E. J. BOYLER.

SEWING MACHINE RUFFLER.

APPLICATION FILED FEB. 10, 1912.

1,041,730. Patented Oct. 22, 1912.

Fig. 1.

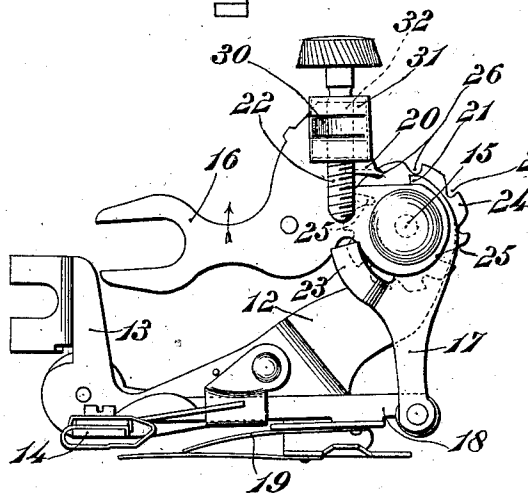


Fig. 3.

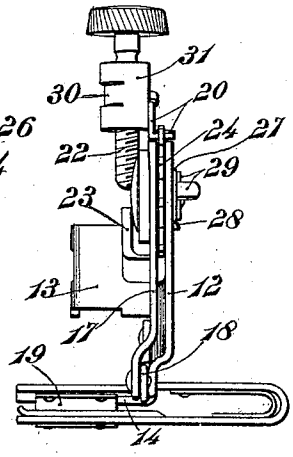


Fig. 2.

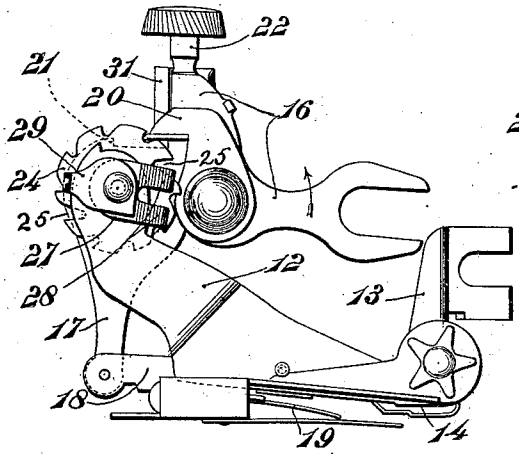


Fig. 4.

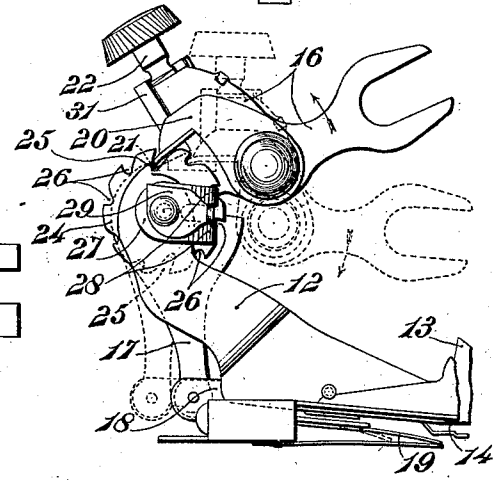


Fig. 5.

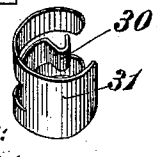


Fig. 7.

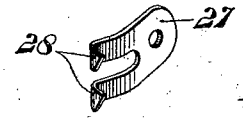
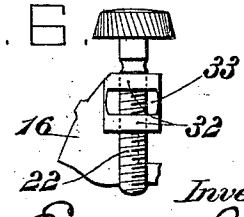


Fig. 6.



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UNITED STATES PATENT OFFICE.

EMANUEL J. BOYLER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE GREIST MANUFACTURING COMPANY, A CORPORATION OF CONNECTICUT.

SEWING-MACHINE RUFFLER.

1,041,730. Specification of Letters Patent. Patented Oct. 22, 1912.

Application filed February 10, 1912. Serial No. 676,722.

To all whom it may concern:

Be it known that I, EMANUEL J. BOYLER, a citizen of Canada, 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 therein to the accompanying drawings.

This invention relates to certain improvements in that class of sewing machine rufflers shown and described in U. S. Patents Nos. 629,736, 983,048, and 1,011,907, and adapted to make a plait or gather at each stitch; or, if it be desired to make wider plaits, to make only a single plait while several stitches are being made. This class of rufflers is commercially known as "five-stitch" rufflers, in that they are usually so constructed that when wide plaits are being made they make one gather or plait for each five stitches of the sewing machine.

The present invention has for its object to provide a ruffler, of the class referred to, which may be more conveniently changed from five-stitch work to plain work than the rufflers of the patents above mentioned, as also to provide a ruffler which may be made at less expense than previous similar rufflers.

In the accompanying drawings Figures 1 and 2 are opposite side views of the improved ruffler. Fig. 3 is an end view thereof, and Fig. 4 is a side view similar to Fig. 2 but with the ruffler adjusted for plain stitching. Figs. 5 and 6 are detail views to show the holding spring and the part on which it is mounted, and Fig. 7 is a detail view of the ratchet-wheel detent device.

Referring to the drawings, 12 denotes a standard which is a part of the frame of the ruffler, and which frame is preferably provided with an integral attaching portion or shank 13 by which the attachment may be secured to the presser-bar of the sewing machine in substitution of an ordinary presser-foot, the attachment including, as is usual, a presser-foot portion 14.

Pivotally mounted on a pin or rivet 15, passing through the upper part of the standard 12, is an operating lever 16 which is forked at its forward or free end for engagement with a roller-stud or pin to be carried by the needle-bar of the sewing machine; and also mounted on the said pin or rivet 15 is a pendulous lever 17 to the lower end of which is jointed a carrier 18 for the ruffling blade 19. The operating lever 16 carries a spring-pressed pawl 20 which is arranged to engage a shoulder 21 on the pendulous lever 17, when, in the upward movement of the operating lever 16, the ruffling blade is to be thrown forward for a ruffling stroke. Also mounted on the operating lever 16 is an adjustable contact screw 22 the lower end of which is arranged to engage the upper end of a contact finger 23 on the pendulous lever 17, for the purpose of moving the said lever backward to retract the ruffling blade. The throw of the ruffling blade may be regulated by adjustment of the said screw 22 which provides for more or less lost motion between the operating lever and the pendulous lever.

The construction thus far described is essentially the same as that of the ruffler shown and described in the application of H. M. Greist and E. J. Boyler, filed January 22, 1912; Serial No. 672,671, and the special improvements to which the present invention relates will now be described.

Mounted on the pivot pin or rivet 15 is a ratchet-wheel 24 having two deep notches 25 and a series of four shallower notches 26 between said deep notches. Attached to the standard 12, in any suitable manner, is a thin plate 27 having two spring fingers 28 adapted to bear frictionally against the side of the said ratchet-wheel, or to engage the teeth of said wheel, for the purpose of preventing backward movement thereof when five-stitch ruffling is being made. Also mounted on the pivot pin or rivet 15 is a small adjusting lever 29 which, when in the position shown in Fig. 4, bears against said spring fingers and thus presses them into holding engagement with the said ratchet wheel, the said spring fingers thus serving as a detent to prevent backward movement of said ratchet-wheel when the operating lever 16, carrying the spring-pressed pawl 20, moves downward. When, however, it is desired to do plain work, or to make a ruffle at each stitch, the adjusting lever 29 is turned to the position shown in Fig. 2, thus releasing the holding engagement of the spring fingers 28 with the ratchet wheel 24. If now the ratchet wheel be in such a position that

the pawl 20 is engaging one of the deep notches 25 of said ratchet wheel, the latter will oscillate with the operating lever 16, owing to the fact that the detent action of the spring fingers 28 has been released. Thus as the said ratchet wheel will oscillate with the operating lever 16 the pawl 20 will remain in the said deep notch and will thus be in such a position as to come in contact with the shoulder 21 on the pendulous lever 17 at each upward movement of the said operating lever. By virtue of this construction a ruffling stroke may be imparted to the ruffling blade at each reciprocation of the operating lever 16, for the purpose of forming plain ruffling consisting of short ruffles or gathers, or a ruffling stroke may be imparted to the said ruffling blade only at each five oscillations of the operating lever, for the purpose of forming "five-stitch" ruffling, consisting of relatively wide plaits or gathers.

In the present improved construction the adjustable contact screw 22 is frictionally retained in any desired position of adjustment by a spring finger 30 forming part of a segmental spring sleeve 31 which is adapted to be snapped or sprung onto the ear 32 on the operating lever 16, said ear being screw-threaded internally for the reception of the said adjustable contact screw. The said spring finger 30 is received in a notch 33 formed in the middle portion of said ear, so that it will bear frictionally against the said screw, and when in said notch it will serve to retain the said spring sleeve in position on said ear. This construction of the friction retaining device for the adjustable contact screw is much cheaper to make than the friction retaining devices heretofore used in previous similar rufflers, and which previous devices have required certain punching and riveting operations in the manufacture of the rufflers.

From the foregoing it will be understood that the present invention provides a very simple and convenient form of adjustment in changing a "five-stitch" ruffler from one class of work to another, and also provides, in the friction device for the adjusting screw, a spring sleeve having a spring finger which not only retains the adjusting screw in any desired position of adjustment, but holds the spring sleeve itself in place.

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

1. In a sewing machine ruffler, the combination with a ruffler and its operating parts, comprising a spring-pressed pawl, of a ratchet-wheel having deep and shallow notches, a detent device for said ratchet wheel, and a movable adjusting device adapted to cause the said detent device to prevent the rotation of said ratchet wheel when five-stitch ruffling is to be performed, and which adjusting device may be moved to a position to release the said detent device.

2. In a sewing machine ruffler, the combination with a ruffler and its operating parts, comprising a spring-pressed pawl, of a ratchet-wheel having deep and shallow notches, a detent device for said ratchet-wheel, and a movable adjusting device adapted to cause the said detent device to prevent the rotation of said ratchet-wheel when five-stitch ruffling is to be performed, and which adjusting device may be moved to a position to release the said detent device, said detent device comprising a plate having one or more spring fingers adapted to be pressed in engagement with said ratchet-wheel, and the said movable adjusting device consisting of a lever adapted to be engaged with or removed from the said spring fingers.

3. In a sewing machine ruffler, the combination with an operating lever provided with a notched, internally threaded ear, of a ruffling blade, means for reciprocating the said blade from said lever, said means comprising an adjustable contact screw mounted in said threaded ear, a spring sleeve frictionally fitting the said threaded ear and having a spring finger to frictionally engage the said screw through the notch formed in said ear.

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

EMANUEL J. BOYLER.

Witnesses:
W. C. GREIST,
H. B. DARTON.

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