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Loeffler

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[54] **BUTTONHOLE GAUGING GUIDE ATTACHMENT ESPECIALLY FOR USE WITH DOMESTIC SEWING MACHINES**

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[52] **U.S. Cl.** **112/75,** 112/115, 112/153

[51] **Int. Cl.** **D05b 3/06**

[58] **Field of Search** 112/136, 75, 131, 112/115, 110, 104, 105, 153; 33/190, 189

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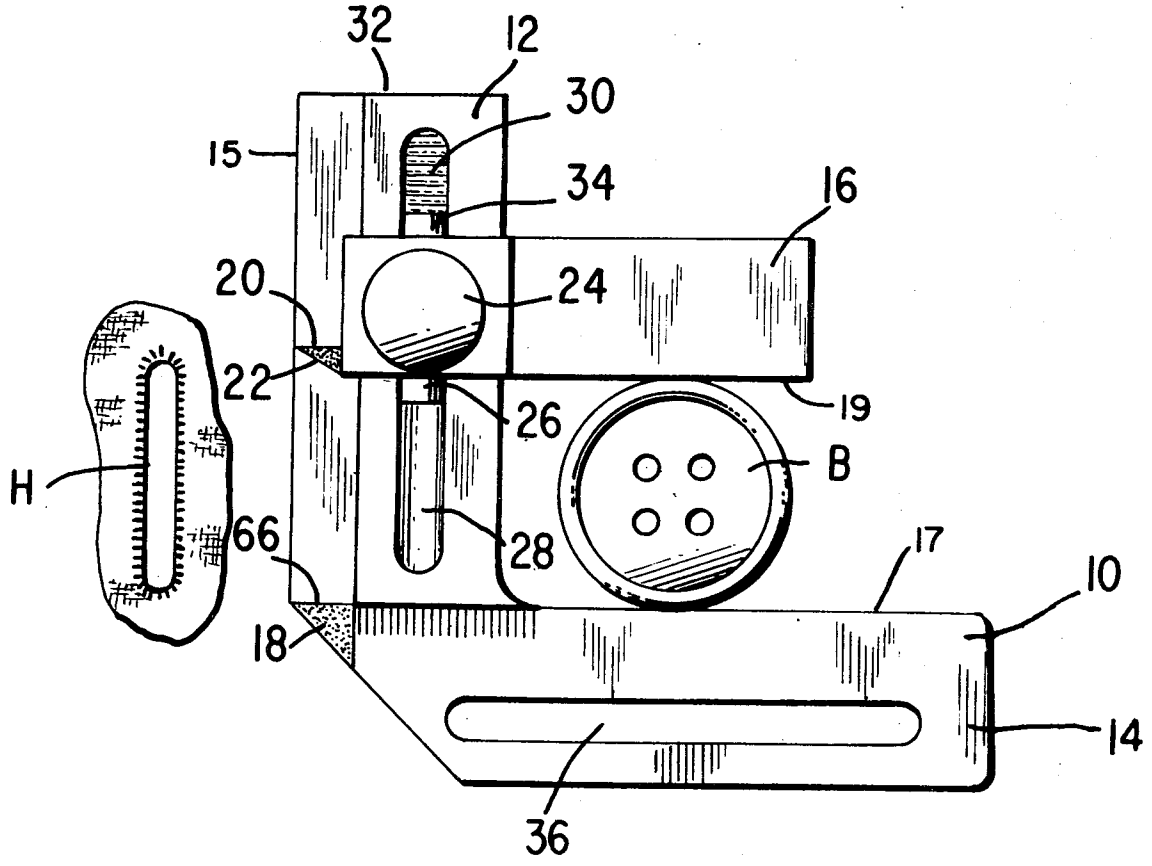
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[57] **ABSTRACT**

A buttonhole gauging guide device is herein provided which is particularly adapted for use with domestic sewing machines. An L-shaped base member presents two legs extending mutually perpendicular with respect to each other. A first leg is provided with a slidable gauging arm which is movable toward the second leg and is supported to maintain parallel relationship therewith. The gauging arm is formed with a clamping portion extending in the plane of the second leg. The arm is further provided with an indicator projection which cooperates with an indicator marking on the base member to display, to a sewing machine operator, the necessary buttonhole length for a button disposed between the arm and the L-shaped base. The slidable gauging member may be spring biased toward the second leg of the base. The first leg may be formed with a raised track-like portion which may be of a hollow configuration to slidably support a guiding member. A threaded fasteneing means may be inserted through an aperture formed in the gauging arm to connect the gauging arm with the aforementioned guiding member supported within the raised track-like portion of the base.

The second leg of the base may be formed with an elongated slot for adjustably mounting the overall device to virtually any existing, conventional, domestic sewing machine.

2 Claims, 4 Drawing Figures



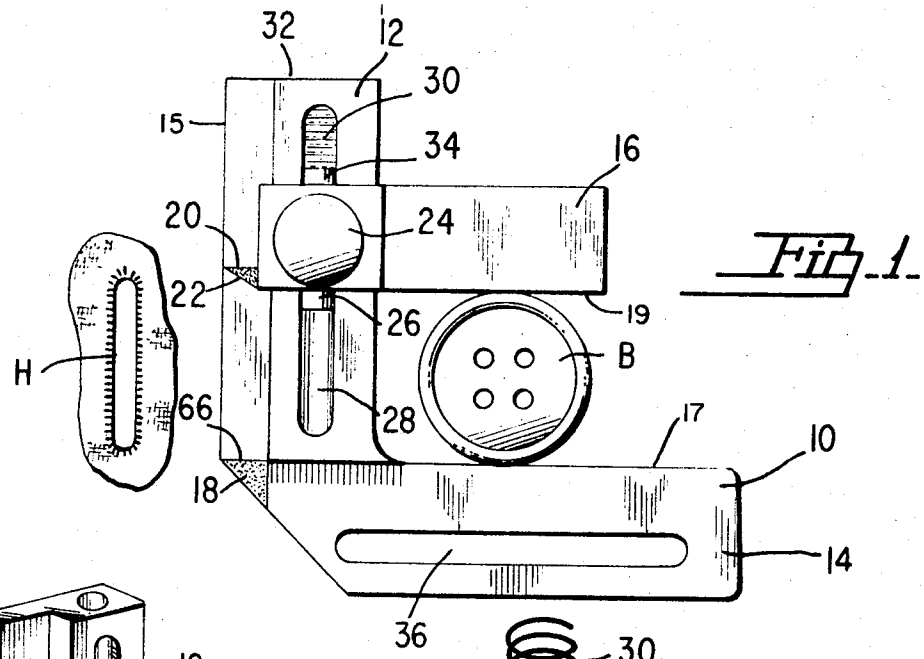


Fig. 1.

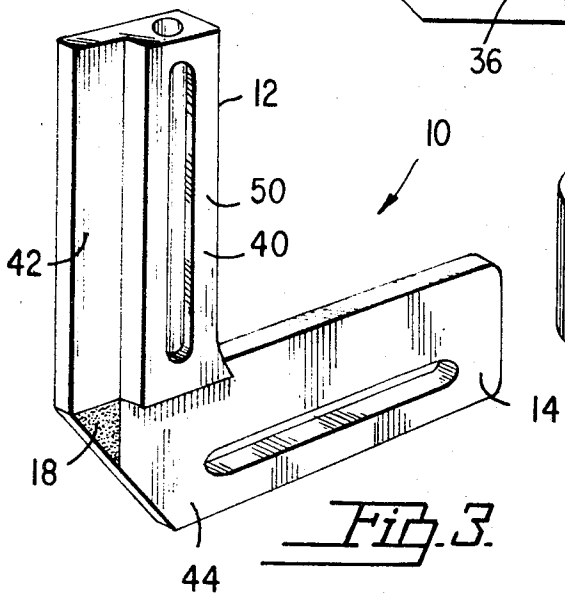


Fig. 3.

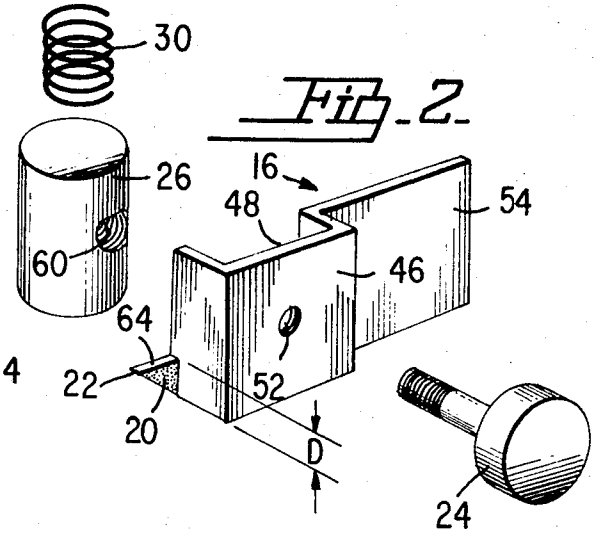


Fig. 2.

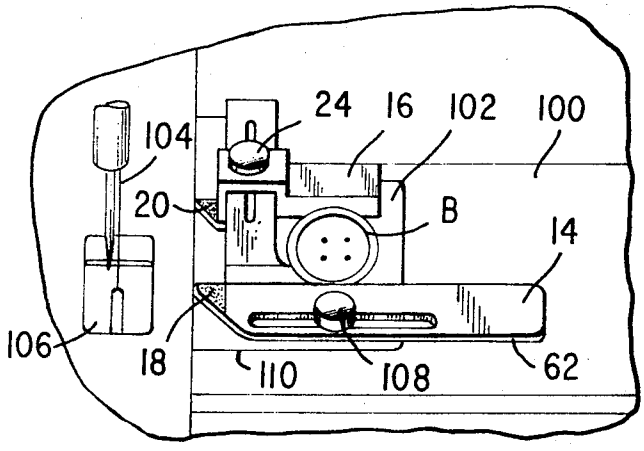


Fig. 4.

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BUTTONHOLE GAUGING GUIDE ATTACHMENT ESPECIALLY FOR USE WITH DOMESTIC SEWING MACHINES

BACKGROUND OF THEINVENTION

The present invention relates to sewing machine attachments and, more particularly, relates to a combined gauging and guiding attachment particularly adapted for use with domestic sewing machines.

Among the most difficult tasks to be performed, on a sewing machine, is the formation of properly sized buttonholes in a complex piece of material.

Traditionally, such buttonholes must be measured and marked by chalk, pen, pencil, or the like, before the fabric is inserted in the domestic sewing machine for preparing the buttonhole. Such measuring and excessive movement of the fabric, is condusive to mistake and error so as to result in an unnecessary loss of material and time.

Existing buttonhole gauges are designed primarily for factory type sewing machines and are not adaptable for domestic use. Furthermore, such devices generally require that the fabric be marked, as mentioned above, so that error or mistake is very likely.

It would therefore be advantageous if an inexpensive and simple attachment were provided for assisting the domestic sewing machine operator in properly preparing buttonholes without requiring the marking of the material.

OBJECTS AND SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide an improved buttonhole gauging and guiding attachment which is particularly adapted for domestic sewing machine use.

It is another object of the present invention to provide a buttonhole gauging and guiding attachment which solves some of the problems confronting domestic sewing machine operators today.

It is still another object of the present invention to provide a buttonhole gauging and guiding apparatus which is simple to operate.

It is yet another object of the present invention to provide a buttonhole gauging and guiding attachment which is inexpensive to manufacture so as to present a practical consumer item.

It is a further object of the present invention to provide a domestic sewing machine attachment for forming buttonholes which attachment is adapted to be used with virtually any conventional, domestic sewing machine on the market.

It is still a further object of the present invention to provide a buttonhole gauging and guiding attachment for domestic sewing machine operation which requires no particular skill for the proper operation thereof.

It is yet a further object of the present invention to provide a buttonhole gauging and guiding attachment for domestic sewing machines which aids an operator in saving time and material while forming buttonholes in complex garments.

At least some of the above-cited objects are achieved by the provision of a buttonhole gauging and guiding apparatus including a generally L-shaped base member having first and second leg portions. A gauging arm may be slidably mounted on the first leg portion and a first indicating means displayed on the gauging arm. A second indicating means is presented on the base member. Upon placing a button in clamped relationship between the arm and the second leg portion, the first and second indicators are operable to display, to a machine operator, the proper length of a buttonhole for the particular button clamped in the apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

While the invention is particularly pointed out and distinctly claimed in a concluding portion of the specification, a preferred embodiment is set forth in the following detailed description which may be best understood by reference to the accompanying drawings in which:

FIG. 1 shows a top plan view of the preferred embodiment of the present invention;

FIG. 2 is an exploded perspective view of a gauging arm of the apparatus shown in FIG. 1, including a guide member associated therewith;

FIG. 3 is a perspective view of a base member included in the overall apparatus shown in FIG. 1; and

FIG. 4 shows the preferred embodiment of the present invention properly mounted on the working surface of a conventional, domestic sewing machine.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, in which like numerals are used to indicate like parts throughout the various views thereof, FIG. 1 is a top plan view of the preferred embodiment of the present invention.

An L-shaped base **10** is formed to present a first leg **12** and a second leg **14.** The side **15** of the leg **12** of the base extends at right angles to the leg **14** and serves as a guide for positioning the edge of a garment or fabric in which a buttonhole is to be made. A gauging arm **16** is slidably mounted on the first leg **12** and is so supported as to maintain parallelism with the extension of the second leg **14** during the sliding of the gauging arm **16** along the leg **12.**

A pointed marker **18** is displayed adjacent the edge **15** of the leg **12** and in alignment with the button contacting edge **17** on the second leg. A second pointed marker **20** is displayed on a projection **22** extending from the gauging arm **16** to be parallel with respect to the second leg **14** of the L-shaped base **10.** The extremity of the projection **22** is positioned a short distance outwardly from the button contacting edge **19** of the arm **16** so as to be spaced from the marker **18** a distance somewhat greater than the diameter of the button located between the button engaging edges **17** and **19.** The markers **18** and **22** therefore indicate the length of a buttonhole through which the button can be easily passed.

The gauging arm **16** may be adjustably mounted on the first leg **12** by a threaded fastening means **24** which may comprise a set screw, or the like. The set screw **24** extends through the gauging arm **16** into a holding member **26,** slidably engaged within an elongated space **28** formed within the first leg **12** of the base **10.**

A helical spring **30** may be disposed between an upper end **32** of the first leg **12** of the L-shaped base **10** and an upper surface **34** of the slidable holding member **26.**

An elongated slot **36** may be formed in the second leg **14,** of the L-shaped base **10,** for receiving an existing threaded fastening means associated with the sewing plate of a domestic sewing machine. The base can thus

be positioned so that the fabric guiding edge **15** thereof will be spaced a desired and predetermined distance from the needle and pressure foot of the sewing machine for forming the buttonhole at a desired location spaced from the edge of the garment.

FIGS. **2** and **3** show the salient parts of the embodiment shown in FIG. **1**, in perspective view.

Referring to FIG. **3**, it can be seen that the first leg portion **12** is formed with a raised track-like portion **40** and a flat planar portion **42**, which is generally coplanar with the surface **44** of the second leg **14** of the base **10**. The portions **12** and **14** may present lengths of from **2** to **3** inches each.

The gauging arm **16** is formed with a U-shaped portion **46** having an internal surface **48** configured to correspond to the external surface **50** of the track-like portion **40**, of the overall L-shaped base **10**. The gauging arm **16** is further formed with a clamping extension **54** which, when the surface **48** is fit flush against the surface **50** of the track-like portion **40**, extends generally coplanar with the planar extension of the leg **14**, so that a button may be impingedly held between the button contacting edge **19** of the gauging arm **16** and button contacting edge **17** of the second leg **14**, (see FIG. **1**).

The projection **22**, extending from the U-shaped portion **46** of the gauging arm **16** and presenting the indicator marker **20**, may be arranged to slide along the planar surface **42** of the first leg **12** of the L-shaped base **10**. Due to this configuration, the markers **18** and **20** may be readily observed by a machine operator for assisting in gauging and guiding the machine needle in forming a buttonhole, indicated in FIG. **1** as H.

It will be noted that, as shown in FIG. **2**, the threaded fastening means **24** may be inserted through an aperture **52** formed in the U-shaped portion **46** of the gauging arm **16** for threaded engagement within the holding member **26**. Of course, it is not necessary that the gauging arm **16** be spring biased into engagement with the button. The gauging arm **54** may be positioned by the sewing machine operator and the set screw **24** engaged within a threaded aperture **60** formed in the holding member **26**, so as to frictionally impinge the surface **48** of the gauging arm **16** against the surface **50** of the L-shaped base member **10**.

Referring to FIG. **4**, the preferred embodiment in the present invention is shown in an operational posture. The base portion **100** of a conventional, domestic sewing machine presents a sewing plate **102** and a needle **104** is operationally supported vertically with respect thereto. A transparent guide member **106** may be provided for buttonhole operations in some of the better quality sewing machines.

A machine operator removes a threaded fastening means **108**, which is generally an existing member on the sewing machine, and positions the apparatus, according to present invention, with the closest edge **62** thereof aligned parallel with the leading edge **110** of the plate **102**. The attachment is then shifted laterally along the slot **36** to a selected position wherein the fabric guiding edge **15** of the leg **12** is spaced a desired distance from the needle **104** corresponding to the required spacing of the buttonhole from the edge of the garment or fabric. The threaded fastening means **108** is then tightened down to secure the present invention in a proper operational posture.

The set screw **24** is then loosened and the gauging arm **16** moved away from the leg **14** to permit the placement of a button B there between. The gauging arm **16** is then released and the spring **30** forces the button contacting edge **19** thereof against the button to hold the button between edge **19** of the gauging member **16** and the edge **17** of the leg **14** of the base **10**.

After the button B has been properly placed within the apparatus, according to the present invention, the markers **18** and **20** are presented alongside the needle **104** so as to give an accurate indication, to a machine operator, as to the proper length of a buttonhole to be prepared in association with the specific button B.

It will be noted, that the marker **20** is formed with an indicating edge **64** disposed on the opposite side of the projection **22** from the indicating edge **66** of the marker **18**. Due to this arrangement, a distance D is automatically added to the diameter of the button B to compensate for the necessary width of a buttonhole for permitting the proper insertion of the button therethrough.

SOME ADVANTAGES OF THE PRESENT INVENTION

It can thus be seen that an improved buttonhole guiding and gauging apparatus has been herein described which is specifically adapted for domestic use. The apparatus according to the present invention solves some of the problems confronting machine operators today and is remarkably simple to use. Since the arrangement according to present invention is uniquely uncomplicated, devices according to the inventive arrangement are inexpensive to manufacture so as to present a practical consumer item.

The guiding and gauging arrangement, according to present invention, is adaptable to virtually any domestic sewing machine and no particular skill is needed in using the apparatus to achieve the desired results. Since the present invention displays a positive measurement of a precise buttonhole size for a particular button, which dimension need not be marked on the fabric itself, an operator may save much time and material in performing the difficult task of properly preparing buttonholes.

The various elements comprising the present invention cooperate in a synergistic manner whereby the resulting function of the overall apparatus exceeds the sum of the functions of the elements.

SCOPE OF THE INVENTION

While what has been shown herein is a preferred embodiment of the present invention, it is of course understood that various modifications and changes may be made therein without departing from the invention. It is therefore intended to cover the following claims all such modifications and changes as may fall within the true spirit and scope of the present invention.

What I claim is:

1. A buttonhole gauging and guiding device adapted for use with a domestic sewing machine having a needle, said device comprising a generally L-shaped base having first and second leg portions disposed at right angles to each other; said first leg portion having a straight material guiding side thereon engagable by the material in which a buttonhole is to be made; said second leg having a slot therein, means extending through said slot and into engagement with a stationary part of a sewing machine for securing said base on the sewing machine in a selected location with said material guid-

ing side of said first leg spaced a selected distance from the needle of the sewing machine; a gauging arm slidably mounted on said first leg of the base and having a button contacting edge thereon extending parallel to and spaced from a complementary button contacting edge of the second leg of the base; said gauging arm being movable toward said second leg into a position wherein said complementary button contacting edges engage the opposite sides of a button designed to be passed through the buttonhole to be made; and indicating means located on said gauging arm and base adjacent said material guiding-side of the first leg; said indicating means being spaced apart a distance exceeding the distance between said complementary button contacting edges of said gauging arm and base to indicate the length of a buttonhole of suitable size to receive the button, said first leg having a channel therein, said gauging arm having a portion thereof embracing a said channel in the first leg, a holding member being located in said channel and movable longitudinally of the first leg, and fastening means carried by said portion of the gauging arm engagable with said holding member to secure said gauging arm in position with the button contacting edge of the arm spaced a fixed distance from the button contacting edge of said second leg.

2. An apparatus according to claim **1** wherein said holding member is spring biased toward said second leg portion of said L-shaped base member.

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