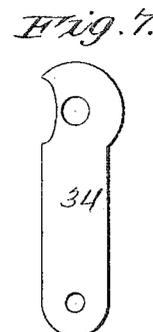
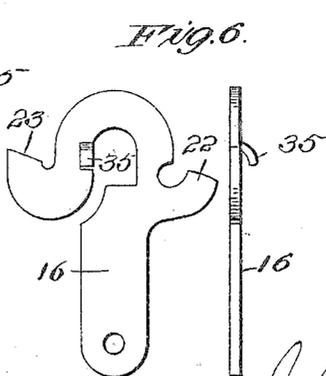
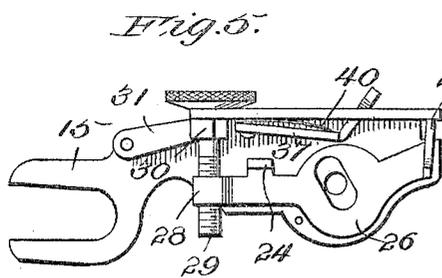
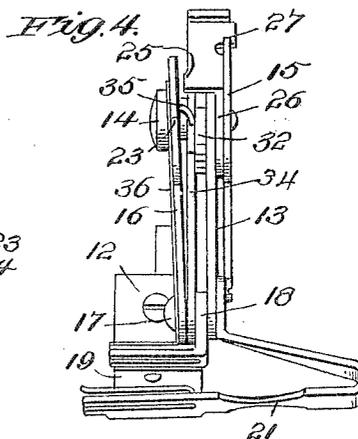
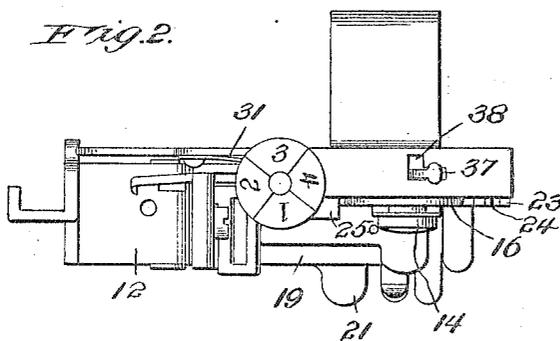
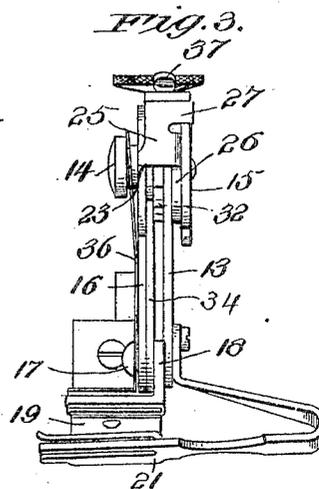
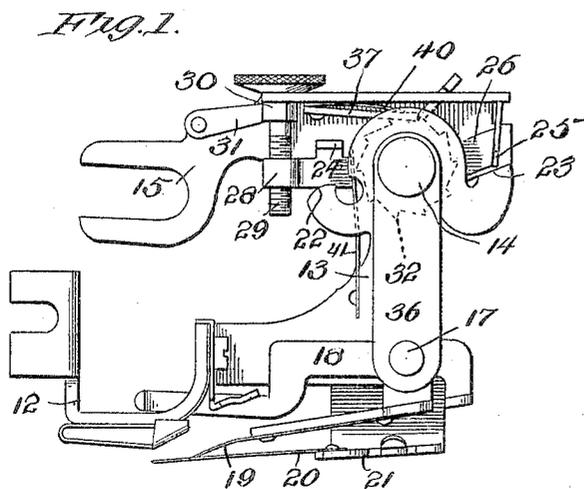
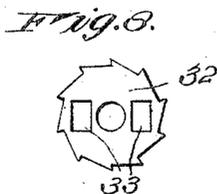


J. M. GREIST.
SEWING MACHINE RUFFLER.
APPLICATION FILED JAN. 26, 1905.



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UNITED STATES PATENT OFFICE.

JOHN M. GREIST, OF NEW HAVEN, CONNECTICUT.

SEWING-MACHINE RUFFLER.

No. 802,635.

Specification of Letters Patent.

Patented Oct. 24, 1905.

Application filed January 26, 1905. Serial No. 242,713.

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 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 that class of sewing-machine rufflers which are operated from the needle-bars of the machines and in which the ruffling-blade may be operated to form a ruffle or gather at each stitch or may be so adjusted as to form one ruffle or gather only at several stitches; and the invention has for its object to provide a ruffler of the class referred to which may be cheaply manufactured and which will be convenient and efficient in operation.

In the accompanying drawings, Figure 1 is a side view of a ruffler embodying the invention, and Fig. 2 is a plan view of the same. Figs. 3 and 4 are end views looking from the right of Fig. 1 with the secondary lever in different positions in the two views. Fig. 5 is a detail view of the main or needle-bar lever and the parts operated thereby. Fig. 6 represents the secondary lever in elevation and edge view, and Fig. 7 is a detail view of the link cooperating therewith. Fig. 8 is a detail view of the ratchet-wheel.

Referring to the drawings, the frame of the attachment comprises the presser-foot portion 12 and the standard portion 13, which is preferably integral with said presser-foot portion and which supports the stud or pivot-pin 14. The main or needle-bar lever 15 and the secondary lever 16, loosely connected therewith, are both fulcrumed on the said stud or pivot-pin, and the said secondary lever has a pivotal connection at 17 with the sliding carrier 18, to which the ruffling-blade 19 is secured in any suitable manner, said ruffling-blade cooperating in the usual way with a separator-blade 20, attached to a holder 21, which is preferably removably secured to the ruffler-frame. The said secondary lever is provided with shoulders 22 and 23, which serve as stops or abutments for contact with the adjustable stops or abutments 24 and 25, moving with the main or needle-bar lever 15, and which are preferably formed in a regulating plate or lever 26, adjustably connected with the said main or

needle-bar lever. The part 26 is pivoted by a lug 27 to the needle-bar lever and is provided at its opposite end with a threaded eye or sleeve 28, entered by an adjusting-screw 29, swiveled to the needle-bar lever 15 and having a squared or polygonal portion 30 pressed against by a small spring 31, which prevents the said screw from turning accidentally, so as to disturb the adjustment. The shoulder 23 on the secondary lever is preferably inclined, and the stop or abutment 25 on the regulating-lever will be moved inward relative to said shoulder 23 when the opposite end of the said regulating-lever is moved upward by the adjusting-screw to increase the lost motion between the stops or shoulders 22, 23, 24, and 25, and thus as the throw of the ruffling-blade is increased or diminished by changing the position of the said regulating-lever 26, the backward throw of the said ruffling-blade will have a greater variation than the forward throw thereof from the central or middle position of said blade, as is usually desirable in this class of devices.

Mounted on the stud or pivot-pin 14 is a small ratchet-wheel 32, having in the present instance ten teeth, said wheel being provided with two recesses or slots 33 of proper size to receive a small lug or projection 35 on the secondary lever 16, so that when the said lug or projection is received in one of said recesses the said secondary lever will be in such position that the shoulder or stop 23 will be within the range of movement of the shoulder or stop 25 on the regulating-lever 26, which moves with the main or needle-bar lever 15. When the parts are in the position just described, the said secondary lever will be operated from the main or needle-bar lever to force the ruffling-blade forward to form a ruffle or gather; but when it is desired that only one ruffle or gather be formed during the time when several stitches are being made the said secondary lever is moved laterally to the position shown in Fig. 4, so as to be out of the range of movement of the said shoulder or stop 25. This result is effected by the ratchet-wheel 32, which when rotated to such a position that the lug 35 of the said secondary lever is not received in a recess or slot 33 of the said ratchet-wheel, but is against the face of the latter, said secondary lever will be forced laterally by said lug 35 against the pressure of the spring 36, (see Fig. 4,) so as to be out of range of move-

ment of the shoulder or stop 25, moving with the main or needle-bar lever, and thus until the ratchet-wheel is rotated to such position as to again bring one of its recesses or slots 33 into register with the said lug or projection 35 on the said secondary lever the ruffling-blade will fail to be operated to form a ruffle or gather.

In the construction shown in the present instance when the parts are operated as just described the secondary lever will be held in its inoperative position during four strokes of the needle-bar or during the time when four stitches are being made and will resume its operative position to form a ruffle when the fifth stitch occurs. The said ratchet-wheel is intermittently rotated by a spring-pressed pawl 37, attached to the main or needle-bar lever 15; but when it is desired to form a ruffle or gather at each stitch or at each upward movement of the needle-bar the said pawl 37 will be thrown into an inoperative position by engaging its upper projecting end with the notch 38, formed in the upper wall or flange of the said needle-bar lever 15, thereby holding said pawl up out of engagement with the ratchet-wheel, and thus suspending the rotation of the latter, it being understood, of course, that the lug or projection 35 on the said secondary lever is at this time in one of the recesses or slots 33 of the said ratchet-wheel. The ratchet-wheel 32 is held from backward movement by a detent-spring 41, the pawl 37 being pressed against by the spring 40.

From the foregoing it will be understood that when it is desired to form a ruffle or gather at each stitch the operating-pawl 37 on the main or needle-bar lever will be thrown out of engagement with the ratchet-wheel in the manner just described; but when it is desired to form a ruffle or gather only once during the time when several stitches are being made, and thus make what may be termed "plaiting," rather than ruffling, the said operating-pawl will move so as to intermittently rotate the said ratchet-wheel, and thus one ruffle or gather will be formed in the construction of ratchet-wheel herein shown only at each fifth stitch made by the sewing-machine.

Between the ratchet-wheel 32 and the secondary lever 16 is preferably interposed the link 34, which is pivoted on the stud or pivot-pin 14 at its top and has a pivotal connection at 17 with the ruffling-blade carrier 18, said link being thus connected to the said secondary lever 16 to move back and forth therewith, but remaining stationary against the ratchet-wheel when the said lever is moved laterally to its inoperative position, as shown in Fig. 4. Said link, which is held in place laterally by a shoulder on the pivot 14, thus

serves to steady the loosely-mounted secondary lever, so that the latter will efficiently perform its functions.

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

1. In a sewing-machine ruffler, the combination with a supporting-frame, a ruffling-blade and loosely-connected main and secondary levers fulcrumed on said frame and from which said ruffling-blade is operated, of a ratchet-wheel provided with one or more slots or recesses, a lug or projection on said secondary lever to enter said slots or recesses, a spring to hold said secondary lever with its lug or projection toward said ratchet-wheel, but which will yield when said secondary lever is to be moved laterally to an inoperative position, and means for intermittently rotating said ratchet-wheel from said main or needle-bar lever.

2. In a sewing-machine ruffler, the combination with a supporting-frame, a ruffling-blade and loosely-connected main and secondary levers fulcrumed on said frame and from which said ruffling-blade is operated, of a ratchet-wheel provided with one or more slots or recesses, a lug or projection on said secondary lever to enter said slots or recesses, a spring to hold said secondary lever with its lug or projection toward said ratchet-wheel, but which will yield when said secondary lever is to be moved laterally to an inoperative position, a pawl, carried by said main lever, for intermittently rotating said ratchet-wheel, and means whereby said pawl may be held in an inoperative position when it is desired to suspend the movement of said ratchet-wheel.

3. In a sewing-machine ruffler, the combination with a supporting-frame and main and secondary levers fulcrumed on said frame, of a ruffling-blade operatively connected with said secondary lever, shoulders or stops on said secondary lever, an adjustable regulating-lever carried by said main lever and provided with shoulders or stops to engage said shoulders or stops on said secondary lever, a screw, carried by said main lever, for adjusting said regulating-lever, to vary the amount of lost motion between said main and secondary levers and thus regulate the throw of the said ruffling-blade, a ratchet-wheel, means for intermittently rotating said wheel from said main lever, and means, controlled by said ratchet-wheel, whereby said secondary lever will be rendered inoperative at intervals.

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

JOHN M. GREIST.

Witnesses:

HENRY CALVER,
GEO. W. REA.