

June 23, 1925.

1,542,872

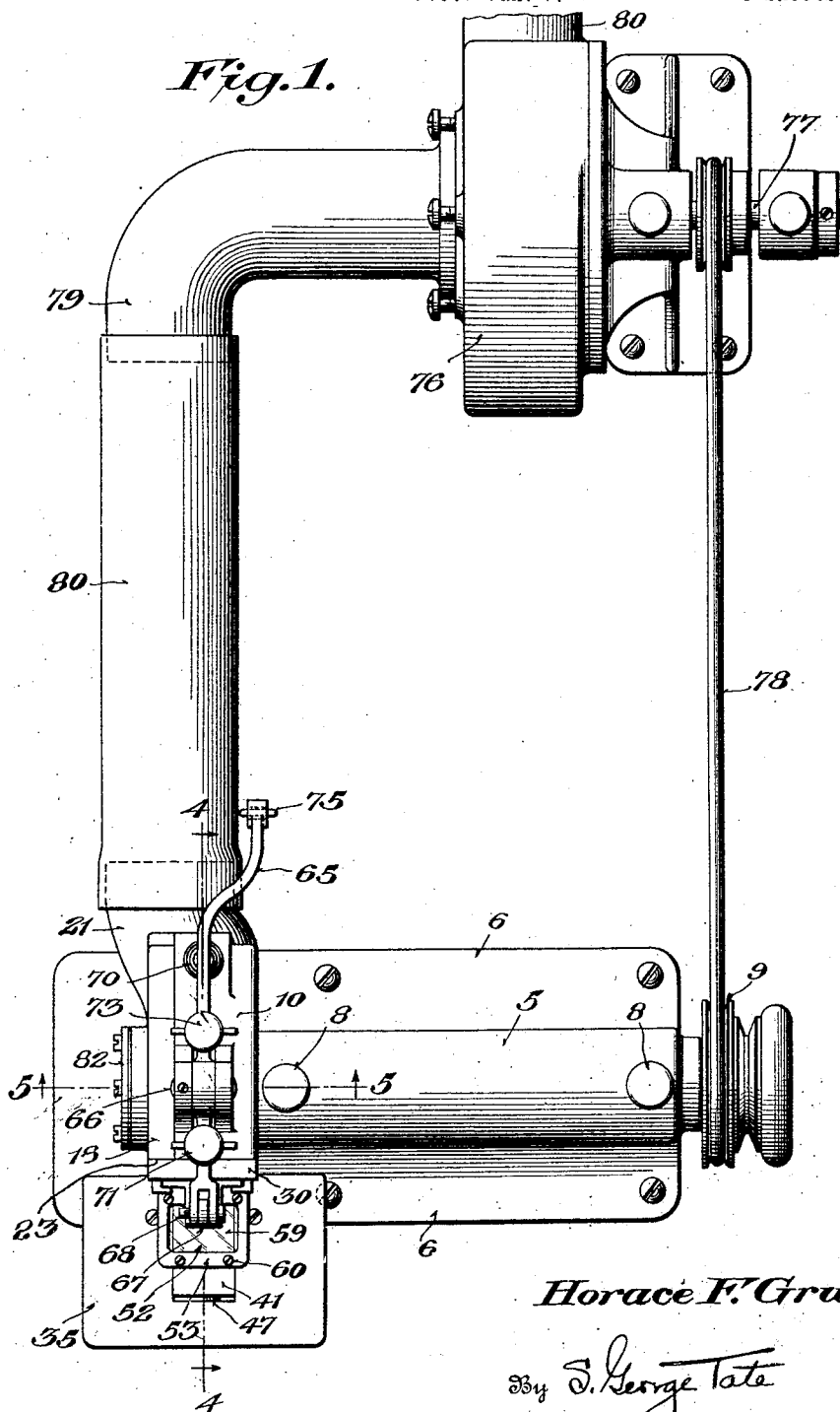
H. F. GRUMAN

EDGE TRIMMING MACHINE

Filed Jan. 7, 1924

5 Sheets-Sheet 1

Fig. 1.



Inventor.

Horace F. Gruman,

By S. George Tate

Attorney

June 23, 1925.

1,542,872

H. F. GRUMAN
EDGE TRIMMING MACHINE

Filed Jan. 7, 1924

5 Sheets-Sheet 2

Fig. 2.

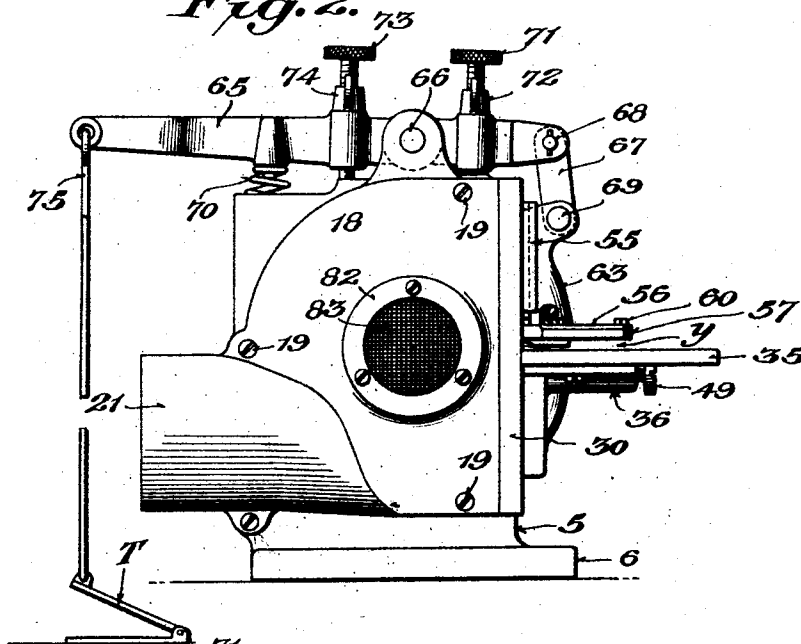
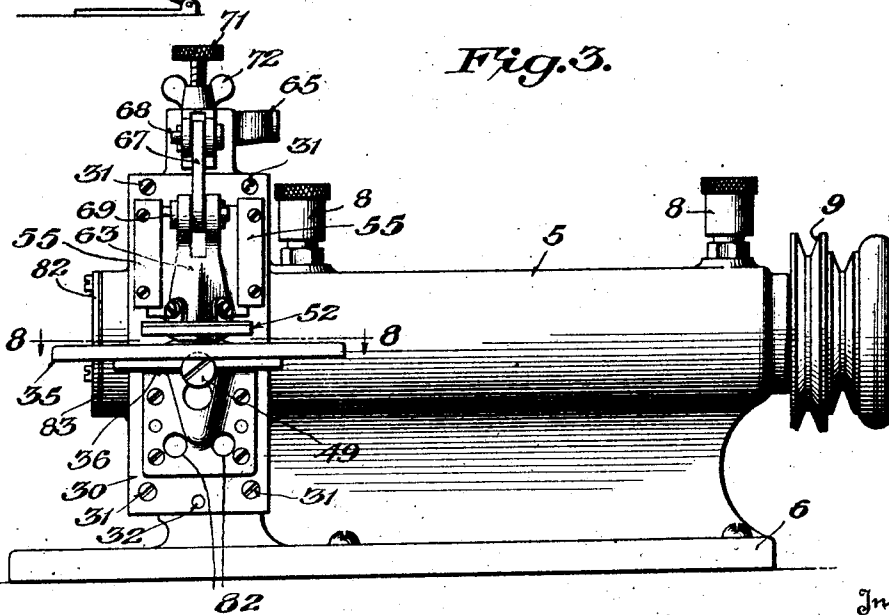


Fig. 3.



Inventor
Horace F. Gruman,

by *S. George Tate*

Attorney

June 23, 1925.

1,542,872

H. F. GRUMAN

EDGE TRIMMING MACHINE

Filed Jan. 7, 1924

5 Sheets-Sheet 3

Fig. 3.

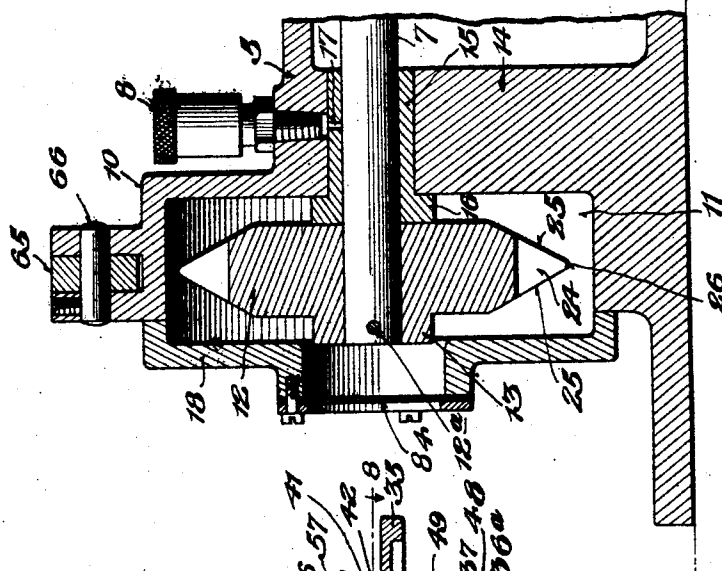
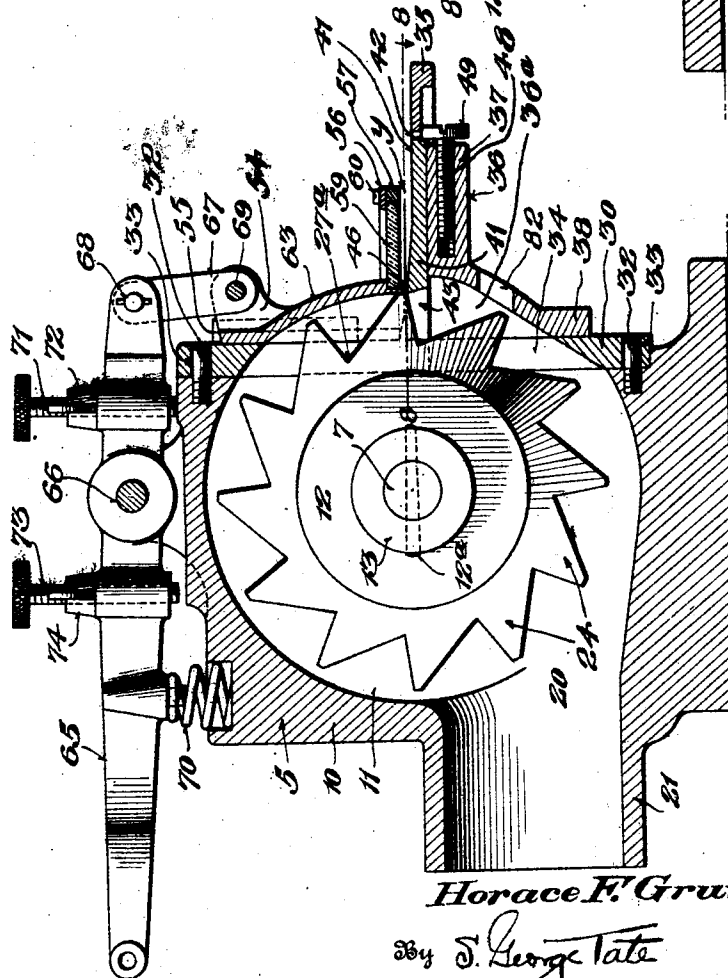


Fig. 4.



Inventor

Horace F. Gruman,

By J. George Tate

Attorney

June 23, 1925.

1,542,872

H. F. GRUMAN

EDGE TRIMMING MACHINE

Filed Jan. 7, 1924

5 Sheets-Sheet 4

Attorney

June 23, 1925.

1,542,872

H. F. GRUMAN
EDGE TRIMMING MACHINE

Filed Jan. 7, 1924

5 Sheets-Sheet 5

Fig. 10.

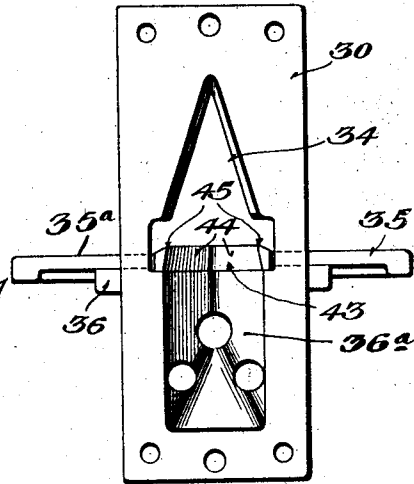


Fig. 8.

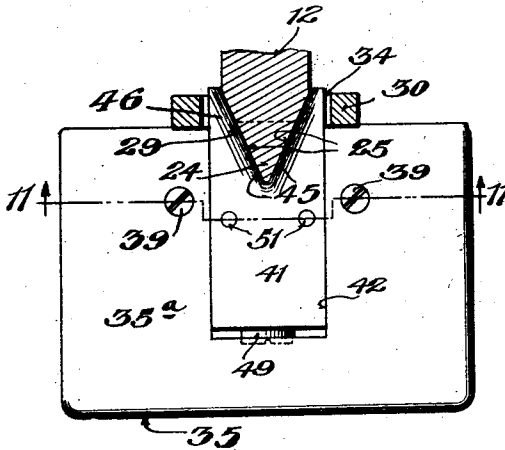


Fig. 9.

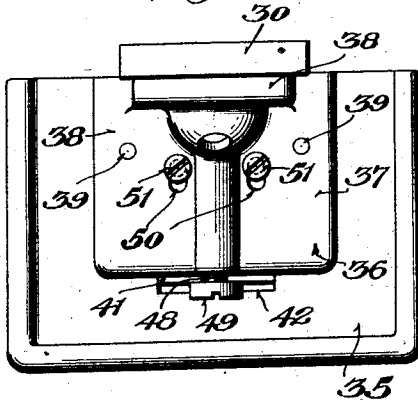
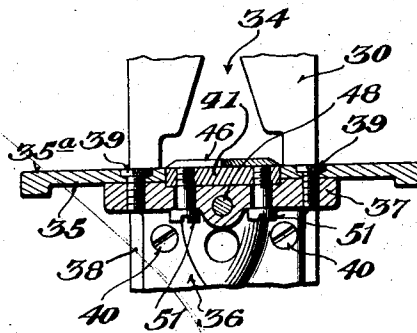


Fig. 11.



Inventor

Horace F. Gruman,

By *S. George Tate*

Attorney

UNITED STATES PATENT OFFICE.

HORACE F. GRUMAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO LEWIS INVISIBLE STITCH MACHINE CO., A CORPORATION OF MAINE.

EDGE-TRIMMING MACHINE.

Application filed January 7, 1924. Serial No. 684,755.

To all whom it may concern:

Be it known that HORACE F. GRUMAN, citizen of the United States, residing at St. Louis, in the State of Missouri, has invented certain new and useful Improvements in Edge-Trimming Machines, of which the following is a specification.

This invention relates to new and useful improvements in edge trimming machines generally, although more particularly to a machine for trimming the surplus fabric lying beyond the line of scalloped embroidery stitches.

In the prior art, such as is shown in the U. S. Patent to West, 313,015, dated November 24, 1885, provision is made for mechanically feeding a long narrow fabric strip having a previously formed line of embroidery scallops stitched thereon, passed a cutter which rotates about a horizontal axis. In this patent, no provision whatsoever is made for trimming the surplus stock or wide fabrics or for trimming the surplus stock from the bottoms of wash skirts, petticoats, etc., which have previously been formed with a line of scalloped embroidery stitches. In trimming this surplus stock from previously made up garments, it is necessary to hand feed the garment passed the cutter because mechanical feeding means cannot be adapted for this class of work owing to the irregular sizes of the garments as well as the irregular sizes of the scallops and the inherent flexibility of the material. In the West patent above noted, the rotary cutter is exposed to the operator and is therefore exceedingly dangerous. Furthermore, in this patent construction the trimmed off pieces of fabric or lint, necessarily pile up in and around the cutter and consequently tend to choke the latter and thereby impair its efficiency.

One of the principal objects of my invention is to provide an edge trimming machine which is especially adapted for use in trimming the surplus stock beyond a line of scalloped embroidery stitches from previously formed garments.

Another object of the invention is to provide a trimming mechanism for the purpose set forth, which permits of the garment to be readily hand fed passed the rotary cutter.

A further object of the invention is to provide a horizontally disposed guide for the

garment arranged in cooperative relation to the cutter and adjustable in height to accommodate seams as well as materials of different weights.

A further object of the invention is to provide manually controlled means operable during the running of the machine to vary the height of the guide whereby the initial loading of the machine may be readily accomplished and whereby the seams of garments may be freely moved through the guide.

A still further object of the invention is to provide a guide of the character described in which the upper member is transparent to permit the operator to view the point of cutting and thereby follow the line of scalloped embroidery stitches while the garment is being hand fed past the cutter, thus insuring the cutting off of the surplus stock in a clean line along the outer edge of the scallops.

Another object of the invention is to provide a housing for the cutter and to provide a suction device for automatically removing the trimmed off pieces of material from the housing, thereby not only avoiding all danger to the operator but also avoiding the clogging of the cutter by the trimmed off material.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:

Figure 1 is a top plan view of an edge trimming machine constructed in accordance with my invention.

Figure 2 is a left hand elevation thereof.

Figure 3 is a front elevation thereof.

Figure 4 is an enlarged vertical sectional view taken on the line 4—4 of Figure 1.

Figure 5 is an enlarged vertical sectional view taken on the line 5—5 of Figure 1.

Figure 6 is an enlarged detail sectional view showing the relation between the rotary cutter, stationary blade, the work and the work guide.

Figure 7 is a horizontal sectional view taken on the line 7—7 of Figure 6.

Figure 8 is a horizontal sectional view taken on the line 8—8 of Figure 3.

Figure 9 is a bottom plan view of the work support.

5 Figure 10 is a rear elevation of the work support and supporting bracket.

Figure 11 is a detail sectional view taken on the line 11—11 of Figure 8.

10 Figure 12 is a rear elevation of the vertically adjustable cutter guard and work stop, together with the upper transparent work guiding member, and

Figure 13 is a bottom plan view thereof.

15 Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Referring to the drawings my invention comprises a frame 5 having a base 6 and journaled within the frame is a horizontally
20 disposed drive shaft 7 which is lubricated through the medium of oil or grease cups 8—8 attached to said frame. The rotary shaft extends beyond the right hand end of the frame 5 and attached to this projecting
25 end of said shaft is a pulley wheel 9. The left hand end of the frame 5 is cast with a housing 10 forming a compartment 11. The left hand end of the drive shaft 7 extends into the compartment 11 and fixed
30 to said projecting end of the shaft is a rotary cutter 12, said cutter being secured to the shaft by means of a pin 12^a which passes through a hub 13 formed on the cutter and through the shaft 7. The shaft 7 adjacent
35 the cutter 12 is journaled in a bearing formed in a web 14 of the frame 5. This bearing preferably includes a hardened bushing 15 having an end flange 16 which is located between the adjacent side face of
40 the cutter 12 and the web 14. The bushing 15 is formed with a duct 17 which communicates with the adjacent oil or grease cup 8 and with the shaft 7. The end of the compartment 11 is closed by a cap plate 18,
45 said plate being detachably secured to the frame by means of screws 19 whereby upon removal of said cap plate access to the cutter may be had. The housing 10 and the plate 18 are conjointly formed with an air
50 outlet opening 20 which is located directly in rear of the cutter 12 and below the horizontal plane containing the axis of the shaft 7. Extending rearwardly in the general
55 plane of the cutter from the housing 10 and merging with the opening 20 is a tubular nipple 21, the longitudinal axis thereof being disposed in a horizontal plane and arranged at a tangent to a circle having for its
60 center the longitudinal axis of the shaft, the nipple being conjointly formed by the housing 10 and plate 18. By forming one-half of the nipple on the plate 18, I have provided a construction which can be readily
65 cast. The front of the housing is open as indicated at 22, and the housing 10 and

plate 18, around the opening are formed with a flat vertical face 23 arranged in a plane parallel with the longitudinal axis of the shaft 7, and located intermediate said shaft and the front edge of the cutter 12. 70

The cutter 12 is formed with peripheral teeth 24, the side walls 25—25 converging outwardly to form resultant points 26. Each tooth includes a front face 27 and a rear face 28. The front face 27 of each
75 tooth is, therefore, substantially V-shaped in plan view and the outer edges of this face merge with the inclined walls 25—25 and form two cutting edges *x—x*. The inner end of the front face 27 meets the inner end
80 of the rear face 28 of the next adjacent tooth at 27^a. Thus I have provided a series of projecting teeth which are formed with forwardly extending faces of substantially V-shape in plan and providing cutting edges
85 which converge outwardly towards the points of the teeth. This forward face 27 of each tooth lies in a plane tangent to a circle, the axis of which is coincident with the axis of the cutter shaft 7, that is, this face extends inwardly from the point of the tooth in a plane inclined to a radial plane
90 of the cutter. In this particular instance the forward face 27 of each tooth is also disposed in a plane parallel to the axis of the cutter whereby both cutting edges of the given tooth will be disposed in the same plane relative to the horizontal. The body
95 of the cutter 12 is formed with inclined sides 29—29 which merge with and are disposed in the planes of the respective converging side faces 25—25 of the teeth. In other words the inclined sides 29—29 of the cutter body are disposed between the cutting
100 teeth 24 and the axis of the cutter for the purpose hereinafter more fully described.

The front opening 22 of the housing is closed by a plate 30 which is seated against the flat vertical face 23, and is secured to
105 said housing and to the end plate 18 by screws 31. Upper and lower guide pins 32—32 project forwardly from said housing and enter openings 33—33 in the front plate 30, thus assuring the proper vertical
110 position of the plate for a purpose hereinafter described. The plate 30 is formed with an opening 34 of sufficient size to receive the cutter teeth 24 which project there-through and in advance thereof.

A horizontally disposed work support 35, 120 having an uninterrupted upper work supporting surface 35^a is disposed in front of the cutter 12, and is attached to the front wall or plate 30 by an angular bracket 36 embodying a horizontal arm 37 and a vertical
125 arm 38, the horizontal arm 37 being disposed under and secured to the work-support 35 by screws 39—39 and the vertical arm 38 being disposed against the plate 30 and secured thereto by screws 130

40—40. The work supporting surface 35^a is disposed slightly below a horizontal plane cutting the axis of the cutter shaft 7.

Cooperating with the rotary cutter 12 is a stationary cutting blade 41 which is seated within a slot 42 formed in the work support 35 and upon the horizontal arm 37 of the supporting bracket 36. The slot 42 is in alinement with the cutter 12 and the cutting blade 41 is mounted for adjustment towards or from the cutter 12. The rear end of the blade 41 is formed with a V-shaped notch 43 which corresponds in shape to the V-shaped teeth 24 of the cutter and has its walls 44—44 undercut (see Fig. 10) to present sharp cutting edges 45—45. The stationary blade 41 is formed on its upper surface along the edges of the notch 43 only, with a raised portion or rib 46 having its upper surface inclined upwardly towards the notch and merging with the walls 44—44 thereof at the sharp edges 45—45. These cutting edges 45—45 are arranged in a horizontal plane cutting the axis of the shaft 7, and are therefore located in a plane slightly above the plane of the work supporting surface 35^a.

The inner face of the vertical arm 36 is recessed as at 36^a to receive the teeth 24 of the cutter, and this recess also forms a chute for directing the trimmed off material from the point of cutting into the housing 11.

The outer ends of the walls 44—44 extend rearwardly of the teeth 21 and engage and cooperate with the inclined sides 29—29 of the cutter to retain the cutting teeth in proper and definite relation with the cutting edges 45—45 of the stationary, especially should loose play develop in the shaft 7.

Thus during the rotation of the cutter 12, the teeth 24 thereof will be presented in rapid succession for cooperation with the cutting edges 45—45 of the stationary cutter. As a given tooth approaches the stationary edges 45—45, the inner end of the tooth, viz: the juncture 27^a, will first meet said stationary cutting edges, and the cutting edges $x-x$ of the tooth will then simultaneously cooperate progressively with the stationary cutting edges and perform what is known as a "shearing" cut, the cut beginning at the inner end of the tooth and terminating at the outer end or point thereof. Thus, when the tooth begins its cutting operation, the forward face 27, and consequently the cutting edges $x-x$, is in a plane inclined to the horizontal, the plane extending upwardly and forwardly, that is, rearwardly relative to the direction of rotation of the cutter.

In order to adjust the stationary blade 41 towards the cutter 12 to meet practical requirements due to sharpening etc., and to

secure the blade in its adjusted position, I have provided the forward portion of the blade in its under face (see Fig. 6) with a recess 46 having a shoulder 47. An adjusting screw 48 extends longitudinally in the plane of the cutter and has threaded engagement with the horizontal arm 37 of the work-supporting bracket 36, the slotted head 49 of the screw bearing against the shoulder 47. The horizontal arm 37 of said bracket is provided with two slots 50—50 which extend in the plane of the cutter, and clamping screws 51—51 pass upwardly through these slots and have threaded engagement with said stationary blade 41. Thus when it is desired to move the blade towards the cutter, and thereby obtain a close fit between the cutting edges of the cutter and blade, the clamping screws are loosened a trifle and the adjusting screw 48 is turned, the head 49 thereof bearing against the shoulder 46 of the blade and thus moving the latter. The clamping screws 51—51 are then tightened and the stationary blade is thereby retained against movement.

In practice a fabric F such as a skirt, petticoat or other garment is previously provided with a line of scalloped embroidery stitches S adjacent one edge thereof, and the surplus material f lying beyond the line of embroidery stitches is then trimmed off by passing the fabric across the work-support 35 in cooperative relation to the cutter 12.

In order to control the fabric F relative to the cutter 12 while said fabric is being fed by hand passed the cutter, I have provided a foot device which I have designated as a whole by the numeral 52. This foot device includes a foot 53 and a supporting shank 54. The shank 54 is mounted between vertically disposed guides 55—55 secured to the front plate 30 whereby said shank may be vertically adjusted. The foot 53 is disposed in a horizontal plane and extends forwardly from the cutter 12 over the work-support 35 and cooperates with the latter to form a horizontally disposed guiding channel y for the fabric to be trimmed. The foot 53 consists of upper and lower clamping rings 56 and 57 respectively. The lower ring 57 is formed with an inwardly extending rib 58 forming a resultant seat for supporting a transparent block 59 of glass or any other suitable material, and the upper ring 56 extends inwardly over said transparent block. Clamping screws 60 serve to secure the rings and block together. This foot is secured to the lower end of the shank 54 by means of ears 61—61 and screws 62—62, the screws passing through the ears and engaging threaded openings in the side walls of a V-shaped guard 63 which forms a part of the shank 54, said guard 63 being V-shaped in cross-section to receive the teeth

24 which project forwardly through the opening 34 of the front cover plate 30. Depending below the lower surface of the foot 53 and in this instance being shown as an integral part of the guard 63 is a V-shaped stop or guard 64.

The foot device 52 is retained in a vertically adjusted position relative to the work-support 35 so as to permit sufficient space to be maintained between said foot and work-support whereby the fabric may be moved freely passed the cutter. It is to be noted that the foot device does not bear upon nor impinge the fabric. The height of the foot device relative to the work-support must be such that the space between the stop 64 and the work-support will readily permit the free passage of the marginal portion *f* of the fabric passed the cutter. The stop or guard 64 is very narrow and is adapted to be engaged by the raised embroidery stitches *S* and thereby limit the movement of the fabric towards the cutter, the width of the stop 64 being sufficiently narrow to permit the cutter to trim the surplus material *f* closely along the line of the embroidery stitches *S*. As the operator moves the fabric over the work support she can readily see through the transparent foot device that the cutter is properly functioning, thus permitting her to follow the scalloped line of embroidery stitches *S* at the point of cutting.

In order to vertically adjust the foot device 52 relative to the work-support whereby fabrics of different weights may be readily accommodated, or whereby seams may be readily passed thereunder without stopping the machine, I have provided a rearwardly extending manually controlled lever 65 and have fulcrumed the same as at 66 upon the top of the housing 10, the longitudinal axis of the pivot 66 being parallel with shaft 7. The forward end of the lever 65 extends to a point in advance of the front plate 30 and a link 67 is pivotally connected at its upper end as at 68 to said forward end of the lever and at its lower end as at 69 to the shank 54 of the foot device. A coil spring 70 is disposed between the housing 10 and the rear arm of the lever and tends to normally urge the forward arm of the lever downwardly. This downward movement of the forward end of the lever is limited by an adjusting screw 71 which has threaded engagement with the forward arm of the lever and the lower end of this screw bears against the upper portion of the housing 10. Thus by adjusting the screw 71 in either direction the vertical position of the foot 53 will be simultaneously adjusted. Thus the screw 71 serves to limit the lowermost position of the foot device relative to the work support. When it is desired to elevate the foot the front

arm of the lever is moved upwardly by the adjusting screw 71 against the tension of the spring 70. When it is desired to lower the foot the adjusting screw 71 is turned in the opposite direction and the spring 70 will automatically and instantly rock the lever 65 upon its fulcrum and cause the foot to follow. In order to lock the screw 71 against movement I have provided the same with a locking nut 72. In order to block the foot against upward movement I have provided an adjusting screw 73 in the rear arm of the operating lever 65, said screw being adapted to engage the upper part of the housing 10. This screw may be locked in a given position by a lock nut 74. Thus I have provided an operating lever for adjusting the vertical position of the foot and have associated with said lever two adjusting screws 71 and 73 which are respectively mounted on opposite sides of the fulcrum 66 of the lever. The lever 65 may be connected to a treadle *T* or to any other leg operated device through the medium of a chain or other connection 75 whereby the foot may be elevated by the operator during the running of the machine when seams or the like are passed under the foot or for raising the foot to facilitate the insertion of the fabric into the guide channel *g*.

The cutter is rotated at the rate of approximately 1800 R. P. M. and consequently the trimmed off material will be more in the nature of lint or fuzz than strips or pieces. If this fuzzy material were not carried away the operator would be compelled to breathe the same. Furthermore, this lint or fuzzy material would quickly clog the teeth of the cutter and thereby cause it to cease functioning. In order, therefore, to eliminate these two objections, I have provided means for withdrawing this trimmed off fuzzy-like material to a point remote from the operator. To this end I have provided a suction fan 76 and have mounted the same at a point in rear of the trimming machine. This fan includes a driving shaft 77 which is disposed in parallel relation with the shaft 7 of the trimming machine and is driven from the latter by means of a belt 78. The suction fan 76 is, of course, provided with the usual casing and is also provided with an inlet 79 and an outlet 80. The inlet 79 is tubular in cross section and is disposed in alinement with the nipple 21 of the trimming machine. A flexible tubular coupling 81 connects the nipple 21 with the tubular inlet 79 and by reason of this coupling being flexible the suction fan 76 may be readily positioned in the same horizontal plane as the trimming machine or in a plane above or below the same. In order to obtain the proper suction to withdraw the lint-like material from the com-

partment 11 of the trimming machine, I have provided the work-support bracket 36 with air inlets 82. I have also formed the end cap 18 of said compartment with an air inlet 83 which is concentric with the cutter 12 and have positioned over said opening 83 a foraminous covering 84.

In factory systems, garments are arranged in "lots" and these "lots" are divided into bundles. The garments in a particular "lot" are of the same weight and consequently it is only necessary to initially adjust the machine in order to take care of all of the garments of a particular "lot". Therefore, when bundles of a certain "lot" are handed to an operator, she first adjusts the vertical position of the foot device by means of the screw 71 to insure the free passage of the fabric through the guiding channel γ . She can also regulate the uppermost position of the foot device by means of the adjusting screw 73 in order to thereby permit of sufficient passage for seams through the guiding channel γ . Power is then applied to the machine in the usual manner, and the operator proceeds with the trimming off operation. She then elevates the foot device 52 by means of the treadle T, and initially inserts the fabric in said guiding channel in a flat condition. The fabric is held by both hands of the operator while the machine is being loaded and also while the fabric is being trimmed. The treadle is released and the fabric is fed by hand past the cutter, the fabric being simultaneously moved in a direction towards and from the cutter in order to follow the line of scolops. By means of the transparent foot device, the operator can readily view the point of work and this avoids the necessity of frequently removing the fabric from under the foot in order to ascertain whether or not the line of trim has been cleanly made. If the garments being operated upon, are formed with seams which extend across the embroidery stitching, the operator can elevate the foot device a distance sufficient only to permit the seam to pass thereunder without dragging, and upon release of the treadle, the spring 70 will cause the foot device to return to its previously determined lowermost position. The trimmed off pieces of fabrics, which are in the form of lint, are fed downwardly by the cutter through the chute 36^a into the housing 11 from whence it is drawn out by the suction device.

From the foregoing it will be seen that a maximum amount of work can be obtained; that the operator is protected from the cutter by the housing; that the trimmed off material is not breathed by the operator but is carried off, and that the trimmed off material is not left within the housing to choke the cutter but is automatically and constantly removed therefrom.

I claim:

1. In a hand feeding embroidery edge trimming machine, the combination with a frame, of a rotary cutter journaled on a horizontal axis on said frame, a horizontally disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, a foot device disposed above the work-support, said devices being respectively located in spaced parallel planes to provide a horizontal guiding channel for the body fabric during the hand feeding thereof, and manually controlled means including a lever fulcrumed on the frame for elevating said foot device to vary the height of said guiding channel.

2. In a hand feeding embroidery edge trimming machine, the combination with a frame, of a rotary cutter journaled on a horizontal axis on said frame, a horizontally disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, a foot device disposed above the work support, said devices being respectively located in spaced parallel planes to provide a horizontal guiding channel for the body fabric during the hand feeding thereof, manually controlled means including a lever fulcrumed on the frame for elevating said foot device to vary the height of said guiding channel, and adjusting means to limit the lowermost position of said foot device relative to said work support.

3. In a hand feeding embroidery edge trimming machine, the combination with a frame, of a rotary cutter journaled in a horizontal axis on said frame, a horizontally disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, a foot device disposed above the work support, said devices being respectively located in spaced parallel planes to provide a horizontal guiding channel for the body fabric during the hand feeding thereof, manually controlled means including a lever fulcrumed on the frame for elevating said foot device to vary the height of said guiding channel, and an adjusting screw carried by the lever and cooperating with the frame to limit the lowermost position of said foot device relative to said work support.

4. In a hand feeding embroidery edge trimming machine, the combination with a frame, of a rotary cutter journaled on a horizontal axis on said frame, a horizontally disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, a foot device disposed above the work support, said devices being respectively located in spaced parallel planes to provide a horizontal guiding channel for

the body fabric during the hand feeding thereof, manually controlled means including a lever fulcrumed on the frame for elevating said foot device to vary the height of
5 said guiding channel, adjustable means to limit the lowermost position of said foot device relative to said work support, and a spring disposed between the lever and the frame for normally holding the foot device
10 in its lowermost position.

5. In a hand feeding embroidery edge trimming machine, the combination with a frame, of a rotary cutter journaled on a horizontal axis on said frame, a horizontally
15 disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, a foot device disposed above the work support, said devices being respectively
20 located in spaced parallel planes to provide a horizontal guiding channel for the body fabric during the hand feeding thereof, manually controlled means including a lever fulcrumed on the frame for elevating said foot device to vary the height of
25 said guiding channel, adjustable means to limit the lowermost position of said foot device relative to said work support, a spring disposed between the lever and the frame for normally holding the foot device in its lowermost position, and adjustable means for limiting the uppermost position of said foot device relative to said work support.

6. In a hand feeding embroidery edge
35 trimming machine, the combination with a frame, of a rotary cutter journaled on a horizontal axis on said frame, a horizontally disposed work support mounted on the frame in advance of and in cooperative
40 relation to said cutter, said work support having an uninterrupted work supporting surface, a foot device disposed above the work support, said devices being respectively located in spaced parallel planes to provide a horizontal guiding channel for the
45 body fabric during the hand feeding thereof, manually controlled means including a rearwardly extending lever fulcrumed on the frame above the cutter for elevating said foot device to vary the height of said guiding
50 channel, an adjusting screw mounted on the lever in advance of its fulcrum and cooperating with the frame to limit the lowermost position of said foot device relative to said work support, and a spring disposed in
55 rear of the lever fulcrum and arranged between the lever and the frame for yieldably holding said foot device in its lowermost position.

60 7. In a hand feeding embroidery edge trimming machine, the combination with a rotary cutter operable about a horizontal axis, of a horizontally disposed work supporting device arranged in cooperative relation
65 to said cutter and having an uninter-

rupted work supporting surface, and a transparent foot device disposed above the work support and arranged in advance of and in cooperative relation with said cutter, said devices being respectively located in
70 spaced parallel horizontal planes to provide a horizontal guiding channel for the body fabric during the hand feeding thereof, one of said devices being provided with an embroidery-engaging flange to limit the
75 movement of the fabric towards the cutter, said foot device extending forwardly beyond the embroidered edge of the fabric.

8. In a hand feeding embroidery edge trimming machine, the combination with a
80 rotary cutter operable about a horizontal axis, of a horizontally disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, and a
85 transparent foot device disposed above the work support and arranged in advance of and in cooperative relation with said cutter, said devices being respectively located in spaced parallel horizontal planes to provide
90 a horizontal guiding channel for the body fabric during the hand feeding thereof, one of said devices being provided with an embroidery-engaging flange to limit the movement of the fabric towards the cutter, said
95 foot device extending forwardly beyond the embroidered edge of the fabric and including upper and lower clamping rings, and a block of transparent material clamped between said rings.
100

9. In an edge trimming machine, the combination of a main frame having a housing formed at one end thereof, said housing having an open outer side, a shaft journaled
105 in said frame and projecting into said housing, a cutter fixed to said shaft and disposed in said housing, and a closure cap for said open outer side of said housing, said housing and cap being conjointly formed with
110 a rearwardly extending nipple communicating with the interior of the housing.

10. In an edge trimming machine, the combination of a main frame having a housing formed at one end thereof, said housing having an open outer side, a shaft
115 journaled in said frame and projecting into said housing, a cutter fixed to said shaft and disposed in said housing, and a closure cap for said open outer side of said housing, said housing and cap being conjointly
120 formed with a rearwardly extending nipple communicating with the interior of the housing, said nipple being disposed in a plane below the shaft and having its longitudinal axis extending in a plane tangential to a
125 circle having for its center the longitudinal axis of the shaft.

11. In an edge trimming machine, the combination of a main frame having a housing formed at one end thereof, said
130

housing having an open outer side, a shaft journaled in said frame and projecting into said housing, a cutter fixed to said shaft and disposed in said housing, and a closure cap for said open outer side of said housing and formed with an air inlet opening arranged in alinement with said shaft, said housing and cap being conjointly formed with a rearwardly extending nipple communicating with the interior of the housing.

12. In an edge trimming machine, the combination of a main frame having a housing formed at one end thereof, said housing having an open outer side, a shaft journaled in said frame and projecting into said housing, a cutter fixed to said shaft and disposed in said housing, and a closure cap for said open outer side of said housing and formed with an air inlet opening arranged in alinement with said shaft, said housing and cap being conjointly formed with a rearwardly extending nipple communicating with the interior of the housing, and a cover for said air inlet opening formed of foraminous material.

13. In an edge trimming machine, the combination with a frame including a housing, of a rotary cutter located in said housing, said housing being provided with an air inlet and an air outlet and with an opening for the teeth of the cutter, a work support disposed adjacent said opening and in cooperative relation to said cutter, a chute for directing the trimmed off material into the housing, and a suction device cooperating with said air outlet for withdrawing said trimmed off material from the housing.

14. In an edge trimming machine, the combination with a frame including a housing, of a rotary cutter located in said housing, and fixed to a driving shaft journaled in said frame, said housing being provided with an air inlet and an air outlet and with an opening for the teeth of the cutter, a work support disposed adjacent said opening and in cooperative relation to said cutter, a chute for directing the trimmed off material into the housing, a suction device cooperating with said air outlet for withdrawing said trimmed off material from the housing and means for driving the suction device from the cutter.

15. In an edge trimming machine, the combination with a frame including a housing, of a horizontal shaft journaled in said frame, a rotary cutter having peripheral cutting teeth disposed within the housing and fixed to said shaft, said housing being provided with an air inlet and an air outlet and with an opening for the teeth of the cutter, a work support disposed adjacent said opening and in cooperative relation to said cutter, a chute for directing the trimmed off material into the housing,

a suction device cooperating with said air outlet for withdrawing said trimmed off material from the housing, said suction device including a driving shaft arranged in parallelism with the cutter shaft, and a driving connection between the cutter shaft and the shaft of the suction device.

16. In an edge trimming machine, the combination with a frame including a housing, of a horizontal shaft journaled in said frame, a rotary cutter fixed to the shaft and located within the housing, said cutter having peripheral cutting teeth, said housing being provided with an air inlet and an air outlet and with an opening for the teeth of the cutter, a horizontal work support disposed in front of the frame adjacent said opening and in cooperative relation to said cutter, a chute for directing the trimmed off material into the housing, a rearwardly extending nipple secured to the housing in alinement with the air outlet, and a suction device attached to said nipple for withdrawing said trimmed off material from the housing.

17. In an edge trimming machine, the combination with a frame including a housing, of a horizontal shaft journaled in said frame, a rotary cutter fixed to the shaft and located within the housing, said cutter having peripheral cutting teeth, said housing being provided with an air inlet and an air outlet and with an opening for the teeth of the cutter, a horizontal work support disposed in front of the frame adjacent said opening and in cooperative relation to said cutter, a chute for directing the trimmed off material into the housing, a rearwardly extending nipple secured to the housing in alinement with the air outlet, a suction device located in rear of the frame and including a horizontal driving shaft arranged in parallelism with the cutter shaft, a flexible conveyor connecting the nipple and suction device, and a driving connection between the cutter shaft and the shaft of the suction device.

18. In an edge trimming machine, the combination with a frame including a housing, of a horizontal shaft journaled in said frame, a rotary cutter fixed to the shaft and located within the housing, said cutter having peripheral cutting teeth, said housing being provided with an air inlet and an air outlet and with an opening for the teeth of the cutter, a horizontal work support disposed in front of the frame adjacent said opening and in cooperative relation to said cutter, a chute for directing the trimmed off material into the housing, a rearwardly extending nipple secured to the housing in alinement with the air outlet, said nipple being disposed in a plane below the cutter shaft and having its longitudinal axis extending in a plane tangential to a circle hav-

ing for its center the longitudinal axis of said shaft, and a suction device attached to said nipple for withdrawing said trimmed off material from the housing.

- 5 19. In a hand feeding embroidery edge trimming machine, the combination with a rotary cutter operable about a horizontal axis, of a horizontally disposed work supporting device arranged in cooperative relation to said cutter and having an uninterrupted work supporting surface, and a foot
10 device disposed above the work support, said devices being respectively located in spaced parallel horizontal planes to provide a horizontal guiding channel for the body fabric
15 during the hand feeding thereof, said work supporting device including a supporting

bracket including a horizontal arm having a pair of spaced slots formed therein, a horizontal work support mounted on said horizontal arm and including a slot disposed in advance of said cutter, a stationary trimmer blade located in said slot and adjustable towards and away from said cutter, and screws extending through the slots of said horizontal arm and engageable with said trimmer blade to clamp the latter against movement.

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

HORACE F. GRUMAN.

Witnesses:

A. P. SCHOEAP,
J. E. FARRELI.