(No Model.) 2 Sheets—Sheet 1.

W. DUDLEY.

RUFFLING AND SHIRRING ATTACHMENT FOR SEWING MACHINES.

No. 295,489. Patented Mar. 18, 1884.

Fig. 2

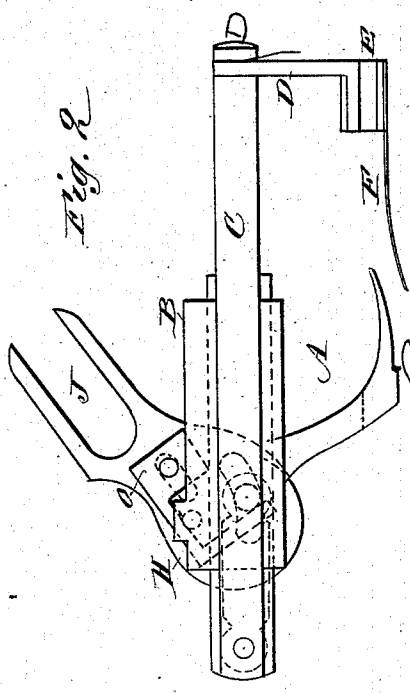

Fig. 4

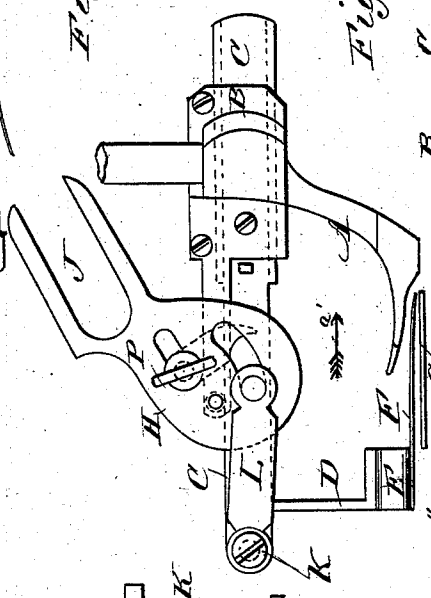

Fig. 5

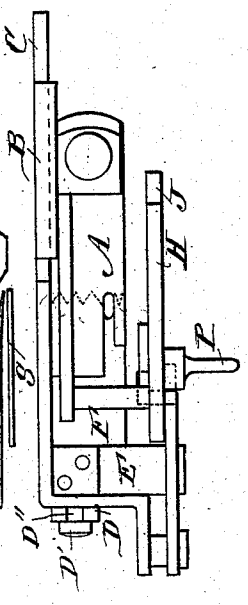

Fig. 1

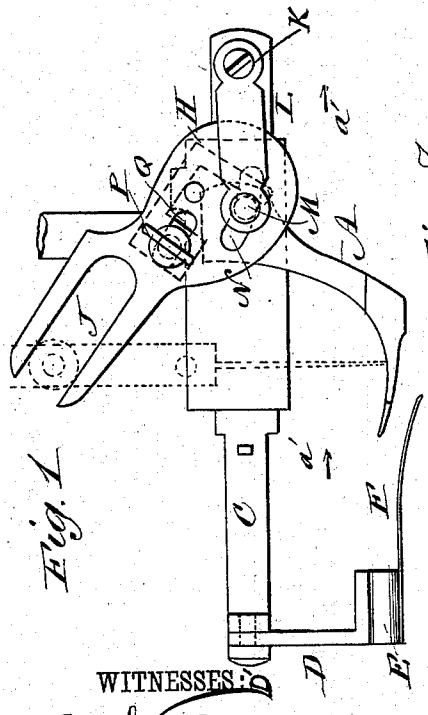

Fig. 3

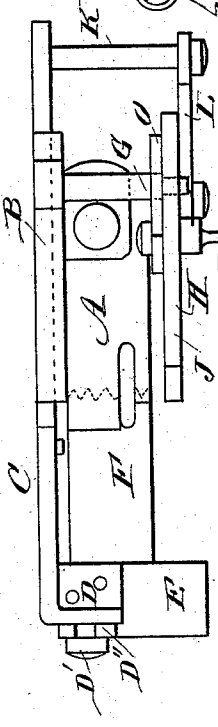

Fig. 6

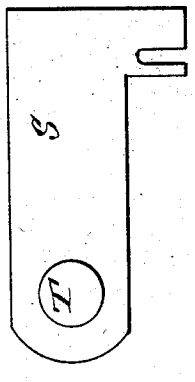

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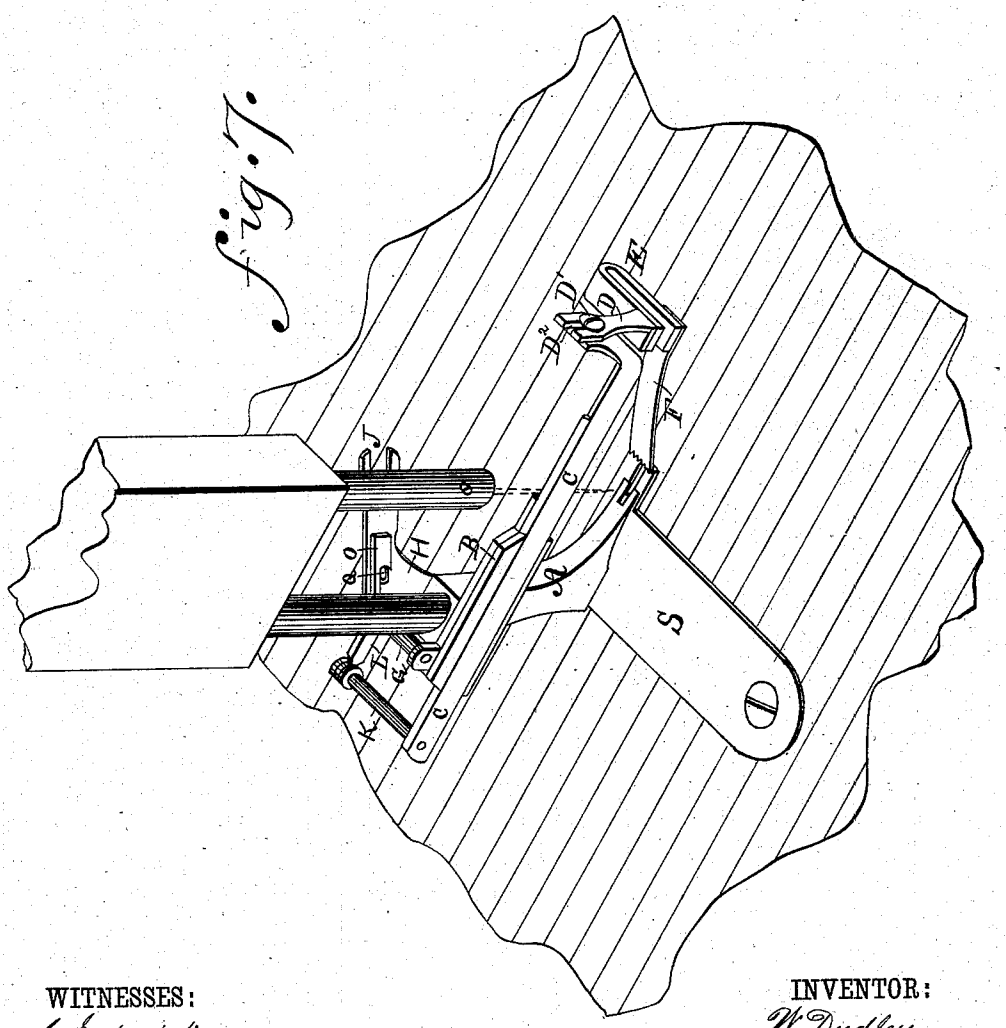
Fig. 1.



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UNITED STATES PATENT OFFICE.

WILLIAM DUDLEY, OF NEWARK, NEW JERSEY.

RUFFLING AND SHIRRING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 295,489, dated March 18, 1884.

Application filed May 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DUDLEY, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Ruffling and Shirring Attachment for Sewing-Machines, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved device of simple construction for overlapping or folding cloth or fabric to facilitate making ruffling and shirring.

The invention consists in a ruffling and shirring attachment for sewing-machines, as hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of one side of my improved ruffling and shirring attachment. Fig. 2 is a longitudinal elevation of the other side. Fig. 3 is a plan view of the same. Fig. 4 is a longitudinal elevation of a modification of the same. Fig. 5 is a plan view of the said modification. Fig. 6 is a plan view of the protector-plate which is placed on the feed-plate of the machine. Fig. 7 is a perspective view of the separator-plate and ruffling mechanism in working position on the bed-plate of a sewing-machine.

To the upper end of the presser-foot A, which is of the usual construction, and is held in place in the usual manner, a horizontal guide-frame, B, is fastened on one side, which guide-frame is provided with dovetailed grooves, in which a bar, C, slides, which is adapted to reciprocate horizontally. To that end of the bar C corresponding to the free end of the presser-foot A a downwardly-projecting arm, D, is held vertically adjustable by a screw, D′, passing through a vertical slot, D^2, Fig. 3, in the arm D. The said arm is provided at its lower end with an arm, E, to the free end of which a horizontal spring-finger, F, is attached, the free end of which is serrated and is bent downward slightly. A pintle, G, projects laterally from the frame B, or from the upper end of the presser-foot, and on the same a plate, H, is pivoted to rock, which plate is provided with a fork, J, adapted to surround a pintle or roller on the vertical reciprocating needle-bar of the machine, whereby the movement of the needle-bar can rock the said plate H. On that end of the sliding bar C opposite the one provided with the bar D a pintle, K, is fastened to project laterally, and to the outer end of the said pintle a connecting-bar, L, is pivoted, which is provided at its free end with a pintle, M, which passes through a curved slot, N, in the lower part of the plate H. A plate, O, is held on the inner side of the plate H by means of a thumb-screw, P, passing through a slot, Q, in the plate H. The plate O is of such length that its lower end can cross the slot N. By means of the winged nut P the plate O can be locked in the desired position, and can be adjusted a greater or less length from that end of the slot Q toward the fork J, whereby the size of the slot N will be increased or decreased accordingly.

In the modification shown in Figs. 4 and 5 the plate L is pivoted to the same end of the sliding bar C to which the arm D is fastened, and the fork J of the plate H is inclined from that end of the bar C provided with the arm D toward the needle-bar, whereas in the construction shown in Figs. 1, 2, and 3 the fork J is inclined from that end of the bar C opposite the one provided with the arm D toward the needle-bar, as is clearly shown. Otherwise the arrangement and construction of the parts are quite similar.

The operation is as follows: In a four-motion or drop-feed sewing-machine, when the needle is moved to its full height, the feed is also at its full height above the surface of the sewing-plate, and when the needle begins to descend the feed drops below the surface of the plate, so that when the needle has entered the goods the feed will be below the plate. As the needle passes through the goods the finger F is moved in the direction of the arrow *a′* and carries the ruffle up to the needle, which it cannot pass. When one ruffle is formed, the needle moves upward, thereby moving the finger in the reverse direction of the arrow *a′*. When the needle descends, another ruffle is made, and so on. The bar C, to which the finger F is attached, does not rock or swing, but reciprocates horizontally, and thus the finger F will always exert the same pressure on

the fabric on the bed-plate, and will not grasp the fabric and carry it forward by a swinging or rocking motion, but the motion is always straight and reciprocating. A much neater fold or plait can be formed if the spring-finger reciprocates than if it rocks or swings. By means of the plate O the length of the slot N can be regulated, and thus the length of the stroke of the bar B can be regulated as may be desired—that is, according to the size of the folds or plaits to be formed.

In the device shown in Figs. 4 and 5 the fork J of the plate H is also carried upward when the needle rises, and its connecting-bar L moves the rod C in the direction of the arrow a', and the spring-finger F forms a fold. When the needle-bar descends, the finger F is moved in the reverse direction of the arrow a' to get a grip on a fresh fold, and so on. In this case a fold is formed when the needle is raised, whereas with a device constructed as described above the fold is formed when the needle is lowered. Otherwise the operation of the device is the same, the spring-finger reciprocating horizontally, as described above. As the feeder of the machine is under the foot A when the needle rises, the serrated end of the spring-finger F will come in contact with the said feeding device and will be apt to injure the same. For this reason a guard-plate, S, is held by means of a suitable screw, T, on the bed-plate of the machine in such a manner that it will be interposed between the feeder and the spring-finger F, and will thus protect the finger from being injured by the said spring-finger.

The above-described attachment is to be used in case ruffles, gatherings, and shirrings are to be made.

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

1. In a ruffling-machine, the combination, with the frame B, of the sliding bar C, the arm D, provided with a slot, D^2, the screw D′, the ruffling-blade F, and device for reciprocating the bar C, substantially as herein shown and described, and for the purpose set forth.

2. In a ruffling attachment to a sewing-machine, the combination, with the grooved frame B, horizontally-reciprocating bar C, sliding in said frame, and provided with a pintle, K, to the outer end of which the bar L, provided with a pintle, M, is pivoted, slotted arm D, screw D′, and ruffling-blade F, of the rocking plate H, forked at J, to surround a pintle on the needle-bar, and provided with the slots N Q and adjustable plate O, substantially as shown and described.

WILLIAM DUDLEY.

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