Aug. 11, 1953 R. E. PEARSALL 2,648,302

GUIDE FOR TWO-PIECE PLATFORM WRAPPER STRIPS

Filed Jan. 11, 1952 2 Sheets-Sheet 1

Fig. 2

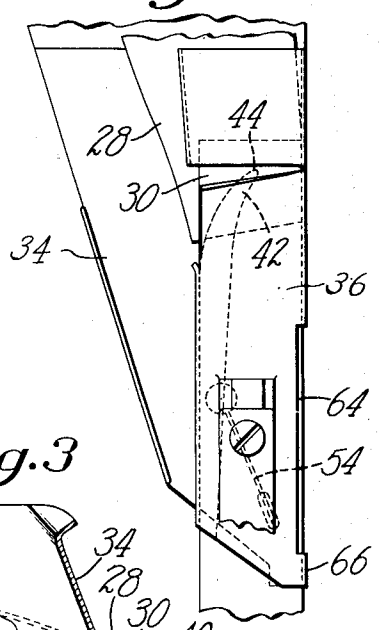


Fig. 3

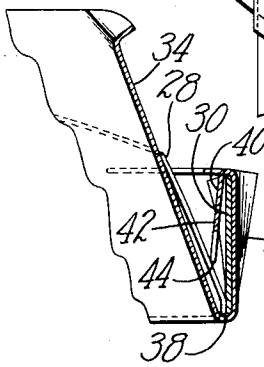
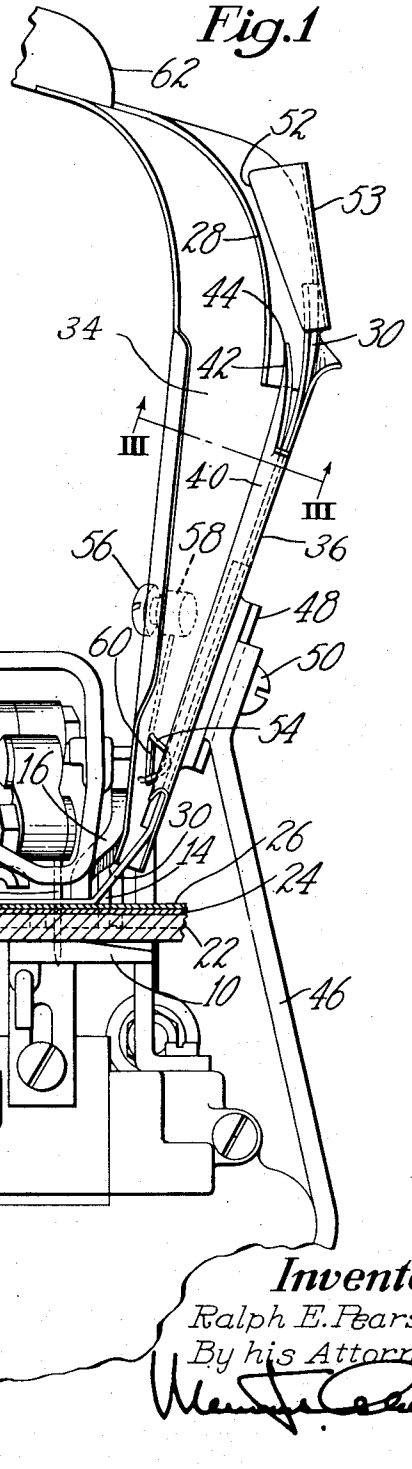


Fig. 1



Inventor

Ralph E. Pearsall

By his Attorney

Aug. 11, 1953 R. E. PEARSALL 2,648,302

GUIDE FOR TWO-PIECE PLATFORM WRAPPER STRIPS

Filed Jan. 11, 1952 2 Sheets-Sheet 2

Fig. 4

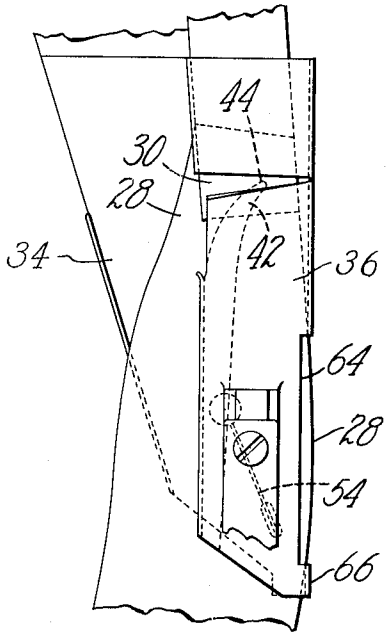


Fig. 5

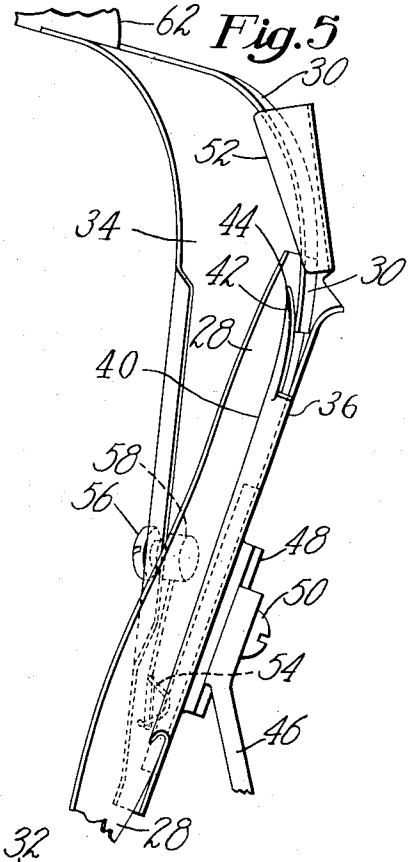


Fig. 7

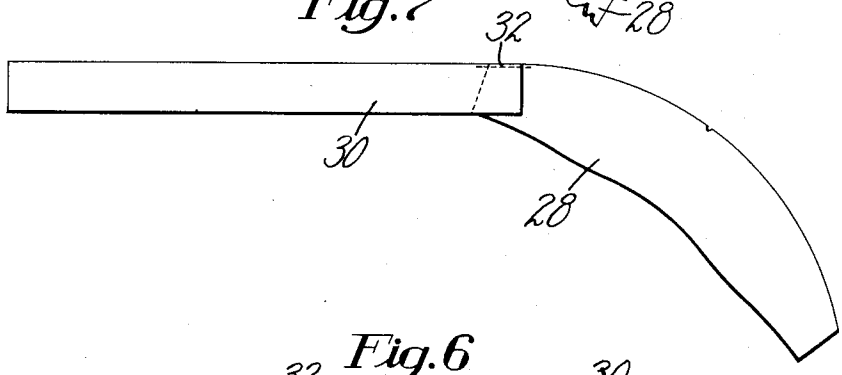
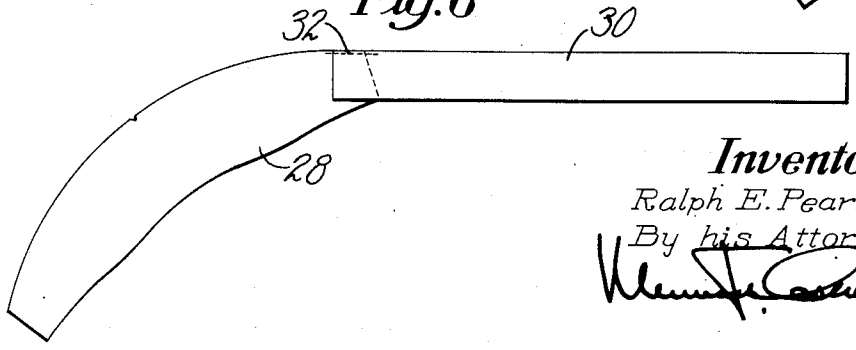


Fig. 6



Inventor

Ralph E. Pearsall

By his Attorney

Patented Aug. 11, 1953

2,648,302

UNITED STATES PATENT OFFICE

2,648,302

GUIDE FOR TWO-PIECE PLATFORM WRAPPER STRIPS

Ralph E. Pearsall, Gloucester, Mass., assignor to United Shoe Machinery Corporation, Flemington, N. J., a corporation of New Jersey

Application January 11, 1952, Serial No. 266,011

10 Claims. (Cl. 112—52)

1

The present invention relates to improvements in platform wrapper guides for directing a wrapper strip formed from two separate serially arranged flat pieces of different width with overlapping ends fastened together, one side edge of each piece being brought into alinement with a side edge of the other. More particularly the improved guide is intended for operation upon a two-piece double width wrapper strip for directing the strip into a machine arranged to perform a shoemaking operation. In the shoemaking operation the alined side edges of the strip pieces are secured to a shoe and the remaining overlapping end areas of the strips are left free to flex toward and from each other.

In directing a two-piece platform wrapper strip into a machine for performing a shoe-making operation, such for instance as that performed by a machine of the type disclosed in an application for United States Letters Patent Serial No. 265,660, filed January 9, 1952, in the name of Alfred S. Clark, a difficulty is encountered, the pieces composing the strip being free to flex angularly toward and from overlapping end relationship with each other in a manner similar to the action of a hinge. If the strip pieces are of a different width and are fastened only along overlapping alined edges, it has been extremely troublesome to lead the strip through a conventional guide acting to confine both edges of the strip. Such guide, if of proper width to confine the narrower strip piece is of insufficient width to pass the wider strip and if of sufficient width to pass the wider piece the guide is too wide for the narrower piece. Furthermore, in many guides of prior construction, difficulty is encountered in guiding a strip of the type referred to, the leading end of the second piece as it enters the guide becoming deflected from proper relationship to the confining surfaces of the guide as the transition is taking place from one strip piece to the other.

The primary purpose of the present invention is to overcome the difficulties encountered, particularly in directing a platform wrapper strip formed from two separate pieces of different widths fastened together in overlapping relationship, when the fastening between the ends consists of a temporary short seam running along alined edges of the respective pieces at their overlapping ends. A further purpose of the invention is to simplify and improve generally the construction of wrapper strip guides in a manner to insure reliable direction of a two-piece double width strip of the type referred to.

2

In accordance with the present invention, freedom for angular flexure between the pieces of a two-piece wrapper strip is utilized to insure that the pieces comprising the strip will be directed through different sections of a double width guide, which sections are particularly formed to confine the respective pieces of the strip. In this way greater guiding accuracy and a more effective machine operation are obtained with a relatively simple guide construction.

In its broader aspects the invention provides a platform wrapper strip guide having narrow and wider, angularly disposed sections, in which corresponding pieces of a wrapper strip are directed by the use of common means including, preferably an edge confining groove and a switch finger running between the sections and acting to separate overlapping areas of the strip pieces for movement into their respective guide sections. The respective sections of the guide may, therefore, be constructed in a form which is most effective for directing each strip piece, the separation of the pieces being accomplished automatically whenever the double thickness of an overlapping area portion of the strip reaches the switch finger. For directing the respective strip pieces means are provided for retaining the alined edges of the pieces in uniform engagement with the edge confining groove which is common to both sections of the guide. As illustrated, the means for retaining the alined strip edges in the groove consist of an edge engaging flange on the guide for the narrow strip and a yielding member within the edge confining groove of the guide frictionally engaging the wider strip piece.

These and other features of the invention as hereinafter described and claimed will be apparent from the following detail specification taken in connection with the accompanying drawings, in which:

Fig. 1 is a view in elevation of a shoe sewing machine equipped with a wrapper strip guide embodying the features of the present invention and showing the action of the guide when a two-piece strip is introduced with the narrow piece inserted first;

Fig. 2 is a fragmentary detail view of the guide as illustrated in the machine of Fig. 1 looking from the right side of the guide;

Fig. 3 is a sectional view of the guide, taken along the line III—III of Fig. 1.

Fig. 4 is a detail view of the guide in right-side elevation, illustrating its manner of operation when a two-piece strip is introduced with the wider piece of the strip first inserted in the guide,

that is, in reverse relation to the strip illustrated in Figs. 1 and 2;

Fig. 5 is a fragmentary detail view in front elevation of the guide as illustrated in Fig. 1 with the wrapper strip introduced within the guide in the same manner as in Fig. 4;

Fig. 6 is a detail view of a two-piece double width wrapper strip, the pieces of which are fastened together in a manner for entry into the guide in the relationship illustrated in Figs. 1 and 2; and

Fig. 7 is a similar strip with its ends fastened together in a manner intended for entry into the guide in the relationship illustrated in Figs. 4 and 5.

The illustrated machine is a lockstitch shoe sewing machine of the type disclosed in the Clark application, above referred to, and is arranged to fasten a platform sole, an upper and a platform wrapper strip together with a lockstitch seam in a single sewing operation, the seam extending entirely around the shoe and being brought into overlapping relationship with itself at the end of the seam. As more fully brought out in the Clark application the problem of guiding the strip parts to the machine presents numerous difficulties in handling them, since the edges of the parts operated upon have different variable curvatures and must be continuously repositioned with relation to each other for smooth configuration in the outlines of a finished shoe. The fastening operation can be accomplished on a commercial basis only with the help of a wrapper strip guide which acts more or less automatically and with a minimum of operator attention during sewing.

The wrapper strip guide of the Clark machine is open along one edge to receive the strip and is formed along its other edge with an edge confining groove into which the wrapper strip is continuously urged by the rotation of a feed wheel engaging the strip and having its axis disposed at such angle to direction of movement of the strip through the guide that the strip is held positively in engagement with the edge confining groove at all times. The strip guide of the present invention does not require a positively driven feed wheel and is arranged to provide an effective guiding action for a two-piece wrapper strip without the use of any power driven devices.

Referring more particularly to the drawings, the machine to which the illustrated guide is applied has a work support **10**, a fixed rabbet gage **12**, a work feeding rabbet gage **14**, a work feeding presser foot **16** cooperating with the feeding rabbet gage **14**, a non-feeding presser foot **18** cooperating with the fixed gage **12**, a needle **20**, and other stitch forming and work engaging devices more fully disclosed in the Clark application. The machine is intended for operation on a platform shoe, the platform of which, indicated at **22**, is rabbeted along its edge and has attached to its inner surface a sock lining **24**. The upper, indicated at **26**, is applied to the platform in a manner which brings its edges into register with the edge of the sock lining, and a wrapper strip is led into the sewing point of the machine onto the outer surface of the upper, all the parts, except the platform, being penetrated by the needle **20** during the sewing operations.

The wrapper strip is formed from two separate pieces **28** and **30** of different width sheet material temporarily fastened together in overlapping relationship at two adjacent ends, best shown in Figs. 6 and 7. The piece **28** is intended for the heel of a shoe and the piece **30** for the forepart. To enable the sewing operation to be started on a shoe beginning selectively about the heel or toe portions the pieces of the strip in Fig. 6 are of the same shape as those in Fig. 7 except that they are temporarily fastened together in opposite relationship, the pieces in both figures being illustrated grain side up. The strip of Fig. 6 is intended for use in sewing the forepart of a shoe before the heel end is sewn and the strip of Fig. 7 is intended for sewing the heel end of a shoe before the forepart is sewn while employing the guide of the present invention.

Of the two wrapper strip pieces **28** and **30** the piece **28** is much wider than the piece **30** and is cut with a substantial curvature to conform with the shape of a high wood heel later to be applied to the shoe. The piece **30** is relatively narrow and straight. Both strips have their respective pieces fastened together with the curvature along the outer convex lateral edge of the curved heel piece **28** alined with a straight lateral edge of the forepart piece, the temporary fastening comprising a short seam **32** running along the alined edges of the overlapping piece areas. Thus, the major portion of the overlapping end areas remaining unfastened are free for flexure toward and from each other about the line of the seam **32** in a manner similar to the sides of a hinge. The strip of Fig. 6 has its straight forepart piece **30** laid over the heel piece **28** at one end of the heel piece whereas the strip of Fig. 7 has its forepart piece laid over the heel piece at the other end thereof, the pieces being shown with their grain or finish surfaces uppermost. Fastening the pieces of a two-part wrapper strip in this way has many advantages both in adaptability for various sizes and styles of shoes and in economy in usage of materials, since the length of a one-piece strip would require a much greater area of material than that required for the pieces of a two-piece strip. The only disadvantages in the use of a two-piece strip results from the tendencies of the overlapping areas along their temporarily fastened ends to flex angularly away from each other while being presented to a sewing machine or one of their end edges to become diverted or distorted along an abrupt surface of the guide for the strip.

To enable a two piece composite platform wrapper strip of the type referred to, to be directed accurately with overlapping alined edges led uniformly into the sewing point of the illustrated machine, there is mounted upon it a steel metal guide having individual and common guiding means acting along the edges of the different strip pieces.

The individual guiding means include a wide section **34** and a principal narrow straight section **36** disposed at an angle to the wide section, through which sections the strip pieces are caused to pass selectively. The wide section **34** has a supporting surface of sufficient extent to underlie the widest strip piece **28** on which the machine is intended to operate. The narrow section **36** forms a main supporting surface for the narrow strip piece **30** and is of sufficient width only to accommodate the straight narrow strip piece, the narrow section **36** being defined by a straight edge confining groove **38** and a bent-over edge confining flange **40**.

The common strip directing means comprises the groove **38** formed along one edge of both the wide and narrow guide sections so that it alone serves as a gage to direct the strip edgewise in

predetermined alinement with the guide into the machine regardless of which piece is passing through the guide.

To separate the overlapping areas of the wrapper strip 28, 30 while passing through the guide so that the narrow piece 30 will be directed with certainty through the narrow section 36 and the wide piece 28 will be directed through the wide section 34, in one form of the invention, means is provided for deflecting one piece of the strip from the other piece comprising a continuation of the edge engaging flange 40 which extends between the narrow and wide sections of the guide to form a common strip deflecting switch finger 42 with a tip 44 at its extremity entering closely within the edge confining groove 38. The switch finger is located closer to the supporting surface of the wide section 34 than the double thickness overlapping areas of the strip pieces. The sections 34 and 36 of the guide are disposed at an angle to each other with the common edge confining groove 38 at the apex. The alined temporarily fastened edges of the wrapper strip running along the groove 38 are thereby directed accurately toward the sewing point of the machine regardless of which strip piece is being operated upon, the groove 38 being located in alinement with the point of operation of the needle 20.

To support the guide in the proper relationship to the sewing point the machine frame has projecting upwardly from it a bracket 46 provided at its upper end with a slotted enlargement engaging the rib of a block 48 formed integrally with the guide, the guide being secured to the bracket by a screw 50 passing through the enlargement into threaded engagement with the block. Loosening or removal of the screw 50 enables the guide to be adjusted vertically or conveniently detached.

The operation of the switch finger 42 will best be understood in connection with Fig. 3 which illustrates the manner of separation of the two strip pieces 28 and 30 as they pass through the guide. Assuming that the operation of the machine is such that the narrow forepart strip piece 30 is first led into the guide and is directed manually into the sewing point of the machine, as the operation proceeds the trailing end of the narrow strip piece 30 approaches the switch finger 42 and the advancing end of the wide piece 28 passes at the opposite side of the switch finger from the narrow piece 30. The switch finger is spaced from the groove 38 a distance greater than the temporary seam 32 from the alined edges of the strip pieces.

To admit the switch finger between them a cam edge 52 spaced from the confining groove 38 on the guide deflects the advancing end of the wider strip piece away from the trailing end of the narrow piece. The cam edge 52 is formed on a right angle flange of an auxiliary section 53 corresponding in width to the narrow strip piece in advance of the switch finger and of the principal narrow section 30 and the spacing from the confining groove 38 is sufficient both to clear the narrow strip piece and to deflect the wider piece.

To accentuate the separating action of the cam edge 52 and to provide angular space for the wide strip piece as it is deflected by the cam edge 52, the supporting surface of the wide section 34 of the guide is formed with a twisted bend along the supporting surface and in advance of the cam edge and switch finger, the weight of the wide strip piece 28 assisting the deflecting action of the cam edge 52. As the operation of the shoe continues to progress, the wide strip piece is drawn into the wide section 34 of the guide and beneath a yielding member in the form of a spring wire 54 fastened by means of a set screw 56 in a lug 58 on the outer surface of the wide guide section 34. The active end of the wire 54 passes through a slot 60 (Fig. 1) in the wide guide section 34 and into engagement with the strip in the guide. While the wire 54 bears progressively against the narrow strip piece 30, as well as against the wider strip piece 28, its particular function is primarily with the wide strip piece to prevent separation of the wide piece from the groove 38 in the guide. To increase the action of the yielding wire 54, the portion of the wire engaging the strip is bent into arcuate form with its plane directed downwardly and toward the confining groove 38. Thus, as the movement of the strip progresses, the tendency is to crowd the strip into more intimate contact with the groove.

Upon introducing the wrapper strip into the guide with its lower end inserted in one of the guide sections, the upper end extending from the guide is laid over a wide tray 62, more fully described in the prior Clark application. Regardless of which strip piece is first introduced to the guide the action of the switch finger 44 is substantially the same. If the wide strip piece 28 is first introduced to the guide, it is inserted in the wide section 34 where it is kept in engagement with the edge confining groove 38 by the wire 54. When the upper trailing end of the wide section 28 reaches the switch finger the leading end of the narrow strip piece 30 passes to the right of the cam edge 52 into the narrow auxiliary guide 53, the curvature of the wide strip section causing the overlapping area at the leading end of the narrow strip piece 30 to be raised angularly as it reaches the switch finger 42. The switch finger 42 then shifts the narrow strip piece into the narrow section 36, as shown in Fig. 5, which insures proper direction of the strip into the sewing point of the machine as the operation progresses.

To assist in guiding the convex curvature along the wide strip piece 28 accurately into the sewing point of the machine, the lower portion of the guide along the edge confining groove 38 is formed with a slot 64 of limited length terminating just short of the extreme lower end of the guide. At the extreme lower end of the guide there is provided a short brace 66 comprising a continuation of the edge confining groove 38. As the wide strip piece 28 passes through the groove 38 its convex edge bulges through the slot 64, as in Fig. 4, insuring accurate placement as the strip emerges from the lower end of the guide.

The nature and scope of the invention having been indicated and a particular embodiment having been described what is claimed is:

1. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow angularly disposed sections, in combination with means for deflecting one piece of the strip from the other and for directing the strip

from one section of the guide to the other as it passes through the respective guide sections.

2. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow angularly disposed sections, in combination with means for deflecting one piece of the strip from the other and for directing the strip from one section of the guide to the other as it passes through the respective guide sections comprising a cam edge on the guide and an edge confining groove along which the alined edges of the strip pieces pass.

3. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow sections, in combination with common means for directing the strip as it passes through the respective guide sections comprising an edge confining groove along which the alined edges of the strip pieces pass, and a switch finger having a tip entering into the edge confining groove to separate the overlapping areas of the strip pieces while passing through the guide.

4. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow angularly disposed sections, in combination with a switch finger running between the narrow and the wide sections for separating the overlapping areas of the strip pieces to cause each piece to be directed with certainty into its respective section while the strip passes through the guide.

5. A guide for a platform wrapper strip formed with two pieces of divergent width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relation about their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow angularly disposed sections, in combination with a switch running between the narrow section and the wide section to separate the overlapping areas of the strip pieces while passing through the guide, and common means for retaining the alined edges of the strip pieces in predetermined alinement with the guide.

6. A guide for a platform wrapper strip formed with two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relation with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow angularly disposed sections, in combination with a common edge confining groove and a switch finger running between the narrow section and the wide

section to separate the overlapping areas of the strip pieces while passing through the guide, and individual means for retaining the alined edges of the strip pieces in predetermined alinement with the confining groove of the guide, comprising an edge confining flange on the guide for the narrower strip piece and a yielding member within the groove frictionally engaging the wider strip for preventing separation of the wide strip piece from the groove.

7. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow angularly disposed sections, in combination with a switch finger running between the narrow and the wide sections for separating the overlapping areas of the strip pieces to cause each piece to be directed with certainty into its respective section while the strip passes through the guide, and a bend in the guide in advance of the switch for deflecting the overlapping areas of the strip pieces angularly away from each other to admit entry of the switch finger between them.

8. A guide for a platform wrapper strip formed with a convex curvature along one edge, said guide having a straight section conforming generally with the shape of the strip and an edge confining groove along one side of the guide, in combination with a slot terminating in a brace at the lower portion of the guide running across the slot, through which slot the convex edge of the strip bulges to insure contact of the strip with the brace as the strip emerges.

9. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow sections formed with strip supporting surfaces, in combination with a switch finger having a tip extending between the wide and narrow sections closer to the supporting surface of the wider section than the double thickness overlapping areas of the strip pieces.

10. A guide for a platform wrapper strip formed in two pieces of different width, the pieces of which have one lateral edge of each alined with one lateral edge of the other and are fastened together in overlapping relationship along their alined edges with freedom for flexure angularly toward and from each other along their remaining overlapping areas, said guide having wide and narrow sections formed with strip supporting surfaces, in combination with a switch finger having a tip extending between the wide and narrow sections, and a cam edge on the guide to deflect the wide strip piece away from the narrow strip piece in advance of the switch finger.

RALPH E. PEARSALL.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
538,472	Wolentarsky	Apr. 30, 1895
2,398,475	Stritter	Apr. 16, 1946