May 7, 1940. J. SEPE 2,200,102

HAT-CROWN RETAINER

Filed Feb. 9, 1938

Fig. 1.

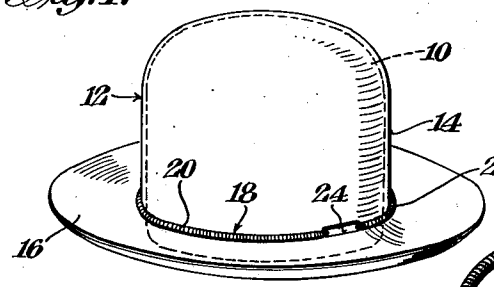


Fig. 3.

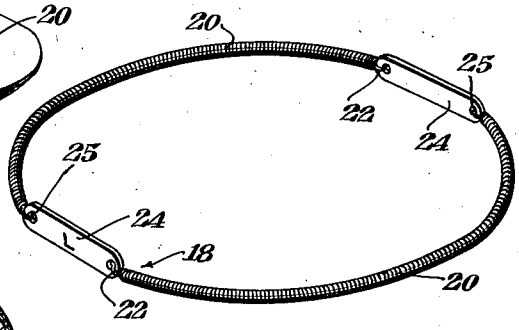


Fig. 2.

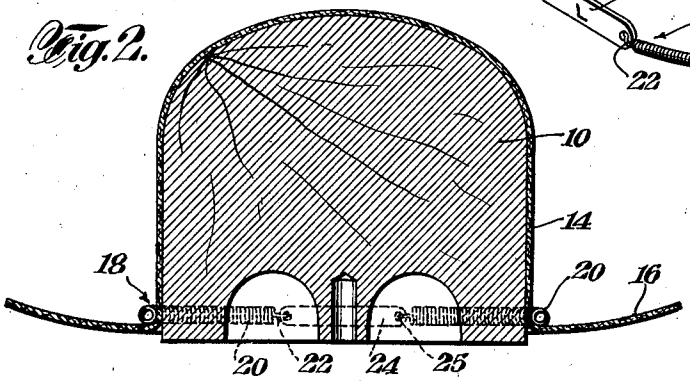


Fig. 4.

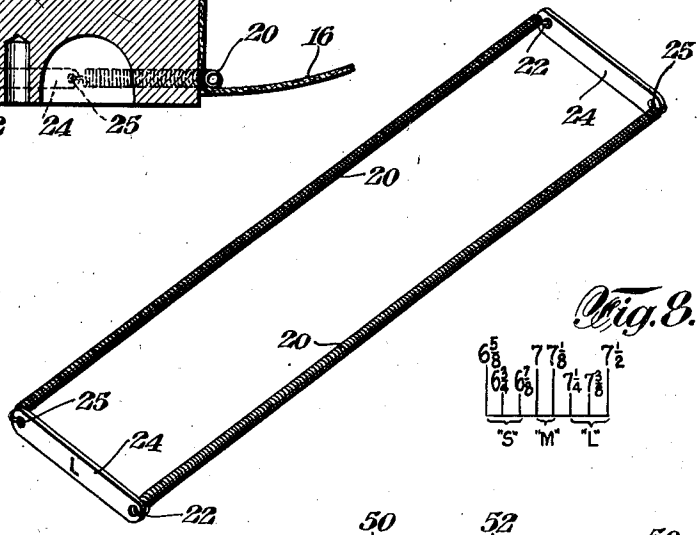


Fig. 5.

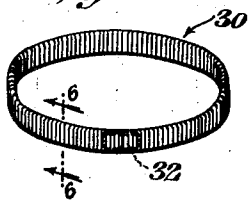


Fig. 8.

Fig. 6.

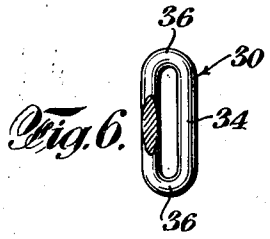


Fig. 7.

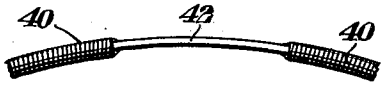
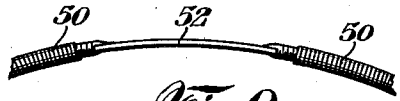


Fig. 9.



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HAT-CROWN RETAINER

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Application February 9, 1938, Serial No. 189,551

6 Claims. (Cl. 223—24)

This invention relates to hat-crown retainers adapted for use in the manufacture of hats.

More particularly, this invention relates to such retainers adapted for application upon felt or other similar hats only during the blocking process thereof, and still more particularly, for holding the crown firmly to the block and for assisting in defining the juncture between the crown and the brim of a hat during other necessary operations while associated with the block.

In this branch of the art of blocking felt hats, cognizance is taken of various adjustable retainers having special means for adjusting the tension and special means for locking the device after such tensional adjustment is obtained. Such prior art means require special skill of the operator in order to obtain the proper tension without rupturing the device.

As is well known, hats and blocks are of varying shapes and sizes and these aforementioned retainers are essentially provided with special means or are of special character to accommodate such variations.

One of the principal objects of the invention is to provide a simple, rugged, and efficient device of the character described having highly desirable characteristics aforementioned and adapted for quick and easy application and removal.

Another object of the invention is to provide a device of the character described which is inexpensive and adapted for use with varying sizes and shapes of hats within a limited range, and requiring no special size-adapting or tightening mechanism; such characteristics being inherent in the device within the size range for which it is adapted.

Other objects and advantages will become apparent in the following description forming part of this disclosure and having reference to the accompanying drawing illustrating several embodiments of the invention, in which:

Figure 1 is a perspective view of a hat in the process of blocking, having the invention applied thereto.

Figure 2 is a sectional view of Figure 1.

Figure 3 is a perspective view of a preferred form of the invention shown in the preceding figure, extended as in use, with the associated parts as shown in the previous figures removed.

Figure 4 is a perspective view of the device shown in Figure 3 in collapsed condition.

Figure 5 is a perspective view of a further modification.

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 5.

Figure 7 is a fragmentary view of a modified form of the invention.

Figure 8 is a diagrammatic view illustrating a preferred size range use of the invention, and

Figure 9 is a fragmentary sectional view of a further modification of the invention.

Referring to the drawing, the reference character 10 designates a hat block of usual type employed in forming or shaping the crown or brim of a hat. A felt hat 12 is illustrated as surrounding the hat block with the crown portion 14 thereof extending along the vertical ovular sides thereof. A brim 16 is shown as extending substantially normal to the crown portion. A retaining device 18 is shown as disposed substantially at the juncture of the crown portion and the brim of the hat.

The blocking retainer comprises a pair of preferably spiral wound springs 20 each having their ends preferably looped as at 22 and suitably joined to short and substantially flat members or strips 24, having suitable means such as holes 25 in the ends thereof for receiving the said loops.

It will therefore be seen that the retainer device comprises a pair of springs oppositely disposed and a pair of flat strips also oppositely disposed, thus forming a substantially symmetrical oblong in collapsed condition, as shown in Fig. 4, and capable of being deformed into substantially ovular shape when extended in use, as shown in Fig. 3. The springs are capable of arcuately conforming snugly to a hat of any particular size and/or shape without appreciable variation in gripping tension. The short flat strips are adapted to contact the hat locally at substantially opposite sides thereof in any oriented position with respect to shape.

In operation, the device is stretched and placed over the dome of the crown portion of the hat having a block disposed internally thereof, and is then pushed down along the crown portion to a desired position, to define the limit or end of the crown portion and the beginning of the brim portion of the hat. The effective perimetrical distance of the device in collapsed condition is less than the ovular distance of the hat with which it is cooperative, whereby a relatively high radial tension is developed by the application of the device as described.

It will be noted that although the springs are round in cross section and tend to roll during application, the strips being flat, definitely prevent this rolling tendency at the ends of the springs. This restraining effect of the two oppositely disposed flat strips is effective substan-

tially throughout the circumference of the crown, whereby the entire device after application, is devoid of up-rolling tendency. It is of course understood that the higher the tension of the spring device, the better for resisting the separation of the crown of the hat from the block at the juncture of the crown and the brim during the blocking operations tending to dislodge the relative association of these parts.

It will be further noted that the springs engage substantially the entire circumference, and the flat strips are preferably as short as is consistent with the function aforementioned. By this construction an equally distributed radial gripping tension is established substantially throughout the entire circumference.

In the form shown in Figures 1 to 4, the spring is illustrated as circular in cross section, which of course aids in sliding the device down along the crown in its stretched or tensioned condition. The edges of the flat strips may also be rounded to prevent scraping of the crown.

The strips **24** are illustrated as substantially planar, thereby creating a slight bite into the resilient material of the hat with which the center portion comes into contact. This further assures the retention of the device in the position set. Movement up or circumferential movement of the device is prevented by the bite of the flat strips or flat portion of the loop into the felt. This bite is affected only against a backed up hat, that is, one within the crown of which a block is positioned.

The tension of the springs is essentially high and preferably at the limit of workability which is such as would require great manual force to expand them. It is, of course, understood that a hat without a block within the crown thereof could not possibly withstand the tensional collapsing effects of such springs here intended.

While a device of proper spring characteristics is capable of application for all normal head sizes, it is preferred to provide such devices in three sizes to cover the entire range of head sizes from approximately 6⅝ to 7½, the sizes of the devices being substantially marked by indicia such as the character "L" (large) on the end strips **24**. Other sizes not shown may be marked "M" (medium) and "S" (small), correspondingly. Any of the group of retainers under such arrangement has been found usable for several sizes varying in ⅛ths and the extent to the use thereof is limited only by the tensional characteristics desired or sought by the operator.

In view of the fact that many more hats of the intermediate sizes are manufactured than those of the small and large sizes, it has been found preferable to employ the medium device on fewer sizes. For example, the device "L" is preferably employed for the sizes 7¼ to 7½ including three hat sizes; the device marked "S" for three hat sizes from 6⅝ to 6⅞ inclusive; and the "M" device for only two hat sizes namely; 7, and 7⅛. It will be seen, however, that the stretching range of the "M" device is only one half size up or down. In such small variation the difference in tensional characteristics is practically negligible; the variation from the mean length of each spring is illustrated in Fig. 8 and is approximately .1 of an inch in 10.

Referring to Fig. 5, the form here shown comprises a substantially endless spiral spring **30** having a suitable juncture as at **32**. This juncture may be accomplished by joining the ends of the wire or by welding short sections of the ends of the spring together. The cross section of this spring is preferably of ovular shape providing flat surfaces **34** intermediate the substantially curved ends **36** thereof. The flat sides prevent the curling of the spring upon application and consequently remain in the position set to define the juncture of the crown and brim of a hat during operation thereof. This form has a further characteristic of more sharply defining the bend at the juncture of the crown and the brim in view of the relatively small radius at **36**.

While in the preferred form the strips **24** are illustrated as being flat, it is to be understood that they may be slightly curved to conform somewhat to the ovular surface prescribed by the block, and that the strips may be rigid and unbendable or may be slightly flexible.

Referring to the form shown in Figure 7, the spring portion of the device **40** may comprise flat ovular spirals such as illustrated in the form shown in Figures 5 and 6, said spring having interposed two or more strips **42** suitably secured as by welding or the like to the ends of the springs **40**. This strip may also be rigid, slightly flexible, or flat or slightly curved.

In Fig. 9 the ends **50** of the flat member **52** may be threaded and adapted to be embraced by the spiral ends of the springs **54** and **56** which are illustrated as wound in opposite directions. The flat strip may thus act as a turnbuckle in initial or adjustable assembly of the device.

While several preferred embodiments have been illustrated and described, it is to be understood that minor changes may be made without departing from the invention as defined in the claims.

By the term "high radial pressure or compression" as employed in the claims it is understood to mean such compression or pressure as will cause the crown of a hat unsupported internally by a block to collapse, or of such resistance as would tax the strength of an adult upon initial expansion of a spring possessing the intended high radial pressure or compression.

I claim:

1. A hat-crown blocking retainer adapted for engagement with the crown of a hat mounted upon a block, said retainer comprising a pair of relatively strong yet manually extensible helically wound springs, a pair of flat narrow members joined at their ends to the ends of said springs and arranged with said springs alternately in an endless loop of head size substantially smaller than that of the block, said flat members comprising a minor portion of the perimetrical distance of said endless loop and adapted to tightly engage the lowest portion of the crown of a hat at the juncture of the crown and the brim thereof under high radial compression.

2. A hat-crown blocking retainer adapted for engagement with the crown of a hat mounted upon a hat block, said retainer comprising a substantially strong yet manually expansible endless extensible helically wound gird of perimetrical dimensions slightly smaller than the perimetrical dimensions of the crown of said block when in an unstressed condition, said gird being of such strength as to tax an operator in its expansion, whereby high radial compression is obtainable in application upon the crown of the hat, said gird comprising an expansible portion and an inexpansible substantially narrow flat portion, both portions adapted for engagement with the crown of the hat immediately above the juncture of the crown and brim thereof, the ends of said

narrow portion being joined in tandem to the ends of the said expansible portion.

3. A hat-crown blocking retainer adapted for engagement with the crown of a hat mounted upon a block, said retainer comprising a single endless extensible loop having major portions thereof comprising two helically wound springs of circular cross-section alternating and with the minor portions of said loop intermediate said major portions and comprising two substantially rigid non-expansible members, each of said members having a substantially flat surface adapted to tightly engage the crown of the hat immediately at the juncture of the brim thereof under high radial pressure, the unstressed size of the loop being slightly smaller than the size of the block with which it is adapted to cooperate, and the ends of said rigid members being engaged alternately in tandem to the ends of said springs.

4. A hat-crown blocking retainer adapted for engagement with the crown of a hat mounted upon a block, said retainer comprising a single endless extensible loop of helically wound metallic material smaller in perimeter when unstressed than the crown and adapted to tightly embrace the crown of a block-mounted hat in high radial compression, said loop including a non-expansible portion having an exposed and arcuate crown-engaging surface corresponding to the external surface of the crown of the hat.

5. A hat-crown blocking retainer adapted for engagement with the crown of a hat mounted upon a block, said retainer including a short flat member adapted to tightly engage the hat at the juncture of the crown and brim thereof, a helically wound spring adapted to form an endless loop with said flat member, the circumference of said loop being smaller when unstressed than the circumference of said block, said flat member having threaded ends adapted to engage internally of said spring, said threaded ends meshing with the helical windings of said spring.

6. A hat-crown blocking retainer adapted for engagement with the crown of a hat mounted upon a block, said retainer comprising oppositely wound helical springs, a pair of flat members, each of said members having threaded ends of opposite hand adapted to engage internally of said helically wound springs to form an endless loop with said flat members, the circumference of said loop in normal unstressed condition being smaller than the circumference of said crown size.

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