J. O. HUFFMAN & E. J. LAUFFER.

FEEDING MECHANISM FOR SEWING MACHINES.

APPLICATION FILED APR. 25, 1910.

1,025,139.

Patented May 7, 1912.

2 SHEETS—SHEET 1.

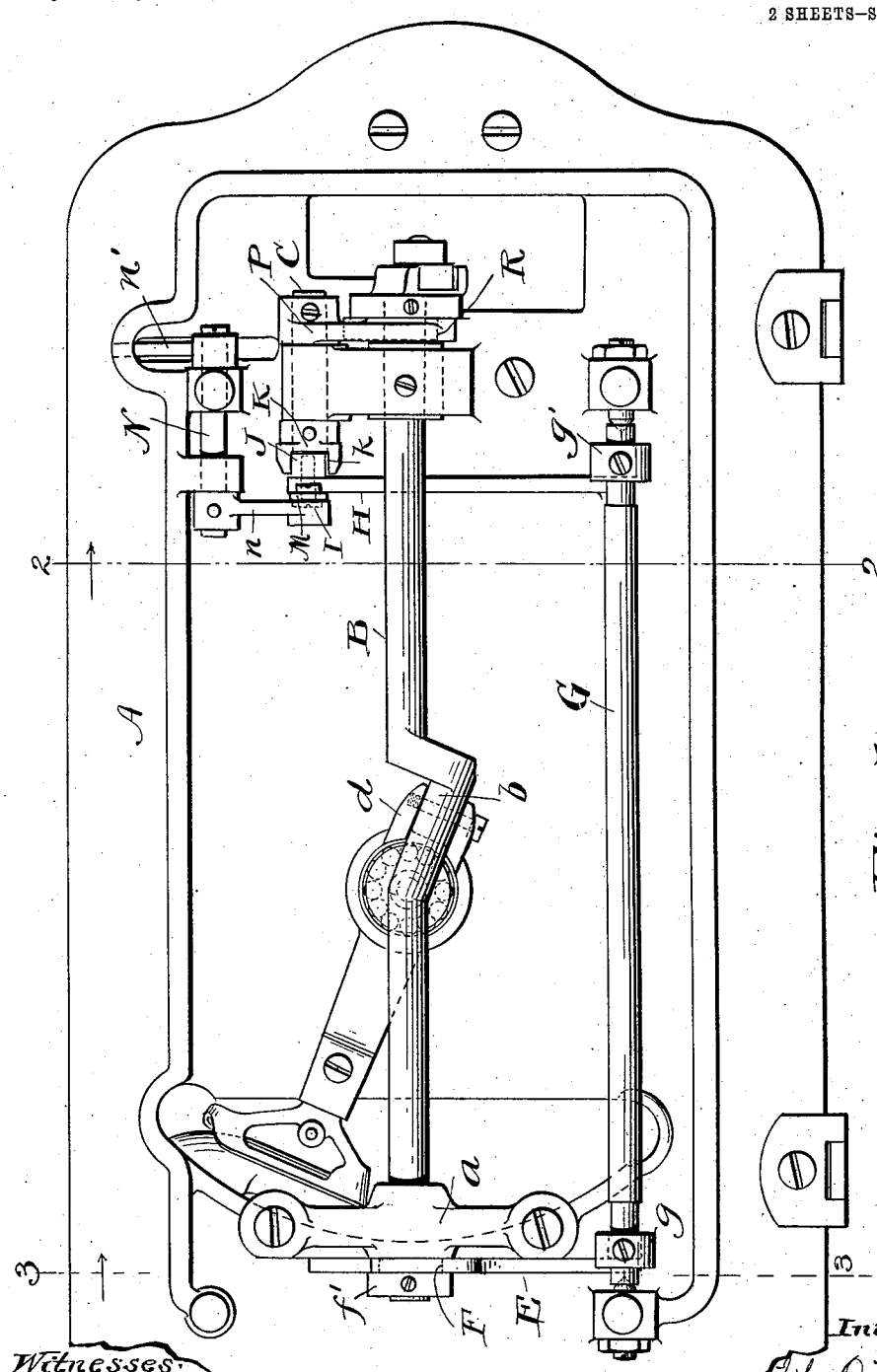

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

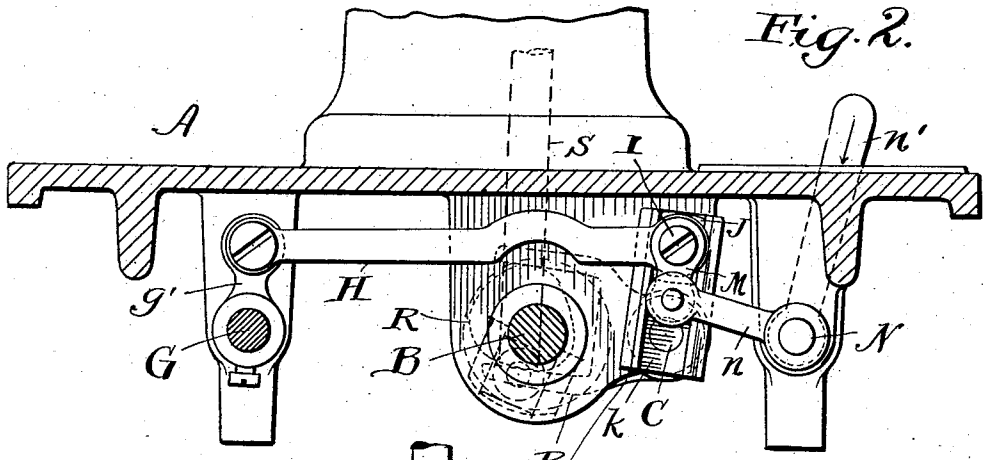


Fig. 3.

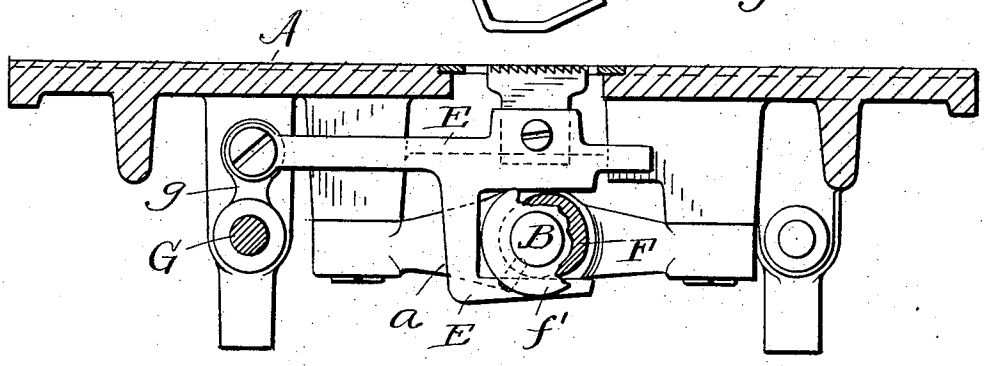
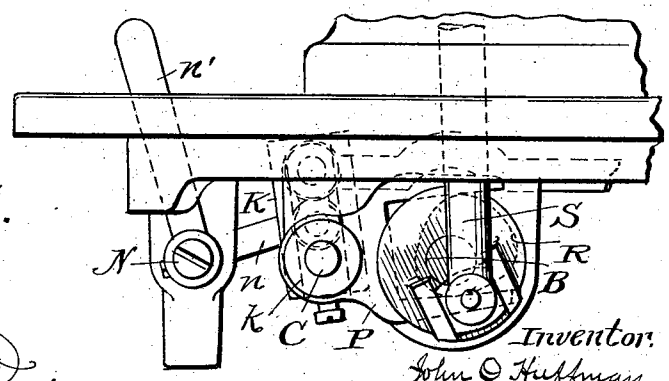


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN O. HUFFMAN AND EMIL J. LAUFFER, OF CLEVELAND, OHIO, ASSIGNORS TO THE WHITE SEWING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

FEEDING MECHANISM FOR SEWING-MACHINES.

1,025,139. Specification of Letters Patent. Patented May 7, 1912.

Application filed April 25, 1910. Serial No. 557,364.

To all whom it may concern:

Be it known that we, JOHN O. HUFFMAN and EMIL J. LAUFFER, citizens of the United States, and residents of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Feeding Mechanism for Sewing-Machines, of which the following is a full, clear, and exact description.

This invention relates to improvements in feeding mechanism for sewing machines.

The object is to provide such mechanism in a form which may be quickly adjusted to vary the length of the stitch or feed, and which will work with very little friction and with equal freedom in all of its various adjusted positions.

In the drawing, Figure 1 is a bottom view of a sewing machine head to which the present invention is applied. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a sectional view on line 3—3 of Fig. 1; and Fig. 4 is an end view from the right end of Fig. 1.

Referring to the parts by letters, A represents the base or bed plate of a sewing machine head.

B represents a driven rotatable shaft mounted in suitable bearings and lying beneath the bed plate. It is of no consequence to the present invention as to what mechanism is employed to rotate this shaft, and no effort has been made to show any particular mechanism for doing this, because such mechanism in a variety of forms is well known in the art.

G represents the feed-bar rock shaft which is mounted in suitable bearings on the under side of the bed plate, and is parallel to the shaft B.

An arm g is fixed to the shaft B and extends upward vertically a short distance; and it is pivoted to the rear end of the feed bar E. This bar is forked at its front end and embraces a suitably shaped cam F fixed to the shaft A. A flange f' fixed also to the shaft B, and the left end of the bracket a, which is fixed to the bed, lie on either side of the cam; and the forks of the feed bar lie between these surfaces, whereby it is guided in its movements. At the other end of the shaft B another cam, which is shown in dotted lines in Fig. 4, and is indicated by R, is secured. A forked arm P embraces this cam, and is itself fixed to a rock shaft C mounted in suitable bearings which project down from the bed plate. An arm K fixed to the rock shaft C extends radially and nearly vertically therefrom; and in its end face is a guide-way k which extends from the axis of the shaft C upward. In this guide-way a block J is movable. A link H is pivoted to this block, and is likewise pivoted to an upwardly extended arm g' fixed to the rock shaft G.

It is quite evident from the foregoing statement that as the shaft B rotates the cam R will rock the rock-shaft C, and thereby the arm K will be rocked. The rocking motion of this arm will be transmitted through link H to the shaft G, and the rocking motion of the shaft G will be transmitted through the arm g' to the feed bar E, thereby imparting to it a reciprocatory forward and backward movement. While this movement is going on, the feed bar is likewise being moved up and down at proper intervals by the action of cam F upon said feed bar.

The block J has connected with it by the same pivot screw I which connects a link H with it, a short link M, the lower end of which is pivotally connected with an arm n fixed to a rock shaft N, to which also an operating arm n' is fixed.

In order to vary the length of the forward and backward movement of the feed bar (which is to vary the length of the stitch) the operator takes hold of the arm n' and swings it forward or backward, said arm projecting up through a slot in the bed plate to a convenient place for its operation. By the rocking of the shaft N the block J will be moved toward or away from the axis of the shaft C. The farther it is away from it the greater will be the arc through which the shaft G will be rocked, and consequently the greater will be the forward and backward movement of the feed bar. By bringing the block J so far down that the axis of the shaft C will be coincident with the axis of the pivot screw which connects the link H and block J, there will be no rocking movement whatever of the shaft G, and consequently no backward movement of the feed bar.

Having described our invention, we claim:

The combination of a rotatable shaft carrying two cams, a rock shaft having two arms fixed to it, a feed bar pivoted to one of said arms and extending forward therefrom, said feed bar being forked to embrace one of the cams upon said rotatable shaft, a rock shaft C, a forked arm fixed thereto and embracing the other cam on the rotatable shaft, an arm K fixed to said rock shaft and having a guide-way which extends across the axis of said shaft, a block movable in said guide-way, a link connecting said block and the other arm of the rock shaft, a rocker pivoted to a fixture below the bed plate and having an operating arm which extends upward through a slot in the bed plate and has also a substantially horizontal arm, and a link pivotally connected with the last named arm and extending upward therefrom and being pivoted at its upper end to said block.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

JOHN O. HUFFMAN.
EMIL J. LAUFFER.

Witnesses:
H. R. SULLIVAN,
E. L. THURSTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."