

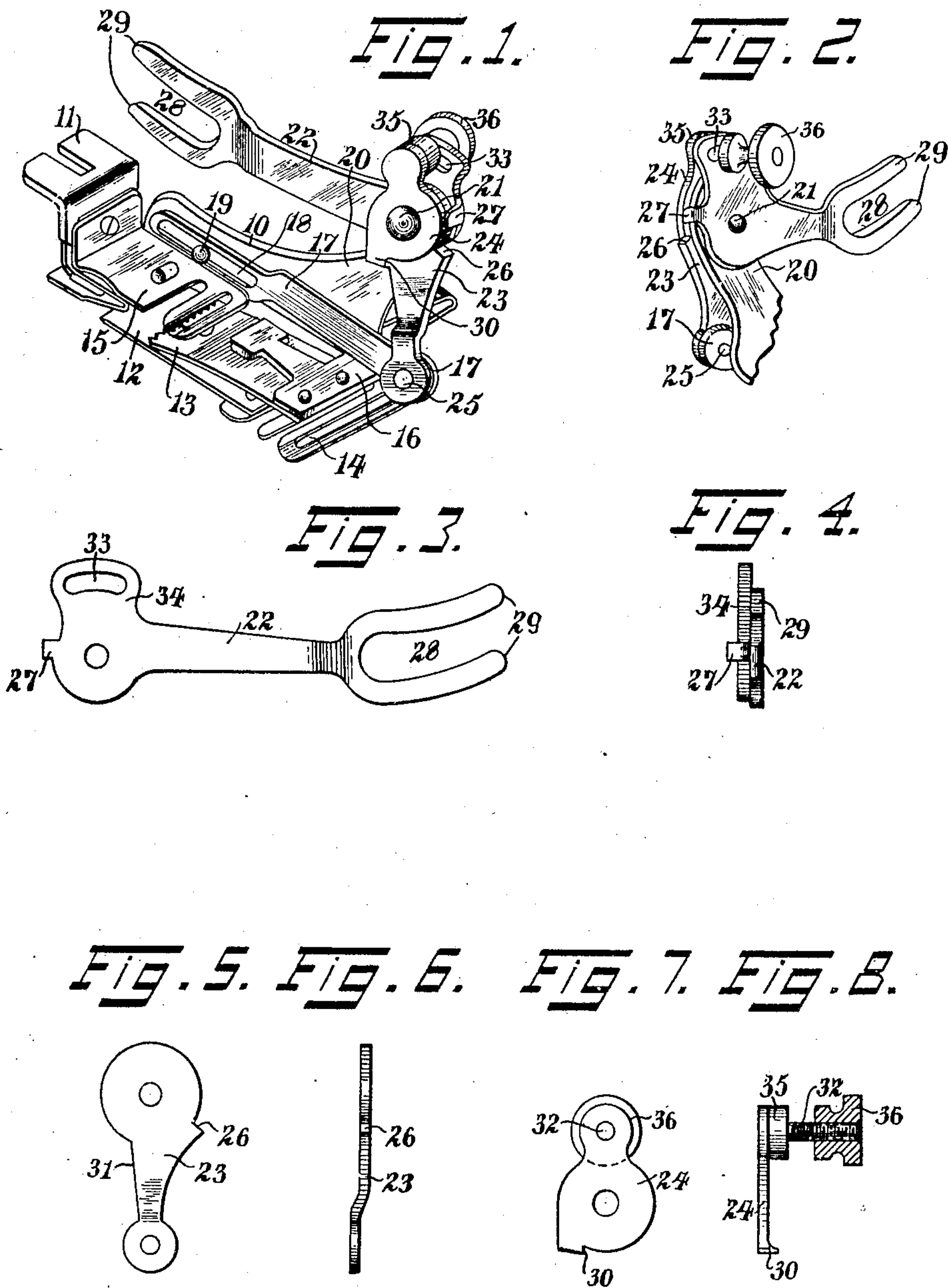
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RUFFLER ATTACHMENT FOR SEWING MACHINES.

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RUFFLER ATTACHMENT FOR SEWING-MACHINES.

No. 882,323.

Specification of Letters Patent.

Patented March 17, 1908.

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To all whom it may concern:

Be it known that I, AMHERST G. LAMB, a citizen of the United States, residing in Torrington, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Ruffler Attachments for Sewing-Machines, of which the following is a specification.

This invention relates to and has for an object to provide improved ruffler attachments for sewing machines, and has particular reference to the adjustment of the length of stroke of the gathering or ruffler blade.

By the present improvement the gathering or ruffling blade will be advanced to its forward position by mechanism preferably controlled by the needle bar of the sewing machine in its upward stroke, the down stroke of the needle bar will retract the blade a predetermined distance over the fabric and place it in position for gathering up the cloth and making the next ruffle. The entire stroke of the needle bar may be utilized for this backward movement, or the parts may be so adjusted that a certain amount of one stroke, for instance the down stroke, will be idle. In the present instance the link for advancing the ruffler blade will be engaged by a lug preferably fixed upon an arm engaging or controlled by the needle bar for advancing the blade to the forward end of its stroke, such forward end of the stroke being constant. Another lug will be provided for adjustment rigidly with such arm for returning the blade to its backward position. The various parts are so constructed that they cooperate in forming an efficient structure and one having considerable stability. The operative parts for controlling the gathering or ruffling blade are mounted upon a single stud, and since the parts have movement one relative to the other upon such stud these cannot be fixed rigidly to the stud, but there must be a working fit upon the stud, and one relatively to the other; but those parts which have all their movements in unison after adjustment will be so securely held together that whatever play is had upon the stud will be compensated for, and the parts which have movement relative to these will be steadied.

In the drawings accompanying and forming a part of this specification, Figure 1 is a perspective view of a form of ruffler provided with a practicable embodiment of the

present improvement. Fig. 2 is a perspective view of a portion of the device looking at the same from the opposite side to that seen in Fig. 1. Fig. 3 is a face view of an actuating arm formed for the engagement of the needle nut of the sewing machine needle bar. Fig. 4 is a view of such arm as seen from the left hand end in Fig. 3. Fig. 5 is a face view of a form of link for connection between the actuating arm and the ruffler blade. Fig. 6 is an edge view of this link. Fig. 7 is a face view of the plate or member for the retraction of the ruffler blade; and Fig. 8 is an edge view of the blade illustrated in Fig. 7, a vertical section of the set nut, and the set screw in elevation are shown.

The form of the ruffler parts of the device are not a part of the present improvement, and therefore will simply be described in a general way. These parts are carried by a frame, designated in a general way by 10, which in the present practice of the sewing machine attachment industry will be made out of sheet metal, as are substantially all of the other parts of the device. The frame has a portion 11 for attachment to the sewing machine presser bar after the removal of the presser foot. The frame also carries a separator plate 12 above which the gathering or ruffler blade 13 is arranged for reciprocation. The frame may also carry some suitable and desirable guides, in the present instance two such guides, designated by 14 and 15, are illustrated. The ruffler blade is carried in the present instance by an arm 16 laterally projecting from a slide or reciprocatory bar 17, which has a slot 18 guided by a pin 19 carried by the frame. The frame has an upstanding portion 20 which affords a bearing for the stud 21 upon which the actuating arm 22 and the link 23 are pivotally mounted, in conjunction with the plate 24. It will be seen that the portion of the frame 20 and the link 23 are embraced between the arm 22 and the plate 24. The link 23 is pivoted at 25 to the slide 17, and is provided at its back end with an engaging face 26 for the engagement of a face carried by the arm 22 in the upward movement of the forward end of the arm and the downward movement of the back end; such face in the present instance is upon a transversely disposed lug 27 upon the rear of the arm, which arm upon being elevated, in the present instance by means of the needle nut

freely riding in the space 28 between the arms 29, will give the advance stroke to the ruffler blade. In the present illustration the lug 27 is fixed relative to the arm 22 and the limit of the forward movement of the ruffler will consequently be fixed and constant. The return or backward movement of the ruffler blade is effected by means of an engaging face, in the present instance carried by a lug 30 extending from the plate 24, and in such a position that it will engage a face, as for instance a face 31 of the link 23 upon the backward movement of the lug and the downward movement of the forward end of the actuator arm, the plate 24 is adjustable upon the stud 21 and after adjustment is rigidly secured to the arm 22 and together they move about the axis of the stud. Such adjustment of the plate relative to the arm determines the backward movement of the ruffler blade over the fabric, and consequently determines the amount of fabric which will be gathered up for the next succeeding ruffle in the next ruffling operation. The adjustment is effected and secured by means of a stud 32 rigid with the plate 24 passing through a slot 33, in the present instance sector shaped and in the upstanding portion 34 of the arm 22. A block 35 is shown surrounding the stud 32 and rigid with the same and with the plate 24, in the present instance such block is of a thickness equal to the thickness of the portion 20 of the frame member and the link 23 in addition to the amount of space required for the proper working of the parts. After the plate 24 has been adjusted upon the stud relative to the arm 22 it will be located in its position of adjustment by means of a set nut 36 upon the screw stud 32. This will compel the arm and plate to move in unison and to move the ruffler blade by engaging the link upon the up and down strokes of the arm. The whole device is steadied by means of the above described connection between the plate and the arm. The stud 21 may be riveted or staked, as the case may be, into the arm 22 and moved with the same, and upon the plate 24 being clamped to the arm these two members will control the stud and there will be but little play between the other parts which are mounted upon the stud and these parts which carry the same. It will be seen that the adjustment of the plate, as for instance by moving the stud toward the left in Fig. 1 to the full extent of its movement, will cause the link to be grasped between the engaging members 27 and 30 which will then move the link without any lost motion. The movement, however, of the stud toward the right in Fig. 1 will give a greater or less amount of lost motion in the down stroke of the needle bar and a shorter or longer gathering or ruffling stroke. When the device is made in substantially

the manner herein indicated in the drawings, having a sheet metal frame 10, the upstanding portion 20 will present two flat side faces, and the actuator arm 22 will present a flat side face against one of such side faces of the upstanding portion 20, the stud 21 will be securely fastened to such arm 22 and find a bearing in the upstanding portion 20 of the frame. The link 23, which is mounted loose upon said stud 21 and is pivoted to the device carrying the ruffler blade 13, will also present two flat faces, one of which engages the flat face of the upstanding portion 20 upon the opposite side to that engaged by the arm, and the other side of said link 23 will be engaged by the side of the plate 24, which will be adjustable relative to the arm 22, the arm 22 and plate 24 carry lugs or other engaging faces 27 and 30 which will engage the edges 26 and 31 of the sheet metal link 23. It will be seen that the stud 21 together with a set screw 32 is rendered highly efficient in imparting rigidity to the device by means of these flat face engagements.

Having described my invention I claim:

1. In a ruffler attachment for sewing machines embodying a frame and a reciprocatory ruffler blade, the combination with a link pivoted to the blade, of an arm having a fixed face for engaging the link and shifting the ruffler blade in one direction, a plate adjacent to said arm and having a face for engaging the opposite side of said link and returning the blade, said arm having a slot, a screw stud traversing said slot and rigidly carried by the plate, and a set nut upon said stud.

2. In a ruffler attachment for sewing machines, the combination with a frame, of a ruffler blade reciprocatory upon the frame, a link pivoted to said frame and engaging said ruffler blade, an arm pivoted concentrically with said link and having means for engaging one side of said link for shifting the same in one direction, said arm having a slot, a plate having means for engaging the opposite side of said link, a stud traversing said slot and carried by said plate, and a set nut upon said stud.

3. In a ruffler attachment for sewing machines, the combination with a frame, of a ruffler blade reciprocatory relative to the frame, a pivot stud mounted upon the frame, a link pivoted on said stud and pivoted to the rear of said blade, an arm pivoted on said stud and projecting forwardly of the blade for the engagement of a sewing machine needle bar and having a face at the rear of said link for engaging the same, a plate pivoted on said stud and having a face for engaging the front of said link, said arm having an upstanding portion provided with a sector slot, a screw stud carried by said plate and traversing said slot, and a nut upon said stud.

4. In a ruffler attachment for sewing ma-

chines, the combination with a frame, of a
ruffler blade reciprocatory relative to the
frame, a pivot stud carried by the frame, a
link pivoted on said stud and pivoted to the
5 rear of said blade, an arm pivoted on said
stud and projecting forwardly of the blade
for engagement with a sewing machine needle
bar and having a lug at the rear of said
link for engaging the same, a plate pivoted
10 on said stud and having a face for engaging
the front of said link, said arm having an up-
standing portion provided with a sector slot,
said plate having an upstanding portion, a
screw stud carried by said upstanding por-
15 tion of the plate and traversing said slot, a
nut upon said stud, and a block upon said
stud between the plate and arm equal in
width to the thickness of the frame and link
in addition to sufficient working space.

20 5. In a ruffler attachment for sewing ma-
chines, the combination with a sheet metal
frame having an upstanding portion, of a
ruffler blade reciprocatory on the frame, a
sheet metal arm having a portion for engag-

ing an operative part of the sewing machine, 25
a stud mounted in said upstanding portion of
the frame and fast with the arm, a flat face of
said arm being in engagement with a flat face
of said frame at one side, a sheet metal link
pivoted upon said stud and having a flat face 30
in engagement with a flat face of said frame
opposite that engaged by the arm, a sheet
metal plate pivoted upon said stud and hav-
ing a flat face in engagement with a flat face
of the link opposite that which engages the 35
face of the frame, said arm having a lug for
engaging one edge of the link, said plate hav-
ing a lug for engaging the opposite edge of
said link, said arm having a slot, a screw stud
carried by the plate and traversing said slot, 40
a set nut upon said stud, and a block be-
tween said plate and arm at the region of the
stud for maintaining these at their proper
distance of separation.

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