

April 5, 1955

S. HOFFMAN

2,705,583

METHOD OF AND APPARATUS FOR FLUTING CLOTH

Filed Aug. 27, 1951

2 Sheets-Sheet 1

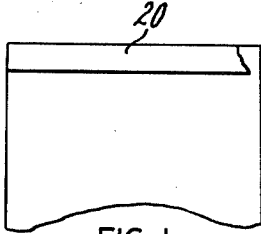


FIG. 1.

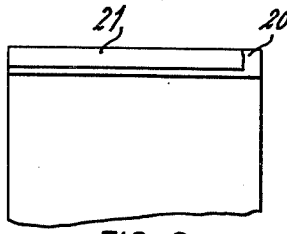


FIG. 2.

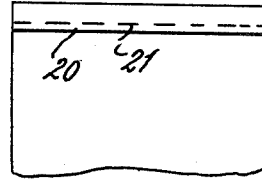


FIG. 3.

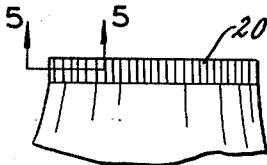


FIG. 4.



FIG. 5.

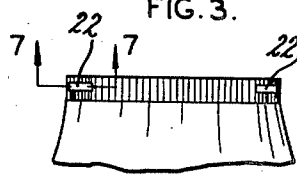


FIG. 6.

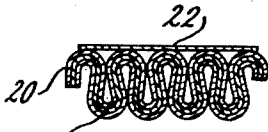


FIG. 7.

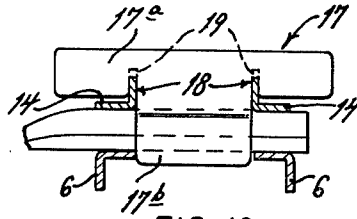


FIG. 10.

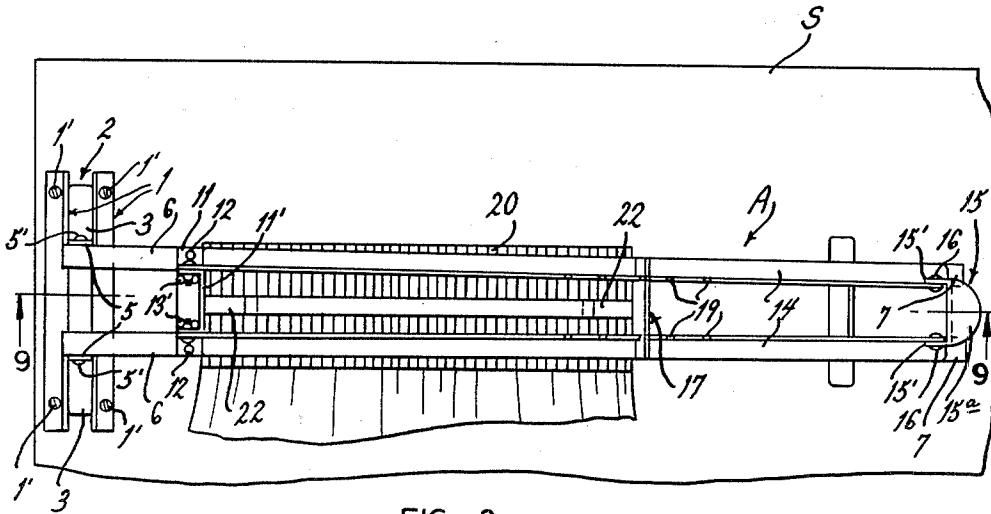


FIG. 8.

INVENTOR

SAM HOFFMAN

BY *Emm Harrington,*
ATTORNEY

April 5, 1955

S. HOFFMAN

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2 Sheets-Sheet 2

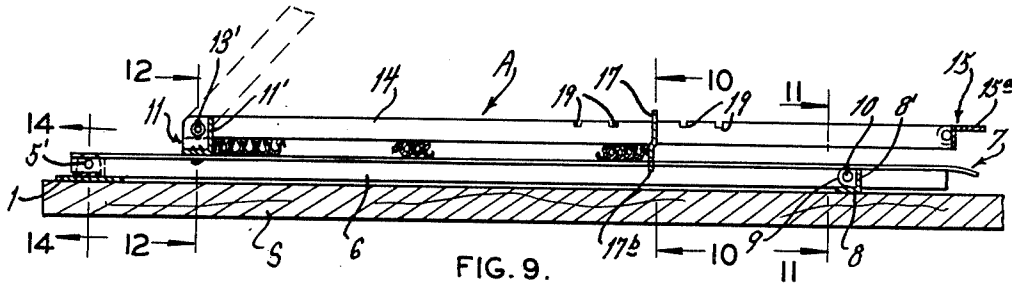


FIG. 9.

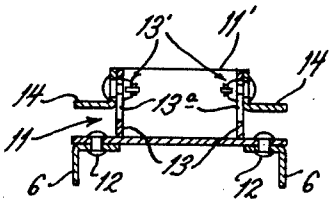


FIG. 12.

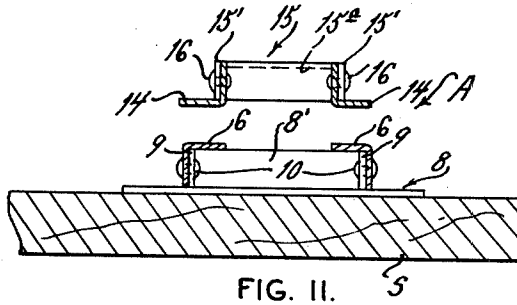


FIG. 11.

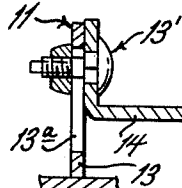


FIG. 13.

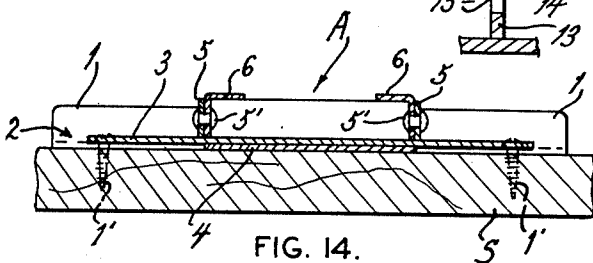


FIG. 14.

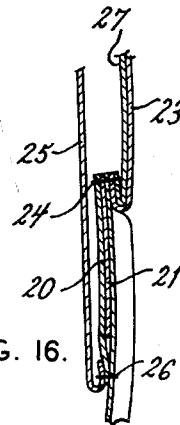


FIG. 16.

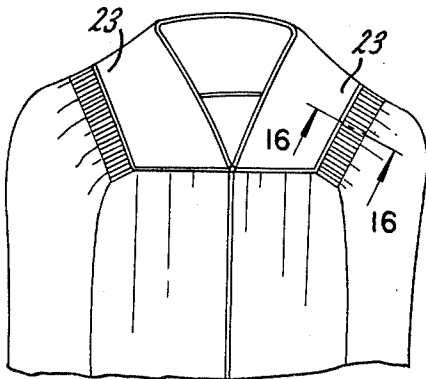


FIG. 15.

INVENTOR
SAM HOFFMAN

BY *Edw. Harrington,*
ATTORNEY

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METHOD OF AND APPARATUS FOR FLUTING CLOTH

Sam Hoffman, University City, Mo., assignor to
Morris Hoffman, St. Louis, Mo.

Application August 27, 1951, Serial No. 243,807

3 Claims. (Cl. 223—28)

This invention relates generally to a method of fluting cloth and an apparatus employed in carrying out the improved method of this invention, the invention being adapted particularly, though not exclusively, for fluting portions of choir robes in a manner which enhances the appearance of the choir robes, and according to a method which is simple and convenient to follow. Prior to this invention flutings of choir robes have been retained in shape by stitches, some of which extended longitudinally along the center of the fluted portion where they were entirely visible and hence detracted from the appearance of the flutings. An important object of the present invention is to provide a method of fluting cloth according to which the stitches which aid in retaining the fluting in place are located in the valleys of the fluting where such stitches are concealed from view with a resultant improvement of the appearance of the fluting over fluting produced in accordance with the visible stitch method heretofore followed.

Figs. 1, 2, and 3 illustrate the preliminary treatment to which a portion of a choir robe is subjected when said choir robe portion is to be fluted in accordance with this invention.

Fig. 4 is a fragmentary elevation illustrating a fluted portion of a choir robe when the fluting operation has progressed a step further than the step illustrated by Fig. 3.

Fig. 5 is an enlarged section taken on line 5—5 of Fig. 4.

Fig. 6 is a fragmentary elevation illustrating a step of the fluting operation beyond the step illustrated by Fig. 4.

Fig. 7 is an enlarged section taken on line 7—7 of Fig. 6.

Fig. 8 is a plan view of an apparatus which is employed in the operation of fluting cloth in accordance with this invention, portions of the support for the apparatus being broken away, and a portion of a choir robe being shown in the view.

Fig. 9 is a longitudinal section taken on line 9—9 of Fig. 8.

Fig. 10 is a vertical section taken on line 10—10 of Fig. 9.

Fig. 11 is a vertical section taken on line 11—11 of Fig. 9.

Fig. 12 is a vertical section taken on line 12—12 of Fig. 9.

Fig. 13 is an enlarged section illustrating a portion of the structure shown in Fig. 12.

Fig. 14 is a vertical section taken on line 14—14 of Fig. 9.

Fig. 15 is a fragmentary front elevation of a choir robe having fluting produced in accordance with this invention.

Fig. 16 is an enlarged section taken on line 16—16 of Fig. 15.

In describing the present invention the apparatus A, which constitutes an important part of the invention, will be described first, after which the method will be described. The apparatus assembly includes a pair of angle elements 1 which are secured by fastening devices 1' to a support S, a table top, for instance, said angle elements being spaced apart to provide a space 2 therebetween. The apparatus A includes a base member 3 which is disposed in the space 2 between the angle elements 1 and rests on a plate 4 which is disposed in said

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space 2 and is suitably fastened to the support S. The base member 3 is provided with a pair of spaced apart, upstanding ears 5, and rigidly fixed by fastening devices 5' to said ears is a pair of spaced apart, elongated bars 6 which preferably, though not necessarily, are in the form of angle bars (see Fig. 10). At their forward ends the elongated bars 6 are provided with portions that are directed downwardly as is indicated as 7 in Fig. 9. Also, the elongated bars 6 have associated therewith a spacer member 8 which is in the form of a foot plate that rests on the top surface of the support S. The spacer member 8 is provided with a central portion 8' which is of angular cross-section, as is shown to good advantage in Fig. 9, and wings 9 are provided at the opposite ends of the upstanding leg of said portion 8' which are secured to the bars 6 through the instrumentality of a suitable fastening devices 10.

Arranged immediately above the pair of elongated bars 6 is a bracket member 11, said bracket member being secured at the opposite ends thereof to the elongated bars 6 by suitable fastening devices 12 (Figs. 8 and 12). The bracket member 11 has a center portion 11' which is of angle-shaped formation and projected rearwardly from the opposite outer ends of the upstanding leg of said center portion is a pair of extensions 13. The extensions 13 have pivotally attached thereto through the instrumentality of a pair of bolt and wing nut assemblies 13' a second pair of spaced, elongated bars 14 which are of angular cross-section. The pair of elongated bars 14 extend substantially parallel relative to the elongated bars 6 and said bars 14 have secured thereto at their outer ends an element 15 having a forward portion 15a which serves as a handle, said element being of angular cross-section, as is shown in Fig. 9 and being provided with ears 15' which are secured by fastening devices 16 to forward end portions of the upper bars 14. The upper, elongated bars 14 have associated therewith an abutment member 17 which is shaped as is shown to good advantage in Fig. 10. The abutment member 17 is provided with a top, cross portion 17a from which is extended downwardly a portion 17b which is disposed between the upper spaced bars 6, there being slots 18 formed in said abutment member 17 in which portions of the upstanding legs of the elongated bars 14 are received when the abutment member is applied to said bars 14, as is shown in Fig. 10. Also, the top edges of the upstanding legs of the elongated bars 14 are provided with alined pairs of notches 19 in which are received portions of the abutment member 17 so as to maintain the abutment member in positions to which it has been adjusted. It will be noted that the extensions 13 of bracket member 11 are provided with vertical slots 13a through which the shanks of the bolts of the bolt and wing nut assemblies 13' extend for purposes of adjustment.

In describing the method of the present invention it is pointed out that a choir robe includes three sections which are pertinent to this invention, these sections being the two sleeve sections and a back section. In carrying out the present invention the three sections referred to are subjected to the identical treatment; that is to say each section is arranged flat on a table, or other work support, and a strip 20 of flannelette material is laid across the top portion of the section, as is shown in Fig. 1, the flannelette material preferably, though not necessarily, being about two inches wide. Next a strip 21 of crinoline, if preferred, or buckram, is arranged on top of the flannelette at the top thereof, as is shown in Fig. 2, the crinoline preferably being narrower than the flannelette. Then a damp cloth which has been soaked in plain starch is rubbed over the top surface of the crinoline strip. The two strips; that is to say the strips of crinoline and flannelette are then picked up together, are turned over, and are placed on the choir robe section which is to be fluted, and this results in the dampened crinoline being interposed between a portion of the choir robe to be fluted and the flannelette strip.

At this point the portions of the choir robe section to be fluted are passed slowly through an automatic master fluting machine, and this machine steams, breaks down the resistance, and flutes the three thicknesses of

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fabric all in one operation of the fluting machine. The next step after the fluting operation has been performed by the fluting machine is to wait approximately one minute for drying-out purposes, and when this has been done both ends of the fluted section are gathered by hand and are taped to a distance of approximately four or five flutes for holding purposes, as is shown in Fig. 6 wherein 22 designates lengths of tape material.

The next step in the method of this invention is to arrange the fluted end of a choir robe section in a flute gathering apparatus, this being the apparatus A heretofore described herein. The upper, elongated bars 14 are raised relative to the lower, elongated bars 6 by pivoting said bars 14 about the pivot bolts 13', and the fluted portion of the choir robe section is arranged in place with respect to the lower, elongated bars 6, after which the upper, elongated bars are moved downward relative to said lower bars 6 so as to cause the fluted portion of the choir robe to be interposed between the lower bars 6 and the upper bars 14. The flutes are then gathered by the operator until the gathered portion is brought down to the length necessary for the particular section of the choir robe, and the abutment 17 is then inserted into place so that it will hold the gathered, fluted length in place in its gathered condition. Next, a piece of scotch masking tape, or other tape or binding material, is arranged completely along the gathered fluting after which the entire choir robe section held in the gathering apparatus, and the gathering apparatus itself, are picked up and turned over to expose the opposite side of the fluted portion, and binding tape is laid completely across and over the ends of the fluted portion of the choir robe at that side thereof. This binds the entire section of the gathered fluting together until the section is sewn into the outside yoke 23 of the choir robe.

When the section has been sewn to the outside yoke of the choir robe by stitches 24 (Fig. 16), the binding tape is removed from both sides of the section, after which the garment has added to it an inside yoke 25 which completely covers the reverse side of the fluting and each valley of each flute is sewn tightly to the inside yoke by stitches 26. Between the inside yoke and the outside yoke is inserted a flannelette padding 27 which is actually a third yoke and which serves as a padding that provides accurate fit for the robe across the shoulders and chest of a wearer of the robe. Thus, both ends of each individual flute are secured in place by stitches but with no threads, stitches, or other form of sewing being visible through the center of the fluting, as was the case heretofore.

I claim:

1. An apparatus for gathering the flutes of a fluted garment portion, comprising a base member, a pair of

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spaced elongated bars secured to said base member at corresponding ends of said bars, a second pair of elongated bars arranged above the first-mentioned elongated bars, means for pivoting said second pair of elongated bars to the first-mentioned elongated bars at corresponding ends of said second pair of elongated bars, and an abutment element supported by said second pair of elongated bars and adjustable to different positions with respect thereto, said second elongated bars being provided with means for maintaining said abutment element in positions to which it has been adjusted.

2. An apparatus for gathering the flutes of a fluted garment portion, comprising a base member, a pair of spaced elongated bars secured to said base member at corresponding ends of said bars, a second pair of elongated bars arranged above the first-mentioned elongated bars, means for pivoting said second pair of elongated bars to the first-mentioned elongated bars at corresponding ends of said second pair of elongated bars, and an abutment element supported by said second pair of elongated bars and adjustable to different positions with respect thereto, said second elongated bars being provided with means for maintaining said abutment element in positions to which it has been adjusted, said means comprising notches formed in portions of said second elongated bars adapted to receive therein portions of said abutment element.

3. An apparatus for gathering the flutes of a fluted garment portion, comprising a base member, a pair of spaced elongated bars secured to said base member at corresponding ends of said bars, a second pair of elongated bars arranged above the first-mentioned elongated bars, means for pivoting said second pair of elongated bars to the first-mentioned elongated bars at corresponding ends of said second pair of elongated bars, and an abutment element supported by said second pair of elongated bars and adjustable to different positions with respect thereto, said second elongated bars being provided with means for maintaining said abutment element in positions to which it has been adjusted, said means comprising notches formed in top edge portions of said second elongated bars adapted to receive therein portions of said abutment element.

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