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Patented Dec. 12, 1899.

H. M. LOVEJOY.

RUFFLER AND GATHERER FOR SEWING MACHINES.

(Application filed Apr. 26, 1897. Renewed Oct. 12, 1899.)

(No Model.)

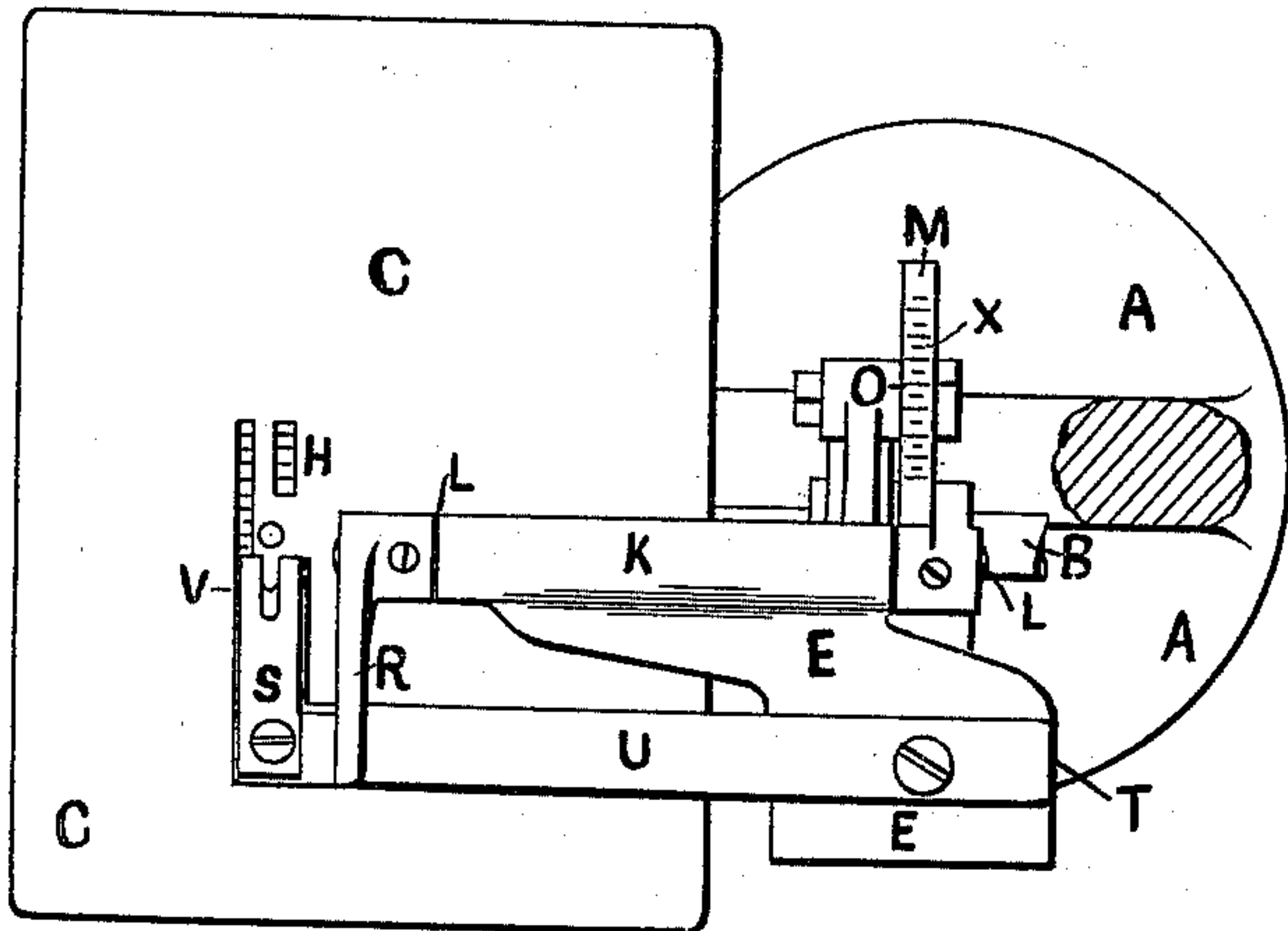


Fig. 1.

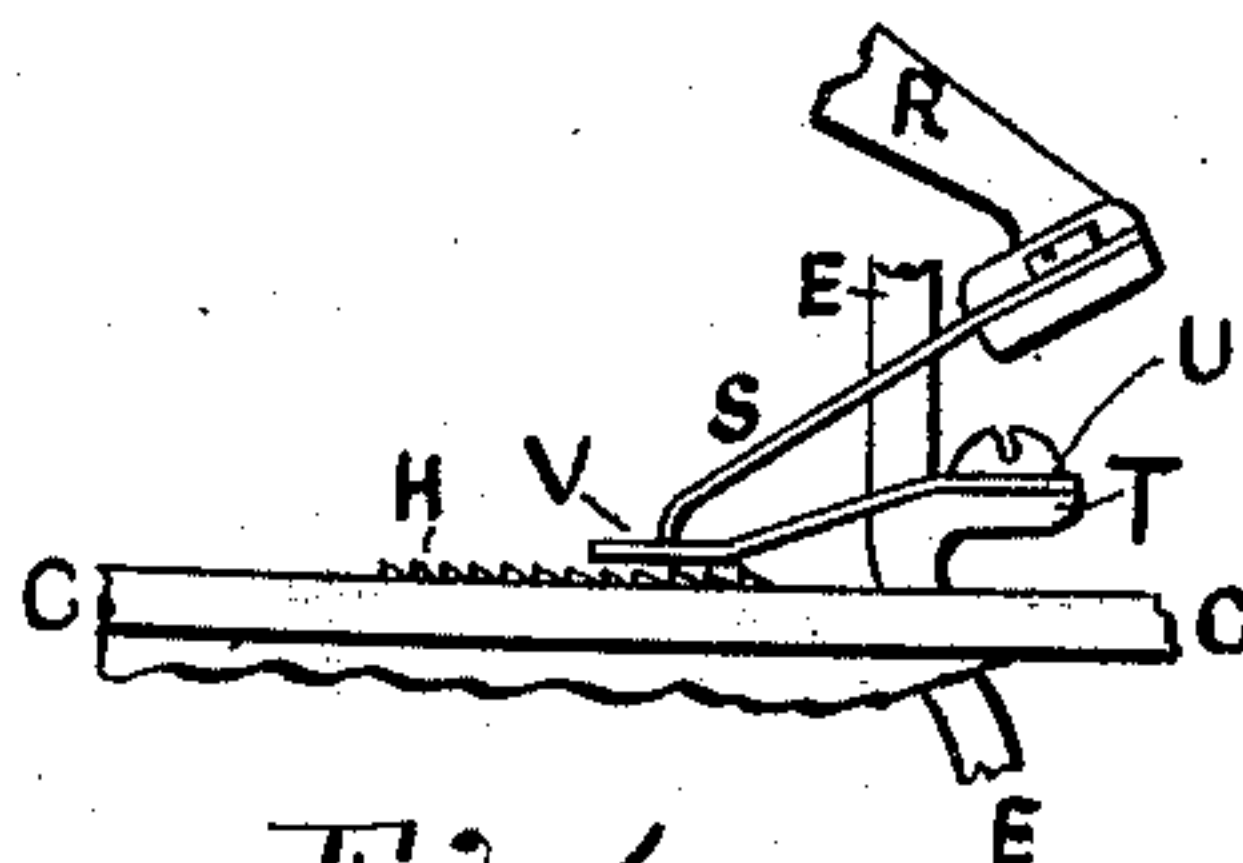


Fig. 4.

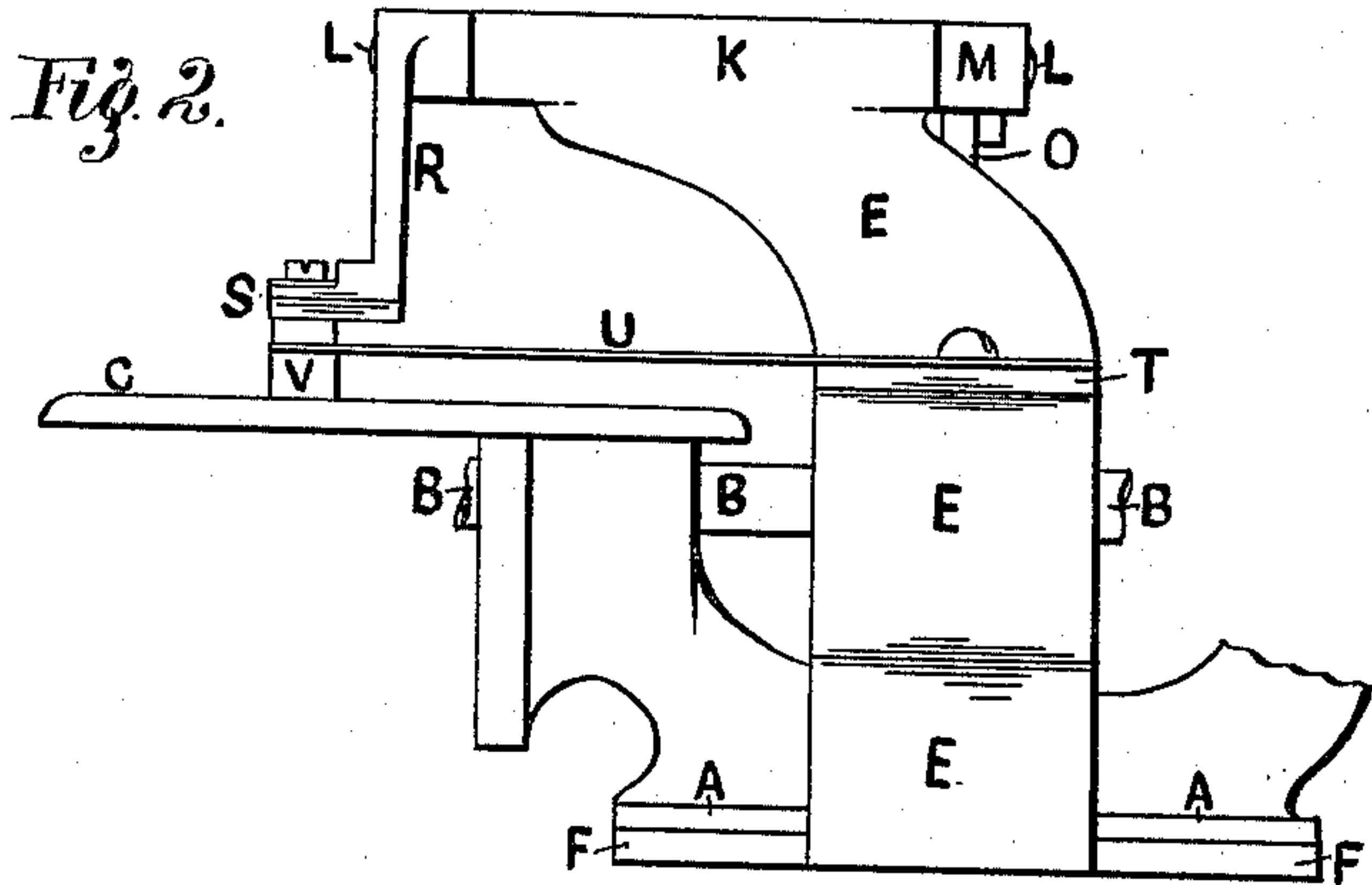


Fig. 2.

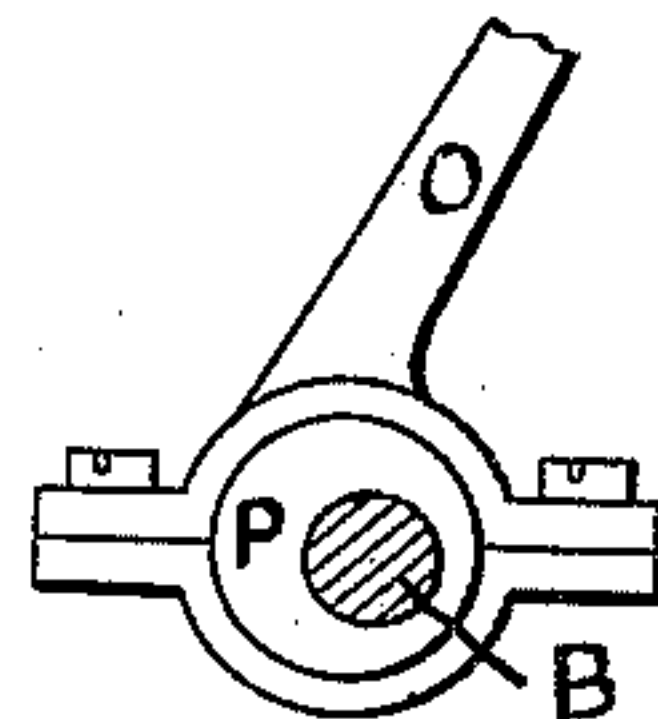
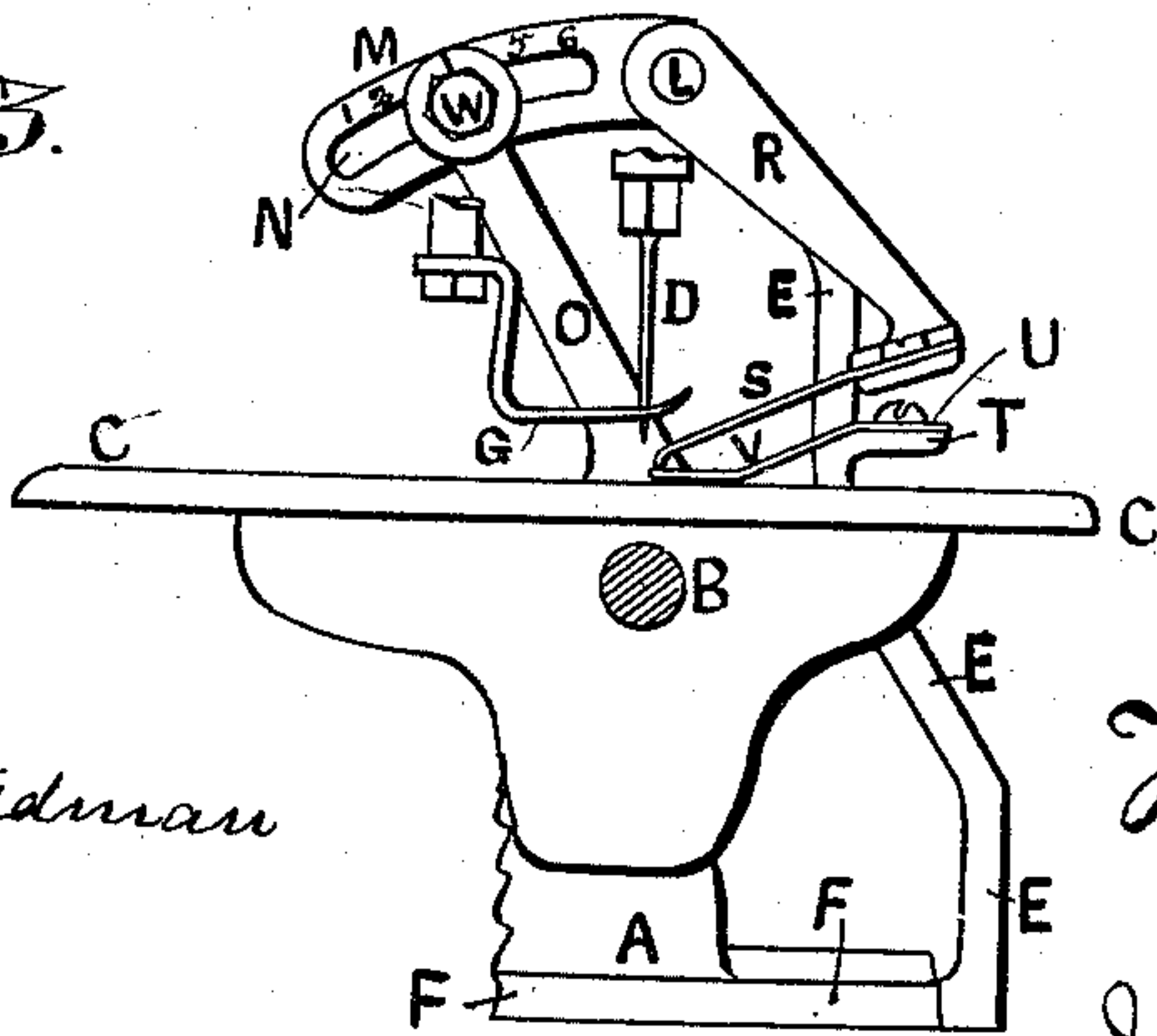


Fig. 5.

Fig. 3.



Witnesses

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RUFFLER AND GATHERER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 638,970, dated December 12, 1899.

Application filed April 26, 1897. Renewed October 12, 1899. Serial No. 733,437. (No model.)

To all whom it may concern:

Be it known that I, HERBERT M. LOVEJOY, of Malden, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Rufflers and Gatherers for Sewing-Machines, of which the following is a specification.

The object of my invention is to provide a cheap, simple, convenient, durable, and efficient ruffler and gatherer adapted to be operated in connection with high-speed power sewing-machines for manufacturing purposes, such as the well-known single-thread Willcox & Gibbs sewing-machines; and it consists in the construction, combination, and arrangement of the several parts of the device hereinafter described, and specifically set forth in the claims.

To the drawings hereto annexed, which form a part of this specification, reference is made.

Figure 1 represents a top or plan view showing a ruffler and gatherer constructed according to my invention and permanently secured in position to the bed-plate of a sewing-machine, the main portion of the stitching devices and supporting-arm being broken away to better show the operative parts of my invention located beneath. Fig. 2 represents a front elevation of the same. Fig. 3 represents a left-hand elevation thereof with the needle and presser-foot in elevated position. Figs. 4 and 5 represent elevations showing detached portions of the actuating devices.

A represents the bed-plate of the sewing-machine, to which my improved ruffler and gatherer is rigidly bolted or permanently secured in any suitable manner.

B represents the main horizontal driving-shaft, provided with journal-bearings and at the inward end with the common rotary hook for forming the loop-stitch, as usual in this class of single-thread sewing-machines. The cloth-plate C, needle D, presser-foot G, and feed-dog H, all of usual construction, need not be further shown or described more fully in detail, as they form no essential feature of my present invention and act only in conjunction therewith when in practical use or operation in stitching the ruffling in the fabric as made.

Now in carrying my invention into practice I construct a vertical curved supporting-arm E. The lower right-angle portion F extends horizontally beneath the said bed-plate A of the sewing-machine and is bolted or rigidly secured in position therewith in any suitable manner desired. The inward-curved upper end is provided with a horizontal journal-bearing K, extended inwardly over and above the said cloth-plate C in vertical line with the needle D and parallel with the said driving-shaft B of the machine. The said journal-bearing K is provided with a horizontal rock-shaft L, to the outward end of which is adjustably secured one end of the downward-curved segmental slotted reciprocating arm M, within the curved slot N of which is adjustably connected the upper end of the vertical incline cam-lever O, the lower end of which is clamped around the eccentric P, secured upon the said driving-shaft B, as shown, Fig. 5. To the opposite inward end of the said rock-shaft L is adjustably secured the upper end of the downward-projecting incline arm R, to the lower end of which is secured the outward end of the opposite incline spring ruffler-blade S, the lower inward end of which is provided with a short needle-slot and extends approximately to the line of the needle, as shown in Fig. 3, and may be moved outward, as shown in Fig. 4. The said supporting-arm E is provided at a point above the said cloth-plate C with a horizontal projecting bracket T, to which is secured the outward end of the long horizontal spring-support U, to the opposite free end of which is secured or formed integral therewith the outward end of the spring separator-blade V, which is curved downwardly and extended inwardly at a right angle to the said support U and terminates at a point near the needle, and the inward end is provided with a needle-slot and has a slight bearing upon the cloth-plate and feed-dog, as shown in Figs. 3 and 4. Now in order to regulate and determine the length or distance of movement imparted to the inward end of said ruffler-blade S the said segmental slotted arm M is provided with a clamp screw-bolt W, which passes through the slot N, formed in said arm, and through the upper end of the said cam-lever O to con-

nect it thereto in an adjustable manner by means of a screw-nut provided on the end of the clamp-bolt W, as shown in Fig. 3. This curved slotted arm M is provided with a graduated scale X, as shown in Fig. 1, and corresponding figures, as shown in Fig. 3, by which means the distance traversed back and forth may be imparted to the lower contact working end of the said ruffler-blade S upon the fabric in use for the purpose of being formed into ruffles thereby and stitched upon the under fabric, which passes beneath the said separator-blade V, and thereby determine the fullness of the ruffle being made.

The inward movement of the ruffler-blade is so timed in relation to that of the needle, that the ruffler-blade, at the instant the needle is raised to its highest point, forms a round ruffle, which is permitted to pass beyond the forward end of said blade and drop down upon the cloth-plate, whereby the needle and needle-thread pass over the round ruffle and through the fabric each side of the ruffle thus formed and through the band or lower fabric, thereby stitching the ruffle in a round form instead of stitching directly through the ruffle, which flattens it down into a small plait, as in all rufflers heretofore constructed with which I am familiar.

By means of the action imparted to the ruffler-blade through the adjustable curved slotted arm and the adjustably-connected end of the cam-lever therewith renders the ruffler-blade self-adjusting or adapted to form all the various degrees of fullness in the ruffles desired without special adjustment of the ruffler-blade to adapt it to form the fullness in the ruffles which may be desired to be pro-

duced in the fabric being operated upon for the purpose.

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

A ruffler and gatherer for sewing-machines comprising the supporting-arm E having a horizontal journal-bearing K provided with a rock-shaft L, the segmental slotted reciprocating arm M secured to the outward end of the said rock-shaft, the incline cam-lever O secured at its lower end around the eccentric P and its upper end adjustably secured within the segmental slot N of the said arm M, the downward-projecting incline arm R adjustably secured to the inward end of said rock-shaft and to the lower end of which is secured the outward end of the opposite incline spring ruffler-blade S, the lower inward end of which is provided with a short vertical slot, the horizontal spring-support U secured at the outward end to the bracket T, and to the inward end of said spring is secured the outward end of the spring separator-blade V which extends inwardly at a right angle thereto at a point near the needle and adapted to have a slight bearing upon the cloth-plate and feed-dog of the sewing-machine, all being constructed and arranged as shown and described as and for the purposes set forth.

In testimony whereof I have subscribed my name, before two witnesses, this 22d day of October, 1896.

HERBERT M. LOVEJOY.

Witnesses:

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