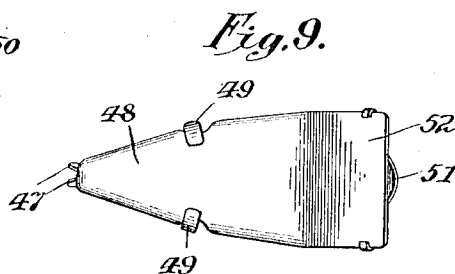
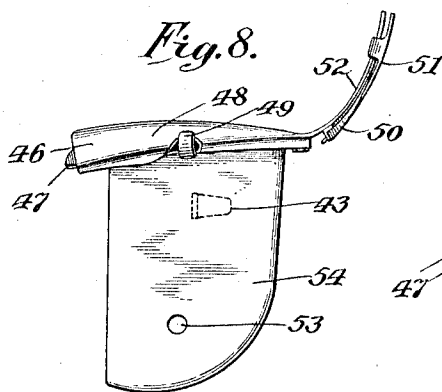
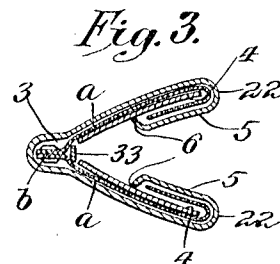
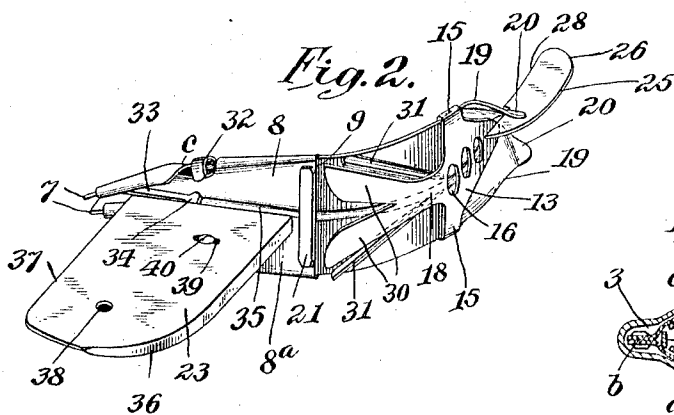
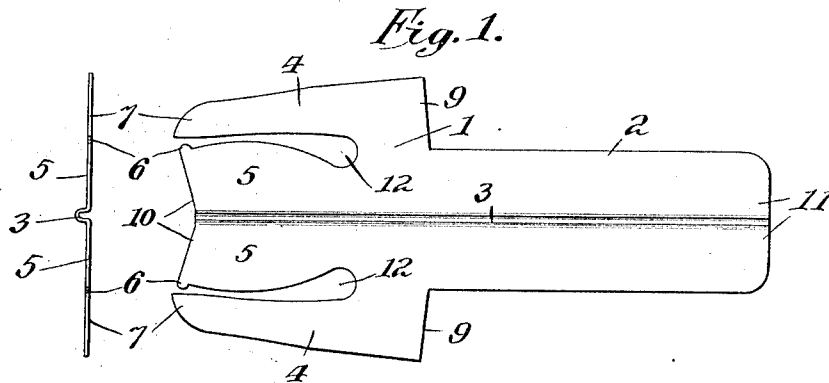


J. P. WEIS & L. KRUG.
FOLDER FOR SEWING MACHINES.
APPLICATION FILED MAY 11, 1905.

1,040,825.

Patented Oct. 8, 1912.

2 SHEETS—SHEET 1.



Attest:
Edgeworth
M. Herskovitz

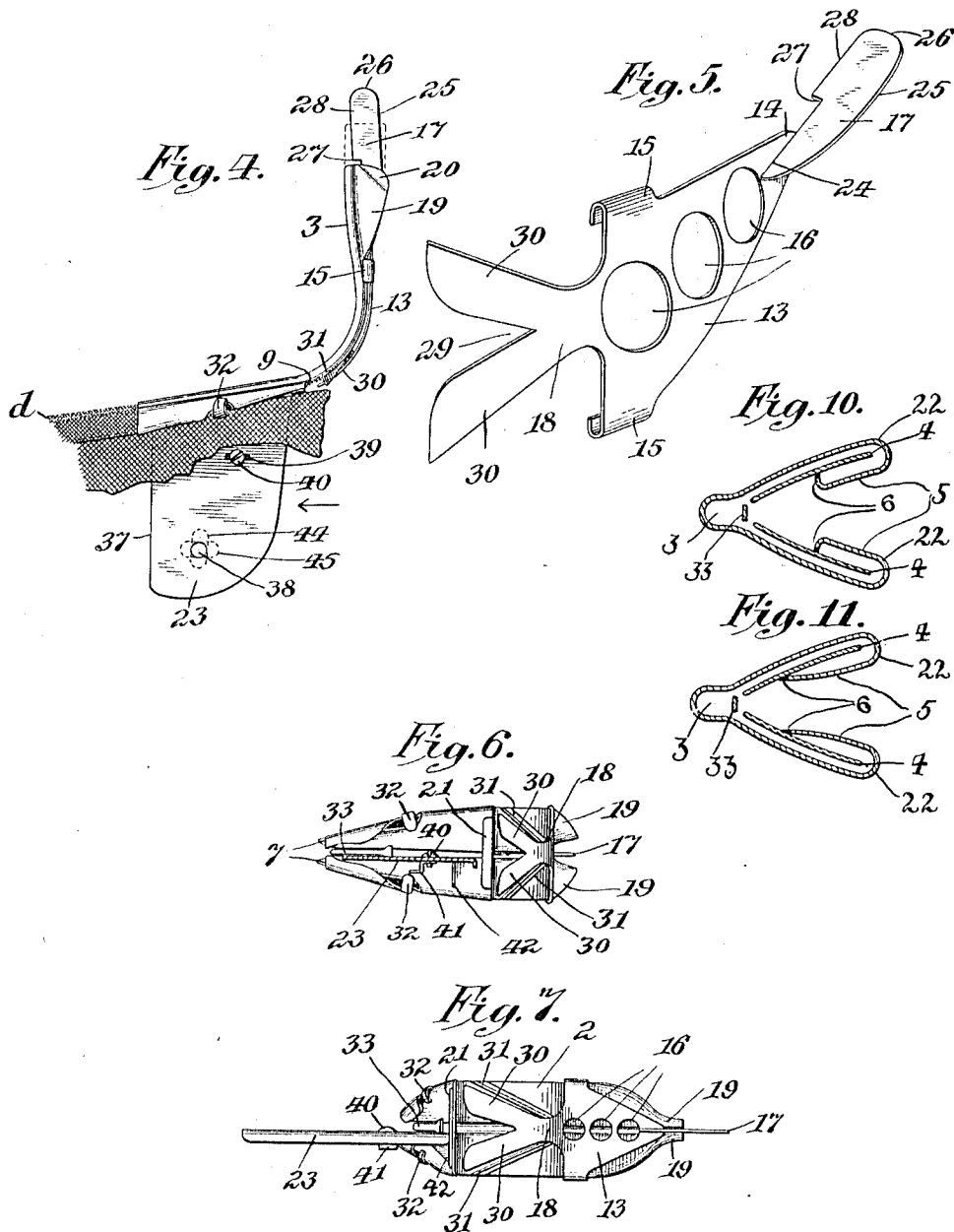
Inventors:
John P. Weis & Louis Krug.
by *Chas. M. C. Chapman, Atty.*

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UNITED STATES PATENT OFFICE.

JOHN P. WEIS AND LOUIS KRUG, OF NYACK, NEW YORK, ASSIGNORS TO METROPOLITAN SEWING MACHINE COMPANY, OF NYACK, NEW YORK, A CORPORATION OF NEW YORK.

FOLDER FOR SEWING-MACHINES.

1,040,825.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed May 11, 1905. Serial No. 259,857.

To all whom it may concern:

Be it known that we, JOHN P. WEIS and LOUIS KRUG, citizens of the United States, residing in Nyack, county of Rockland, and State of New York, have invented a new and useful Improvement in Folders for Sewing-Machines, of which the following is a description.

This invention relates to folders for sewing machines, and particularly to that class of folders, or cloth-turning devices, which are adapted for manipulating a "collarette,"—technically so known,—the style of the folder, forming the subject-matter of this application, having become known in the trade as a "Crescent folder."

Among the objects of this invention, the following may be noted: to provide a folder which will so manipulate the binding material, such as a collarette for knit undershirts, that it may be accurately fed to the stitching point of a sewing machine with its edges properly and evenly hemmed or folded and thus attached to the body-material of, for instance, a shirt along the neck-opening thereof; to provide a folder so constructed that a specially prepared collarette, or binding material, such as may be provided with a finished edge or beading, may be accurately and properly guided and its edges folded, laid upon and attached to the body-material by stitching; to provide a folder, for attachment to a sewing machine, of such construction that it will properly manipulate a collarette or binding material, receive the edge of the body-material, and present the two materials in proper condition and juxta-position for connection by a line of stitching; to provide a folder for manipulating the material of the binding or collarette so as to properly present the same at the entry-end of the folder; to provide a construction by means of which the edges of the binding material are prevented from curling or otherwise getting out of place during its passage to the stitching point; to provide a construction by means of which the strain of the feeding or of the stitch-forming mechanism is prevented from dragging the beading of the binding from its guiding channel; to provide a construction whereby the feeding mechanism and the stitch-forming mechanism are prevented from placing such strain or tension upon the body of the binding as to cause the same

to drag the tongues of the folder out of operative position; and to provide a construction by means of which bindings, of any desired width, may be manipulated and applied to the edges of garments, or materials of any kind, and whereby the said edges may be entered as deeply as may be desired into the fold,—even up to and against the median fold or beading of the binding.

With the above objects in view, together with others which will be exposed during the course of this description, the invention consists in the parts, features and combinations of elements hereinafter described and claimed.

In the drawings forming part of this description: Figure 1 is a plan-view of the blank from which one form of folder is produced, the view including also a delivery-end elevation of the blank; Fig. 2 is a perspective view looking at the face of the completed folder; Fig. 3 is a transverse, vertical section of the folding-portion of the device, the section being taken a short distance from the delivery-end thereof; Fig. 4 is a top-plan view of the complete folder showing the binding-material and the body-material in operative relation and passing through the device; Fig. 5 is a perspective view showing the combined brace, separator, and part of the uncurler; Fig. 6 is a front elevation of the complete folder, looking directly at the face of the folder-portion and showing the supporting-plate in section; Fig. 7 is a combined perspective and elevation of the folder, looking directly at the face of the bend of the neck-portion; Fig. 8 is a top-plan view showing another form of the folder, this form being devoid of the throat or channel-guide for the beaded or ornamental edge of the binding-material, and also being devoid of the separator; Fig. 9 is a rear elevation of Fig. 8, portraying the construction of the back thereof; and Figs. 10 and 11 show sections similar to Fig. 3, with the lugs 6 in different positions, to illustrate the manner in which the same may be adjusted to vary the size of the spaces in the loops 22.

Primarily, it should be understood that, up to the time of the production of the Crescent folder made the subject-matter of our application #229,408, filed Oct. 21, 1904, it was mechanically impossible to attach a "French collarette" to the neck-opening of

a French balbriggan shirt and, in fact, it was impossible to manipulate and control a collarette or binding of any character so as to apply the same to the neck of a garment evenly, smoothly, and without puckering or wrinkling the same or the body-material. The Crescent folder of the application above referred to is especially constructed and adapted for leading in, hemming the edges of, and applying a French collarette to the neck-opening of a garment without puckering or wrinkling either the collarette or the body-material; and the folder made the subject of this application contains various new appliances calculated to improve and perfect the manipulation, control and application of the French collarette to the neck of a garment as well as binding materials of any character to the edge of a piece of fabric or of a garment. Moreover, the folder of this application, in all of its different forms, is capable of being used in various connections and in combination with most any character of stitch-forming and feeding mechanisms; but, it has been found that the best results are obtained, in connection with the manipulation of elastic goods of any character, by combining the folder with a sewing machine provided with a differential feed.

For brevity, throughout the description and claims, we purpose referring to the material manipulated by the folder as the "binding", and we intend that this term or expression shall comprehend any kind, style or class of binding, irrespective of its structure or the material which it is made of; and we also purpose referring to the article or material to which the binding is applied as "body-material," and intend that this term or expression shall comprehend any material to which a "binding" may be applied, whether it be in garment form or not.

The folder, of this invention, will be clearly understood upon reference to Figs. 1 and 5, Fig. 1 showing the blank from which the main part is formed and Fig. 5 showing the form of the brace, separator and a portion of the uncurler. The folder consists of two principal portions, the folder-portion and the neck-portion. The blank from which these two parts are formed consists of the body-portion 1 and the extended, narrowed neck-portion 2. A throat, or guide-channel 3 is formed in the blank and extends from end to end thereof, the same being produced by channeling or bending the material as shown in the end elevation of Fig. 1. Tongues 4 are formed on opposite sides of the body-portion 1 and adjacent thereto loop-portions 5 are also formed, the outer end of each of which is inclined, or said ends are caused to converge toward the throat 3, so as to have the ex-

tended V-shape shown. Projections or lugs 6 are formed at the extreme end and on the outer edge of each of the loop-portions 5; and the ends of the tongues 4 are extended so as to project materially beyond the end of the loop-portions 5, as shown at 7. The rear ends 9 of the said body-portion 1 form and constitute the entry-end of the folder-portion. The delivery-end of the folder-portion is indicated at 10, and the entry-end of the neck-portion is indicated at 11. Slots 12 are formed in the body-portion by removing material of the blank in order to give the desired functional outline and contour to the loop-portions 5 and tongue 4 and to enable the several parts of the folder-portion of the blank to be properly bent, shaped and manipulated, as hereinafter described; but, it is to be distinctly understood that no more material has been removed at 12 than is conceived to be necessary to give the proper functional shape to the described parts and to enable them to be formed and relatively disposed as presently described, and by this the idea is intended to be conveyed that said slots have no other function than as just stated, but are, as a matter of fact, rather a necessary structural evil, the objection to the presence of which, in the completed article, has to be, and is, overcome and obviated as will be described. In Fig. 5 the brace is indicated by 13 and consists of the body-portion narrowed and extended to the point 14, and having at its broadened part the extensions 15, which are bent over and secured to the back of the neck of the folder, as presently described. The several apertures 16 enable the binding to be properly entered between the brace and the neck. The separator is indicated by 17, and that portion of the uncurler, which is carried by the brace, is indicated by 18. These two blanks are made into the folder of the form shown in Figs. 2 to 7 and are specially constructed and adapted for leading in, separating, spreading, uncurling, folding and otherwise manipulating a binding of the form and construction illustrated in Figs. 3 and 4, or one which is composed of two body-portions *a*, and the ornamental, finished edge or beading *b*. This binding may be made of either two corresponding pieces of material or a single piece of material folded in the middle lengthwise; and in either event the binding is made so as to have along its center the selvage, finished edge or beading indicated by *b*, which has to be taken care of during the progress of the binding through the folder.

The extreme rear, or entry-end, of the neck 2 of the blank of Fig. 1, on opposite sides of the throat 3, is bent to form the wings 19, which flare or diverge from the entry-end 11 and at their outer corners or angles are slightly deflected in opposite

directions, as shown at 20. This structure or formation is given for the purpose of imparting an initial fold to the material of the binding, in order to centrally and properly locate the beading *b* thereof in the throat or channel 3 and the oppositely bent and rounded corners 20 prevent the wings 19 from catching in and dragging on the body of the binding. The body-portion 1 of the blank of Fig. 1 is folded at two points longitudinally substantially along a line in extension of the outer edges of the neck-portion 2 so as to cause the outer edges of the body-portion 1 to lie along the length of the channel or throat 3 and be slightly separated from each other, and have a slight divergence from the rear to the front end of the folder-portion, as clearly shown in Figs. 2 and 6. The body-portions thus folded and overlapped produce the tubular folder-portion 8, which is substantially flat at the entry-end 9. The portions of the body 1, as thus folded and formed, are connected together, so as to be properly held and to avoid sharp corners, by means of a brace or connecting-bar 21 brazed, soldered or otherwise held thereto. This construction holds the two parts separated and in proper relative position and produces a channel through which the binding is led. Inasmuch as the tubular portion 8 may be crushed by an accidental blow or by heavy pressure, the brace 21 is made extensive, as shown, in order to properly sustain and strengthen the tubular portion. By thus bending the body-portion, it will also be seen that the ends of the tongues 4 project quite a distance beyond the delivery-end of the loop-portions 5. The tongues 4 are also given a bend amounting to substantially a half-turn relatively to the body-portion, thus disposing the ends 7 of the tongues substantially at a right-angle to the tubular folder-portion 8 and the neck-portion 2, and at an obtuse-angle, substantially, to the width of the rib, channel or throat 3. The loop-portions 5 are also bent longitudinally substantially in the line of the bend given the body-portion, which causes said loop-portions to overlap themselves and the tongues 4, inclose the latter in their fold and form a channel in which the binding is given an initial fold for hemming the edges thereof. The loop-portions 5 are then given an additional turn or bend, the line of which runs substantially from the throat or channel 3 at the delivery-end of the folder-portion to the point *c* at the curve of the first fold and extending practically to the throat of the slots 12, this bend of the loop-portions 5 conforming to the bend given the ends of the tongues 4 and causing the edges of the loop-portions 5 to extend toward the throat or channel 3. Thus, there are formed passages between the two parts of the loop-portions 5 and the

tongues 4 and on opposite sides of the latter, and the inner edges of the tongues 4, as shown in the blank of Fig. 1, lie in the folds 22. This structure forms a guide and produces means for gradually turning or folding the edges of the binding over upon the body thereof and turning a hem along said edges to be subsequently stitched down upon the body-material, as clearly shown in Figs. 3 and 4. The distance between the loops or folds 22, at the delivery-end thereof, is sufficient to permit the easy insertion of any thickness of body-material, and this distance may be increased or decreased according to the character of the work, thus changing the angle of the tongues and loops at the delivery-end of the folder relatively to the throat 3. The extension of the ends 7 of the tongues 4, beyond the delivery-end of the loops 22, as indicated in Figs. 2 and 6, provides a support for the inturned hem along the edges of the binding beyond the delivery-end of the folder and prevents the said hem from springing out or assuming any other position than that which is required at the stitching point for the production of perfect work. The body-portion thus bent and formed is substantially flat at the entry-end 9 and tapers therefrom to the delivery-end, and the loops 22 have substantially the relative disposition shown in Figs. 2, 3, 6 and 7.

As shown in Figs. 2 and 4, the neck-portion 2 at or about the entry-end 9 of the folder is bent or curved transversely of its length so as to cause the entry-end of the neck to be substantially at a right-angle to the delivery-end of the folder-portion. The object of thus bending the neck of the folder is to cause that portion of the entry-end, extending to substantially midway of the neck, to lie and be disposed longitudinally of the cloth-plate of the machine and extend toward the driving-wheel of the latter, this disposition enabling the material of the binding to be disposed very much at one side of the path of feed of the machine and away from the working position of the operator, thus avoiding any interference with the movements and necessary manipulations of the operator and avoiding entanglement of the binding with the body-material, which latter is led in from the opposite side over the supporting-plate 23. This will be appreciated when it is understood that the bulk of a man's shirt, for instance, hangs to the left, viewing Fig. 4 and looking in the direction of the arrow, of the line of feed of the combined materials, and the operative must with one hand control the travel of said body-material and keep the edge-portions thereof up to the channel or space between the two loop-portions 22, the space of the body-material being clearly shown in Figs. 2, 3, and 7. The binding-

material is usually wound in great lengths upon a reel, bobbin or other suitable holder, which is free to revolve and thus unwind the material freely, according to the demands and pull of the feed. From the reel the binding material is led into the entry-end of the neck-portion, as shown in Fig. 4, and by bending said neck-portion, as described, the binding material can be conveniently disposed, supported and led up to the folder and said material can, without wrinkle or displacement, be accurately and smoothly traversed to the stitching point.

As shown in Figs. 2 and 4, the brace 13 is, by the extensions 15, secured by soldering to the back of the neck 2, the said extensions being overturned, as clearly shown in Fig. 5, for the purpose, and the parts being secured together at the point where the edges of the wings 19 vanish in the edges of the neck 2. By thus securing the brace 13, a channel is left between the same and the neck 2 for the passage of the binding, and the point 14 of the brace extends between the two wings 19 centrally of the channel between the same, and almost up to the entry-end of the neck-portion; and the perforations 16, in said brace, providing means by which the binding may be engaged and properly manipulated to run the latter along the neck, up to substantially the entry-end 9 of the folder-portion. To prevent the binding from having movement laterally relatively to or away from the neck, and also to prevent the beaded edge of said binding from running or working out of the channel or throat 3, the brace is provided with the extended portion 18 which is curved to conform to the contour of the neck as bent, as clearly shown in Figs. 2, 4, 6 and 7. The extension 18 is formed as hereinafter described and constitutes a part of the uncurler. At its forward end 14, the brace has secured thereto the separator 17, the same being brazed, soldered or otherwise secured to said brace along the edge 24 and disposed centrally of said brace and projecting a considerable distance beyond the forward end 14. The outer edge 25 of the separator is curved as shown and the outer end 26 is rounded so as to present a smooth, working end and edge for engagement with the two portions or flaps *a* of the binding. The inner edge of the separator is notched as at 27 so as to provide the two straight edges on opposite sides thereof. When the brace is in position and secured to the neck-portion of the folder, the separator will extend beyond the entry-end thereof as shown in Fig. 4, and the notch 27 will be in such position as to prevent the straight edge 28 from engaging with the throat 3 of the neck, this construction allowing both the brace and the separator to yield and give to a considerable extent relatively to

the neck-portion of the folder and thus prevent the separator, if strained, bent or flexed toward the neck of the folder, from pinching the material and retarding the same at the entry-end of the neck. It often happens, — and especially with woolly or knit goods, — that the two portions *a* of the binding, as they run from the reel to the folder, will cling together and thus obstruct its proper entry into the neck and also prevent its beading or ornamental edge *b* from being properly centered and entered into the throat or guiding channel 3. By providing the separator 17, as shown and disposed, it acts upon and between the two portions *a* of the binding and plows them apart or separates them and prevents them from coming together at the point of entry in the neck 2. This has been found to be quite an essential feature, owing to the fact that it is difficult to maintain the beading in the guiding-channel at the entry-end of the neck without considerable hand-attention. The extension 18 though shown as formed integral with the brace 13, but may be obviously made separate from and attached to said brace, is enlarged at its outer end and formed with a V-shaped notch 29, thus providing the two diverging fingers 30. Coöperating with the fingers 30, on the face of the neck-portion 2, are two diverging ribs 31, the same being secured to said neck by soldering, brazing, or otherwise. The ribs 31 extend and diverge from the channel, guide or throat 3 at a point under the neck-portion 18, to the outer edges of the neck 2 and adjacent the entry-end 9 of the folder-portion, the divergence of said ribs being slightly greater than that of the fingers 30, thus permitting the latter to rest between the two ribs and strain the material of the binding over the same, so as to create some tension on the said binding and firmly hold the latter flat against the face of the neck-portion and prevent the binding-material from curling, sliding on, or falling away from the said neck-portion. It will be understood that elastic materials, such as knit goods, have a natural tendency to roll and curl up which, if allowed or not prevented, would result in choking the folder, retarding the feed and preventing the binding from being evenly and properly fed or advanced through the folder to the stitching point. By placing the uncurling device at the point indicated, and forming the same as shown and described, the natural tendency of the edges of the binding to curl is prevented and any curl which may form in the binding, before reaching the uncurler, will be removed; for, the uncurling device takes control instantly, the binding emerges from the brace and while it is traveling to the tubular portion 8 of the folder, and smooths out the binding and

carries its edges properly up to the entry-end 9 of the folder, so that it may properly enter the latter. It will be noted that the ribs 31 do not extend into or interfere with the guiding-channel or throat 3, but permit the free passage of the beading or ornamental edge *b* to freely pass between the same. Up to this point means have been described whereby the binding may be properly led into the neck of the folder, the parts of the binding properly separated, the beading of the binding properly centered and guided, the two portions *a* of the binding spread out and flattened against the neck of the folder, the edges of the binding prevented from curling and the binding as a whole prevented from slipping transversely of the neck or springing away therefrom, and the binding properly entered at the entry-end 9 of the folder-portion 8. Passing along the tubular portion 8 of the folder and reaching the throats of the slots 12, the binding would have a tendency, at its edges, to expand, twist or otherwise turn in said openings or slots thus preventing the material from being properly hemmed and resulting, in many cases, in uneven hemming of the edges of the binding. To prevent this, the turners, or auxiliary folders 32, are provided, the same consisting of substantially U-shaped pieces of sheet-metal soldered, brazed or otherwise secured to the back of the folder-portion centrally of the opening formed by the slots 12, and the curvature of said turners conforming substantially to the initial bend of the loops 22 and the free end of the turners terminating on the other side of the said slots or openings at the face of the folder, but allowed to stand free from the latter. The result of this structure and disposition of the turners is to positively engage and direct the edges of the binding and give thereto the initial or preliminary turn, in order to start the same properly into the channel of the loops 22 and over and around the tongues 4 which extend into said loops. In this way, it will be understood that the tendency of the material to spring straight or twist is prevented and the objection to the openings, which are the necessary result of cutting the blank to give proper form to the loop-ports and tongues, is obviated; and, as before noted, the said openings or slots 12 have no purpose or function in the device in connection with the manipulation of the work.

As heretofore described, and as clearly shown in the drawings, the tongues 4 extend into the loops 22, formed from the loop-ports 5, and provide a guiding and turning-channel between the bottom and top of the tongues and the said loops. It will be noted that the tongues 4 are quite long and slender and that their only support is

through their connections with the body-portion 1 of the blank and, hence, these tongues are quite liable to be strained by the constant drag of the binding thereon, resulting in the gradual weakening and displacement of the same, causing them to lose, in great measure, their effectiveness as a guide and folder, thus allowing the binding to be applied to the body-material unevenly. When thus strained and displaced, the tongues are caused to twist in or be dragged from the loops 22, resulting in pinching the binding against one or both sides of the loops, creating an objectionable drag on the binding, retarding the feed thereof and, consequently, stretching, distorting and materially reducing the width of the hem and of the binding as a whole, and resulting in uneven and unsightly work. To avoid these objections, the lugs or projections 6 are provided on the loop-ports 5, so that, when the loops 22 are formed, said lugs or projections 6, may be bent as shown in Fig. 3, into contact with the bottom of the tongues 4 and rigidly secured thereto by brazing, soldering or otherwise, thus rigidly sustaining the tongues in said loops. This structure also has the function of strengthening and maintaining the loops 22, by preventing them from being accidentally compressed or crushed. Furthermore, the lugs or projections 6 can be so bent and adjusted as to regulate the size or width of the loop-channels within very large or extensive limits, as will be readily understood upon viewing Figs. 3, 10 and 11, by merely giving to said lugs or projections more or less of an angular disposition relatively to the tongues 4, the folder being thus provided with adjustable means by which it can be adapted to guide and control any predetermined width or size of binding, within certain limits.

In the operation of the folder, it has been found that the strain on the binding, caused by the feed and the stitch-forming mechanism, in addition to having the tendency to drag and twist the tongues 4, as above described, sometimes drags the beading or edging *b* of the binding from the channel-guide or throat, resulting in uneven work, distorting and extending the binding and giving to the beaded edge a stretched, sinuous and crooked appearance. To prevent these objections, it has been found expedient, effective and quite practical to dispose a yielding guard 33 in such position that it will extend substantially parallel to, and operate at the mouth of, the channel or throat 3, as shown in Figs. 2, 3, 6 and 7. This device thus guards the mouth of the throat and prevents the beading or edge *b* of the binding from being dragged therefrom, at the same time having a yielding action so as not to put too much strain upon the binding. The guard consists of elastic material and is soldered,

brazed or otherwise rigidly secured, at or about the point 34, to the tongues 4 at their adjacent edges, as shown in Figs. 2 and 6, and extends from said point to the delivery-end of the folder and operates upon the binding, as shown in Fig. 3, substantially at the point of juncture of the two parts *a* thereof, where the beading *b* is formed. This guard is sufficiently strong to prevent the feed from dragging the beading out of the throat. In addition to having the functions just described, by securing the guard at the point 34, the tongues 4 are additionally braced, strengthened, sustained and prevented from flexing between their free ends and the brace 21; and by this means also, the tubular portion 8 of the folder is strengthened and sustained and prevented from being accidentally crushed by pressure or a blow.

With the structural features above described, it will be understood that the tongues 4 are braced, strengthened and sustained in three ways, viz., at their ends by the lugs or projections 6, back of their ends by the guard 33 at the point 34, and at their bases by the brace 21; that the tubular portion 8 of the folder is strengthened and sustained in two ways, viz., by the brace 21 and the guard 33 at the point 34; and that the slot 35, formed by the separated edges of the tongues 4 and body-portion 1, is permanently formed and rigidly maintained and the said edges are prevented from flexing or bending relatively. The function of the slot 35 will be presently described, and it will be noted that said slot diverges slightly from the brace 21 to the end of the folder, owing to the manner in which the tongues 4 are bent for the functional purposes described.

In order that the folder may be properly secured to and supported by the cloth-plate of a sewing machine, the supporting-plate 23 is provided substantially of the form shown, the front edge and a portion of the outer end thereof, as at 36, being rounded and flanged to present a smooth edge or surface for the passage of the body-material and to prevent the dragging or retardation of the same on said plate. The rear edge 37 of the plate is made substantially straight and extended to a point such that it will not overlap the slide-plate and the throat-plate of the machine. The supporting-plate 23 is soldered or otherwise permanently secured to the lower part 8^a of the body-portion of the folder, as clearly shown in Figs. 2 and 6, and extends to a point within the loops 22 near the delivery-end of the latter, as shown in the said figures, thereby providing a substantial support for the body-material approximately to the stitching point and, hence, preventing the said material from falling away from, or sagging relatively to, the binding, and also insuring the

proper disposition of the edge of the body-material within the hem and fold of the binding. For the purpose of attaching the folder to the cloth-plate of the machine the supporting-plate 23 is provided with the aperture 38, for the reception of a binding-screw, as hereinafter described. The supporting-plate is also provided with an elongated slot 39 extending transversely thereof, said slot receiving the neck of a screw 40 which holds in place an angular stop-lug 41 on the bottom of said plate, the said slot 39 permitting the adjustment of the lug 41 and the screw 40 transversely of the plate 23. The lug 41 is substantially L-shaped and engages under the cloth-plate of the machine to prevent any vertical movement of the folder, to steady the latter on the cloth-plate and, when once properly set, provide a stop for regulating the position of the delivery-end of the folder relatively to the stitching point and limiting the movement of the folder. As shown in Fig. 6, the supporting-plate 23 is provided with a brace 42 which is disposed at an angle both to the plate and the folder and is secured to the bottom of said plate and the portion 8^a of the folder, thus strengthening the attachment of said plate to the folder and preventing accidental breaking or bending. It may be noted that it is not essential to provide the supporting-plate with the elongated, adjusting slot 39 and, if preferred, the stop-lug 41 may be rigidly secured to the bottom of the plate 23, as indicated by the dotted lines 43 in the alternative form of Fig. 8; and it will be obvious that, instead of making the aperture 38 circular, it may be extended longitudinally of the plate 23, as shown by dotted lines 44 in Fig. 4, for the purpose of adjusting the folder on the cloth-plate of the machine so as to regulate the position of the delivery-end of the folder laterally relatively to the stitching-point and line; and another slot may be extended transversely of the plate 23, as shown by dotted lines 45, Fig. 4, thus providing means for universal adjustment of the folder horizontally on the machine work-plate or frame.

The folder illustrated in Figs. 8 and 9, in so far as the bending and disposition of the loops 46, tongues 47 and body-portion 48 are concerned, is substantially the same as shown in the other form and figures described, and the turners 49, uncurler 50 and brace 51 are in all material respects substantially the same as the other form described and shown in the other figures. The neck 52 of the folder is bent in the same way as described with reference to the other form, but said neck is much shorter and is devoid of the wings 19 or any equivalent thereof, inasmuch as the same are not essential in this form. The neck 52 and the brace 51 are shortened, as shown, because

the binding-material manipulated by this form of folder passes to the latter from a reel in flat form and, in consequence, the separator is not needed and, therefore, is not applied to this form of folder. Furthermore, the binding manipulated by this folder is plain or devoid of the ornamental beading or rib *b*, hence, the back of the folder is smooth, as shown in Fig. 9, and devoid of the guiding-channel or throat of the other form. The uncurling device is necessary to this form of folder, inasmuch as the edges of the material have the same tendency to curl. The aperture 53, for attachment of the folder to the cloth-plate of the machine, is provided the same as in the other form and the slots 44 and 45 may also be provided in the supporting-plate 54 of this form. In other respects, this form of folder is substantially the same, and manipulates the binding in practically the same manner, as the other form of folder.

A description of the details of our invention having been given, it will only be necessary to describe briefly the mode of operation of the device and the parts as they occur in sequence for manipulating the binding and controlling the action thereof in its passage through the folder to the stitch-forming mechanism. A binding of substantially the form shown in Figs. 3 and 4 is, as previously stated, usually made or formed in bulk, or strips of considerable length, and is mounted upon a spool, reel or other similar device properly supported to freely deliver the binding to the folder. The "leading" end of the binding is then trimmed or cut transversely so as to bring the same to a point as at *d*, Fig. 4, at the beading or solid edge, thus giving to the leading end, when spread, a V-shaped appearance, the vertex of which is then led into the entry-end 11 of the neck of the folder by inserting the bead or solid edge in the throat or channel 3 and entering the separator between the two portions *a* of the binding. Having thus entered and started the collarette in its passage through the folder, the separator will be disposed between the two body-portions so as to prevent the woolly faces from clinging. A pointed instrument will now be used to engage and drag the collarette along the length of the folder up to and beyond the delivery-end thereof, this being accomplished by inserting the instrument through the several apertures 16 of the brace, engaging the collarette after the end thereof has passed the body-portion of the brace and emerges at the uncurler, and inserting the implement in the slot between the diverging walls of the body-portion of the folder leading to the delivery-end of the latter. The trimmed end of the collarette having passed the delivery-end of the folder, it is pulled sufficiently far through to make a good start

for the hemming and stitching operation. After the collarette has been properly placed in the folder as above described, the neck of the garment is then placed between the two scroll portions of the folder and as deeply into the throat of the groove between the two as may be desired; that is to say, the edge of the body-material may be placed in direct contact with the resilient guard or it may be spaced as far therefrom as is desired, according to the depth to which it is required that the body-material shall enter the binding. The body-material is led practically up to the stitching point, this disposition enabling the feed-dogs of the machine to engage both the binding and body-material and advance the same together automatically. In passing through the folder, the binding has its beaded edge properly centered in the guide-groove or channel, and the two body-portions thereof held apart at the entry-end by the separator. The two wings at the entry-end of the neck-portion of the folder give to the binding-material a bend which is calculated to enable the beaded edge to properly traverse the guide-groove or channel, the binding being, however, gradually spread out by the brace and any tendency to curl after leaving the brace being prevented by the uncurler, which places a tension upon the body of the binding, as will be clearly understood. In this condition the binding enters the entry-end 9 of the folder and, as it reaches the turners, the opposite edges thereof are given an initial turn or fold in the right direction, which is increased so as to carry said edges gradually around and into the loops 22 to be delivered with the respective edges folded the requisite distance over upon the body of the binding. In this condition the hemmed edges of the binding are stitched to the body-material and said binding is made to inclose the edge of the body-material as deeply as may be desired, as previously explained. By the means described, the folder can be made to guide various sizes of collarettes, the size being predetermined and the lugs 6 being turned and soldered to the tongues at the requisite angle to produce the proper width of guiding-channel in the loops 22. The resilient guard will not yield to ordinary strains which would tend to draw the beaded edge from its guiding-channel, but will yield under such strains as would tend to either break the needle or materially affect the condition of the work. By setting the tongues rigidly in the loops by the means described, the hemmed edges of the binding are maintained absolutely uniform, thus producing even, unpuckered and unstretched edges and avoiding the unsightly appearance which would result from one of the materials being puckered or drawn relatively to the other.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A folder for fabrics comprising a tapering, tubular body-portion provided with loops at the narrow end thereof, and tongues in said loops, said tongues being continuities of opposite portions of one of the walls of said body, and means for holding said tongues rigidly suspended in said loops, substantially as described.
2. A folder for fabrics comprising a tubular body-portion having one portion thereof flat and tapering therefrom to provide a reduced end-portion, loop-portions extended inwardly from opposite sides of the outer wall of said body at the tapered end thereof and forming loops, tongues forming continuations of the outer wall of said body entering said loops, and means for rigidly holding said tongues suspended within said loops.
3. A folder for fabrics comprising a tubular body-portion having its side edges cut away or notched between the ends thereof, turners applied to the body-portion and formed so as to overhang the said notches, a portion of the tubular body being flattened and a portion of it being tapered and formed into loops, tongues suspended in said loops, and means for rigidly holding said tongues in said loops.
4. A folder for fabrics comprising a body-portion having a centrally located channel for receiving and guiding an edge of the fabric, a plurality of loops for receiving and guiding other portions of the fabric, tongues suspended in said loops, and means for rigidly securing the tongues in place.
5. A folder for fabrics comprising a body-portion formed to provide loops, tongues suspended in said loops, and means carried by the loop-portions whereby the tongues are rigidly held suspended in said loops.
6. A folder for fabrics comprising a tubular, flattened body-portion tapered and formed to provide oppositely disposed loops at its delivery-end, slots formed in said body-portion adjacent said loops, and turners disposed adjacent said slots and cooperating with the latter.
7. A folder for fabrics comprising a tubular body-portion and a flattened neck-portion, the body-portion having loops, tongues suspended therein, and means for rigidly setting the tongues in said loops.
8. A folder for fabrics comprising a tubular body-portion, an extended neck-portion, and a separator yieldingly mounted upon the neck-portion.
9. A folder for fabrics comprising a tubular body-portion, and an extended neck-portion, in combination with a separator freely suspended adjacent the entry-end of said neck-portion.

10. A folder for fabrics provided with a tubular body-portion, an extended neck-portion, a guiding-channel extending longitudinally of the neck-portion, and a separator carried by the neck-portion and cooperating with the guiding-channel thereof.

11. A folder for fabrics comprising a tubular body-portion, an extended neck-portion, a guiding-channel formed in said neck-portion, and an uncurler having its functional elements disposed on opposite sides of the said guiding-channel.

12. A folder for fabrics comprising a tubular body-portion, and an extended neck-portion, in combination with a device carried by the neck-portion forming a brace for the work and carrying an element of an uncurling device, and complementary means carried by said neck-portion cooperating with said uncurling element.

13. A folder for fabrics comprising a tubular body-portion, an extended neck-portion, a separator carried by the neck-portion at its entry-end, and an uncurler carried by said neck-portion in the line of travel of the work beyond the entry-end of said neck-portion.

14. A folder for fabrics comprising a tubular body-portion, and an extended neck-portion, said body-portion having a flattened entry-end, in combination with an uncurler carried by said neck-portion and extending to the entry-end of said tubular portion.

15. A folder for fabrics comprising a tubular body-portion, an extended neck-portion, the tubular body-portion having a flattened entry-end and the neck-portion carrying a separator, and an uncurler also carried by said neck-portion between the separator and the entry-end of the body-portion.

16. A folder for fabrics comprising work-guiding loops, tongues suspended therein, means for rigidly supporting said tongues in said loops, and means for bracing said tongues at a point back of their ends, whereby said tongues are prevented from bending or flexing in said loops.

17. A folder for fabrics comprising a tubular body-portion having work-guiding loops, tongues suspended in said loops, means for rigidly setting the tongues in said loops, and a guard for holding the work adjacent the edges of the tongues.

18. A folder for fabrics comprising a tubular body-portion having a flattened inlet end, and an outlet end having loop-portions provided with inturned edges forming loops, and tongues suspended in said loops, the material of the loops being flexible and capable of being set in any desired position in continuity with said tongues, and means for rigidly holding the tongues in the loops.

19. A folder for fabrics comprising a body-portion having a centrally located

guide-channel, loop-portions for receiving the fabric, tongues suspended in said loop-portions, the material of the loops being flexible and capable of being set in any desired position in continuity with said tongues, and means for rigidly holding the tongues in the loops.

20. A folder for fabrics having its body-portion formed to provide loop-portions, tongues suspended in said loop-portions, the material of the loops being flexible and capable of being set in any desired position in continuity with said tongues, and means for rigidly holding the tongues in the loops.

21. A folder for fabrics comprising a tubular, flattened body-portion tapered to provide a narrow delivery-end, folding means at said end, slots formed in said body-portion between the delivery-end and the said flattened portion, and auxiliary folders located adjacent said slots and cooperating with the latter.

22. A folder for fabrics comprising a tubular body-portion, and an extended neck-portion bent substantially at a right-angle to said body-portion, in combination with an uncurler carried by said neck-portion composed of substantially V-shaped cooperating parts extending longitudinally of said neck-portion.

23. A folder for fabrics comprising a tubular body-portion, an extended neck-portion bent substantially at a right-angle to the body-portion, and an uncurler carried by the said neck-portion at the bend thereof.

24. A folder for fabrics comprising a tubular body-portion, an extended neck-portion bent substantially at a right-angle to said body-portion, a brace applied to the neck-

portion for retaining the work, and an uncurler carried by the neck-portion between the brace and the folder.

25. A folder for fabrics comprising a tubular body-portion having a flattened inlet-end, an extended neck-portion formed as a continuation of said inlet-end, and a separator carried by the neck-portion at the entry end of the latter and extending longitudinally and arranged centrally of said neck-portion for entering between the layers of folded fabric to separate the same.

26. A folder for fabrics comprising a tubular body-portion having a flattened inlet-end, an extended neck-portion formed as a continuation of said inlet-end, and a separator carried by the latter and located centrally thereof at its entry end.

27. A folder for fabrics provided with a tubular body-portion having a flattened inlet-end, and an extended neck-portion formed as a continuation of said inlet-end, in combination with a device applied to the said neck-portion affording a separator and a brace for the work.

28. A folder for fabrics comprising a body-portion having a flattened inlet-end and a neck-portion formed as a continuation of said inlet-end, said neck-portion carrying a separator and an uncurler, and said body-portion having a hammer.

In testimony whereof we have hereunto signed our names in the presence of two subscribing witnesses.

JOHN P. WEIS.
LOUIS KRUG.

Witnesses:

CHAS. MCC. CHAPMAN,
M. HERSKOVITZ.