(No Model.)

E. T. THOMAS & H. L. BREVOORT.

RUFFLER FOR SEWING MACHINES.

No. 270,512. Patented Jan. 9, 1883.

Figure 1.

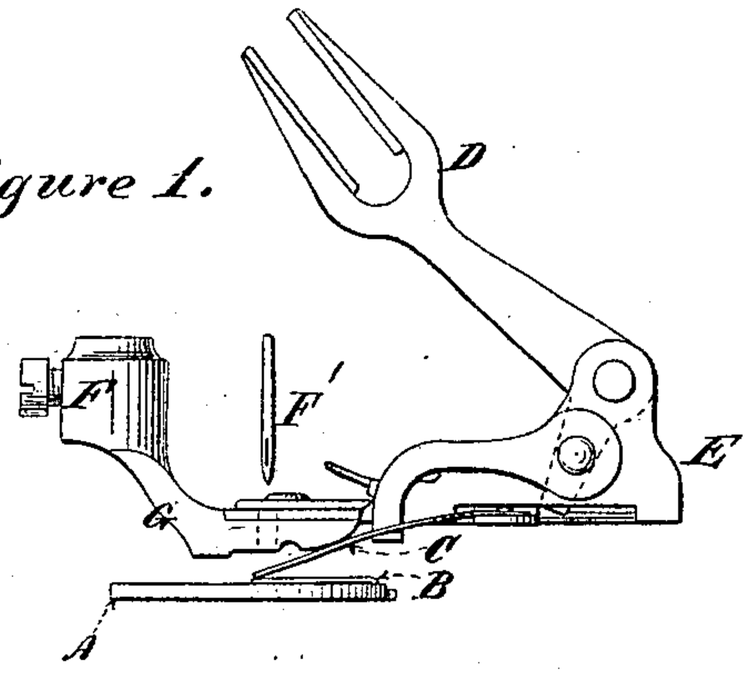


Figure 2.

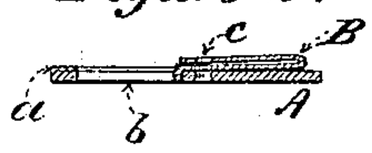


Figure 3

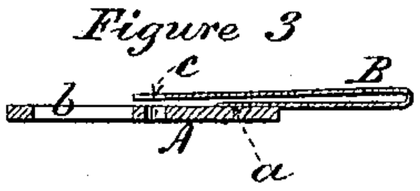


Figure 4.

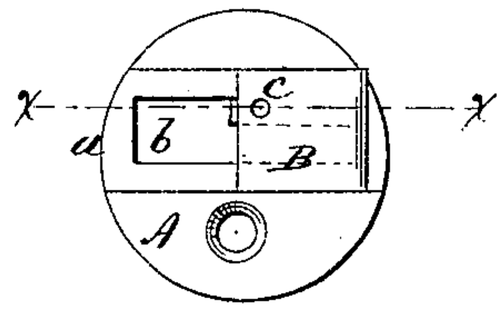


Figure 5.

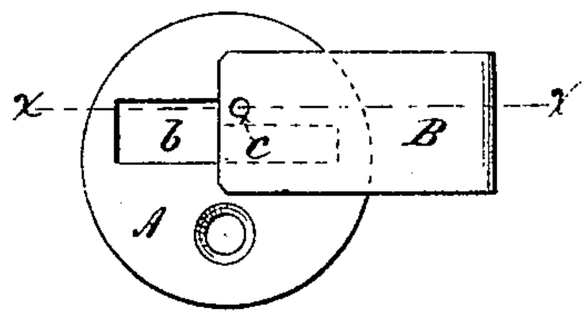
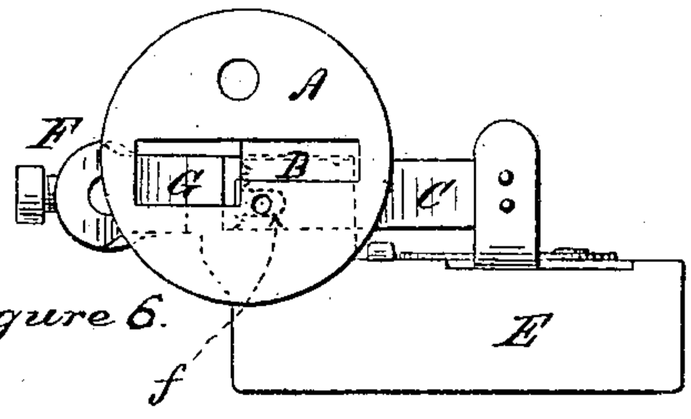


Figure 6.



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UNITED STATES PATENT OFFICE.

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RUFFLER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 270,512, dated January 9, 1883.

Application filed October 10, 1881. (No model.)

To all whom it may concern:

Be it known that we, EDDY T. THOMAS and HENRY L. BREVOORT, said THOMAS of the city, county, and State of New York, and said BREVOORT of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Ruffling and Shirring Attachments for Sewing-Machines, which improvement is fully set forth in the following specification.

The invention consists in a modification of ruffling attachments of the general class illustrated by the well-known Johnston ruffler, so as to enable the attachment to shirr as well as ruffle. Shirring consists of successive lines of gathering in the parts of the cloth not adjacent to its edges, as distinguished from ruffling where the gathering is adjacent to the edges of the cloth. With the form of ruffler which is adapted to be attached to the work-plate or cloth-plate of the machine, and in which the ruffler-blade acts upon the separator-plate attached to the frame of the ruffler, shirring cannot be done, because the cloth cannot be moved freely over the work-plate, the support or fastening of the separator and the frame of the ruffler being in the way.

The present invention relates more particularly to that class of rufflers in which the frame, ruffler-blade, and operating devices are supported on some part of the machine above the work-plate—the presser-bar, for example—the separator-plate or feed-guard being attached to the cloth-plate, work-plate, or slide-plate of the machine.

It consists in the improved construction of such feed guard or plate, as hereinafter more fully set forth.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side view of an ordinary Johnston ruffler with the separator removed, in connection with one of our improved feed-guards. Fig. 2 is a section, on line *x x* of Fig. 4, of the feed-guard and throat-plate; Fig. 3, a section on line *x x* of Fig. 5; Fig. 4, a top view of the feed-guard shown in Fig. 2; Fig. 5, a similar view of the feed-guard shown in Fig. 3, and Fig. 6 a bottom view of Fig. 1.

A is the needle-plate or work-plate of the machine, to which is attached the feed-guard B.

E is the ruffler, and C the ruffler-blade, which is caused to vibrate in the usual way through the instrumentality of the arm D, which is connected to the moving parts of the sewing-machine.

At F is shown that part of the ruffler E which is used for securing said ruffler to the presser-bar of the machine, and at G is shown the false presser-foot forming part of the ruffler E.

The feed-guard B, composed of a thin flexible piece of metal, is attached to the needle-plate, slide-plate, or throat-plate of the machine, and covers a portion of the feed-surface. A surface is thus furnished for the action of the ruffling-blade, while the edge of the blade is protected from the teeth of the feed movement, and the entire cloth or work plate is left clear, so that ruffles can be formed at any distance from the edge of the goods. To give the feed-guard sufficient elasticity to rise and fall with the feed, the said plate is attached by rivets, solder, or otherwise to the needle or cloth plate, and carried back from its point of attachment and bent upon itself.

In Figs. 2 and 4, as well as in Figs. 1 and 6, the feed-guard B is attached at *a* to the needle or throat plate, and bent upon itself, as described, the upper portion passing behind the needle; but in Figs. 2 and 4 the said feed-guard is so constructed and located as to lie entirely within the needle or throat plate. In attaching the feed-guard it is well to let said guard partly into the surface of the needle or throat plate, the groove formed to allow such insertion being at least as deep as the thickness of the metal used in forming the feed-guard. In Figs. 3 and 5, if the feed-guard is so let in, it must be sharply bent up for a short distance where it leaves the needle-plate, so as not to interfere with the insertion of the needle-plate in the sewing-machine. In Figs. 2 and 4 it will be noticed that the under portion of the feed-guard has to be cut away, or, rather, is best made with a hole in it to admit of the feed passing up through it, while the upper portion of the feed-guard is not cut away, except where the needle-hole is formed. In these

figures the point of attachment of the feed-guard to the throat-plate is shown at *a*, and the hole for the passage of the needle is shown at *c*. The free end of the feed-guard should not cover or extend longitudinally over the feed-opening *b* farther than is necessary to have made in it the needle-hole *c*, and in width the feed-guard should about correspond with the ruffling blade or knife C. In the drawings it is shown as somewhat wider than said blade.

In Figs. 1 and 6 the position of the ruffler-blade, ruffler, feed-guard, and needle-plate is shown. The blade C of the ruffler must act upon the upper surface of the material lying upon the top or upper surface of the feed-guard, and such blade should not in its forward throw pass beyond the end of the feed-guard, the ruffle being formed between the upper surface of the feed-guard and the bottom of the false presser-foot. The blade should be slotted, as shown at *f*, Fig. 6. In Fig. 1 the needle of the sewing-machine is shown at F′, and the relation which the blade should bear to the needle when moved forward its full extent also appears.

When the machine is in operation the bottom of the false presser-foot and the top surface of the feed-guard are separated only by the thickness of the material being ruffled. When the work is introduced or removed the ruffler is lifted with the presser-bar in the ordinary way.

The feed-guard might be attached to the bed-plate of the machine instead of to the throat-plate, slide-plate, or work-plate; but such construction would be less advantageous than those herein shown and described.

Having now fully described our said invention and the manner of carrying the same into effect, what we claim is—

1. The combination, with a ruffling or shirring device supported wholly above the cloth or work plate, of the feed-guard attached to the cloth-plate, throat-plate, or needle-plate of the machine, and rendered elastic or flexible by being bent back upon itself, substantially as described.

2. The detachable throat-plate for a sewing-machine, suitably perforated or cut away for the working of the feed-surface, and provided with an elastic feed-guard extending over a portion of the feed-surface, and consisting of a metal strip bent or doubled upon itself, as indicated, and having its upper end free, substantially as described.

3. As part of a ruffling or shirring attachment, the feed-guard described, attached to the throat or needle plate, which is cut away for the passage of the feed, said guard extending from its point of attachment forward over a portion of the feed-surface and then doubling upon itself and passing behind the needle, the lower portion or piece of said guard being perforated or cut away above the feed-surface, substantially as set forth.

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