

(No Model.)

J. M. GREIST.
SEWING MACHINE RUFFLER.

No. 587,257.

Patented July 27, 1897.

Fig. 1.

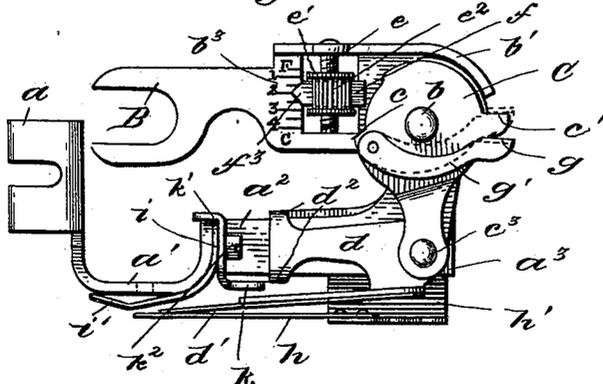


Fig. 2.

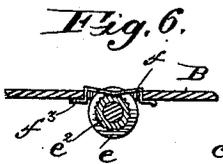
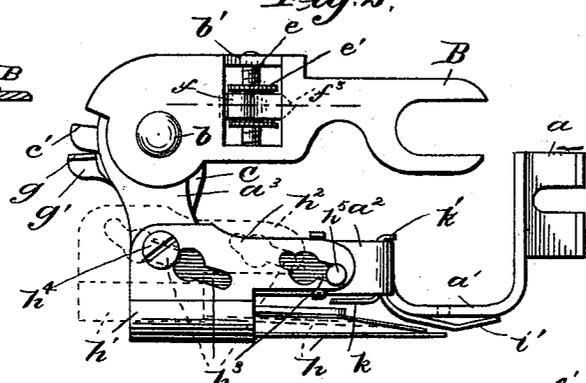


Fig. 4.

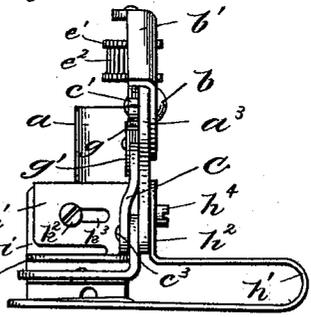


Fig. 3.

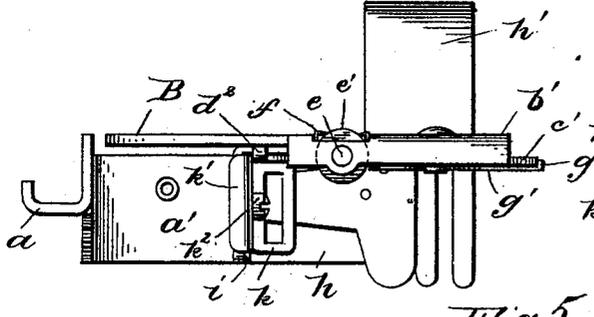


Fig. 7.

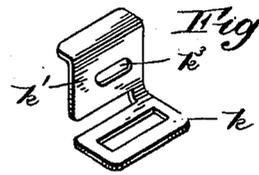
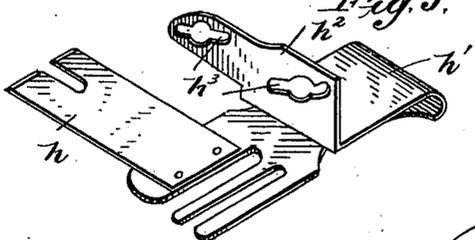


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN M. GREIST, OF NEW HAVEN, CONNECTICUT.

SEWING-MACHINE RUFFLER.

SPECIFICATION forming part of Letters Patent No. 587,257, dated July 27, 1897.

Application filed July 23, 1896. Serial No. 600,197. (No model.)

To all whom it may concern:

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

My invention relates to sewing-machine rufflers or ruffling attachments, and has for one of its objects to provide a ruffler in which the throw of the ruffling-blade may be adjusted with great nicety or delicacy, so that the said blade may have a great number of varying or different strokes, and also to provide means whereby the proper timing thereof may be retained when the throw of the needle-bar is changed to adapt the ruffler to be operated from the needle-bars of sewing-machines in which the needles have different or varying vertical movements without throwing the ruffling-blade out of proper timing. My improved ruffler also comprises means whereby the separator-plate may be withdrawn from operative position without being removed from the ruffler when it is desired to use the attachment for shirring in connection with a shirring-plate attached to the work-plate of the machine or to the throat-plate or shuttle-cover slide.

In the accompanying drawings, Figures 1 and 2 are opposite side views of my improved ruffler; and Figs. 3 and 4 are plan and end views, respectively, of the same. Fig. 5 is a detail view of the separator-plate and its support detached. Fig. 6 is a detail view showing the adjusting-nut and the movable index operated thereby. Fig. 7 is a detail perspective view of the guide for an upper strip.

The framework of the ruffler comprises the bracket portion *a*, by which the attachment is secured to the presser-bar of a sewing-machine, the foot portion *a'*, the arm *a²*, and the standard *a³*, these parts being preferably all stamped or otherwise fashioned from a single piece of sheet metal.

B is the operating-lever, forked at its forward end to embrace a pin or screw head on the needle-bar of the machine, to which the ruffler is to be attached, said lever being pivoted by means of a stud *b* to the standard *a³*

and being provided near its rear end with a horizontal lip or flange *b'*.

C is a secondary lever also pivoted on the stud *b* and provided with the shoulders *c* and *c'*, the said lever being jointed at its lower end to a slide *d*, to which is attached the ruffling-blade *d'*, and said slide being bent into right-angular form and having lips *d²* at the forward end of its upper portion to embrace the arm *a³* of the ruffler-frame, said lips thus serving to steady and guide the said slide, which is held in place thereby and by the rivet *c³*, by which said slide is jointed to said lever *C*.

To the flange *b'* of the lever *B* is attached a screw-threaded stud *e*, on which is mounted a nut *e'*, vertically movable in an opening *b²* in said lever, said nut having a central grooved portion *e²*, provided with teeth. To retain the nut *e'* in any position to which it may be adjusted, I provide a small yoke-spring *f*, having a V-shaped bend to form a point or apex adapted to engage the teeth of said nut, the ends of said spring being formed as lips, which are in contact with the inner face of the lever *B* and one of which ends is formed as an index-finger or pointer *f³*, movable adjacent to a graduated scale *b³*, formed on the lever *B*.

The lever *C* is operated in one direction from the lever *B* through the nut *e'*, which serves as an adjustable abutment or contact part and which is arranged to engage the shoulder *c* of the said lever *C*, and in the other direction by the flange or finger *b'* of the said lever *B*, which serves as the other contact part and which is arranged to engage the shoulder *c'* of the said lever *C* or to impinge against a finger or device interposed between said shoulder *c'* and the end of said flange. This interposed device in the form of my invention herein shown consists of a small lip or finger *g*, carried by a pivoted arm *g'*, attached to the lever *C* and adapted to be adjusted to the position shown in dotted lines in Fig. 1, so as to bring the said lip or finger between the said shoulder *c'* and the end of said flange *b'*, so as to retain the proper timing of the ruffler-blade when the device is operated from a needle-bar having a different length of stroke. With the arm *g'* adjusted to the position shown in full lines in Fig. 1 the ruffler may be adapted for operation in

connection with a sewing-machine—such, for example, as a Singer vibrating-shuttle machine—in which the needle-bar has a comparatively large vertical throw; but to adapt
 5 the ruffler for operation in connection with another machine—such, for example, as a Singer oscillating-shuttle machine—in which the needle-bar has a lesser throw the arm g' may be adjusted to the position shown in dotted lines in Fig. 1 to bring the lip or finger g
 10 between the flange b' and the shoulder c' . Thus by this simple adjustment the ruffler is adapted for use in connection with two different classes of sewing-machines in which the
 15 needle-bars have different throws.

In the operation of my ruffler there will be more or less lost motion between the lever B and the lever C, according to the position of the regulating-nut e' , which, as above stated,
 20 serves as an adjustable abutment or an adjustable connection between said levers, so that by lowering said nut on its stud e the throw of the ruffler-blade will be increased, and by raising said nut the throw of the ruffler-blade will be lessened, owing to the increased lost motion between the said levers B and C. The number of different adjustments of which the ruffling-blade is capable depends upon the number of teeth on the nut
 25 e' multiplied by the number of threads on the stud e , and it will thus be apparent that a great number of delicate or but slightly-varying adjustments of the ruffling-blade is thereby provided. The nut e' is held in any
 30 position to which it may be turned by the yoke-spring f , the point or apex of which is in yielding contact with the teeth e^2 of the said nut, while the upper and lower walls of the annular groove in said nut (at the bottom of which groove said teeth are formed and in which said spring is placed) serve by engagement with said spring to raise and lower the latter as said nut is turned on its screw-stud e , so that the index-finger or pointer f^2 , formed at one end of said spring,
 35 will be moved to varying indicating positions relative to the graduated scale b^2 , formed on the lever B, as said nut is raised or lowered.

The separator-plate h is carried by an arm
 40 h' , bent into the form of a loop and having integral therewith the vertical flange h^2 , provided with inclined openings h^3 , which receive a screw h^4 , by which the separator-plate is secured in place in any desired position, and a stud or rivet h^5 , which assists in
 45 steadying the separator-plate-supporting arm in place. When the parts are adjusted as shown in Figs. 1 and 2, with the separator-plate in its forward position, the said plate is adapted to serve its usual purpose of keeping the ruffling-blade out of contact with the work passing beneath it, but if it be desired to adapt the attachment for shirring in connection with a shirring-plate to be attached
 50 to the work-plate of the machine, or to the throat-plate or shuttle-cover slide, the screw h^4 may be loosened and the separator-plate-

supporting arm may then be adjusted to the position shown in dotted lines in Fig. 2, and being thus withdrawn rearward and raised
 55 upward, owing to the inclined slots h^3 , through which the shank of the screw h^4 and the stud or rivet h^5 extend, it will be out of the way, and therefore need not be entirely removed from the attachment when shirring
 60 is to be done.

For cheapness of construction the parts comprising my improved ruffler are preferably stamped out of sheet metal, but in this stamping process it is difficult to mold the
 65 relatively thick metal of which the presser-foot part a' of the frame of the attachment is composed into proper shape—that is to say, it is difficult to form it with a suitable shoulder for proper coöperation with the ruffling-blade. In order that this shoulder may be properly formed from sheet metal, I prefer to employ a false plate or sole i , which is to extend beneath the bottom of the presser-foot, and which, being of comparatively thin
 70 metal, may easily be stamped into shape to form the bend or shoulder i' , which is essential to the proper operation of the ruffling-blade. The plate i may be attached to the presser-foot in any suitable manner, as by a
 75 rivet or screw.

Attached to the toe or turned-up portion of the presser-foot part of the attachment is a strip-guide k , which has a shank portion k' ,
 80 by means of which it may be attached to the presser-foot, as by a screw k^2 , passing through a slot k^3 in said shank, and which slot permits of a lateral adjustment of the said guide, the latter being thus supported above and in
 85 position over the ruffling-blade or its operating-slide.

It will thus be seen that I provide a ruffler consisting of comparatively few parts, and all of which are capable of being stamped out of sheet metal, which is strong and efficient in
 90 operation, and which is capable of a large number of delicate adjustments, as well as being adapted for use in connection with different kinds of sewing-machines.

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

1. In a sewing-machine ruffler, the combination with a suitable supporting-frame, of a reciprocating ruffling-blade, primary and
 100 secondary levers operatively connected with said frame, said secondary lever being provided with two shoulders and said primary lever having a screw-threaded stud and two contact parts and one of which parts consists
 105 of an adjustable nut movable on said threaded stud, and means for retaining said nut in any desired position of adjustment.

2. In a sewing-machine ruffler, the combination with a suitable supporting-frame, of a reciprocating ruffling-blade, primary and
 110 secondary levers operatively connected with said frame, said secondary lever being provided with two shoulders and said primary
 115

lever having a screw-threaded stud and two contact parts, and one of which parts consists of an adjustable nut movable on said threaded stud, said nut having an annular groove and a toothed portion formed at the bottom of said groove, and a resilient or yielding retaining device entering said groove and engaging the teeth at the bottom thereof, and serving to hold the nut in any desired position while permitting it to be turned for adjustment.

3. In a sewing-machine ruffler, the combination with a suitable supporting-frame, of a reciprocating ruffling-blade, primary and secondary levers operatively connected with said frame, said secondary lever being provided with two shoulders and said primary lever having a screw-threaded stud and two contact parts, and one of which parts consists of an adjustable nut movable on said threaded stud, said nut having an annular groove and a toothed portion formed at the bottom of said groove, and a yoke-spring in said groove and engaging the teeth at the bottom thereof, said primary lever being also provided with a graduated scale, and said yoke-spring having an adjustable pointer or finger movable adjacent to said scale.

4. In a sewing-machine ruffler, the combination with the framework thereof, of a reciprocating blade, a primary operating-lever constructed to be actuated from the needle-

bar of a sewing-machine and provided with contact parts or devices, a secondary lever operatively connected with said ruffling-blade and having contact-shoulders, and an adjustable device which may be interposed between one of said shoulders and a contact part of the said primary lever, to effect the proper timing of the ruffling-blade with a sewing-machine the needle of which has a different throw from the needle-bar of a machine for which the ruffler is adapted when said adjustable device is not thus interposed.

5. In a sewing-machine ruffler, the combination with the attachment-frame, the ruffling-blade and its operating mechanism, of a separator-plate the attaching portion of which is provided with inclined slots, and a fastening device by means of which said separator-plate may be held in any desired position on said frame, said inclined slots permitting the said plate to be withdrawn from operative position and lifted out of the way without necessitating the removal of said plate from the attachment when shirring is to be done.

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

JOHN M. GREIST.

Witnesses:

H. DAYTON STANNARD,
WM. S. BEECHER.