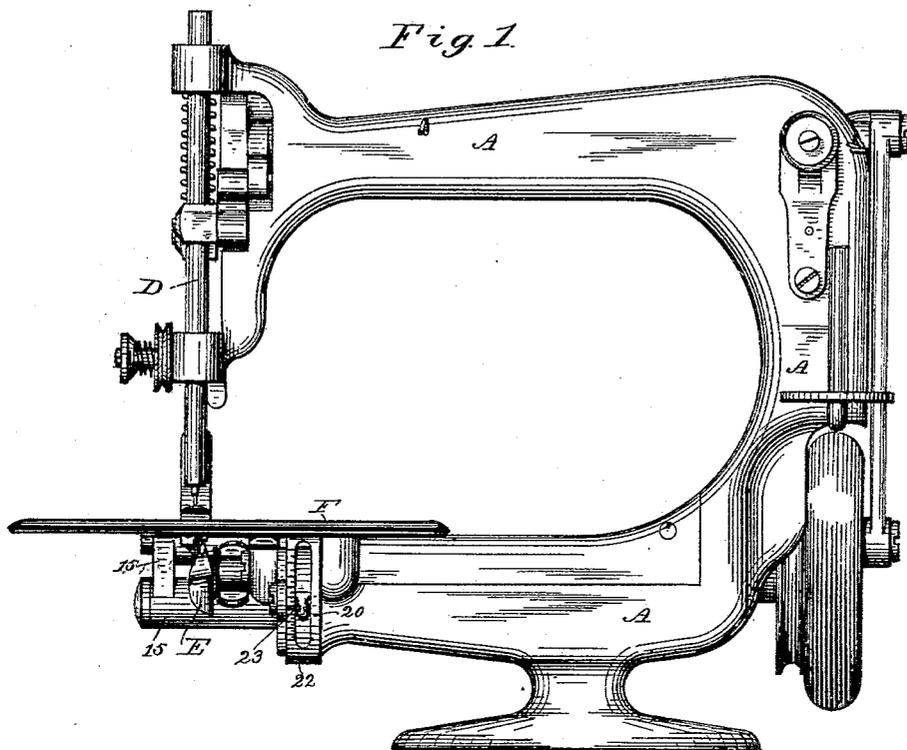
2 Sheets—Sheet 1.

P. DIEHL.

FEEDING MECHANISM FOR SEWING MACHINES.

No. 339,624.

Patented Apr. 13, 1886.



Witnesses:
E. S. Smith
C. E. Doyle

Inventor:
Philip Diehl
 by *Henry C. Carter*

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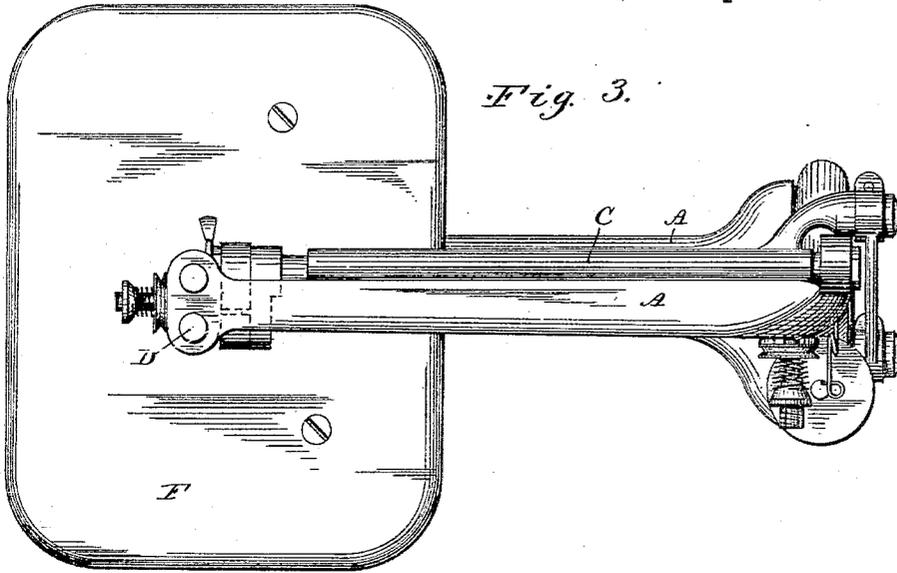


Fig. 3.

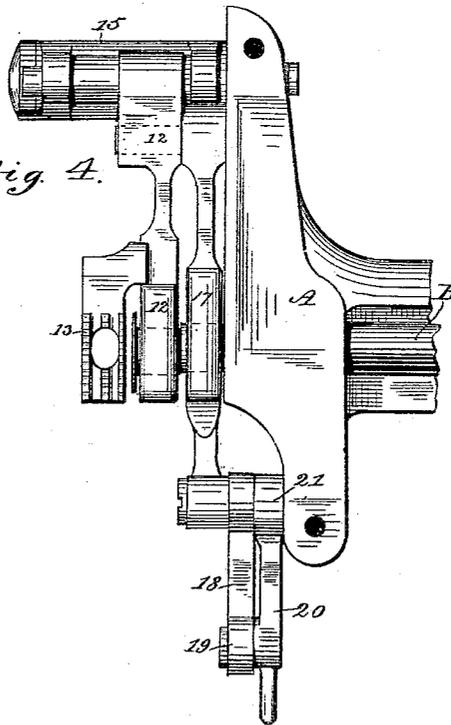


Fig. 4.

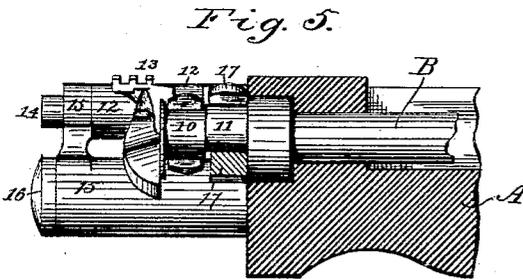


Fig. 5.

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UNITED STATES PATENT OFFICE.

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FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 339,624, dated April 13, 1886.

Application filed October 10, 1885. Serial No. 179,541. (Model.)

To all whom it may concern:

Be it known that I, PHILIP DIEHL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Feeding Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to provide a simple and effective "four-motioned" feeding mechanism for sewing-machines, in which all of the movements of the feed-bar are positive, and in which the horizontal or feeding movements thereof are easily regulated.

In carrying out my invention I provide a driving-shaft with two eccentrics, so placed that their points of greatest throw are at an angle of about ninety degrees (or about at a right angle) to each other. To the frame of the machine I pivot a rocker, to which the feed-bar is jointed at its rear end, the forward end of said bar being forked to embrace one of the said eccentrics, which thus imparts positive up-and-down movements to said bar. To the feed-bar, near its rear end, is pivoted a yoke, which is forked or slotted to embrace the other of the said eccentrics, the forward end of the said yoke being jointed to a link, which in turn is jointed to a feed-regulating lever near the free end of the latter. The yoke and link form a toggle, and when the regulating-lever is adjusted so that the part of said lever to which the link is jointed is on a level, or nearly so, with the pivot by which the yoke is jointed to the feed-bar, said yoke, as the eccentric rotates therein, will vibrate vertically on its pivot, imparting little or no horizontal movement to the feed-bar; but when the free end of the regulating-lever is depressed to bring the point of connection of the link therewith more or less below the point of connection of the yoke and feed-bar, and thus shorten the distance between these two points, the yoke, as it moves vertically, will also be forced more or less horizontally, and will thus impart horizontal movements to the feed-bar.

In the drawings, Figure 1 is a side elevation of a sewing-machine embodying my invention. Fig. 2 is a front end elevation, and

Fig. 3 a plan view, of the same. Fig. 4 is a detail plan view of the feeding mechanism, and Fig. 5 is a detail sectional view thereof.

A indicates the frame of the machine, in the lower part of which is journaled the driving-shaft B, connected by a crank and pitman with the rear arm of a rock-shaft, C, pivoted by center screws to the upper part of the frame A, and having at its forward end an arm connected by a link to a block secured to the needle-bar D. Thus, as the driving-shaft rotates, the needle-bar will be reciprocated vertically in a well-known manner.

The driving-shaft, as herein shown, carries at its forward end a Willcox & Gibbs hook, E, co-operating with the needle to form chain-stitches.

The parts just above described are merely shown incidentally with my invention to illustrate its operation in connection with a complete machine.

The driving-shaft is provided at its forward end with two eccentrics, 10 and 11, the former being embraced by the slotted or forked free end of the feed-bar 12, carrying the feed-dog 13. The feed-bar is jointed at 14 to a feed-rocker, 15, which is pivoted on a pin or stud, 16, attached to the machine-frame A. Embracing the eccentric 11 is a yoke, 17, pivotally attached at its rear end to the feed-bar 12, and jointed at its forward end to a link, 18, which in turn is jointed at 19 to the feed-regulating lever 20, pivoted at 21 to the frame A. I prefer to attach to the work-plate F a graduated segment, 22, and to provide the regulating-lever 20, the end of which projects through a slot in said segment, with an index-pin, 23, so that the operator may readily adjust the said lever to any desired position.

From the foregoing it will be apparent that as the driving-shaft B is rotated the eccentric 10 will impart positive up-and-down movements to the feed-bar 12 and to the feed-dog 13, carried thereby, while the eccentric 11, working in the yoke 17, will cause said yoke to move the feed-bar connected therewith horizontally to feed the work, the horizontal movements being positive in both directions, and the extent of these movements being governed by the position to which the regulating-lever may be adjusted, as above described.

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

1. In a sewing-machine, the combination, with a driving-shaft having two eccentrics, 5 of a feed-bar carrying a feed-dog, and forked to embrace one of said eccentrics, a rocker, to which said bar is pivotally connected, a yoke jointed to said feed-bar and embracing the other of said eccentrics, a regulating-lever, 10 and a link connecting the latter with said yoke, substantially as set forth.
2. In a sewing-machine, the combination,

with the work-plate having a graduated segment, the driving-shaft having two eccentrics, the feed-bar, feed-dog, rocker, yoke, and link, 15 of a regulating-lever projecting through said segment and provided with an index-pin, substantially as set forth.

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

PHILIP DIEHL.

Witnesses:

JAMES G. GREENE,
WM. H. INSLEE.