

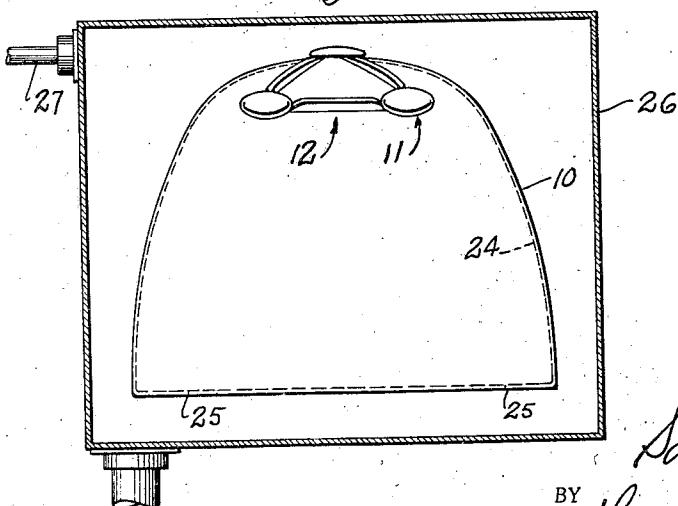
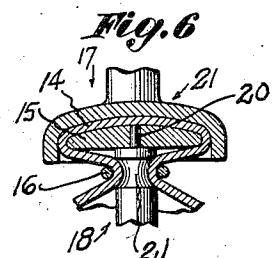
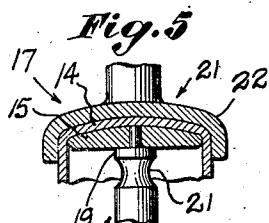
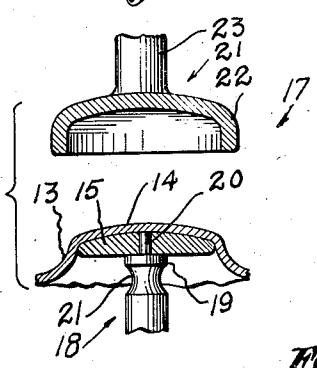
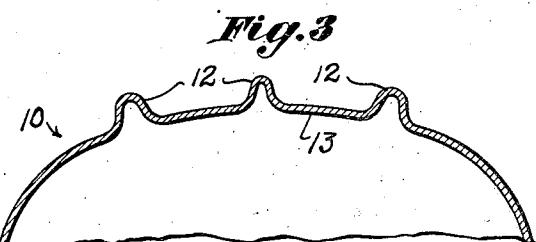
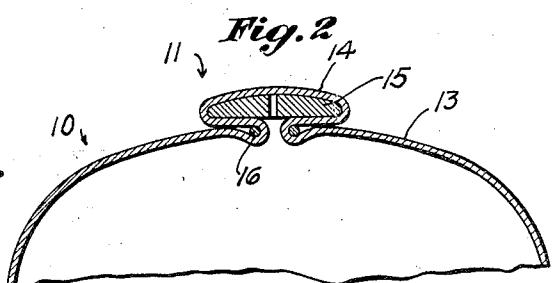
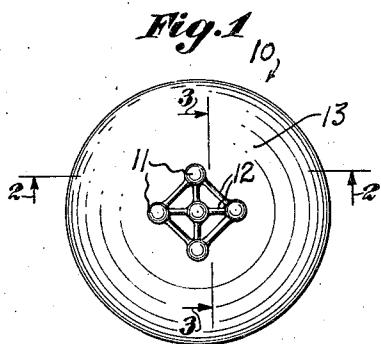
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2,148,697

PROCESS AND APPARATUS FOR TREATING FELTS AND THE LIKE

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UNITED STATES PATENT OFFICE

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PROCESS AND APPARATUS FOR TREATING
FELTS AND THE LIKE

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2 Claims. (Cl. 223—7)

This invention relates to processes and apparatus for the treatment of felt and like materials, with particular reference to the production of ornamental effects thereon.

5 One object of the invention is to provide an improved process of the character described whereby certain structural changes preferably of a decorative character can be produced in stretchable or otherwise workable materials.

10 By way of illustration, it may be mentioned that heretofore, in the millinery art, buttons for decorative purposes have been manually sewn on felt hats, with a great deal of wear and tear on the hands of the operator, so that even the most experienced workers could turn out only a very limited quantity of the product. This difficulty was due mainly to the thickness of the material and its resistance to penetration by a needle, even where a thimble was being used.

15 Accordingly, the invention aims to avoid this difficulty and provides a new button-like construction and a new method and apparatus for producing the same.

20 Another object of the invention is the provision of projecting or button-like effects and supplemental design ridges or grooves of a permanent character directly related in structural coordination therewith, and a novel method and apparatus for producing the same.

25 Another object of the invention is to produce an improved concaved or hat like structure of felt or similarly workable material, and to accomplish the desired results by inexpensive methods on a quantity production basis.

30 Other objects and advantages of the invention will become apparent as the specification proceeds.

35 With the aforesaid objects in view, the invention consists in the novel combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated in the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

40 Figure 1 is a plan view of an article such as a hat embodying the invention.

45 Fig. 2 is an enlarged fragmentary sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary sectional view taken on the line 3—3 of Fig. 1.

50 Fig. 4 is a fragmentary view in side elevation with parts in section showing a die assembly for

practising the invention, with the work in position according to the first step of the process.

Fig. 5 is a similar view showing a die assembly operated according to the second step of the process.

5 Fig. 6 is a view similar to that of Fig. 5 except that the work has been treated according to the third step of the process.

Fig. 7 is a sectional view with parts in elevation illustrating the final step of the process.

10 The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined in one and the same structure, but useful devices may be produced embodying less than the whole.

15 It will be obvious to those skilled in the art to which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing the preferred embodiment of the invention.

20 Referring in detail to the drawing, 10 denotes an article such as an item of wearing apparel or the like, for example, a hat. The article referred to is preferably made of felt but can also be constructed of any other suitable material having a velvet finish or the like, and which is adapted preferably to be stretched or otherwise worked to change its configuration or produce a different alignment or positioning of the fibres. By way of 25 illustration, the crown of the hat 10 may be provided with one or more projections or button-like forms 11 which are constructed predominately of the same material as the article 10. These buttons may be arranged to form any suitable design 30 or pattern and preferably a series of ridges or grooves such as 12 of regular formation extend in symmetrical relation with respect to the buttons 11 and are directly structurally coordinated therewith so that these elements 12 are of a reliable and permanent character.

35 Referring to Fig. 2, the article 10 is shown as having a body or crown portion 13 thereof formed with a part 14 which is concaved or suitably upset around a disc like member 15 of wood or any other suitable material, so as to substantially completely encase the latter with the neck of the part 14 being retained closed by any feasible means, as for example by a thread or string 16 wound around the neck portion and knotted in place.

40 Referring to Fig. 3, the ridge formations 12 are shown as being of relatively uniform shape with the adjacent surrounding area of the crown portion 13 being of regular configuration, for example spheroidal or the like.

In Fig. 4 the die assembly 17 is shown. The same may include a die or any other holder 18 having a supporting head 19 for the disc member 15 and a central pin 20 assembled releasably in a closely fitting perforation of the disc member 15. In general, any means may be provided whereby the disc member 15 is held against lateral slippage and is restrained to a suitable degree against tilting motion. Immediately below the relatively thin head 19 is provided an annular groove or recess 21a for a purpose hereinafter described. The companion die member or former 21 includes a hollow cylindrical head 22 which may be completely open at its bottom and which may be actuated by a rod 23 affixed thereto. It will be understood that the die members 18 and 21 are in alignment and are relatively movable toward and away from each other with the head 22 adapted to cause the fabric 13 to snugly engage around the disc member 15 so as to begin encasing the latter according to the first step of my novel method.

In Fig. 5 is illustrated the second step of the method with the die members 18 and 21 moved to operative position so as to cause the fabric 13 to stretch and snugly engage around the top and sides of the disc member 15 with the several parts being in suitable snug fitting relation to each other.

In Fig. 6 is shown the third step of my novel method according to which the die members 18 and 20 are retained in the position of operation shown in Fig. 5, but with the fabric 13 having been drawn annularly inward into the groove 21a so as to permit the resulting neck to be closely fastened by suitable means as for example by the cord 16 which may be suitably knotted in position.

Upon completion of the step illustrated in Fig. 6, the die member 18 may be withdrawn, the fabric 13 or the elements 16 or both having sufficient yield to permit the head 19 to pass outward through the construction or neck of the member 14. Upon disengagement of the die members from the article 10, the latter is ready for treatment according to the final step of the invention as illustrated in Fig. 7.

According to the final step of the invention, as suggested in Fig. 7, the article 10 is placed upon any suitable former or stretcher such as a hat size block 24. The article 10 may be tilted, stretched, or otherwise worked along such element 24. If desired, it may be secured to the latter as at 25 to cause the article to be retained in stretched or other desired condition. The working or manipulation referred to tends to flatten or render regular the crown portion of the article so that the projections 11 assume a uniform and regular character and so that the rib portions 12 become uniform and symmetrical in character in accordance with the resulting fullness of the material which obtains around the projections 11. It will be appreciated that that fullness may be manipulated according to the skill of the operator so as to shape it to any desired character. The article is, in the condition mentioned inserted in any steam compartment 26 into which live steam may be injected at 27 so as to cause the felt or like material to acquire a permanent set.

It will be perceived that the button-like projections 11 are of durable character and of highly decorative appearance because they are constructed permanently of the same fabric as the hat itself. At the same time the laborious operation of sewing buttons on to the felt has been eliminated and replaced by one which requires only the simplest and most ordinary manipulation. It will be noted that the design effect is greatly enhanced by the ribs 12 which are of permanent and durable character not only because the felt has been set in accordance with their pattern, but also because they are structurally directly co-ordinated with the button like projections 11.

My invention permits the novel article described to be inexpensively constructed on a quantity production basis by utilizing a few elementary operations in a wholly original manner. It will be understood that in any other case, a felt hat must be blocked by the milliner by the use of live steam in order to obtain the desired shape and hat size. In this instance, the blocking operation is utilized after the button-like projections have been formed instead of previously to the attachment of the buttons as heretofore.

It will be observed that for the practise of my invention, a comparatively simple die or machine may be utilized which may be manipulated by hand or operated as in the manner of the ordinary foot press and that the die or holder portions are inexpensive to make and sufficiently simple in operation to lend themselves readily to large production.

Accordingly the several objects of the invention have been fully realized and the same is well adapted for practical use on flat or convex articles wherein the fabric has setting means or wherein a holding or setting means is associated with the fabric to maintain it in the stretched or other desired condition. In the case of felt, the means referred to is any usual adhesive base in the material.

I claim:

1. The method of treating felts and similar fabrics including disposing the fabric over and around a plurality of spaced button-like elements individually gathering the fabric under the elements and securing the gathered portions, then stretching the fabric to produce ridge like formations extending between the elements and treating the fabric to permanently set the same while the fabric is thus stretched.

2. An apparatus for felts and like materials including a first die member having means adapted to hold a button-like element, a second die member having a concave head adapted to cause the felt to extend over and around the element, and the first die member having a stem having a portion of reduced diameter immediately below said means, whereby the felt can be gathered and secured to form a neck around said portion, with the first die member adapted to be withdrawn from the element through said neck.

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