J. H. CHENOWETH.

SEWING MACHINE ATTACHMENT.

APPLICATION FILED SEPT. 21, 1908. RENEWED JULY 26, 1912.

1,055,319. Patented Mar. 11, 1913.

3 SHEETS—SHEET 1.

Fig. 1.

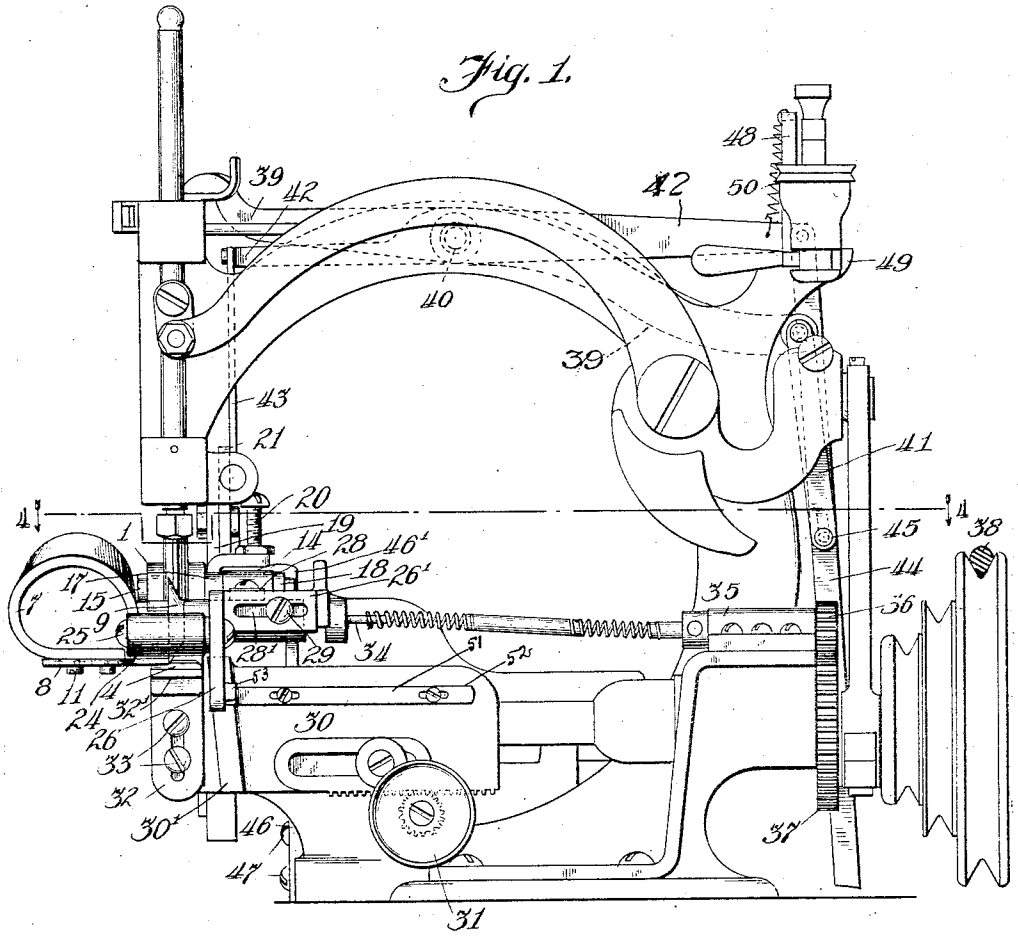
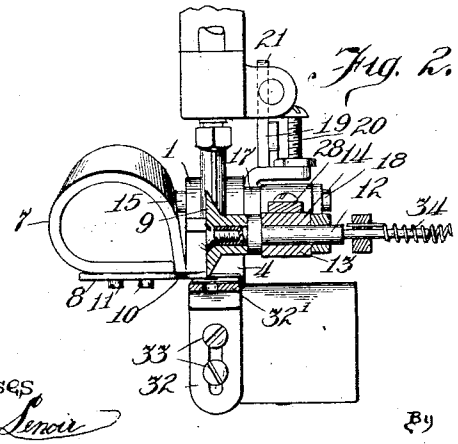


Fig. 2.



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3 SHEETS—SHEET 2.

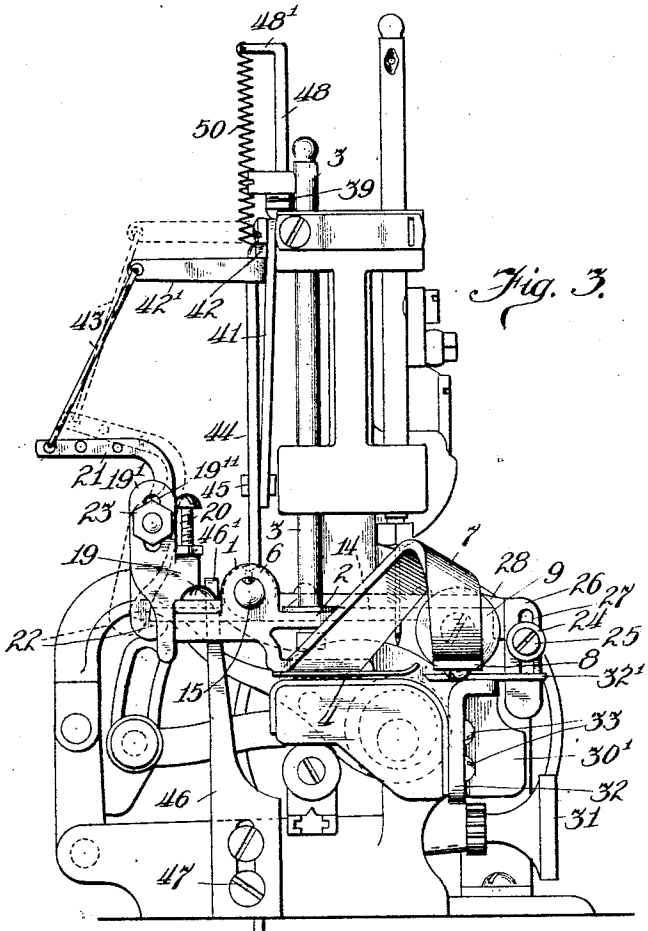

Fig. 3.

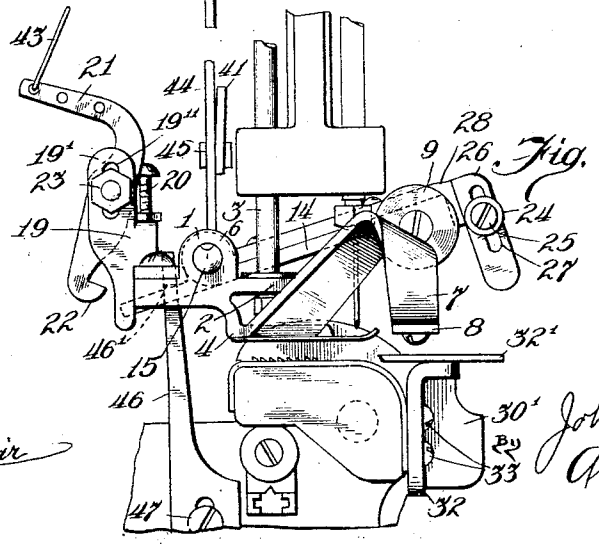

Fig. 6.

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3 SHEETS—SHEET 3.

Fig. 4.

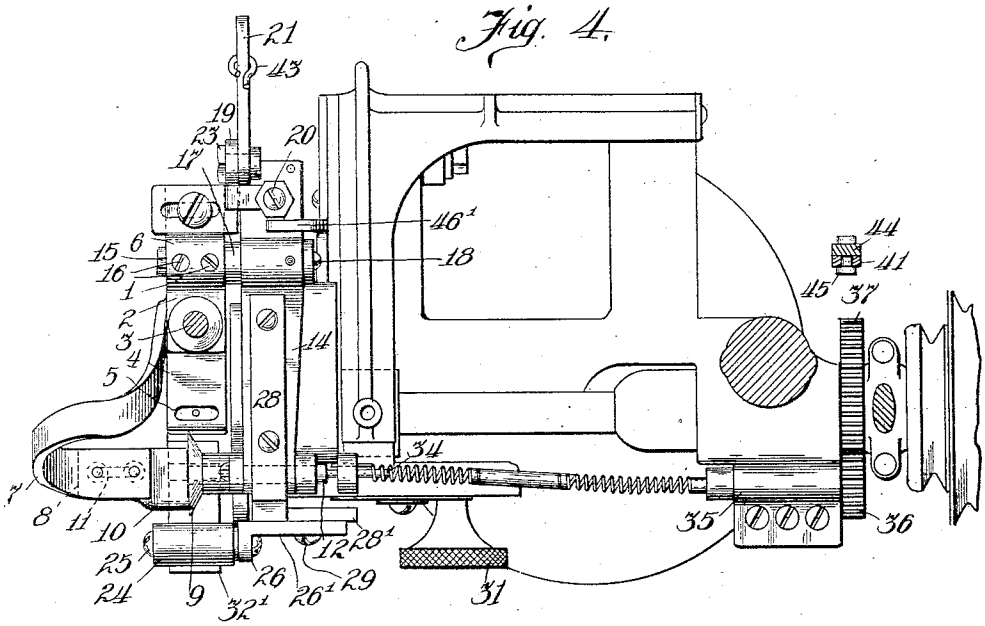
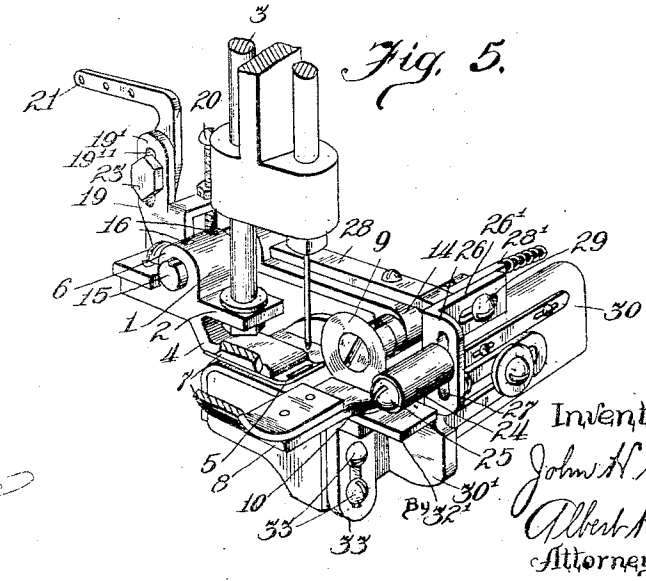


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SEWING-MACHINE ATTACHMENT.

1,055,319. Specification of Letters Patent. Patented Mar. 11, 1913.

Application filed September 21, 1908, Serial No. 454,013. Renewed July 26, 1912. Serial No. 711,733.

To all whom it may concern:

Be it known that I, JOHN H. CHENOWETH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sewing-Machine Attachments, of which the following is a specification.

This invention relates to improvements in sewing machine attachments, and refers more specifically to an attachment for effecting the folding down, trimming and sewing of the edge of a hat,—usually a felt hat.

Among the salient objects of the invention are to provide an attachment of the character above referred to; to provide an attachment of the character referred to so organized that the folding down and trimming mechanism is automatically lifted and thrown into a position where the hat edge may be conveniently adjusted to position, by the same movement which raises the presser-foot of the machine; to provide in combination with a sewing machine attachment a rotary cutter or trimming-knife which is driven at a rate of speed greater than that which would be incident to a rolling cut; to provide improvements in the details of construction and arrangement of the attachment whereby the latter is made capable of use in making and trimming folds of various widths and thicknesses of material; to provide improvements in the details of construction whereby the lowering of the presser-foot brings the folding and trimming mechanism into proper operative position and automatically locks the same rigidly in such position; to provide improved details in the driving connection between the rotary cutter and element from which it is driven, which permit the adjusting movements hereinbefore mentioned without disarranging the driving connections; to provide an attachment which is adapted to machines now in common use without re-constructing and re-modeling the same; and in general to provide an improved mechanism of the character referred to.

To the above ends the invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims.

In the accompanying drawings—Figure 1 is a front elevation of a sewing machine head with my attachment applied thereto; Fig. 2 is a fragmentary view partly in front elevation and partly in axial section through the rotary cutter and journal support thereof; Fig. 3 is a side elevation of the mechanism as viewed from the left-hand side of the machine; Fig. 4 is a sectional view taken approximately on line 4—4 of Fig. 1 and looking downwardly; Fig. 5 is a fragmentary perspective view of the attachment applied to the machine, the main guide loop of the attachment being broken away; Fig. 6 is a view in general like Fig. 3 but showing the parts in their changed positions when the presser-foot is raised, and the cutter-bar unlatched and also uplifted.

The rough felt hats or "shapes", as they are called in the trade, used by milliners, require that the curled up brims be trimmed off evenly, and usually folded down and sewed. Heretofore the practice has been to first cut the edges of the brim off accurately and of the required width, either by hand shears or upon a trimming machine organized for that particular purpose, then place the "shape" under a suitable die-press and fold down and crease the inturned edge of the brim, and thereafter sew the folded down edge upon an ordinary sewing machine. Sometimes, especially when the trimming of the edge is to be done upon a machine, the rough jagged corners of the "shape" are first cut off by hand, the hat then placed in the dies and folded and creased, and thereafter the trimming done upon a machine which is guided by the fold or crease thus made. In either case there are several operations involved.

Describing, now, the preferred embodiment of my attachment, 1 designates as a whole the presser-foot (see Figs. 3 and 5), which comprises an upper arm 2 rigidly secured to the presser-bar 3 in any suitable manner, as by fitting upon the lower end of the latter, a lower foot proper 4 provided with a needle opening or throat 5, and a transverse pillow block or pintle support 6; all of these parts mentioned being desirably cast or forged integrally with each other. To the left-hand side of the presser-foot is rigidly attached a guide loop 7 which is large enough to permit the turned over part of the brim of the hat with all of its uneven portions to pass freely therethrough, and which loop carries at its lower return end a fabric-support or extension 8. The extension 8, as best seen in Figs. 2 and 4,

extends to a point adjacent to the lower edge of a rotary cutter 9, there terminating in a right-angled edge which supports the fabric closely adjacent to the point where the latter is being severed by the knife. In plan view, the extension 8 is widened or fan-shaped, as indicated at 10, so as to support the fabric for some distance before it passes under the cutter, and this broadened portion 10 is suitably rounded at its edge, which is presented to the onwardly moving fabric, so as to smooth out wrinkles and facilitate the free movement of the fabric. The extension is made longitudinally adjustable by means of slot-and-screw connections, as indicated at 11 (Fig. 4) so that it may be adjusted to follow the cutter, which may also be adjusted in a manner hereinafter described.

The cutter 9 is rigidly mounted upon the end of a shaft section 12 (see Fig. 2), which shaft section is journaled in a suitable journal-eye 13 formed as a part of a bar 14, which for convenience will be termed the cutter-bar. The cutter-bar extends rearwardly parallel with the length of the presser-foot and is pivotally mounted upon a fixed pintle stud 15, which extends transversely through the socket 6 of the presser-foot hereinbefore described; said pintle stud being longitudinally adjustable and held rigidly in adjusted position by means of set-screws 16 threaded through the upper side of the socket member 6 and into a groove in said pintle (see Fig. 4). The pintle carries an enlargement or collar 17 against which the journal portion of the cutter-bar bears thus securing rigidity of the bar against lateral vibration, and the cutter-bar is held upon the pintle by means of a cap-screw 18.

In order to positively limit the descent of the forward end of the cutter-bar and so determine the cutting position of the cutter, a bracket 19 (Figs. 3 and 5) is rigidly mounted upon the rear portion of the presser-foot and arranged to project above the rear end of the cutter bar, and through this bracket is adjustably threaded a stop-screw 20. In order to normally lock the cutter-bar against lifting up, a bent latch 21 is pivotally mounted upon an extension 19′ of the same bracket; which latter terminates at its lower end in a hook 22 which engages underneath the rear end of the cutter-bar. The pivot bolt or stud 23 which carries the latch is vertically adjustable in a slot 19″ of the bracket.

In order to roll down and hold the fabric or folded edge of the brim at a point just before it passes under the cutter, a roller 24 is mounted upon a journal stud 25, which is in turn adjustably mounted in a slot 27 of a guide member 26. This guide member 26 is secured rigidly to the front end of the cutter-bar, the latter being to this end provided with a strap-like extension 28. which is secured to the top of the bar and has its extended portion 28′ bent at right angles to receive the corresponding part 26′ of the member 26. The guide 26 is adjustably and rigidly secured in position by slot-and-screw connection, as indicated at 29.

As a part of the regular equipment of the sewing machine, the latter is provided with a fabric guide or gage 30, which is adjustable transversely of the machine table by means of a hand-wheel 31 (see Fig. 1). The guiding face 30′ of the main guide or gage 30 is normally set co-incident, or substantially co-incident, with the face of the gage or guide 26 which carries the roller 24.

The presser-roller 24 coöperates with a table-like extension 32′ formed as a part of a bracket 32 adjustably mounted by means of slot-and-screw connections 33 upon the front face of the main guide 30.

The rotary cutter is driven by means of a flexible shaft 34 suitably connected at one end with the shaft section 12 and at its opposite end connected with a similar short shaft section journaled in a suitable pillow block 35 and carrying a pinion 36. The pinion 36 meshes with a gear 37 mounted upon the main shaft of the sewing machine head. The latter shaft is driven, as usual, by a belt 38 engaging either one of a plurality of grouped pulleys rigid with such shaft.

The presser foot bar cutter with the presser foot and attached parts is lifted by the usual lifting lever 39 (see Fig. 1) forming a part of the regular equipment of the sewing machine; said lifting lever being pivoted intermediate its length, as indicated at 40, to the stationary arm or frame of the machine and being acted upon at its rear end by a link 41. In order that the cutter-bar of the attachment may first be released or unlatched, and thereafter tilted up so as to raise the cutter out of the way concurrently with the raising of the presser-foot, I provide a second lever 42, which is likewise pivoted at 40, has its right-hand end approximately of the same length as the lifting lever 39 and is provided at its opposite end with a rearwardly turned extension 42′, which is connected with the horizontally extending portion of the latch 21 by means of a link 43 (see Fig. 3). A link 44 connects directly with the right-hand end of the lever 42 and extends thence downwardly to a suitable foot-lift or tread while the link 41 which actuates the lever 39 is connected at 45 to the link 44 by a suitable lost motion connection (slot-and-pin, as shown), the arrangement being such that the lever 42 moves some distance before the lever 39 begins to move. The initial move-

ment of lever 42 oscillates the latch out of engagement with the presser-foot.

In order to effect the up-tilting of the cutter-bar during the succeeding upward movement of the two lifting levers, a stationary hook 46 (see Fig. 3) is adjustably mounted upon the under frame of the machine, as indicated at 47, and extends upwardly and hooks over the rear end of the cutter-bar, as indicated at 46′ (Fig. 4). Obviously in the bodily upward movement of the presser-foot and connected parts, the cutter-bar is thus positively up-tilted; this being permitted by the flexible driving connections hereinbefore described.

In order that the latch 21 may be caused to automatically reëngage the cutter-bar when the parts are returned to normal operative position, a spring is arranged to act upon the lever 42 in a manner tending to return it to its normal position. To this end a bracket or upstanding arm 48 is mounted upon the rear portion of the stationary frame 49 of the machine head, and has a bent extension 48′ to which is attached a coiled contractile spring 50. The lower end of this spring connects with the corresponding end of the lever 42, and acting through the lever exercises a down-thrust upon the link 43, which insures a reëngagement of the latch.

Inasmuch as the attachment extends a considerable distance in front of the presser-foot, and is as a whole chiefly carried by the presser-foot, I provide an adjustable stop which supports the front end of the attachment against lateral movement under the pressure exerted upon the latter in guiding the edge of the fabric. This stop takes the form of a gage 51, which is adjustably mounted upon the main guide or gage 30 by means of a slot-and-screw connection indicated at 52. The outstanding end 53 of the stop engages the part 26 of the attachment proper, as shown clearly in the drawings.

The operation of the mechanism has been practically described in connection with the description of its construction, but may be chiefly re-stated. Assuming that the presser-foot is raised and the cutter-bar uptilted, as shown in Fig. 6, the operator inserts the curled up part of the brim of the hat by passing the main part of the brim below the terminal portion of the guide loop, and the parts to be folded down, sewed and trimmed extending inside of the guide-loop and above the member 8. The fabric-support at the end of the guide-loop extends between the overlying fold which is to be trimmed and the main part of the brim. The operator having suitably adjusted the fold beneath the presser-foot, lowers the latter into bearing with the fabric, the cutter being thus permitted to descend and rest loosely upon the fabric. Preferably the operator will stitch a short distance so as to get the fabric started and running truly through the machine, whereupon manual pressure is applied to the cutter-bar, thus forcing the cutter through the upper fold of the fabric and allowing the latch to automatically engage the rear end of the cutter-bar and hold it locked in its operative position. The machine is then operated in the usual and obvious manner, and, if the fabric is started in the manner suggested, upon completing the circumference of the hat brim, the cutter will finish its cut in exact alinement with the starting portion thereof, so that no manual trimming will be required to finish the job. Having sewn and trimmed the entire brim, the operator lifts the presser-foot, and in so doing automatically throws up the cutter-bar, so that the fabric can be readily removed.

While I have herein shown and described a practical and, what I deem to be a preferred embodiment of the invention, yet it will be understood that the details of construction may be modified without departing from the spirit of the invention.

I claim as my invention:

1. A sewing machine attachment comprising a frame having a loop for folding the edge of a piece of fabric, a shelf adjustably secured to the end of said loop and having a cutting edge parallel with the direction of travel of the fabric, and a rotary cutter carried by said frame, said cutter being adjustable in axial and radial planes.

2. A sewing machine attachment comprising a presser foot, a guide member rigid with the presser foot and terminating in a fabric support located in front of and in alinement with the presser foot, a cutter bar movably connected with the presser foot, a rotary cutter disk carried by said cutter bar, means for locking said cutter bar positively against up-lifting movement and driving connections between the cutter disk and a source of power.

3. In a sewing machine attachment, the combination of a presser foot, a guide loop carried by the presser foot and extending forwardly therefrom and terminating in an approximately horizontal fabric support, a cutter bar pivotally mounted upon the presser foot, a cutter disk journaled in the swinging end of said cutter bar and located in coöperative relation with said fabric support, flexible driving shaft connections between said cutter disk and the rotating part of the sewing machine and means for adjustably locking said cutter bar against up-lifting movement at its cutter carrying end.

4. In a sewing machine attachment, the combination of a presser foot, a guide loop carried by the presser foot and having a fabric support located in front of and ap-

proximately in alinement with said presser foot, a cutter bar pivotally mounted upon the presser foot, a cutter disk journaled in the cutter bar and located in coöperative relation to the fabric support of the guide, upper and lower guides located in front of the cutter and between which the folded fabric passes before reaching the cutter, means for adjustably locking the cutter bar against up-lifting movement as to its forward end, means for positively limiting the downward movement of the forward end of the cutter bar and suitable flexible driving connections for actuating said cutter disk.

5. In a sewing machine attachment, the combination of a presser foot, a cutter bar pivotally supported at one end, a cutter disk journaled upon the cutter bar, suitable driving connections for the cutter disk, a fabric support arranged in coöperative relation with the cutter disk, mechanism detachably engaging the cutter bar and locking the latter against up-lifting movement as to its forward end, and means for adjusting the depth of cut of the cutter.

6. In a sewing machine attachment, the combination of a presser foot adapted to be mounted upon the movable presser foot bar of a sewing machine, a cutter bar pivotally mounted and carrying at its movable end a rotatable cutter disk, a latch mechanism adapted to engage said cutter bar and hold the cutter carrying end thereof against up-lifting movement, operative connections associated with the lifting mechanism of the presser foot bar and said latch mechanism whereby the latch is released during the initial movement of the mechanism which lifts the presser foot.

7. In a sewing machine attachment, the combination of a presser foot adapted to be mounted upon the movable presser foot bar of a sewing machine, a cutter bar pivotally mounted and carrying at its movable end a rotatable cutter disk, a latch mechanism adapted to engage said cutter bar and hold the cutter carrying end thereof against up-lifting movement, operative connections associated with the lifting mechanism of the presser foot bar and said latch mechanism whereby the latch is released during the initial movement of the mechanism which lifts the presser foot, and flexible driving connections for said cutter disk.

8. In a sewing machine attachment, the combination of a presser foot adapted to be mounted upon the movable presser foot bar of a sewing machine, a cutter bar pivotally mounted and carrying at its movable end a rotatable cutter disk, a latch mechanism adapted to engage said cutter bar and hold the cutter carrying end thereof against up-lifting movement, operative connections associated with the lifting mechanism of the presser foot bar and said latch mechanism whereby the latch is released during the initial movement of the mechanism which lifts the presser foot, flexible driving connections for said cutter disk, and a fixed stop arranged to overhang the end of the cutter bar opposite the cutter carrying end thereof and operating to impart a positive up-tilting movement of the cutter bar as the latter moves upwardly with the presser foot.

9. In a sewing machine attachment, the combination of a presser frame, a presser foot on said frame, a guide shelf suspended from said frame in front of the presser foot and having a cutting edge, a rotary cutter supported from said frame for coöperating with said cutting edge, means for raising said presser frame, and means for automatically removing the cutter from the cutting edge during primary upward movement of the presser frame.

10. In a sewing machine attachment, the combination of a presser frame, a presser foot on said frame, a guide shelf extending from said frame and having a cutting edge, an arm pivoted to said frame, a rotary cutter journaled in the end of said arm and in the plane of said cutting edge, means for raising the frame, and trip mechanism for deflecting said arm upwardly during initial movement of said frame whereby said rotary cutter is carried away from the cutting edge.

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