Oct. 10, 1944. A. F. DE ROSE 2,360,045

RUFFLING ATTACHMENT FOR SEWING MACHINES

Filed April 19, 1941 4 Sheets-Sheet 1

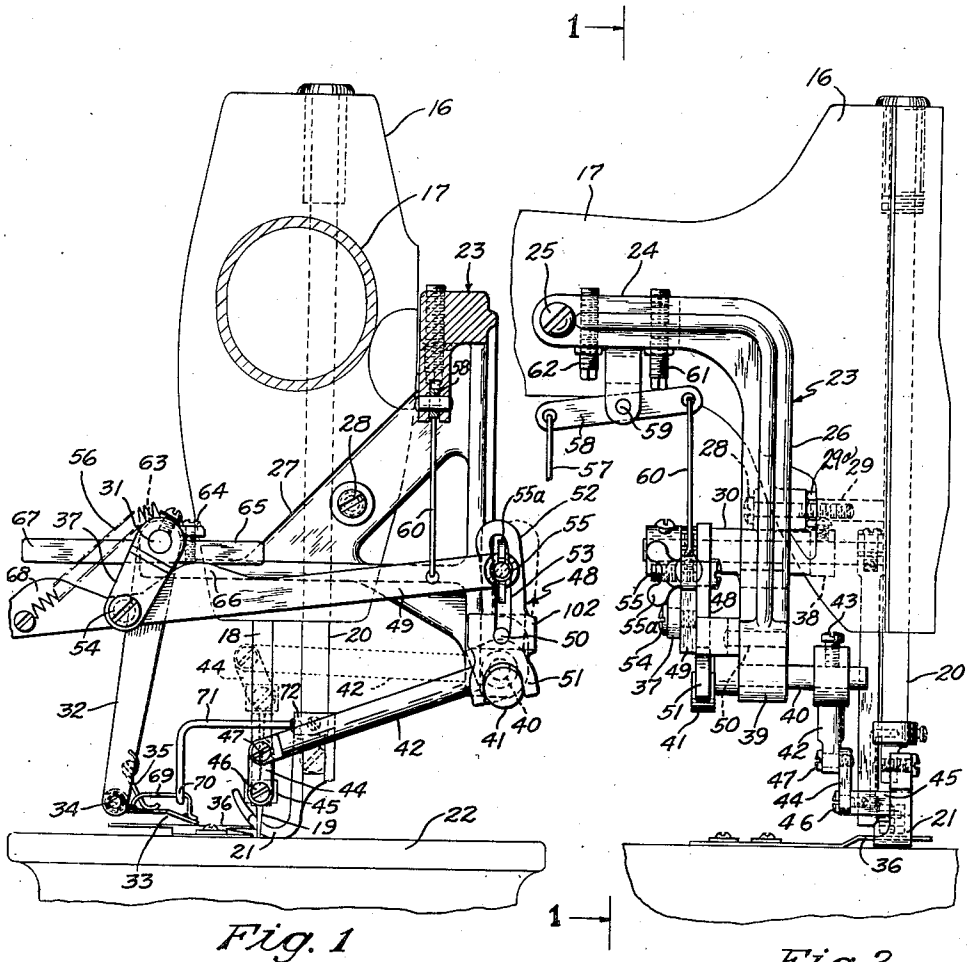


Fig. 1

Fig. 2

Alfred F. De Rose INVENTOR

BY

Wooster & Davis ATTORNEYS

Oct. 10, 1944. A. F. DE ROSE 2,360,045

RUFFLING ATTACHMENT FOR SEWING MACHINES

Filed April 19, 1941 4 Sheets-Sheet 2

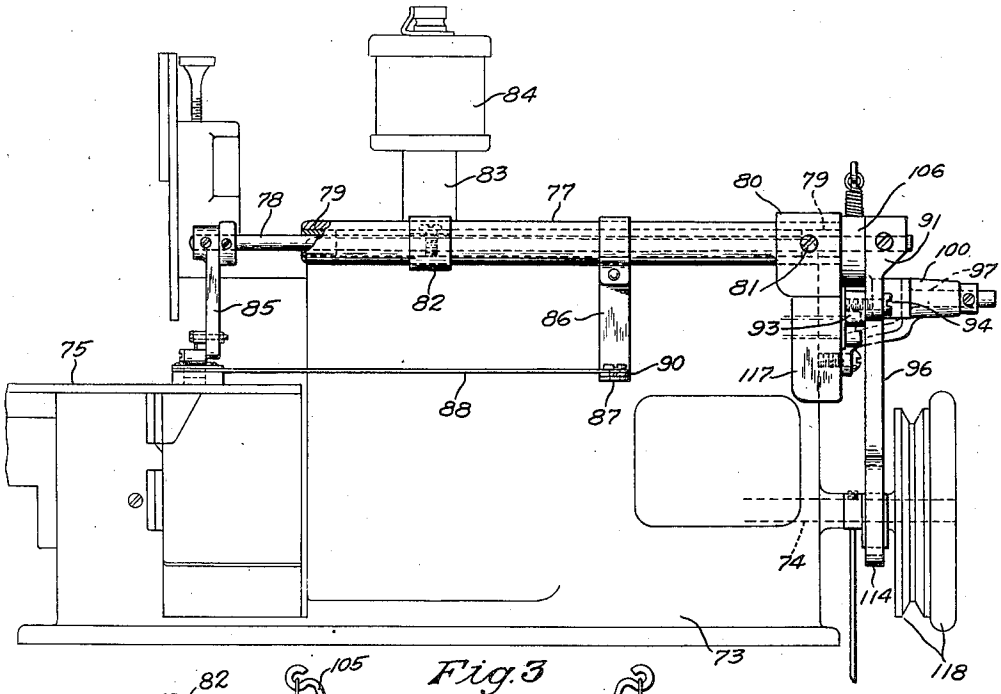



Fig. 3

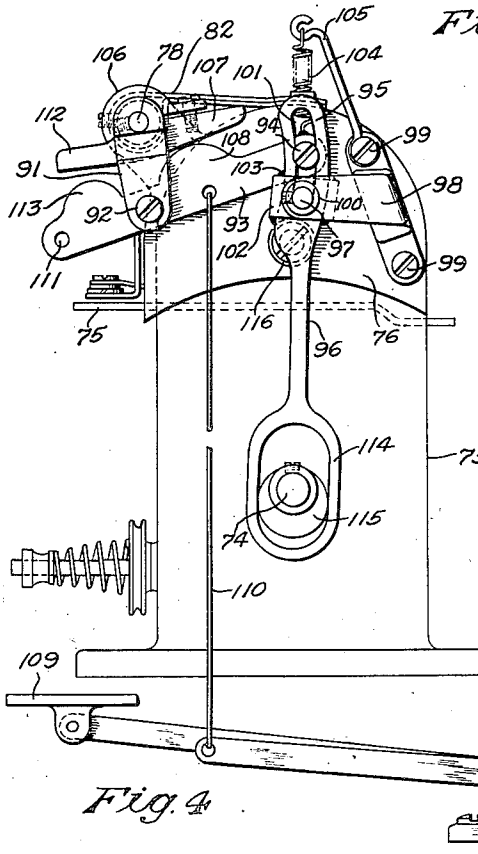



Fig. 4

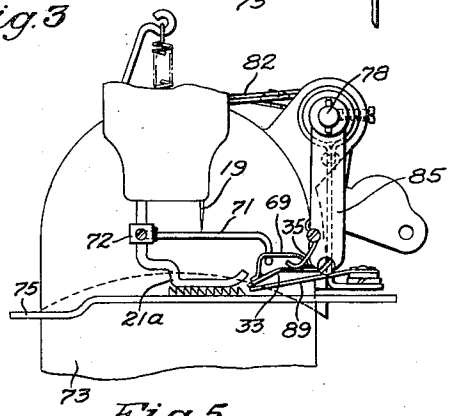



Fig. 5

INVENTOR
Alfred F. De Rose
BY
Wooster & Davis
ATTORNEYS.

Oct. 10, 1944. A. F. DE ROSE 2,360,045

RUFFLING ATTACHMENT FOR SEWING MACHINES

Filed April 19, 1941 4 Sheets-Sheet 3

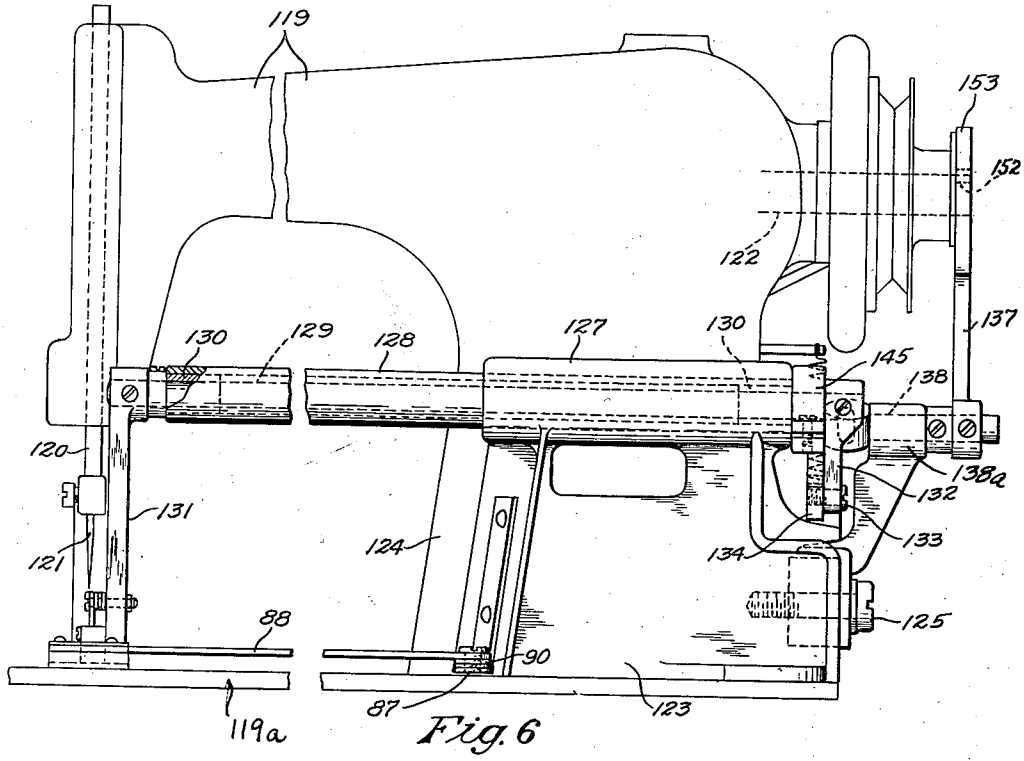



Fig. 6

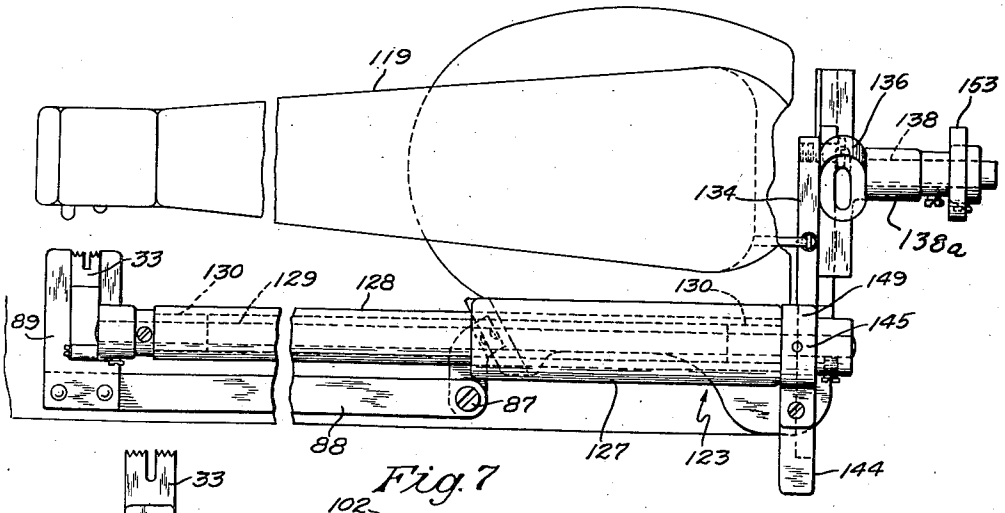



Fig. 7

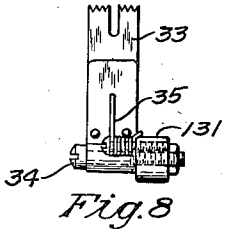



Fig. 8

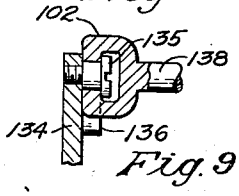



Fig. 9

INVENTOR
Alfred F. De Rose
BY
Wooster & Davis
ATTORNEYS.

Oct. 10, 1944. A. F. DE ROSE 2,360,045

RUFFLING ATTACHMENT FOR SEWING MACHINES

Filed April 19, 1941 4 Sheets-Sheet 4

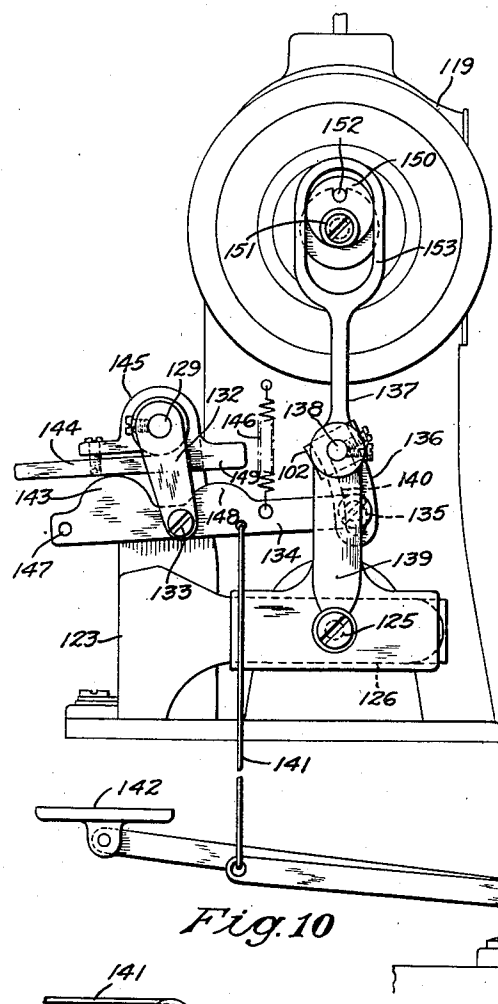



Fig. 10

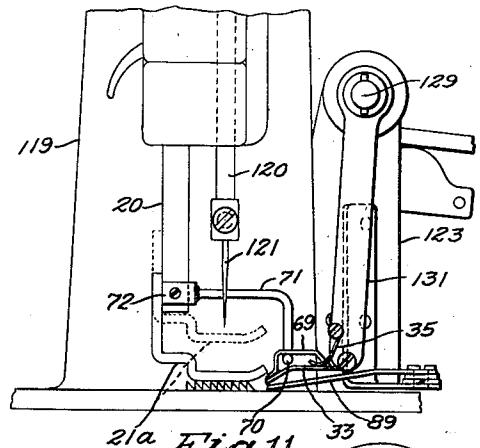



Fig. 11

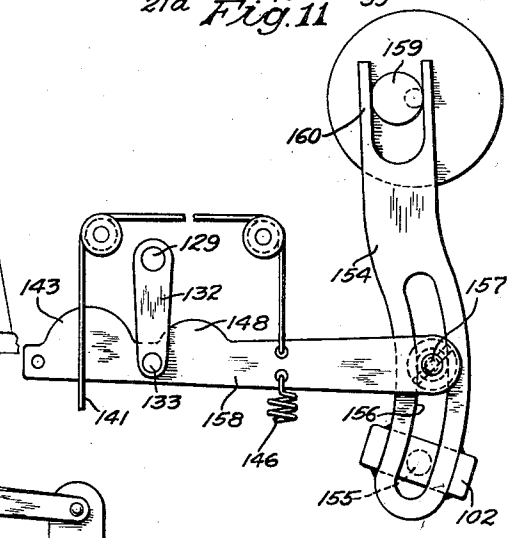



Fig. 12

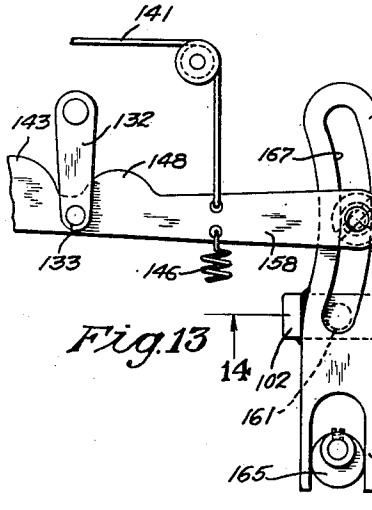



Fig. 13

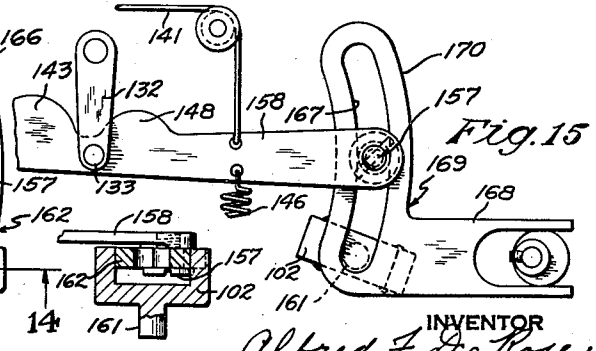



Fig. 15

Fig. 14

INVENTOR
Alfred F. De Rose
BY
Wooster & Davis
ATTORNEYS.

Patented Oct. 10, 1944

2,360,045

# UNITED STATES PATENT OFFICE

2,360,045

## RUFFLING ATTACHMENT FOR SEWING MACHINES

Alfred F. De Rose, Bridgeport, Conn.

Application April 19, 1941, Serial No. 389,373

10 Claims. (Cl. 112—134)

This invention relates to a ruffling attachment for sewing machines, and has for an object to provide a ruffling attachment which may be assembled complete as a unit and then attached as such by a simple attaching means to a sewing machine without requiring reconstructing of the machine, so that the device may be applied complete by a simple operation to sewing machines already installed in a factory.

It is also an object of the invention to provide such a device of a simple and rigid construction which may be operated indefinitely at the speed of operation of factory sewing machines, and will effectively perform the ruffling operation at these speeds.

It is another object of the invention to provide such an attachment with readily operable control means so constructed and arranged that the machine may be used for straight sewing, and then without stopping or adjusting the machine the ruffling device may be brought into operation for ruffling a given length of the seam, and then again if desired returning to straight sewing without stopping or adjusting the machine; and particularly to provide a mechanism for operating the ruffler in which the adjusting means may be shifted from a position in which no motion is imparted to the ruffling blade, so that when the ruffler is not being used the blade is stationary, and may be adjusted to the position of maximum movement through all intermediate positions.

This invention is a further development of the invention of my prior Patent 2,161,410, June 6, 1939, and distinguishes from the device of said patent in several mechanical features, and particularly in a construction and arrangement in which when the ruffler is not being used no motion is applied to the ruffling blade.

With the foregoing and other objects in view I have devised an improved ruffling attachment several embodiments of which for applying to different types of sewing machines are illustrated in the accompanying drawings forming a part of this specification, it being understood, however, that I am not limited to the specific construction and arrangement shown, but that various changes and modifications may be employed within the scope of the invention.

In the drawings:

Fig. 1 is a transverse section through the arm of the head of a sewing machine showing my improved attachment in elevation applied thereto, the plane of the section being substantially on the line 1—1 of Fig. 2;

Fig. 2 is a rear elevation looking from the right of Fig. 1;

Fig. 3 is a front elevation of a different type of sewing machine in which the main driving shaft is in the lower part of the head of the machine, and showing my improved attachment applied thereto;

Fig. 4 is an elevation of the device of Fig. 3 looking from the right of Fig. 3;

Fig. 5 is an elevation of the ruffling device looking from the left of Fig. 3;

Fig. 6 is a front elevation showing a different arrangement of the device;

Fig. 7 is a top plan view thereof;

Fig. 8 is a plan view of the ruffler blade;

Fig. 9 is a detail section showing the adjustable connection of the operating bar to the oscillating operating lever;

Fig. 10 is an end view looking from the right of Figs. 6 and 7;

Fig. 11 is an end view looking from the left of Figs. 6 and 7;

Figs. 12, 13 and 15 are elevational views showing various modified arrangements of the oscillating operating lever and the connection therefrom to the shaft operating the ruffler blade; and

Fig. 14 is a detail section substantially on line 14—14 of Fig. 13.

Referring first to the form of the device shown in Figs. 1 and 2, there is shown the forward portion 16 of the head of a sewing machine carried by the horizontal arm 17 in which is mounted the usual mechanism, not shown, for operating the vertically reciprocating needle bar 18 carrying the needle 19 and also the mechanism (not shown) for carrying and lifting the presser foot bar 20 to which the presser foot 21 is attached and cooperates with the usual feed, not shown, in the bed or plate 22. In this form my improved ruffling attachment is mounted as an assembled unit on the head of the machine and comprises a bracket 23 having a horizontal arm 24 secured to the arm 17 by screw 25 threaded into the lifting lever hinge screw in the side of the arm 17. It also includes a vertical arm 26 having a rearwardly extending portion 27 secured by a screw 28 to the head portion 16 by tapping it into a screw 29. The regular presser bar lifter screw is replaced with the same kind of screw except being longer on threaded end to allow space for nut 29a, therefore making it unnecessary to tap or drill or modify the machine. This bracket 23 has a bearing 30 for an oscillating

shaft 31 extending horizontally in front of the machine and carrying a laterally extending arm 32, in this case a depending arm, extending to a position in front of the needle and presser foot of the machine and carrying a ruffling blade 33 pivoted to this arm at 34. A spring 35 tends to hold the free end of this blade down against the cloth or work passing through the guide 36 to the sewing position under the presser foot. The arm 32 is secured to the shaft 31 so as to be operated thereby. Also secured to the shaft 31 is an operating lever 37 located at any suitable position, but in this case located on the opposite side of the bracket 23 and at the opposite end of the bearing 30 from the arm 32. If desired, a collar 38 may be secured to the shaft 31 at the other end of the bearing 30 to help hold the shaft in place.

For operating the shaft 31 there is located in a bearing 39 on the bracket a short shaft 40 carrying an eccentric or eccentric crank 41, and this shaft is oscillated by a crank arm 42 connected to the shaft by any suitable means, such as a set screw 43, and it is connected by a link 44 to the needle bar 18 by any suitable means, such as a block 45 on this bar. The link 44 is pivoted to this block at 46 and to the arm 42 at 47. It will be evident that as the needle bar reciprocates up and down it will carry with it the free end of the lever arm 42, as indicated by full and dotted lines in Fig. 1, to oscillate the shaft 40 and with it the eccentric crank 41.

Connecting the eccentric crank 41 with the operating arm 37 is a pivoted lever 48 and a connecting link or bar 49. The lever 48 is pivoted to the bracket 23 at 50 and has a bearing 51 at one side of this pivot embracing the eccentric crank 41. In the present case this bearing comprises a fork. Extending laterally from the pivot 50 is a guide extending longitudinally of an arm 52 of this lever. In the present case this guide is an elongated curved slot 53 and it extends from a point over the pivot 50 a sufficient distance therefrom to give the maximum throw required for the ruffling blade. The link or bar 49 is pivotally connected to the operating arm 37 at 54, and at one end, as indicated at 55, is pivotally connected with the lever 48 by a connection which is adjustable along the arm 52, and in this case the slot 53, to and from a position over the pivot 50. It will be evident that as the lever 48 is oscillated about the pivot 50 oscillating motion will be imparted therefrom to the bar 49 and the operating arm 37 to oscillate the shaft 31 and thus reciprocate the ruffling blade 33 back and forth. It will also be seen that the throw of the blade will depend upon the distance of the connection 55 from the pivot 50, and the construction is such that this connection 55 may be located either directly in alignment with the pivot 50 at which time oscillation of the lever 48 will not impart any motion to the bar 49 and the ruffler blade, or at a distance from this pivot. When the connection 55 is shifted away from the pivot 50 oscillating motion will be imparted to the bar 49 and the ruffling blade and the amount of this motion, and therefore the throw of the blade will depend on the distance the connection 55 is spaced laterally from the pivot 50.

In the arrangement shown a spring 56 connected to the bar 49 tends to swing its free end and the connection 55 toward the pivot 50 to shift the device to the inoperative position. A foot pedal, not shown, may be connected by a wire or chain 57 to a lever 58 pivoted to the bracket at 59 and connected by another connection 60 to the bar 49. By pressing on the foot pedal the free end of the bar 49 and the connection 55 may be shifted along the guide slot 53 to set the ruffler in operation. Stops are provided to limit this movement to give the amount of throw desired to the ruffling blade. For this purpose there may be a stop screw 61 adjustably threaded in the bracket 23 to be engaged by the lever 58, and if desired another adjustable screw 62 may be provided to limit swinging of the lever in the opposite direction. There may also be provided another stop on the shaft 31 comprising a collar 63. This is a split collar having a clamping screw 64 so that the collar may be swung to different positions about the shaft and clamped in adjusted positions. This collar has a laterally extending arm 65 in position to be engaged by a stop 66 on the bar 49 to limit upward movement of this bar under action of the foot pedal. With the arrangement as just described, when pressure is removed from the foot pedal the bar 49 is automatically returned to a position by the spring 56 in alignment with pivot 50 to stop operation of the ruffling blade, and then if the operator wishes to perform some ruffling operation she merely presses downwardly on the foot pedal, carrying the free end of bar 49 along the guide 53 to a position determined by either the stop 61 or 66.

In some operations, however, it may be preferred that when pressure is removed from the foot pedal the bar 49 will be shifted to operating position, and when pressure is applied to the foot pedal it will be shifted to the inoperative position, with the connection 55 in alignment with the pivot 50. In this arrangement the connections of the foot pedal and the connection of the spring 56 are reversed. That is, the spring 56 is connected to the bar 49 on the opposite side of the pivot 54 so that it will tend to raise the connection 55, and the foot pedal is directly connected to the bar 49 so that pressure on the pedal will pull this bar downwardly to shift the connection 55 to alignment with the pivot 50. Or if it is desired that pressure on the pedal will merely reduce the throw of the ruffling blade, the collar 63 may be provided with an arm 67 projecting in the opposite direction from the arm 65 and cooperating with a stop 68 on the bar 49 on the opposite side of the pivot 54. The connection 55 may be provided with some means, such for example as a clamping or wing nut 55*a* to secure this connection in adjusted position, as where it is desired to use the machine for continuous ruffling operations.

The ruffler blade 33 may have a loop such as a wire 69 secured to this blade and under which extends the free end 70 of a rod 71 secured to the presser foot or the presser foot bar at 72. With this arrangement when the presser foot is raised to insert work under the presser foot or to release work which had been under it, this operation also lifts the free end of the ruffling blade from the work to release the work from this blade so that the work can be freely shifted as desired.

In the other forms of the device shown the basic mechanism and principle of operation is the same as that of Figs. 1 and 2, but it is modified for attachment to different types of machines. Thus in Figs. 3 to 5 it is shown as applied to a machine 73 in which the main operating shaft 74 is below the bed or plate 75 at the stitch-

ing level. In this arrangement the bracket of the ruffling attachment is indicated at 76 secured to the back end of the head of the machine. Extending from this bracket and horizontally in front of the machine is a tube 77, such as a drawn brass tube, carrying the oscillating shaft 78 corresponding to the shaft 31 of the first form. This tube has sleeves or bushings 79 mounted in it forming bearings for the shaft 78, and any number desired may be employed. This permits easy aligning of the bearings for the shaft, which is a difficult operation where it is attempted to bore aligned spaced bearings in a bracket, as the drawn tube is straight and keeps the bearings in perfect alignment. It is mounted in a bearing 80 in the bracket 76 and may be secured therein by any suitable means such as a set screw 81. If desired the extended free end portion may be further supported and held by a bracket or strap 82 embracing the tube and fastened to the head of the machine, such, for example, as by clamping it under the stem 83 of the oil cup 84 usually employed on this type of machine. The oscillating shaft 78 carries the laterally extending or depending arm 85, carrying the ruffling blade 33 the same as in the first form.

If desired a depending bracket or arm 86 may be mounted on the tube 77 to which is pivoted at 87 a rod 88 carrying a separator plate 89 to lie under the ruffler blade 33 to separate the upper piece of cloth being ruffled from the lower piece of cloth which passes under the plate 33 and which is to be sewed in the seam without ruffling. This plate 89 may be swung to or from the position under the ruffler blade by merely swinging the rod 88 about its pivot. A spring washer 90 is preferably provided in this pivot to retain the rod in different positions. It will be understood this separator blade may be provided if desired in each of the other forms of device shown.

The mechanism for operating the shaft 78 comprises a downwardly depending operating arm 91 secured to the shaft 78 and corresponding to the arm 37 of the form of Fig. 1. Pivoted to this arm at 92 is a link or bar 93 corresponding to the bar 49 of the first form. The other end of this bar is secured at 94 for adjustment along the arm 95 of the oscillating lever 96 pivoted to the bracket 76 at 97. This pivot is on an arm 98 extending forwardly of the bracket and secured thereto by any suitable means such as the screws 99, and this arm carries a suitable bearing 100 for the pivot 97. The connection 94 is adjustable along the arm 95 in the elongated slot 101 extending from a position over the pivot 97 and laterally therefrom. The pivot 97 is carried on a yoke 102 which is substantially U-shape and welded to the opposite edges of the lever 96 at 103. This connection is the same as that shown in Figs. 9 and 14, and leaves space between the yoke and the lever 96 to permit the head of the screw 94 to pass between the lever and the yoke so that the connection 94 may be shifted to a position in direct alignment with the pivot 97. When in this position oscillation of the lever 96 will not impart any motion to the rod 93, the shaft 78 and the ruffler blade. It will however be apparent that when the connection 94 is moved along the lever arm 95 away from the pivot 97 oscillation of the lever 96 will impart motion to the rod 93 to reciprocate the ruffler blade, and the throw of the blade will depend on the distance the connection 94 is spaced from the pivot 97.

A spring 104 is connected to the bar 93 and some part of the bracket, such, for example, as the support 105, and tends to shift the connection 94 along the slot 101 away from the pivot 97. The amount of this movement may be determined by any suitable means, such, for example, as a split collar 106 clamped to the shaft 78 and having a stop arm 107 to be engaged by a stop 108 on the bar 93. The bar may be shifted in the opposite direction by a foot pedal 109 connected to it by a chain or wire 110. If it is desired that pressure on the pedal shall operate to shift the connection 94 from the inoperative position in alignment with the pivot 97 to an operative position, then the connection 110 may be connected to the bar 93 at 111 on the opposite side of the pivot 92. With this arrangement the action of the spring 104 would be reversed and it would be connected to the bar 93 in such a way as to tend to shift the connection 94 downwardly to its inoperative position in alignment with the pivot 97. If desired stop means may be provided to limit such movement such as an arm 112 on the collar 106 cooperating with a stop 113 on the bar 93.

For oscillating the lever 96 it has a fork or bearing 114 embracing an eccentric or eccentric crank 115 secured to the main shaft 74 of the machine. This whole device may be assembled on the bracket 76 forming a unit assembly, and then this whole unit may be mounted as such on the machine by fastening the bracket 76 to the machine by any suitable means, such as the screws 116 either threaded into the head of the machine or other screws or elements already on the machine. A front flange 117 may be provided embracing a portion of the front surface of the machine to cooperate with the screws 116 to line up the bracket and hold it in position. The eccentric 115 may be easily mounted on the shaft 74, preferably back of the usual hand wheel and pulley 118 which can be readily taken off the shaft to permit mounting of the eccentric and then replaced on the shaft.

In Figs. 6 to 11 is shown an arrangement embodying the invention for attachment to the type of sewing machine in which the head includes a horizontal arm placed above the bed plate. It really is the same type of head as that shown in Figs. 1 and 2, but instead of driving the ruffling attachment from the needle bar it is driven from the main operating shaft in the sewing machine head which operates the needle bar. In these figures the overhead arm of the sewing machine head is shown at 119 carrying the needle bar 120 and the needle 121 which is driven by mechanism, not shown, from the main shaft 122. The ruffling attachment unit comprises the bracket 123 secured to the head 124 or the bed plate 119a by any suitable means. In the drawings it is shown as secured by the screws 125 in a laterally and rearwardly extending arm 126 of the bracket. The bracket has a bearing 127 for mounting the bearing tube 128 for the oscillating shaft 129. This tube 128 corresponds to the tube 77 of the form of Fig. 3 and carries the bearing sleeves or bushings 130 for the shaft. This shaft carries the depending arm 131, carrying the ruffler blade 33. This shaft 129 is oscillated by a mechanism similar to that of the other form including the operating arm 132 secured to the shaft 129 and to which is pivoted at 133 the operating link or bar 134. The free end of this bar is adjustably connected at 135 to the arm 136 of the oscillating lever 137 pivoted at 138 in the upwardly extend-

ing arm 139 either integral with or secured to the bracket 123. This pivot 138 is mounted on the yoke 102 welded to the lever arm 136 the same as shown in Figs. 9 and 14 and as used in the other arrangements so as to permit the head of the screw connection 135 to pass to a position in alignment with the pivot 138 for the lever 137. When the connection 135 is in alignment with this pivot oscillation of the lever 137 will not impart any motion to the bar 134 and so will not impart motion to the ruffler blade as pointed out in connection with the previous form. In this form of operating lever however the arm 137 is not integral or in one piece with arm 136, but as shown in Figs. 6 and 7 is secured to the pivot pin or shaft 138 on the opposite side of bearing 138a from the arm 136.

As in the previous forms the connection 135 is adjustable along the curved slot 140 in the arm 136 of the operating lever and extending from the position of the pivot 138 laterally therefrom and longitudinally along the arm 136. It may be shifted along this slot away from the pivot 138 by a connection 141 to a foot pedal 142. This movement will be limited by a stop 143 on the bar 134 engaging a stop arm 144 on a split collar 145 adjustably clamped about the shaft 129. A spring 146 connected to the bar 134 may be employed to tend to shift the bar back to the inoperative position with the connection 135 in alignment with the pivot 138. If the opposite operation is desired the spring 146 may be so connected to the bar 134 as to tend to pull it downwardly and shift the connection 135 away from the pivot 138. With this arrangement the connection 141 from the foot pedal would be connected to the bar 144 at 147 on the opposite side of its connection 133 to the operating lever 132. To limit this movement under action of the pedal a stop 148 could cooperate with an arm 149 on the collar 145. The lever 137 is oscillated by an eccentric or eccentric crank 150 secured to the main shaft 122 of the machine by any suitable means such as the screws 151 and located for proper timing by a pin 152 seated in the usual notch in the end of the shaft. The eccentric is embraced by a fork or other bearing 153 on the lever 137.

Figs. 12, 13 and 15 show slightly modified arrangements for the oscillating lever. In Fig. 12 the lever is shown at 154 and its pivot at 155 adjacent one end thereof, and the longitudinal slot 156 extends from a position over this pivot longitudinally along the lever for adjustment of the connection 157 to the operating link or bar 158. The lever is oscillated by the eccentric or eccentric crank 159 secured to or operated by connection with some operative part of the sewing machine such as the main shaft or needle bar as above described. This eccentric crank is embraced by a fork or bearing 160 at the opposite end of the lever. It will be understood that in this arrangement the lever 154 corresponds to the levers 48, 96 and 137 of the forms previously described except that the pivot is at one end instead of between the arms of the lever, and that the bar 158 corresponds to the bars 49, 93 and 134 of the forms previously described, while the connection 157 corresponds to the connections 55, 94 and 135.

Fig. 13 shows substantially the arrangement of Figs. 1 and 4, or the arrangement of Fig. 10 reversed. In this arrangement the pivot 161 for the lever 162 is intermediate the arms of the lever, the arm 163 on one side carrying the bearing or fork 164 to embrace the eccentric crank 165, and the other arm 166 having the longitudinally extending curved slot extending from the pivot 161 for adjustment of the pivotal connection 157 to the bar 158, it being of course understood this lever 162 operates the oscillating shaft carrying the ruffler blade in the same manner as does the other arrangements shown, and the eccentric is driven from some operative part of the sewing machine.

Fig. 15 operates in the same manner as Fig. 13 except that one arm 168 on one side of the pivot 161 is substantially at right angles to the other arm 170 carrying the elongated slot 167.

It will be seen that in all the forms shown all the operating parts, with the exception of the eccentric or the eccentric crank in Figs. 3 to 10, are assembled on the bracket, and that this can be assembled away from the machine and applied thereto as a unit already assembled, it being necessary merely to attach the bracket to the machine and connect the operating lever with some operative part of the sewing machine, such for example as connecting the operating arm 42 for the eccentric or eccentric crank to the needle bar as in Figs. 1 and 2, or mounting this eccentric crank on the main shaft of the machine as shown in Figs. 4, 6 and 10. It will also be seen that unlike previous ruffling devices of which I am aware this operating lever with its connection to the oscillating shaft through the operating link or bar insures that when the ruffler is not in use it can be made absolutely stationary without disconnecting any of the parts, because it is so arranged that the adjustable connections 53, 94, 138 and 157 can each be moved to a position in alignment with the pivot for the lever, and, therefore, as the lever oscillates no motion is transmitted to the ruffler blade. In other forms of ruffler of which I am aware the adjustment can be shifted when the ruffler is not in use to a position where only a small movement is imparted to the ruffler blade, but even this small movement when the ruffler is not being used is often quite objectionable, and, therefore, one of the advantages of the present construction is the elimination of this movement.

Having thus set forth the nature of my invention what I claim is:

1. A ruffling attachment for sewing machines comprising as an assembled unit and attachable to a sewing machine as such a unit, a bracket, a shaft mounted in the bracket, a laterally extending arm secured to said shaft, a ruffling blade carried by the arm in front of the machine presser foot, an operating arm secured to the shaft, a link pivoted to the latter arm, an oscillating lever having a longitudinal guide and a supporting pivot at one end of the guide, means spaced from the pivotal connection of the link to the arm connecting said link to the lever for adjustment along said guide by swinging the link about its pivot, an eccentric crank mounted on the bracket, a bearing for the eccentric crank arranged to oscillate said lever, an arm connected with the needle bar of the machine to turn said eccentric crank, and means for securing the bracket to the sewing machine to mount the assembly thereon.

2. A ruffling attachment for sewing machines comprising a bracket, an oscillating shaft mounted in said bracket, a ruffler blade operated by

the shaft and carried by said bracket, an operating arm secured to said shaft, an eccentric crank, means for connecting said crank with an operative part of the sewing machine for turning the crank, a pivoted lever mounted on the bracket and having a bearing embracing said eccentric crank, a bar pivoted to said operating arm, means spaced from said arm connecting said bar to said lever for adjustment thereon toward and from the pivot of the lever by swinging the bar about its connection to the operating arm to vary the throw of the blade, and means for securing said attachment to a sewing machine to locate the blade in front of the machine presser foot.

3. A ruffler attachment for sewing machines comprising a bracket, an oscillating shaft mounted in the bracket to extend horizontally in front of a sewing machine head, an arm secured to said shaft, a ruffler blade carried by said arm adjacent the machine presser foot, an operating arm secured to said shaft, an eccentric crank, a pivoted lever having a bearing to embrace said eccentric crank, a bar pivoted to the said operating arm and having a connection with said lever spaced from the arm and adjustable along the lever to and from the pivot of said lever by swinging the bar about its connection to the operating arm to vary the throw of the blade, an operative connection from the sewing machine to said crank to operate it, and means for securing said bracket to the sewing machine.

4. A ruffling attachment for sewing machines comprising an oscillating shaft, an arm secured to said shaft, a ruffler blade operated by said arm adjacent the sewing machine presser foot, an operating arm secured to said shaft, a pivoted lever, a bar pivotally connected to said operating arm and having a connection with said lever spaced from said latter arm and adjustable along one arm of said lever toward and from its pivot by swinging the bar about its connection to the operating arm to vary the throw of the blade, means connected to the bar for swinging it to adjust it along said lever and movable back and forth with the bar as the bar is shifted by the lever, means mounted on said shaft limiting swinging movements of said arm, and means connecting said lever with an operative part of the machine to oscillate said lever about its pivot.

5. A ruffling attachment for sewing machines comprising an oscillating shaft, an arm secured to said shaft, a ruffler blade carried by said arm adjacent the presser foot of the sewing machine, an operating arm secured to said shaft, a pivoted lever having a guide extending longitudinally of one arm thereof in a direction away from its pivot, a bar pivoted to the said operating arm, means spaced from said operating arm connecting said bar to the lever and adjustable along said guide by swinging the bar about its connection to the operating arm to vary the throw of the ruffler blade, means to swing said bar to adjust it along the guide, stop means mounted on the shaft and movable therewith arranged to limit swinging movement of the bar, and means connecting said lever with an operative part of the sewing machine to oscillate said lever on its pivot.

6. A ruffling attachment for sewing machines comprising an oscillating shaft, an arm secured to said shaft, a ruffler blade carried by said arm adjacent the presser foot of the sewing machine, an operating arm secured to said shaft, an eccentric crank, a pivoted lever having a bearing embracing said crank and a guide extending longitudinally of one arm of said lever away from its pivot, a bar connected to said operating arm, means spaced from said connection connecting the bar to said lever and adjustable along said guide to and from the pivot by swinging the bar about its connection to the operating arm to vary the throw of the blade, and means for connecting the crank with an operative part of the sewing machine for driving said crank.

7. A ruffling attachment for sewing machines comprising an oscillating shaft, an arm secured to said shaft, a ruffler blade operated by said arm adjacent the sewing machine presser foot, an operating arm secured to said shaft, a pivoted lever, a bar connected to said operating arm and having a connection with said lever spaced from its connection to said arm adjustable along one arm of the lever toward and from its pivot by swinging the bar about its connection to the operating arm to vary the throw of the blade, stop means mounted on the shaft and adjustable to various positions about said shaft and cooperating with said bar to limit adjustable movement of the bar relative to the lever, and means connecting said lever with an operative part of the sewing machine to oscillate the lever about its pivot.

8. A ruffling attachment for sewing machines comprising an oscillating shaft, an arm secured to said shaft, a ruffler blade operated by said arm adjacent the sewing machine presser foot, an operating arm secured to said shaft, a pivoted lever, a bar pivoted to said operating arm and having a connection with said lever spaced from the operating arm and adjustable along an arm of the lever toward and from its pivot by swinging the bar about its connection to the operating arm to vary the throw of the blade, stop means comprising a collar mounted on the shaft and having an arm, a stop on the bar adapted to engage the said arm of the collar to limit adjustable movement of the bar relative to the lever, said collar being adjustable about the shaft, means for securing the collar in adjusted positions, and means connecting said lever with an operative part of the sewing machine to oscillate the lever about its pivot.

9. A ruffling attachment for sewing machines comprising as a unit assembly a bracket, a shaft carried by the bracket, a ruffling blade operated by said shaft and carried by the bracket, an operating arm secured to the shaft, a lever pivoted on the bracket, a bar connected with said arm and secured to the lever by a connection spaced from its connection to said arm and adjustable along an arm of the lever toward and from its pivot by swinging the bar about its connection to the operating arm to vary the throw of the blade, an eccentric crank carried by the bracket, said lever having a bearing embracing said crank, means for mounting the bracket on the head of a sewing machine with the ruffling blade in operative position adjacent the sewing machine needle, and means for connecting said eccentric crank with the needle bar of the machine to operate said crank.

10. A ruffling attachment for sewing machines comprising as a unit assembly a bracket, a tube carried by said bracket and projecting laterally therefrom to extend longitudinally in front of a sewing machine head, bearings mounted in said tube, a shaft mounted in said bearings, a ruffling

blade carried by said shaft and operated thereby, an operating arm secured to said shaft, a lever pivoted to said bracket, an eccentric crank, a bearing on said lever embracing the crank, means for connecting the eccentric crank to an operative part of the machine for operating the crank, a bar connected to said operating arm, means connecting said bar to said lever and adjustable along an arm of said lever toward and from the pivot of the lever to vary the throw of the ruffling blade, and means for securing the bracket to a sewing machine with the ruffling blade in operative position adjacent the sewing machine needle.

ALFRED F. DE ROSE.