

May 22, 1956

G. T. RAFFERTY

2,746,056

WELT EDGE HAT

Filed Sept. 14, 1953

FIG. 1

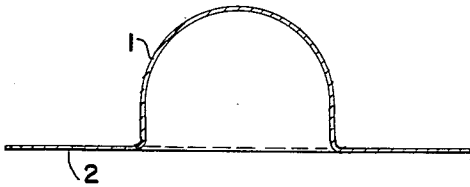


FIG. 2

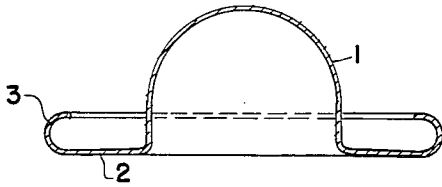


FIG. 3

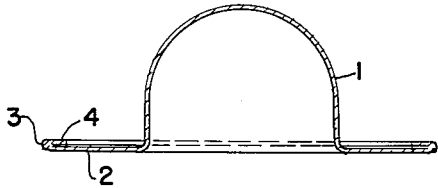


FIG. 4

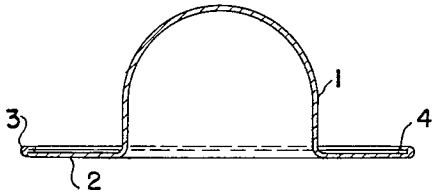


FIG. 8

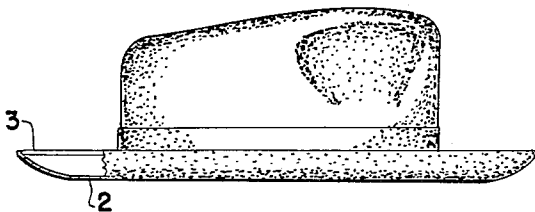


FIG. 5

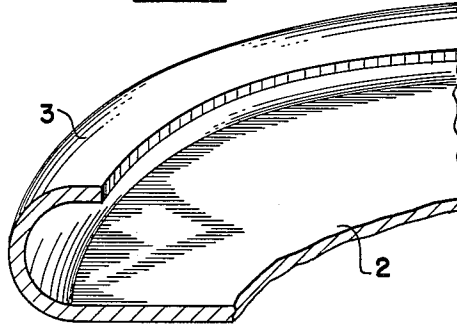


FIG. 6

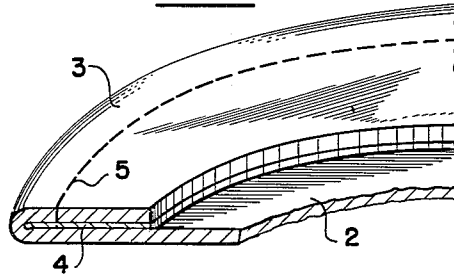


FIG. 7

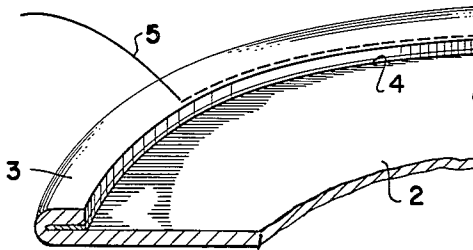
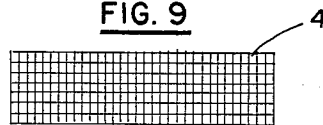


FIG. 9



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1

2,746,056

WELT EDGE HAT

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Application September 14, 1953, Serial No. 379,979

2 Claims. (Cl. 2—178)

This invention relates to the production of a welt edge on a soft felt hat. Welt edges have heretofore been produced by turning over the edge of the hat and felting the two surfaces together. They have also been produced by the use of adhesives being placed between the layers of felt after turning over the edge and adhering them together. By this process a final row of stitching is required on the extreme edge of the brim to hold the extreme edge in contact with the brim. Other methods of sewing the turned over edge have also been used but the stitching in the final product is quite undesirable.

According to the present invention a strong and durable edging is produced with a most attractive appearance with no stitching in the final edge and which maintains its curl or flange after it has been formed in slightly rolled position. That is, the brim does not become flat over a period of time nor does the attachment of the turned edge release. An object of the invention is to produce a small turned edge economically in the use of labor and materials. Another object of the invention is to reinforce the edge to avoid any possibility of the expansion of the edge so that the brim might lose its curl. Another object of the invention is to stiffen the edge so that the brim will retain any desired configuration given it by the wearer.

These and other advantages will be apparent from the following description and the accompanying drawings forming a part hereof and in which:

Figure 1 is a sectional view of a hat blocked and with the brim extending flat.

Figure 2 is a sectional view of the blocked hat edge curled upwardly.

Figure 3 is a sectional view of the new edge with the tape sewed in.

Figure 4 is a similar view with the tape and brim edge trimmed.

Figure 5 is an enlarged sectional fragmentary view of the brim curl of Figure 2.

Figure 6 is a sectional enlarged fragmentary view of the sewed brim of Figure 3.

Figure 7 is a sectional fragmentary view enlarged shown in Figure 4 and with the stitching partly removed.

Figure 8 is a view of the finished hat with a portion of the brim sectioned and enlarged to show the overlapping of the tape by the brim edge.

Figure 9 is a plan view of a section of the tape.

In the drawing similar numerals refer to similar parts throughout the several views.

The hat of Figure 1 has the crown 1 and the brim 2. As a preliminary operation the brim has been ironed and cut round and smooth before the curling operation of Figure 2 in which the edge 3 of the brim has been turned up in a curl.

The tape 4 has a relatively wide lattice weave and is made of cotton. The fibers of the cotton extend from the strands as is usual with such strands. The tape is impregnated with a thermo-setting plastic which is rigid when set and which is not soluble in water and in the usual cleaning fluids.

2

After the brim of the hat has been turned up as shown in Figure 2 a section of this tape is spread around the crown beneath the overturned edge of the brim which is then stitched down as shown in Figures 3 and 6, with a chain stitch, the stitches being shown at 5. The thread is lubricated prior to sewing to avoid its cutting by the adhesive. This stitching temporarily holds the edge uniformly turned and the tape in the overlapped brim edge. After the stitching, the overlapped edge or welt is ironed to eliminate unevenness in the edge and the heat will smooth out and partly weld the felt edge to the brim in preparation for the next operation which is the trimming off the excess brim edge and tape, or hand jacking them. These edges are cut off quite close to the stitching as shown in Figures 4 and 7.

After this trimming, the stitching is removed as shown in Figure 7 and the hat is pressed in a hydraulic press with a mould which places the brim under considerable pressure as well as heat and this heat and pressure sets the adhesive, fuses the felt together with the relatively wide latticed tape between. Both the fibers of the tape and the fibers of the felt are rigidly gripped by the adhesive which is brittle or rigid upon hardening. The edge of the brim is further curled by a special set-up iron with still higher temperature which welds the felt edge firmly to the brim. It may be desired to wet the partially turned-up edge of the brim before the final curling by the special tool which will affect principally the felt but it also tempers the adhesive on the tape to make the tape more pliable in shrinking it or folding it, that is shortening it, to the final length which it assumes in the curled-up edge under the influence of heat and pressure and forms the tape to the length to which it is held from ever stretching by the rigidity of the adhesive binding both the fibers of the tape as well as the fibers of the two adjacent sides of the felt.

After the above operations have been carried out the edge of the felt, due to the pressure, has been pushed slightly over the tape as shown in the enlarged sectional view of Figure 8. The fusing of the adhesive after trimming the edge, the extreme edge due to pressure having extended over the tape, extends some of the adhesive beyond the tape, to securely weld the extreme felt edge directly to the brim over and beyond the tape. But none of the adhesive gets out, it is all taken up or absorbed in the fold of the felt. Also the hardened adhesive and tape add considerably to the stiffness of the brim edge, the edge keeps any given shape, and there is no stretching of the welded edge, the tape held in the welded adhesive firmly holds the edge to its up-turned length or perimeter. It is thereafter self-curling. The hat body is then ready for the front shop operations of pouncing the brim, singeing, greasing, powdering and giving it a second grease to make a finished body.

After the brim edge has been welded as above described, it will be found virtually impossible to separate the edge from the brim even by the use of instruments. It is difficult to explain the tenacity of the hold of the edge. It is believed partly explained by the fibrous condition of the tape as the fibers of both the tape and the adjacent felt edges are absorbent and are held in the rigidly fused adhesive. There is possibly some felting action due to the extensive dispersal of the strands in the tape under the heat and the fluidity of the adhesive when heated. There may be some felting action with the fibers of the tape. Whatever the explanations may be for the firm hold of the curled edge upon the trim, it has been found to remain firm over long periods of use and with soaking and mistreatment with many different materials which might tend to soften the adhesive.

What is claimed as new and is desired to be secured by Letters Patent is:

1. The process of forming a hat brim comprising fold-

3

ing the brim edge upon itself, inserting flat in the fold a fibrous thermo setting waterproof rigid adhesive impregnated tape extending coextensively with the fold, stitching the folded brim edge with the tape therein, ironing the folded edge to give the adhesive a preliminary setting, removing the stitches, curling and shortening the tape and brim edge including the folded portion thereof, heat setting the adhesive in the fold of the curled brim edge, the tape and adhesive imparting longitudinal rigidity to the shortened turned up edge when set through the adhesive adherence between the fibers of the tape from each side of the tape with each other and with the fibers of the adjacent brim on one side of the tape and with the fibers of the folded brim edge to the extremity of the edge on the other side of the tape.

2. A soft hat brim having a curled edge portion, the said curled edge being folded upon itself to form a double thickness at the edge, an absorbent fibrous woven latticed

4

tape of single thickness impregnated with water-proof thermo-setting rigid adhesive lying in the folded brim edge and extending co-extensively with the fold and being heat set therein, the tape and set adhesive imparting longitudinal rigidity to the curled edge through the adhesive adherence between the fibers of the tape from each side of the tape with each other and with the fibers of the adjacent brim on one side of the tape and with the fibers of the folded brim edge to the extremity of the edge on the other side of the tape.

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