Feb. 17, 1931. L. ROCKE 1,793,334

SEWING MACHINE ATTACHMENT

Filed Nov. 23, 1926 2 Sheets-Sheet 1

Fig. 1.

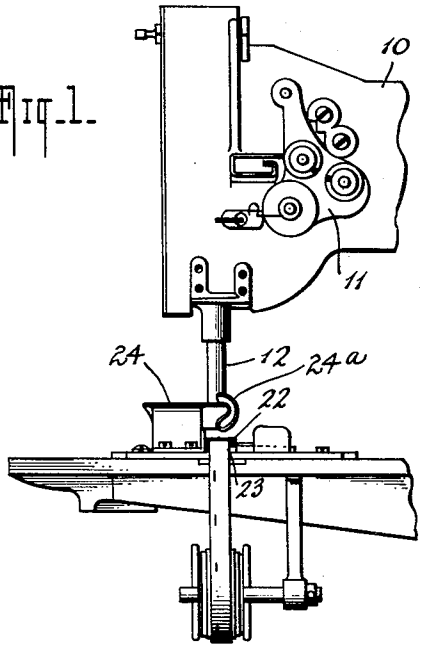


Fig. 2.

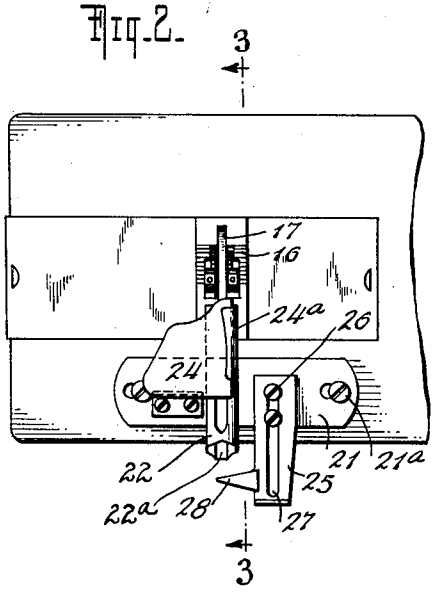


Fig. 3.

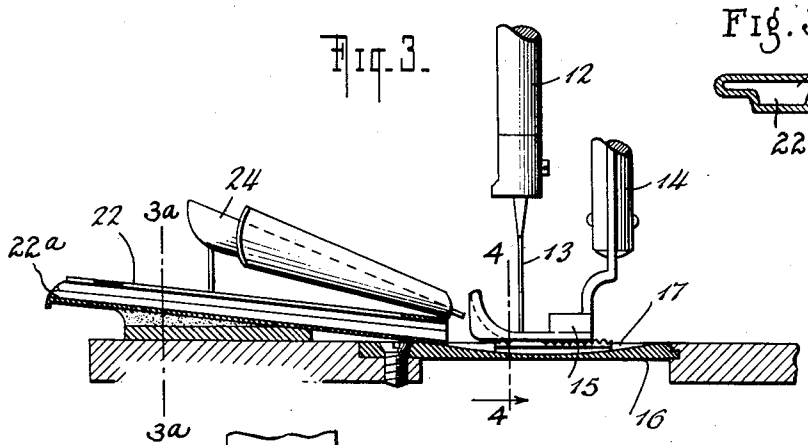
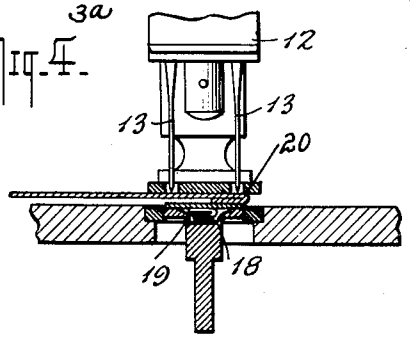


Fig. 3a

Fig. 4.



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Fig. 5.

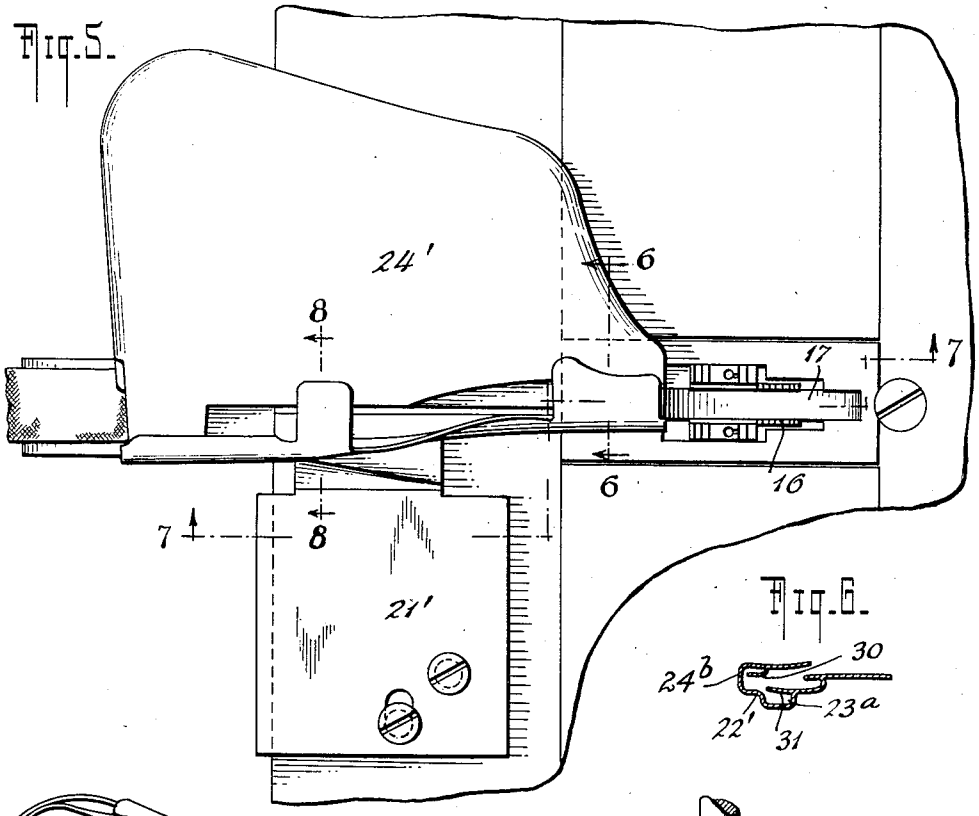


Fig. 6.

Fig. 7.

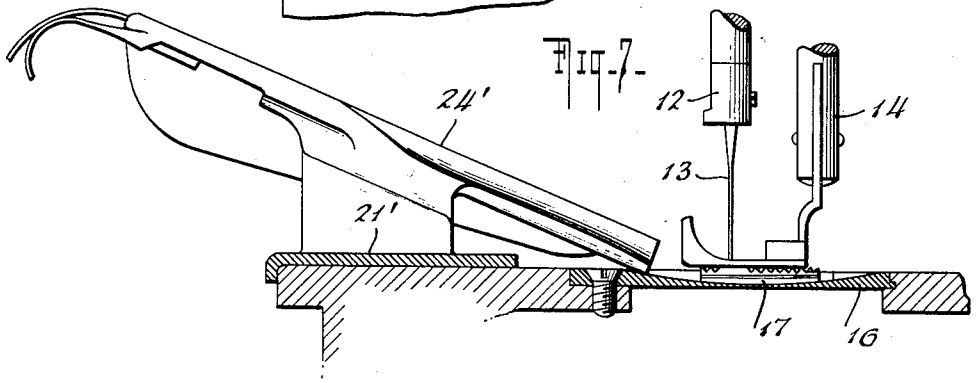


Fig. 8.

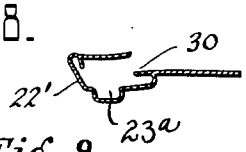


Fig. 9.

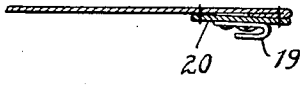
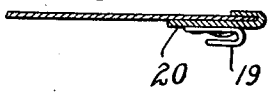


Fig. 10.



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Patented Feb. 17, 1931 1,793,334

UNITED STATES PATENT OFFICE

LOUIS ROCKE, OF BROOKLYN, NEW YORK, ASSIGNOR TO WALDES-KOH-I-NOOR, INC., OF LONG ISLAND CITY, NEW YORK, A CORPORATION OF NEW YORK

SEWING-MACHINE ATTACHMENT

Application filed November 23, 1926. Serial No. 150,235.

This invention relates to sewing machine attachments, and particularly to attachments for use in connection with two-needle sewing machines, by means of which tapes, provided with separable fastening devices, as, for example, hooks and eyes are adapted to be sewed to a garment by a single operation.

In Letters Patent of the United States #1,603,246, granted to me October 12, 1926, I have disclosed an apparatus for the purpose above set forth. Such apparatus, however, has certain objections, in that it necessitates the use of a special front plate, a special throat plate, and a special feed dog for the sewing machine, both of said plates being provided with guiding and clearance grooves or channels, and the feed dog also being provided with a clearance groove or channel. As only certain types of two-needle sewing machines are provided with a front plate, the invention of the patent is necessarily limited in its application to two-needle machines of such certain types. In addition, as the grooves provided in both the throat plate and feed dog are comparatively wide, it is practically impossible to use the specially constructed parts for plain or flat work, so that when it is desired to shift the machine over from sewing hook and eye tape to sewing plain or flat work, these parts of special construction must be removed and replaced by the usual standard parts of the machine. Although the sewing machine operatives in garment factories are familiar with the use of extra attachments, such as hemmers or the like, which are merely screwed upon the bed plate of the machine, the placing of such attachments upon the machine does not ordinarily involve the removal of the throat plate or feed dog, and while the removal of the throat plate and feed dog is not a particularly difficult operation, it is one which such operatives are not ordinarily called upon to perform, and therefore is considered by them to be the work of a machinist rather than of an operative. Because of this fact, and also because the operatives are usually paid for their work upon a piece-work basis, and consequently do not want to spend their time removing the special parts and replacing them by the usual sewing machine parts, it has been found that in most cases a machinist must be used to make the necessary changes for shifting the machine over from one class of work to another.

A further objection to the apparatus disclosed in the patent resides in the fact that as the supply of tape passing to the needles through the channels of the throat and front plate is entirely concealed, the operator is unable, with such apparatus, to determine the location of the points upon the tape at which the fasteners are secured, and consequently it is extremely difficult for the operator to know whether or not the tape is being positioned longitudinally of the garment so as to bring the fasteners to the proper points along the garment.

The principal object of this invention is to provide a new and improved attachment, capable of being secured to the bed plate of a sewing machine in a manner similar to that employed for securing other commonly used attachments, which will not necessitate the change of any of the parts of the machine when it is desired to shift the machine over from sewing hook tape to plain work, other than simply removing the attachment, and which is not limited in its application to any particular type of a two-needle machine.

Another object of the invention is to provide an attachment having associated therewith means for enabling the operator to determine accurately the exact position of the fasteners upon the tape and to position the tape longitudinally of the garment so as to bring the fasteners into their proper or desired positions.

A further object is to provide an attachment by means of which the feeding of the hook and eye tape, and the garment material, the turning over of the edge of the tape around said material, and the sewing of both edges of the tape to the garment material to secure the tape thereto and simultaneously bind the edge of the garment, are performed in a single operation.

These and other objects will appear more fully from the following more detailed de-

scription and by reference to the accompanying drawings forming a part hereof in which Fig. 1 is a front elevation of a portion of the head of a sewing machine and the bed plate thereof with my improved attachment secured to the latter; Fig. 2 is a plan view of the bed plate and attachment shown in Fig. 1; Fig. 3 is a vertical section taken substantially on the line 3—3 of Fig. 2; Fig. 3ª is a section on the line 3ª—3ª of Fig. 3; Fig. 4 is a section on the line 4—4 of Fig. 3; Fig. 5 is an enlarged plan view of a combined binder and tape feeding attachment; Fig. 6 is a section on the line 6—6 of Fig. 5; Fig. 7 is a section on the line 7—7 of Fig. 5; Fig. 8 is a section on the line 8—8 of Fig. 5; Fig. 9 is an enlarged sectional view of the product produced by the operation of the attachment shown in Figs. 1 to 4 inclusive; and Fig. 10 is a similar view of the product of the attachment shown in Figs. 5 to 8 inclusive.

As shown in Figs. 1 to 4 of the drawings, the numeral 10 indicates the head of a two-needle sewing machine provided with the usual upper thread guiding and feeding devices 11 and a needle bar 12 to which is secured a pair of needles 13, and also having the presser foot bar 14 and presser foot 15.

Instead of providing the throat plate 16 with a through guiding groove or channel, as shown in my prior patent above referred to, the throat plate 16 has formed therein a relatively short arc-shaped depression 17, which, by referring to Fig. 2 of the drawings, it will be noted does not extend the full length of such throat plate, but terminates short of the front and rear ends thereof so as to leave a pair of continuous surfaces across the full width of the throat plate closely adjacent to the front and rear ends of the presser foot. In addition, it will be noted that the width of the depression 17 is just sufficient to provide a clearance for the bill portion 18 of the hook 19, secured to the tape 20.

I have found that the attaching eyelets of both the hooks and eyes will pass readily between the presser foot and throat plate, and that it is only necessary to provide a clearance of just sufficient depth and width to permit the passage of the bill of the hook, and thereby prevent the crushing thereof, and that it is not necessary to provide a clearance space of the entire width of the hook. By providing a small arc-shaped depression or clearance only, I am enabled to overcome the objectionable features of the wide channels or guideways shown in my prior patent, and to provide a throat plate having a sufficient supporting surface to enable it to be used with equal facility on plain or flat work, or for the sewing of hook and eye tape to a garment.

Instead of providing a guiding channel in the front plate of the machine, as shown in the patent, I use an attachment having a base 21 adapted to be secured to the bed plate by the screws 21ª. Suitably secured to the base 21 is a hollow tubular sheet metal member 22, the inner dimensions of which are large enough to permit the passage of the tape therethrough. The bottom wall of the tubular member is provided with a central offset section 22ª (see Figs. 2, 3, and 3ª) extending the full length of said wall, thus forming a pair of side sections which support the side edges of the tape and leaving clearance space between said side sections through which the bill of the hook is adapted to pass freely.

The tubular member, as clearly shown in Fig. 3 of the drawing is inclined downwardly from its front to its rear end and the rear end of said member terminates closely adjacent to the front of the arc-shaped depression 17, thus serving to direct the tape fed through said member downwardly into said arc-shaped depression below the presser foot 15. Immediately above the tubular member 22 a supporting plate 24 is provided, the right hand end of which, as shown in Fig. 2, is curved upwardly to provide a hemmer 24ª for the edge of the garment material.

For the purpose of accurately locating the fasteners longitudinally of the edge of the garment, I provide an arm 25 secured, as by the screws 26, to the base plate 21, said screws passing through a longitudinal slot 27 in said arm. A pointer 28 projects laterally from the side of said arm and the provision of the longitudinal slot enables the arm to be adjusted inwardly or outwardly relatively to the needles 13. As the fastening members are secured at regularly spaced intervals along the tape, the pointer may be adjusted so that when a fastener is in alignment with the pointer, the position of the fastener nearest to the end of the tape can be accurately determined.

The manner in which the attachment is used as follows: The operator places the tape within the tubular member 22 with the fasteners located at the lower side of the tape and places the garment to which the tape is to be attached upon the supporting plate 24 with the edge of the garment in engagement with the side wall 24ª of said supporting plate. The garment and tape are then pushed forwardly onto the presser foot, which of course has been raised in the usual manner to permit the passage of the tape and garment between the presser foot, feed dog and throat plate. In starting the operation upon any certain type of garment, the edge of the tape is positioned longitudinally of the edge of the garment to bring the fastener nearest to the end of the tape to the desired point relatively to the end of the longitudinal edge of the garment. The screws 26 are then loosened and the arm 25 adjusted so as to bring the pointer 28 in a alignment with the fastener nearest to said pointer. The screws 26 are then secured in position and the pointer may then be

used as an indicator for locating the tape in its proper longitudinal position. The presser foot is then lowered and the sewing operation is performed, the presser foot and feed dog carrying the goods forwardly in the usual manner and the bill portion of the hook passing through the arc-shaped depression 17, while the two-needles of the machine sew both edges of the tape simultaneously to the garment.

In Figs. 5 to 8 of the drawing, I have shown an attachment which differs from that shown in Figs. 1 to 4, in that the tubular member 22′ is provided with a fold or hem turner 30 which causes one edge of the fastener tape 20 to be turned back gradually upon the tape for the purpose of binding the edge of the garment. It was necessary heretofore when both a fastener tape and binder for the edge of garment material were employed, to perform two separate operations, one for securing the binder to the garment and another for securing the tape thereto. As these operations were formerly performed a separate piece of tape was usually employed to bind the garment material or in some cases where elastic material was used in the garment an outer or inner facing material was used in addition to the elastic material, the edge portion of which facing material was turned over the elastic material to bind the edge thereto. The fastener tape was then either sewed over the binder hem, or placed inwardly of the edge of the garment to abut the inner side of the such hem. In either case, the resulting product was of poor appearance. The use of the fastener tape material for the binder eliminates the necessity for any overlapping or abutting relationship of the such tape and binder and consequently a product of much neater and more attractive appearance is secured. In addition, as the tape material is usually stronger than the facing material, the use of the fastener tape for the binder secures greater strength and durability.

The tubular member 22′, it will be noted by referring to Figs. 6 and 8, is provided with a central offset portion 23^a to form a clearance for the passage of the bills of the hooks and, in addition, has, as shown in Fig. 6, adjacent to the rear end thereof, a projecting ledge or tongue 31 which the bill of the hook is adapted to straddle as the tape nears the presser foot. The outer or free edge of this tongue engages the hook at the inner end of the base of the bill and serves to hold and to force the edge of the tape well up into the fold turner 30.

The supporting plate 24′ of the attachment of Figs. 5 to 8 is substantially the same as that of Figs. 1 to 4, except that the upturned wall 24^b at the end of the plate is of slightly different shape from that of Figs. 1 to 4. In both forms of attachments the tubular members through which the fastener tape passes extend inwardly at a downward inclination and terminate adjacent to the front of the arc-shaped depression 17 and direct the tape downwardly into said depression, while in both cases the supporting plates 24, 24′, are located above and are supported by the tubular members 22, 22′ respectively, which in turn are secured upon the base plates 21, 21′. The construction of the presser foot is identical in both forms of the invention illustrated.

The operation of the attachment of Figs. 5 to 8 is substantially the same as that of Figs. 1 to 4 as far as the passage of the fastener tape is concerned. As the fastener tape passes through the attachment the tape is folded around the edge of the garment material to incase it completely. The attachment, as will be readily understood, is so located with respect to the needles that the stitches made by the needles will pass through the tape at the edges thereof, one row of stitching being located along and securing the unfolded edge of the tape to the garment and the other row along the folded edge for securing the binder hem of the tape to the garment.

I claim:

1. The combination with a two needle sewing machine having a pair of spaced feed dogs of a throat plate having a small narrow arc-shaped depression therein extending between said feed dogs for permitting the passage of the bill portion of a hook fastener beneath the presser foot of the machine, and an attachment adapted to be detachably secured to the bed plate of the machine, said attachment including a tubular member inclined rearwardly and downwardly towards, and terminating closely adjacent to, the front of said depression to direct a fastener tape downwardly into said depression, said tubular member having a downwardly offset portion extending along the longitudinal center of its lower wall to provide a clearance-way for said bill and a pair of side sections one on each side of said offset portion to support the side edges of the tape, one of said side sections being curved upwardly and a turning member located at the upper end of said section for folding one edge of said tape about the edge of the garment material as said tape and material are passed through the attachment.

2. An attachment for use with a two-needle sewing machine comprising a base plate, a tubular member secured to said base plate at an angle thereto, said tubular member having a pair of side sections for supporting the side edges of a fastener tape and a central offset section to define a clearance-way for the bill of a hook fastener, and a supporting plate for garment material secured to said

base plate and extending to one side of and above said tubular member.

3. An attachment as set forth in claim 2 in which the tubular member is provided with means to fold one longitudinal edge of the tape around one edge of the garment material, thereby to bind said garment edge with the tape as said tape and material are passed through said attachment.

4. An attachment for use with a two-needle sewing machine comprising a tubular member through which a fastener tape is adapted to pass and a binder associated with said member for folding the edge of said tape about the edge of a piece of garment material and thereby bind the edge of said material with said tape.

5. The combination with a two-needle sewing machine of a throat plate having a longitudinal arc-shaped depression therein to permit the passage of a fastener tape below the presser foot of the machine and said throat plate being provided with continuous surfaces extending the entire width of said plate at the ends of said depression whereby said throat plate may be used with equal facility for both plain flat work or for sewing fastener tape to a garment.

6. An attachment as set forth in claim 2 in which the tubular member is provided with means to fold one longitudinal edge of the tape around the garment material as said tape and material pass through said attachment, and a tongue projecting into said tubular member for engaging within the bill of the hook fastener and holding the longitudinal edge of the tape up into said folding means.

7. The combination with a two needle sewing machine having a pair of spaced feed dogs, of a throat plate having a small narrow arc-shaped depression extending longitudinally in the space between said feed dogs for permitting the passage of the bill portion of a hook fastener beneath the presser presser foot of the machine, and an attachment adapted to be detachably secured to the bed plate of the machine, said attachment including a tubular member and a folder arranged one above the other in converging relationship and inclined rearwardly and downwardly towards, and terminating closely adjacent to, the front of said depression to direct simultaneously a fastener tape and the folded edge of a garment downwardly towards said depression.

8. The combination with a two needle sewing machine having a pair of spaced feed dogs, of a throat plate having a small narrow arc-shaped depression extending longitudinally in said throat plate between said feed dogs, for permitting the passage of a bill portion of a hook fastener between the presser foot of the sewing machine and said feed dogs, and an attachment adapted to be detachably secured to the bed plate of the machine, said attachment including a tubular member having a central downwardly offset portion extending along its lower wall to provide a clearance-way for said bill and a pair of side sections one on each side of said portion to support the side edges of a fastener tape to which a plurality of said hook fasteners are attached, said tubular member being inclined rearwardly and downwardly towards said throat plate with its central offset portion extending into said depression and with its side sections terminating above the top surface of said throat plate.

9. The combination with a two needle sewing machine having a pair of spaced feed dogs, of a throat plate having a small narrow arc-shaped depression extending longitudinally in said throat plate between said feed dogs, for permitting the passage of a bill portion of a hook fastener between the presser foot of the sewing machine and said feed dogs, and an attachment adapted to be detachably secured to the bed plate of the machine, said attachment including a tubular member having a central downwardly offset portion extending along its lower wall to provide a clearance-way for said bill and a pair of side sections one on each side of said portion to support the side edges of a fastener tape to which a plurality of said hook fasteners are attached, said tubular member being inclined rearwardly and downwardly towards said throat plate with its central offset portion extending into said depression and with its side sections terminating above the top surface of said throat plate, said tubular member having secured thereto a supporting plate and folder having a turning section.

In testimony whereof I have hereunto set my hand.

LOUIS ROCKE.