

F. L. HUMESTON.
 SEWING MACHINE RUFFLER.
 APPLICATION FILED MAY 3, 1911.

1,011,957.

Patented Dec. 19, 1911.

Fig. 1.

Fig. 2.

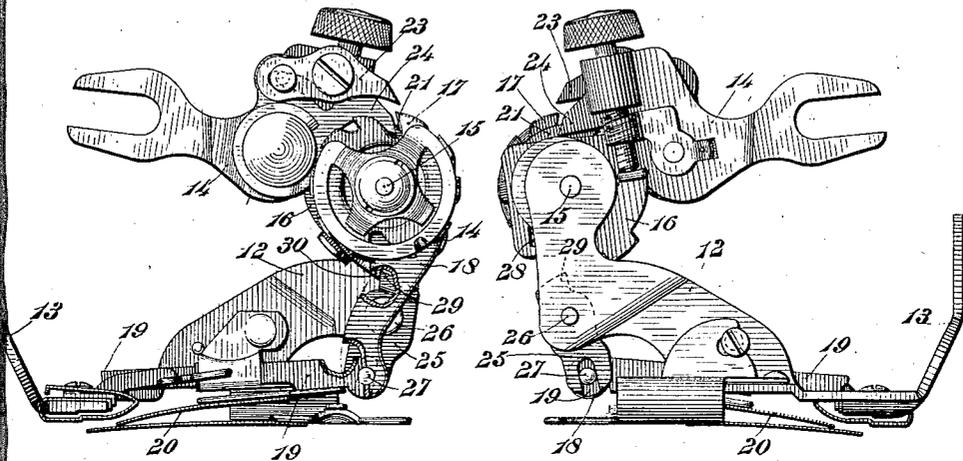
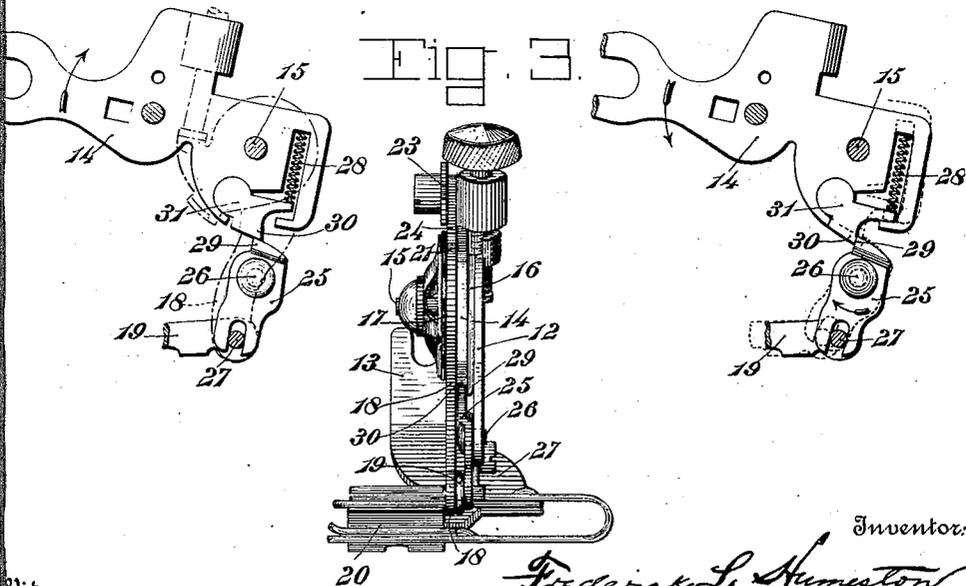


Fig. 4.

Fig. 5.



Witnesses
Harry King.
C. W. Sweeney.

Inventor:
Frederick L. Humeston,
 By *Calvin Calvin,*
 Attorneys

UNITED STATES PATENT OFFICE.

FREDERICK HUMESTON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE GREIST MANUFACTURING COMPANY, A CORPORATION OF CONNECTICUT.

SEWING-MACHINE RUFFLER.

1,011,951

Specification of Letters Patent. **Patented Dec. 19, 1911.**

Application filed May 3, 1911. Serial No. 624,802.

To all whom it may concern:

Be it known that I, FREDERICK L. HUMESTON, a citizen of the United States, residing at New Haven in the county of New Haven and State of Connecticut, have invented or discovered certain new and useful Improvements in Sewing-Machine Rufflers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of sewing machine rufflers in which the ruffling blades are actuated from the needle-bars of the machine in such a manner that the forward strokes of the ruffling blades are effected during the forward movements of the operating levers connected with the needle-bars of the sewing machines, and in which the backward movements of the ruffling blades take place during the downward movements of the needle-bars.

In some sewing machines as now made the take-ups are timed as to complete their stitch-tightening movements after the needle-bars have commenced their downward movements. In the operation of sewing machine rufflers for such machines it is desirable that the extreme forward throws of the ruffling blades should occur simultaneously with or immediately after the take-ups have completed their stitch-tightening movements, and when the needle thread is held somewhat taut so that the ruffling operation can be performed in the best manner.

To this end the present invention comprises certain improvements in rufflers of that class in which the forward strokes of the ruffling blades are effected at the upward movement of the operating levers connected with the needle-bars of the machines, and the invention has for its object to provide an improved method whereby, after the main forward movement of a ruffling blade has been effected during the upward movement of the operating lever with a sewing machine needle-bar, a slight additional forward movement may be imparted to the ruffling blade during the first part of the downward movement of the operating lever with the needle-bar, so that the backward movement of the ruffling blade will be effected during the last part of the downward movement of the operating lever with the needle-bar. By

thus changing the timing of the ruffling blade the ruffler will be best adapted for coöperation with a sewing machine in which the take-up completes its stitch-tightening movement after the needle has commenced to descend for the next succeeding stitch.

The present improvement comprises an additional lever between the operating lever and the ruffling blade carrier and which additional lever so coöperates with a yielding cam projection or tooth carried by the operating lever that after the forward movement of the ruffling blade has been mainly effected during the upward movement of the operating lever with the needle-bar of the machine, the said additional lever will be caused to impart a slight, further or additional forward movement to said ruffling blade during the first part of the downward movement of the operating lever with the machine needle-bar, as will hereinafter more fully appear.

In the accompanying drawings Figures 1 and 2 are opposite side views of a sewing machine ruffler embodying the present invention. Fig. 3 is a rear view of the same, and Figs. 4 and 5 are detail views showing the parts to which the present improvement more particularly relates, and with said parts in different positions.

The present invention is herein shown as being applied to a "five-stitch" ruffler such as that shown and described in the Greist and Beckert Patent No. 983,048, dated Jan. 31, 1911, but it will be understood that this invention may be embodied in other kinds of rufflers than the five-stitch ruffler referred to.

Referring to the drawings, 12 denotes the body of the frame of the ruffler, and which frame is preferably provided with an integral attaching portion or shank 13 by which it may be secured to the presser-bar of a sewing machine in substitution of an ordinary presser-foot. The forked operating lever 14 is pivotally mounted on a stud 15 riveted to an upright portion of the frame 12. Also pivotally mounted on the said stud are an oscillating plate 16, a ratchet wheel 17, and a pendulous or secondary lever 18, the latter being jointed at its lower end to the carrier 19 of the ruffling blade 20. The pendulous or secondary lever 18 is provided at its top with a shoulder 21 to be engaged by a pawl 24 carried by

the operating lever 14, said lever carrying a second pawl 23 which may be thrown into engagement with the teeth of the ratchet wheel 24 when "five-stitch" ruffling is to be done, and by means of this double pawl construction a ruffle may be made at each stitch of the machine, or at each five stitches, according to the adjustment of said pawls, as fully described in the application of Emanuel J. Boyler, No. 601,905, filed Jan. 10, 1911.

In the ruffler of Patent No. 983,048, hereinafter referred to, the entire forward movement of the ruffling blade is effected during the upward movement of the forked operating lever 14, which is actuated from the needle-bar of the sewing machine. In the present improved ruffler the main part of the forward movement of the ruffling blade is effected during the upward movement of the operating lever 14, but after the upward movement of said lever 14 with the needle-bar has been completed, and when the said lever commences its downward movement with the needle-bar, an additional forward movement is imparted to the ruffling blade carrier by means of a lever 25 fulcrumed on a pin 26 and forked at its lower end to embrace the pin 27 by which the pendulous lever 18 is jointed to the ruffling blade carrier 19. The said lever 25 is provided at its upper end with a tooth or cam projection 29 having an abrupt front face, and the operating lever 14 is provided near its fulcrum or pivot with a yielding tooth or cam projection 30 having an abrupt rear face. The yielding tooth or cam projection 30 is carried by a pawl or small lever 31 mounted in the rear portion of the operating lever 14 and pressed downward by a coil spring 28. During the upward movement of the operating lever 14 the cam projection 30 carried by the said operating lever rides over the tooth or cam projection 29 on the upper end of the lever 25, said tooth or cam projection 30 yielding upward against the stress of the coil spring 28, so as to pass by the said tooth or cam projection 29. When, however, the operating lever 14 has nearly reached the limit of its upward movement the cam projection 30 thereon passes by the cam projection 29 on the lever 25, so that when the said lever 14 commences its downward movement the abrupt faces of the cam projections 29 and 30 will be in contact, thus causing the operating lever to impart, through the said lever 25, a slight additional forward movement to the ruffling blade carrier; but as soon as, in the downward movement of the operating lever 14, the tooth or cam projection 30 on said lever passes by the tooth or cam projection 29 on the lever 25 the forward movement of the ruffling blade carrier ceases and the backward movement thereof is ef-

fectured from said operating lever 14 through the connections such as are described in said Patent No. 983,048, hereinbefore referred to.

From the foregoing it will be apparent that the provision of the lever 25 and its operating cam projection 29, in coöperation with the yielding cam projection 30 carried by the operating lever 14 enable the final forward movements of the ruffling blade to be effected during the first part of the descent of the operating lever 14 with the needle-bar, instead of having said forward movements fully completed at the upward movements of the needle-bar, as in similar rufflers heretofore made. From this it results that, in the operation of the improved ruffler, the forward movements of the ruffling blade will be completed at the time when the needle thread is held taut by the take-up, as hereinbefore stated.

I do not herein claim broadly the combination, in a sewing machine ruffler, of an operating lever so connected with the ruffling blade carrier as to impart a forward movement to said ruffling blade on the upward movement of said operating lever with the needle-bar of the machine, and means for imparting an additional forward movement to said ruffling blade during the first part of the downward movement of said operating lever with the needle-bar; as such combination, broadly considered, is the invention of Emanuel J. Boyler, and is claimed in his application Serial No. 602,337, filed January 12, 1911, the present invention being an improvement upon the ruffler of the said Boyler application.

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

1. In a sewing machine ruffler, the combination with an operating lever adapted to be actuated from the needle-bar of a sewing machine and provided near its fulcrum with a yielding tooth or cam projection, of a ruffling blade, a ruffling blade carrier, means for imparting a forward movement to said ruffling blade and its carrier during the upward movement of the said operating lever, and an auxiliary lever actuated from said operating lever and having a tooth or cam projection coöperating with the yielding tooth or cam projection carried by said operating lever, whereby the last part of the forward movement of the ruffling blade may be effected during the first part of the downward movements of said operating lever.

2. In a sewing machine ruffler, the combination with an operating lever adapted to be actuated from the needle-bar of a sewing machine, and a yielding tooth or cam projection carried by said operating lever, of a ruffling blade, a ruffling blade carrier, a pendulous lever actuated from said operating lever and connected with said ruffling

blade carrier to impart a forward movement to said carrier and blade during the upward movement of said operating lever, and an auxiliary lever also connected with said ruffling blade carrier and provided with a tooth or projection opposing the said yielding tooth or cam projection carried by said operating lever; whereby, during the first part of the downward movement of said operating lever, an additional forward movement will be imparted to said ruffling blade and carrier.

3. In a sewing machine ruffler, the combination with an operating lever adapted to be actuated from the needle-bar of a sewing machine, a ruffling blade, a ruffling blade carrier, a yielding lever actuated from said operating lever and connected with said ruffling blade carrier to impart a forward movement to said carrier and blade during

the upward movement of said operating lever, a spring-pressed pawl or lever carried by said operating lever and having a tooth or cam projection, an auxiliary lever also connected with said ruffling blade carrier and provided with a tooth or cam projection arranged so as to be opposed to and to cooperate with the said yielding tooth or cam projection carried by said operating lever; whereby, during the first part of the downward movement of said operating lever, an additional forward movement will be imparted to said ruffling blade and its carrier.

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

FRED. L. HUMESTON.

Witnesses:

HUBERT M. GREIST,
W. C. GREIST.

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