

(No Model.)

L. K. FULLER.

FEED OPERATING MECHANISM FOR SEWING MACHINES.

No. 304,424.

Patented Sept. 2, 1884.

Fig. 1.

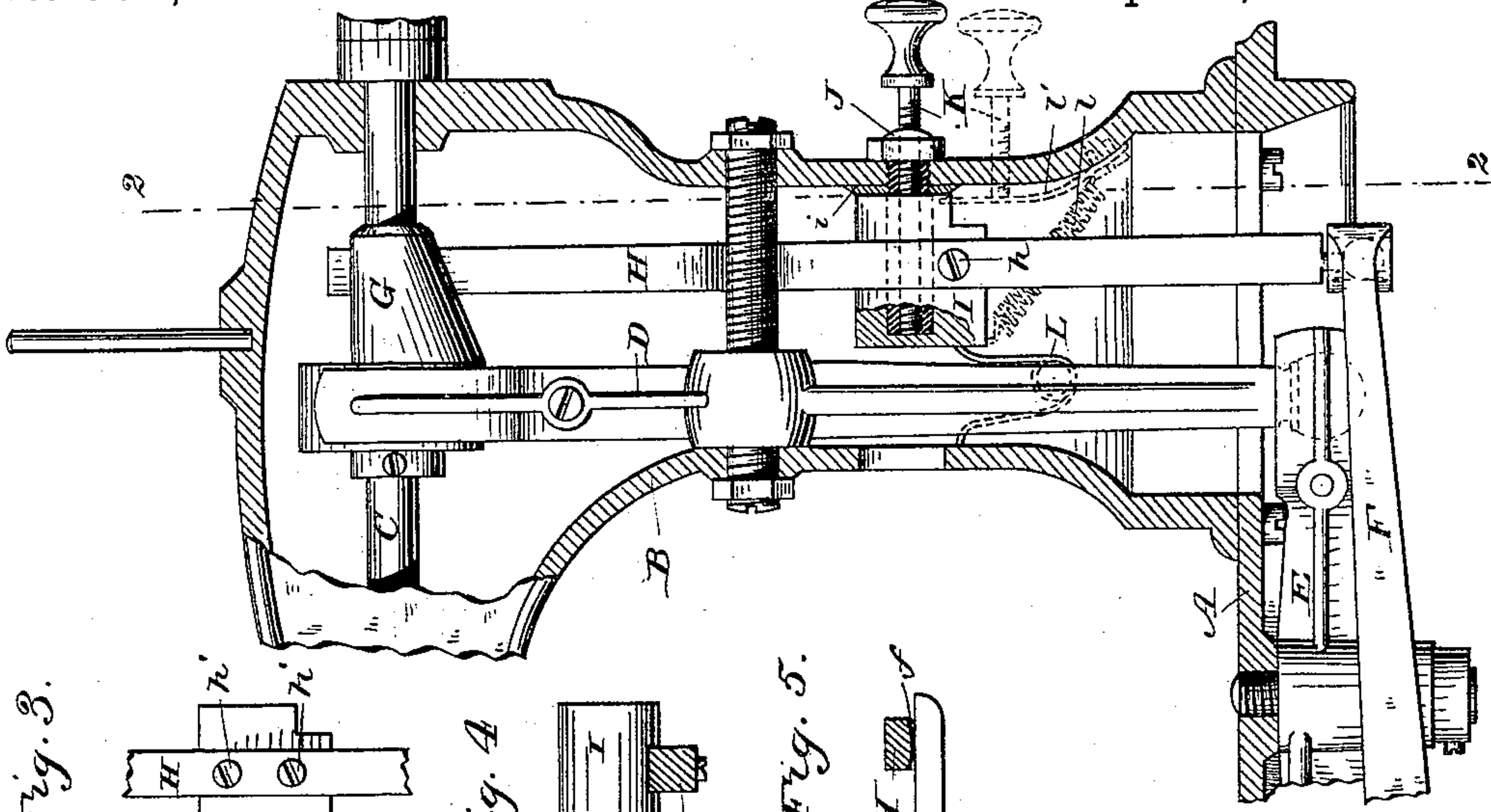


Fig. 3.

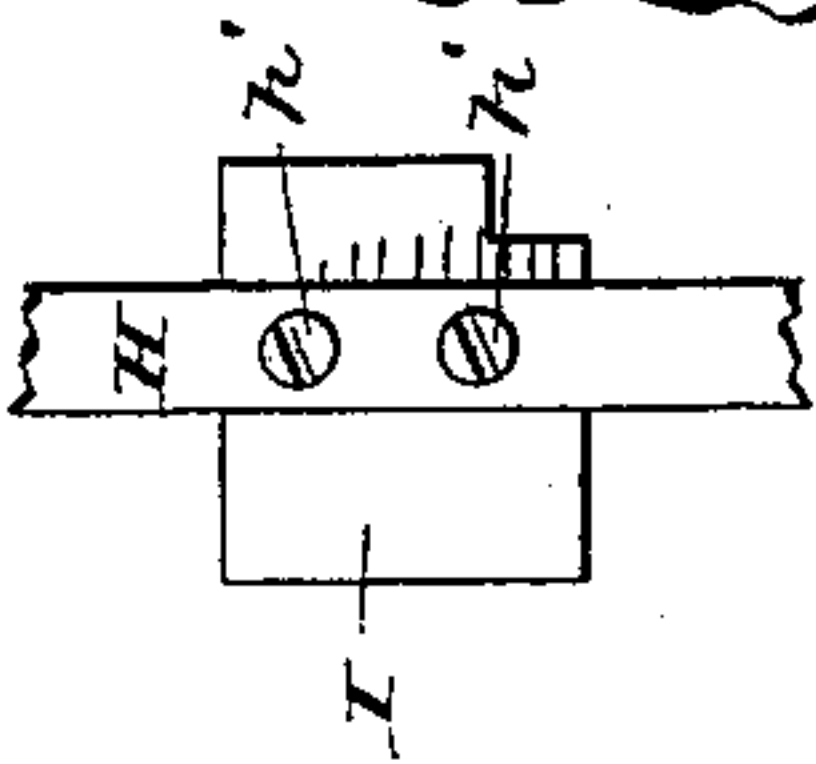


Fig. 4.

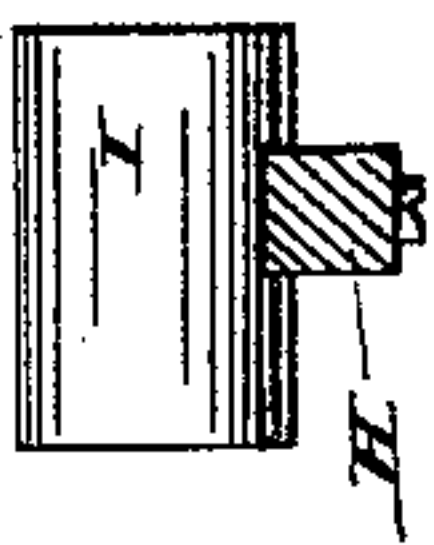


Fig. 5.

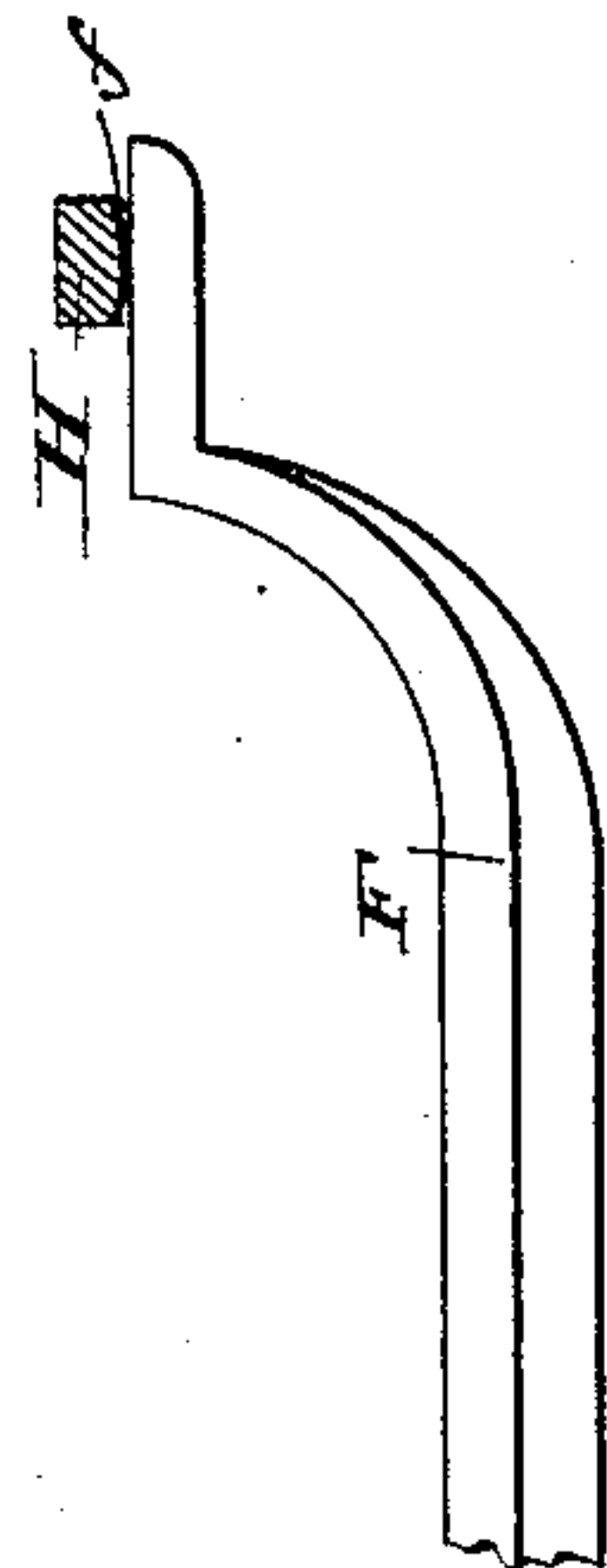


Fig. 7.

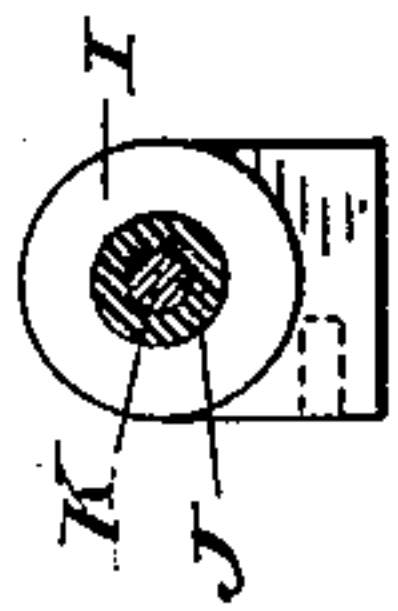


Fig. 6.

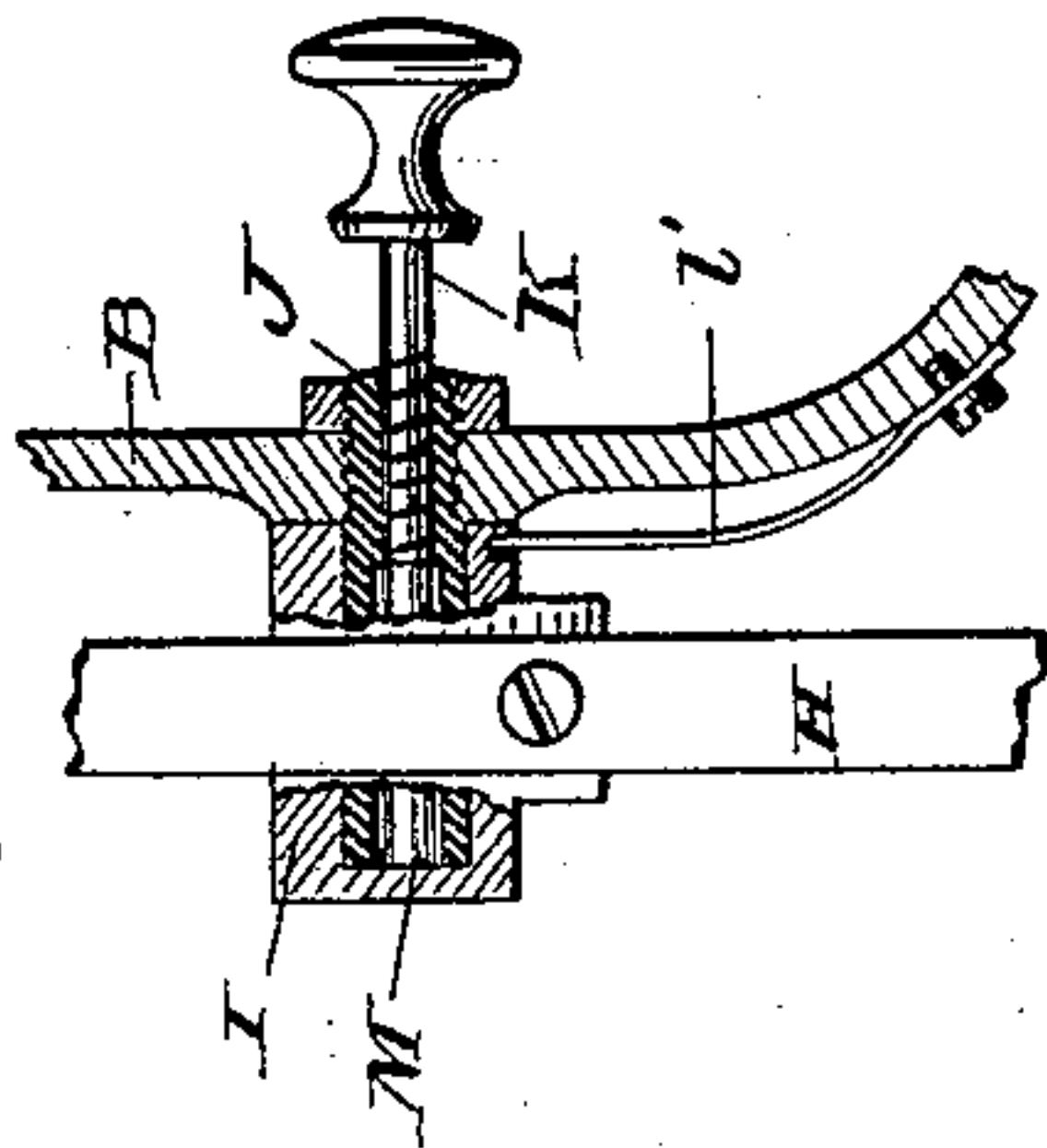
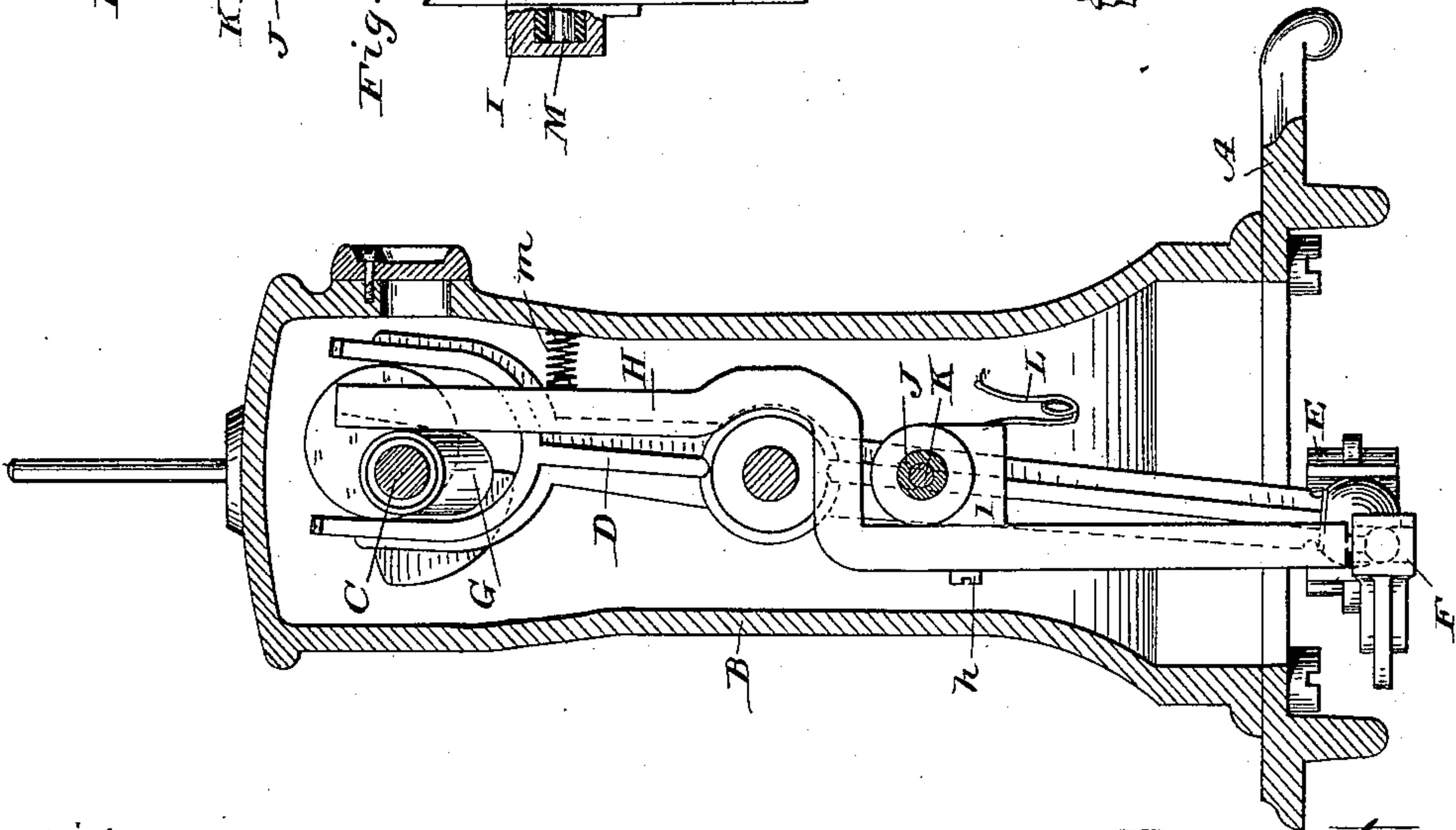


Fig. 2.



Witnesses:

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Inventor:

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# UNITED STATES PATENT OFFICE.

LEVI K. FULLER, OF BRATTLEBOROUGH, VERMONT.

## FEED-OPERATING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 304,424, dated September 2, 1884

Application filed May 8, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI K. FULLER, a citizen of the United States, residing at Brattleborough, in the county of Windham and State of Vermont, have invented certain new and useful Improvements in Feed-Operating Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the feeding mechanism of that class of sewing-machines in which the driving-shaft is journaled in the bracket-arm above the work-plate of the machine.

In the accompanying drawings, Figure 1 is a partial side elevation, with the frame-work in section, of a sewing-machine embodying my invention. Fig. 2 is a transverse section of the same on the line 2 2, Fig. 1. Figs. 3, 4, 5, 6, and 7 are detail views illustrating modifications of my invention.

A indicates the bed-plate, and B the bracket-arm, secured thereto in any suitable manner.

C is the driving-shaft, carrying an eccentric for operating a vertical shuttle-lever, D, loosely connected at its lower end with a horizontal shuttle-lever, E, in a well-known manner.

G is a tapering feed-cam secured to the driving-shaft, and engaged by a vertical feed-lever, H, which is preferably secured by a pivot-screw, *h*, to a block, I, which is in turn pivoted on a pin, J, fixed to the bracket-arm. The vertical feed-lever H is loosely connected at its lower end with a horizontal feed-lever, F. The pin J is preferably provided with a central longitudinal aperture, in which is tapped an adjusting-screw, K, adapted to extend through the hollow pin J, and thus engage the block I. By turning the screw K in the proper direction, the block I will be forced inward against the stress of a spring, L, which has a tendency to hold said block against said screw. An anti-friction washer, as *i*, may be interposed between said block and the inside of the arm.

Instead of the spring L, a coiled spring, *l*, or a plate-spring, *l'*, (both indicated by dotted lines,) might be used. In case the plate-spring were used, the block I would be provided with

a groove or recess entered by the end of the said spring, said groove or recess permitting of the proper axial motion of the said block. In this case, also, the adjusting-screw K might be arranged to engage the spring instead of the block I, as indicated in dotted lines in Fig. 1.

The operation of my mechanism is as follows: As the shaft C rotates, the cam G thereon will vibrate the vertical feed-lever H, which will in turn operate the horizontal feed-lever F. The lever H will be held in contact with the cam G by any suitable spring, preferably by the spring (at the forward end of the machine) which lowers and retracts the feed-bar, and which will act through the lever F; or an additional spring, as *m*, may be employed. When it is desired to adjust the throw of the feed-levers, and thus vary the feed, the screw K will be turned in one direction or the other, thus moving the upper end of the lever H along the tapering feed-cam G, so as to bring the said end of said lever in contact with that part of the said cam having the desired throw, the pivot-screw *h* permitting the necessary movement of said lever on the block I, when the two feed-levers are connected, as shown in Figs. 1 and 2.

Instead of securing the lever H to the block I by a single screw, serving as a pivot for said lever, the latter may be rigidly connected to said block by using two securing-screws, *h'*, as shown in Fig. 3, or by letting said lever slightly into said block, as shown in Fig. 4, and in the latter case a single screw will form a rigid connection. This rigid connection will cause the lever to be moved bodily when the the block is adjusted. As such bodily adjustment of the lever H will cause its lower end to move longitudinally of the lever F, the latter will be provided with a contact portion, *f*, of suitable length to accommodate this adjustment.

The parts of the machine not herein shown are or may be the same as those shown in my application, Serial No. 130,536, (Case A,) filed May 6, 1884.

In the modification shown in Fig. 6 the screw K is made somewhat shorter than in

Fig. 1, and in the back part of the hollow pin J is loosely fitted a piece of wire, M, against which the screw impinges in adjusting the block I against the stress of the spring V.

5 I claim as my invention—

1. The combination, in a sewing-machine, of a bracket-arm, a driving-shaft journaled therein above the work-plate, a tapering cam on said shaft, vertical and horizontal feed-  
10 levers, an adjustable block to which the vertical lever is secured, a pivot-pin fixed to the bracket-arm and loosely fitting said block, an adjusting-screw, and a counteracting-spring for changing the position of the said block on  
15 the said pin, and thereby varying the throw of the feed-levers, substantially as set forth.

2. The combination, in a sewing-machine,

of a bracket-arm, a driving-shaft journaled therein above the work-plate, a tapering cam on said shaft, vertical and horizontal feed-  
20 levers, an adjustable block to which the vertical lever is secured, a hollow pivot-pin fixed to the said bracket-arm and loosely fitting said block, a screw tapped in said pivot-pin and engaging said block, and a spring for holding  
25 the latter against said screw, substantially as set forth.

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

LEVI K. FULLER.

Witnesses:

W. H. CHILDS,

J. E. HALL.