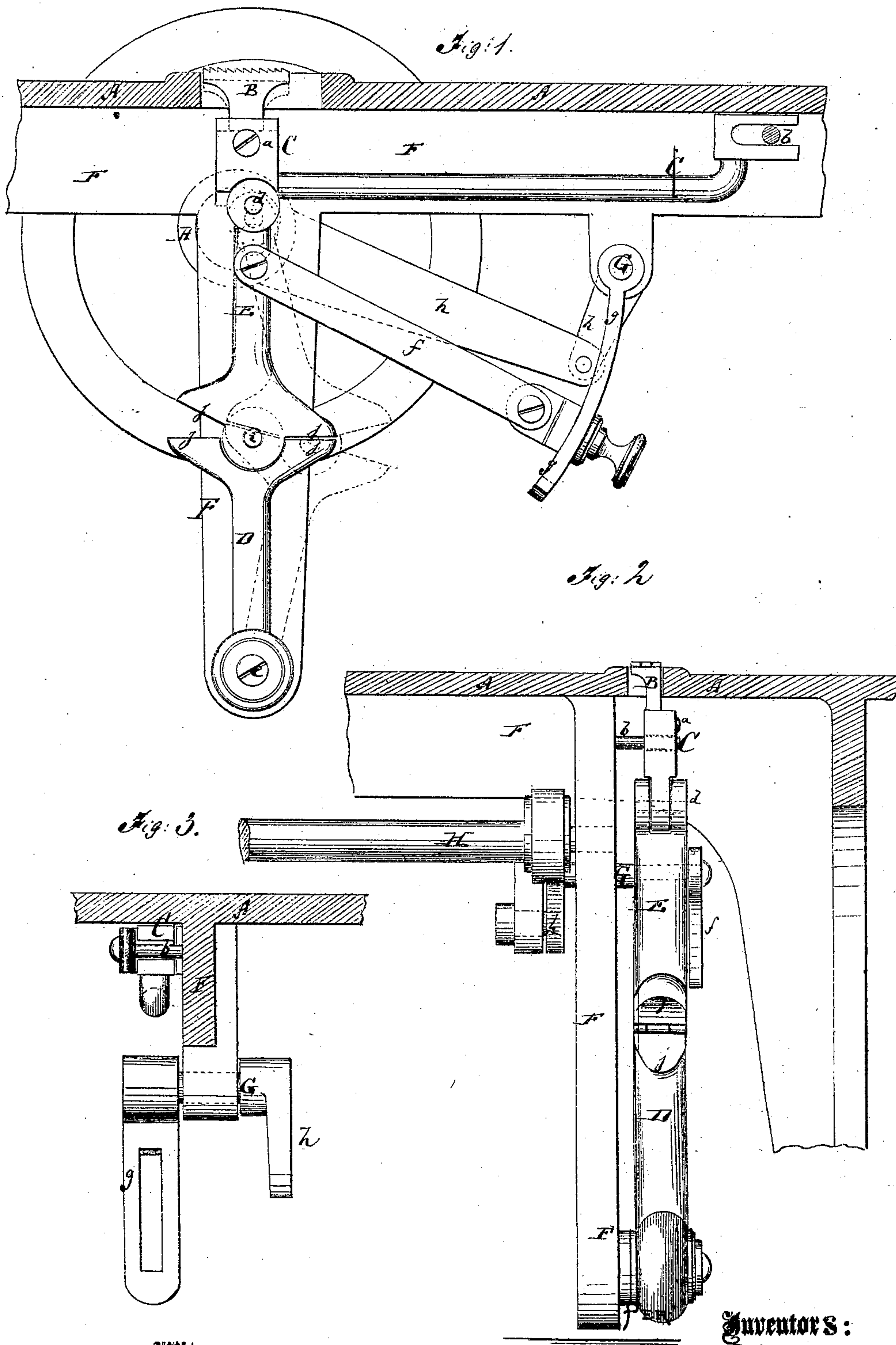


P. DIEHL & L. OEHRING.

Improvement in Feeding Mechanism for Sewing Machines.

No. 115,036.

Patented May 23, 1871.



Witnesses:

*Chas. Nida*  
*Wm. H. C. Smith*

Inventors:

*P. Diehl*  
*L. Oehring*

*Wm. H. C. Smith*  
Attorneys.



# UNITED STATES PATENT OFFICE.

PHILIP DIEHL AND LUDWIG OEHRING, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN FEEDING MECHANISMS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 115,036, dated May 23, 1871.

*To all whom it may concern:*

Be it known that we, PHILIP DIEHL and LUDWIG OEHRING, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Feed Mechanism for Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a side view of our improved feed mechanism. Fig. 2 is an end view of the same. Fig. 3 is a detail back-end view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new feed mechanism for sewing-machines, which is so arranged as to produce a sudden upward, but only a gradual horizontal, adjustment of the feed, so that the change from each horizontal stroke will be quite rapid and effective, while the stroke itself is quite gradual. The objection to the mechanism for the same purpose now in use consists, chiefly, in the curvilinear movement of the feed, which will prevent it from taking proper hold of the fabric at the commencement and end of each stroke. Our invention consists in a novel arrangement of toggle-levers and other mechanism for imparting the desired motion to the feed.

A in the drawing represents the sewing plate or table of a sewing-machine. B is the feed, fitting, when in action, through a slot in the plate A. The feed is, by a screw, *a*, or otherwise, secured to an elbow-lever C, which has its back end slotted and supported on a fixed pin, *b*, on which it can slide horizontally. The front end of the lever C is, by a pivot, *d*, connected with the upper end of a toggle-lever, D E. The lower pivot *e* of said toggle-lever is secured to a part of the frame F of the sewing-machine. A pitman, *f*, connects the toggle-

lever with the crank *g* of a rock-shaft, G. This rock-shaft receives its motion by a suitable connection, *h*, with a rotary shaft, H. The two parts D E which constitute the toggle-lever are pivoted together by a pin, *i*, and have flat shoulders *j j*, in front and rear of the pivot, which prevent them from swinging beyond a certain distance forward or back on said pivot *i*. The pitman *f*, when moved by a rock-shaft, swings the upper toggle at first back, so as to carry the joint *i* out of line of the pivots *d e*, thereby suddenly lowering the feed. It then draws the toggles and feed further back. When the motion of the rock-shaft is reversed, the levers D E are first shown in line—that is to say, the pivots *d i* and *e* are brought in line, whereby the feed is rapidly raised—and are then moved forward to feed the fabric under the needle. The desired motion is thus obtained.

Fig. 1 represents the feed elevated at the end of its feed motion. The dotted lines represent it lowered at the commencement of the return stroke.

The shoulders *j j* hold the toggle-levers in the two extreme positions, ending both vertical adjustments, to enable the commencement of the horizontal strokes. The feed can be vertically adjusted on the lever C and set by the screw *a*. The crank *g* is, by preference, slotted, to permit the adjustment up or down of the pitman *f* for regulating the stroke of the feed.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of the feed B with the toggle-levers D E, slide C, and rock-shaft G, all arranged to operate substantially as herein shown and described.

PHILIP DIEHL.  
LUDWIG OEHRING.

Witnesses:

JOHN M. FAULHABER,  
HENRY ARNOLD.