Oct. 21, 1941. W. J. HUBBARD, JR 2,260,224

TRANSPARENT HEEL

Filed Sept. 5, 1940

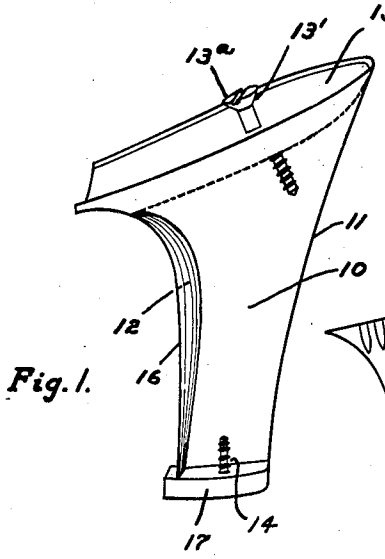


Fig. 1.

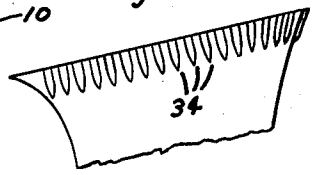


Fig. 9.

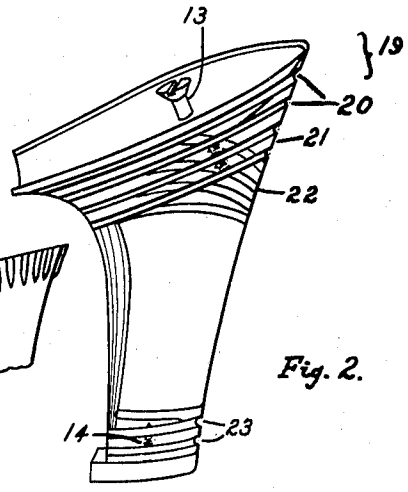


Fig. 2.

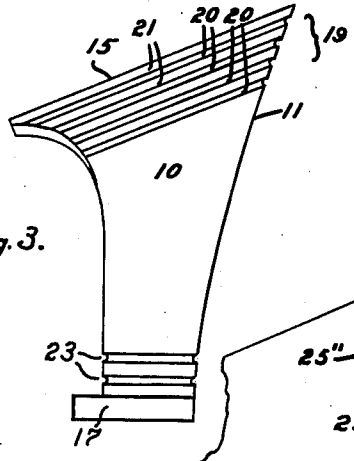


Fig. 3.

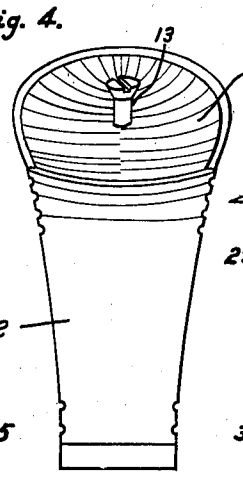


Fig. 4.

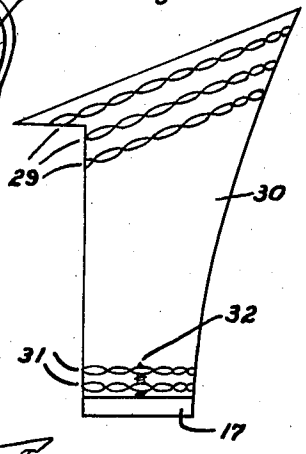


Fig. 7.

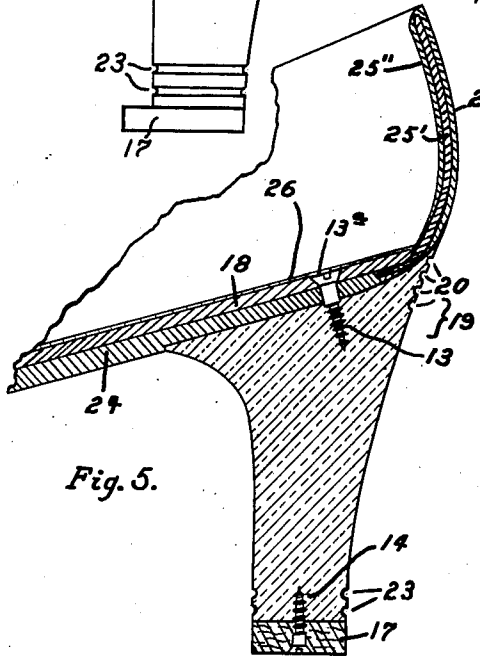


Fig. 5.

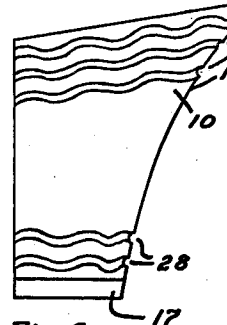


Fig. 6.

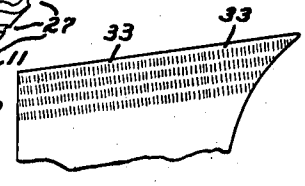


Fig. 8.

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TRANSPARENT HEEL

William J. Hubbard, Jr., Herkimer, N. Y.

Application September 5, 1940, Serial No. 355,500

5 Claims. (Cl. 36—34)

My present invention relates to heels for ladies' shoes.

The purpose of this invention is to provide a new and improved heel for ladies' shoes and particularly to provide a heel of transparent or substantially transparent material such as plastic, wherein not only are the necessary means provided for fastening the heel to the shoe and for fastening the top lift to the tread end of the heel, but also there are provided means for in effect concealing these internal fastening means for attaching the heel to the heel seat of the shoe and for concealing the means used for fastening the leather or other suitable tread surface to the small or tread end of the heel.

According to one of the recent styles the heels of ladies' shoes are made of transparent or substantially transparent material such as a proper plastic material, usually of some pleasing color. The transparent feature of this material affords a very pleasing aspect to the heel and this is further accentuated by the peculiar shape of some of the heels. One of the disadvantages of these more or less transparent plastic heels is that they must be fastened to the shoe by means in addition to the adhesive or cement that is used, viz. the bottom or large end of the heel must be fastened to the heel seat of the shoe by a screw, nail, brad or equivalent mechanical means; and similarly the tread surface or so-called top lift of the heel, usually of leather or rubber or other somewhat elastic material, must be fastened to the tread surface of the heel by similar mechanical means in addition to the adhesive; and the transparency of these heels renders these mechanical fastening means visible. This is a very undesirable feature of the transparent heel because the noticeable appearance of these mechanical fastening means detracts greatly from the attractive appearance and beauty of the heel. The transparency of this type of heel gives it a lovely and very pleasing effect but unfortunately reveals any mechanical fastening members inside the surface of the heel very plainly.

The main purpose of my present invention is to overcome this disadvantage; I still provide a substantially transparent heel but I also provide means for making unnoticeable the metal fastening members that project into the heel.

A further and somewhat more specific purpose is to provide variations in the otherwise regularly curved outer surface of the heel, which variations will not interfere with the general transparency of the heel but will in fact make pleasing lines, curves or irregularities on the surface that will present attractive surface patterns, and also show reflections or refractions of the near or distant or even intermediate variations or lines so that the observer will see these lines on the near surface or their distorted or changed or refracted images on the far side of the heel.

The effect of these patterns, such as grooves, in the otherwise regular smooth surface of the heel, is to bring it about that the observer sees these variations or lines, images and refractions and almost always loses sight of the metal fastening members within the body of the heel.

It is within the scope of this invention to use any one or more of a great variety of lines, patterns or variations in the regularity of the exterior surface of the transparent heel in order to effectively camouflage the presence of the metal heel-fastening members. Preferably, as shown in the drawing, the variations in the smooth surface of the plastic heel are confined firstly to a zone a short distance down from the seat portion of the shoe in order to largely conceal the screw or other metal fastening member that comes down through the shoe heel seat into the heel, and secondly to a narrower zone of grooves or other variations in the surface of the heel provided near the tread surface of the heel in order to conceal or make less conspicuous the relatively shorter and smaller metal member that comes up through the tread lift into the heel proper. I prefer to leave the larger intermediate portion of the heel free from these surface irregularities in order to preserve as far as possible the general effect of the heel being transparent and in fact this unmarked smooth intermediate portion of the heel is advisable in that it provides part of the means for showing off the refracted or reflected images from the other side of the heel.

Further purposes and advantages will appear from the specification and claims herein.

Fig. 1 is a perspective view of a transparent full Louis heel for a lady's shoe with the heel-fastening screw in place and showing noticeably through the heel, as also is the case with the screw fastening the top lift to the heel.

Fig. 2 is a similar view of a transparent heel of the full Louis type and its top lift, and having both screws in place but with the heel equipped with my improvement in the way of variations in certain zones of the outer surface and so rendering the said screws very much less noticeable.

Fig. 3 is a side elevation of the heel shown in Fig. 2.

Fig. 4 is a front elevation of the heel shown in Figs. 2 and 3.

Fig. 5 is a central vertical sectional view of a transparent heel equipped with my invention as applied to a shoe only the rear portion of which is shown.

Fig. 6 is a side elevation of a so-called Cuban heel equipped with my invention in a form varying from that shown in Figs. 2–5.

Fig. 7. is a side elevation of a so-called Continental heel equipped with my invention in another form.

Figs. 8 and 9 are side elevations respectively of the shoe-engaging portions of two heels having still different forms of surface variations.

Referring to the drawing in a more particular description it will be seen that Fig. 1 is a perspective view as seen from slightly to the rear and above a transparent heel for a lady's shoe, said heel being of the type to which my invention is especially adapted to be applied. This particular heel however is not equipped with my invention but shows a heel of the type in question, where the regular various curved surfaces, such as the sides 10, rear 11 and front or breast 12, are all left plain and therefore show very plainly, through the transparent heel and plain surfaces thereof, the heel-fastening screw 13 and the top lift-fastening screw 14.

In this view, Fig. 1, the heel-fastening screw 13 is in the regular position it would occupy if the heel were fastened to a shoe as is the case in Fig. 5, and so the head and the unthreaded upper portion of the shank of the screw appear above the shoe-engaging face 15 of the heel. The lower portion of the shank of this upper screw 13 is visible through the upper portion of the near side 10 of the heel but due to the curved surface of the sides of this heel the said lower part of the screw appears decidedly to the right of the actual position of said lower part of the screw as explained by the principle of refraction of light. Similarly and for a similar reason the position of the breast or front 12 of the heel appears somewhat distorted so that the farther corner of the front of the heel appears bent into a greater curve than is the case with the near edge 16.

The lower screw 14 is also very plainly visible through the part of the heel adjacent the so-called top lift 17. This top lift 17 is the ground-engaging part of the heel but is called in the shoemaking trade and particularly in the heel-making trade the top lift because the heels are always built up upside-down and this lift is put on the top of the upside-down heel and so at that time is the top lift.

As already suggested these transparent heels of plastic or similar material, and sometimes called in the shoe trade "glass heel," are of very pleasing and attractive appearance due to the glass-like luster of the surfaces of the heel and to the transparency of the heel, and due also to the pleasing colors or tints in which the transparent heels can be made. These relatively high heels however, especially when made of plastic material, have to be fastened to the heel seat of the shoe by additional strong fastening means in addition to the adhesive regularly applied to the heel seat of the shoe and the shoe-engaging surface 15 of the heel. Such additional fastening means are usually of metal or equivalent very strong material and are usually in the form of screws such as 13 and 14, already mentioned, or other equivalent fastening means, if desired. Ordinarily and preferably such fastening means will be the screws heretofore regularly used to fasten wood heels to shoes, in that the conical heads 13' of these screws can be readily countersunk into countersunk holes located in the insole 18 of the shoe so as to make the flat top 13a of the screw come level with or on the plane of the upper surface of the insole 18 of the shoe, as appears in Fig. 5 as hereinafter described.

The advantage of this particular fastener is that the threading of the screw will cut its own groove in the relatively smaller hole provided projecting down from the surface 15 of the plastic heel into the body of the said heel and thus providing a very firm, positive connection between the transparent plastic heel and the shoe.

However as already intimated, the very transparency of heels of this type shows off very distinctly, and might be said to almost emphasize the presence of the metallic fastening means within the body of the otherwise beautiful transparent heel. It will be understood that these screws are perfectly honest and perform an honorable function of holding these parts together but as the shoemaker and even the shoe salesman well know, the ladies who buy shoes equipped with these glass-like heels are selecting the shoes and their heels for the glass-like beauty of the said heels and they do not want the beauty of the transparent heels to be marred by the very noticeable appearance of these screws or other metallic fastening means showing through the heels. Since I have equipped these transparent heels with my invention, which practically conceals the screws or other fastening means or at least renders such fastening means in effect unnoticeable, the said transparent heels have become very much more popular than ever was the case with plain transparent heels. When lady customers are given the choice of plain transparent heels or such heels with variations in the surfaces thereof pursuant to my invention, they almost invariably choose the plastic heels provided with my invention.

In Figs. 1 to 5 of the drawing I have shown heels of a full Louis form, but this form is simply illustrative of my invention and is not a limitation of my invention. Such full Louis heels are particularly pleasing when made of plastic material and especially when made of plastic material and embodying my invention, but it will be distinctly understood that my invention is not limited to the full Louis or even part Louis construction but is fully applicable to many other forms of ladies' heels, such as Cuban, Continental, or military heels and other forms of heels too numerous to mention.

Figs. 2 to 5 illustrate a full Louis form of transparent heel embodying what I now consider my preferred form of the invention in that these heels are provided around their sides 10 and rear 11 in a belt or zone 19 near the shoe-engaging end 15 of the heel with a series of grooves 20. These grooves or recesses 20 are U-shaped in cross section, that is with a circular bottom to the groove, and one very pleasing arrangement is to have these grooves 20 arranged parallel to each other and parallel to the adjacent edge of the shoe-engaging end 15 of the heel. These grooves 20 are spaced a short distance apart so as to leave therebetween a band 21, having the original curved surface of the heel.

Fig. 2, being a perspective view of a heel of this type equipped with one form of my inven-

tion, shows as nearly as can be in a drawing, the appearance to the eye of a heel equipped with my invention. It will be noticed that the grooves 20, by forming interruptions in the regular smooth curved surface of the zone 19, very largely prevent the shank of the screw within the heel from being seen. The curved form in cross section of the grooves 20 appear to satisfactorily prevent most of the shank of the screw from being seen. At the most only small portions of the shank of the screw can be seen through the intervening bands 21 between the grooves 20.

Furthermore, the refracted, distorted appearance of the grooves on the further side of the heel come out as much more noticeable curved showings of the grooves on the farther side, as appears from the rearwardly down-turned curved but widened representations 22 appearing in this Fig. 2. The sum total of the pleasing appearance of the grooves 20 themselves and the pleasing bands 21, and of the refracted showing 22 of the grooves from the farther side of the heel, all operate to make these parts much more noticeable than the one or two obscurely shown portions of the lower part of the upper screw 13. In other words my invention has brought it about that these surface grooves 20 and the intervening bands 21 and the distorted showings of the grooves and bands on the farther sides of the heel, present a pleasing and eye-attracting view which distracts the eye from the obscurely, only slightly shown screw within the heel. There is thus accomplished a practical concealment or hiding of the screw within the heel.

Of course it will be understood that when this heel is fastened to a shoe in the usual conventional way, as shown in Fig. 5, the conical head 13′ of the screw and even the flat top 13a of the screw will be absolutely invisible when the shoe is worn or even when the shoe is in the hand of a purchaser.

As appears in Figs. 1 to 7, the ground-engaging end of the heel is provided with a so-called top lift 17 of material other than that used in the transparent heel and commonly of leather or composition that is somewhat resilient, and this top lift is permanently and securely fastened to the so-called top of the heel by the screw 14. The side and rear surfaces of the heel in a zone near this top lift 17 are likewise provided with surface variations which are shown in Figs. 2 to 5 as curved-bottom grooves 23. While the portion of the lower screw 14 that comes up into the body of the transparent heel is perhaps not quite as noticeable as the upper screw, yet it does appear plainly through the plain sides of the heel as shown in Fig. 1, and these grooves 23 serve the same purpose as the grooves 20 already mentioned in that they very largely conceal or obscure the threaded portion of the lower screw 14, and the grooves and the spaces between the grooves make pleasing lines or patterns upon this portion of the heel that catch the customer's eyes and thereby distract her sight from the very obscurely appearing upper portion of the screw 14 within the heel.

In the longitudinal sectional view Fig. 5 there is shown a part of the rear end of a shoe including the thick outer sole 24, insole 18 already mentioned and the usual counter 25′, quarter 25, and inside lining 25″ for the counter, projecting up from the back of the shoe around the heel of the wearer of the shoe. There is also shown in this view the usual arrangement of the upper or heel-affixing screw 13 projecting through the insole 18, the main sole 24 and into the upper portion of the body of the heel. It will be seen from this view that the conical head 13′ of the screw has a very strong engagement with the thick inner sole 18 and therethrough with the thick main sole 24 and also that the outwardly projecting screw threads on the shank of the screw project outwardly in an obvious manner into the body of the heel and thus effect a positive engagement between the said heel and the insole 18 and main sole 24. Ordinarily a sock lining or other equivalent layer 26 covers the insole 18 and the flat head 13a.

Fig. 6 is a side elevation of a transparent heel of the so-called Cuban type and equipped with a modified form of my invention in that the surface variations placed about the sides 10 and rear 11 of the heel consist of reversely bent curved grooves or variations 27. Also similarly reversely curved grooves or other surface variations 28 are placed about the side and rear faces and also if desired across the adjacent lower portion of the front of this Cuban heel. It will be understood that these reversely curved grooves or recesses function in the way already described as to the grooves 20 and 23 on the heels of Figs. 2, 3, 4 and 5, to largely conceal or obstruct the visibility of the upper screw that will ultimately be used to fasten this heel to a shoe. In Fig. 6 the top lift 17 is shown as already in place and so a top lift-attaching screw 14 will already be in place in the heel shown in Fig. 6, but will be largely concealed by the reverse grooves 28.

In Fig. 7 there is shown a transparent heel embodying my invention as applied to a so-called Continental heel. In this heel the surface variations are a series of rows of scallops 29 placed in a zone immediately below the edge of the shoe-engaging end of this heel 30, such scallop-shaped variations performing the function of concealing largely the upper heel-attaching screw that will be used with this heel, or of making lines and patterns that attract the eye of the observer and distract the eye of the observer from the slightly shown screw in more or less the same way as already described in prior forms of this heel. Similarly, scalloped-shaped surface variations 31 are provided adjacent the lift-engaging end of this heel to in an obvious manner largely conceal the lower lift-attaching screw 32, and to form patterns on the heel distracting the observer's eye from what little of the screw may be seen through the variations.

Fig. 8 shows a side elevation of another form of heel equipped with a still different form of surface variation embodying this invention. In this view the heel is provided in the zone just below the edge of its shoe-engaging end with a series of small relatively closely arranged indentations 33, say about one-sixteenth of an inch long vertically and one thirty-second of an inch apart laterally. Even these small close indentations break up the direct transmission of light through the surface of the heel sufficiently to accomplish the purpose of my invention.

In some of the claims of this application I have expressly described the heel of my invention as being of transparent material and having transparent side and rear surfaces. In practice the transparent material when formed into proper shape for heels does not always have a transparent surface at its sides and rear but these side and rear surfaces have to be definitely pol-

ished in order to make them transparent. On the other hand, in several of the claims I have described the heel as being transparent and this includes not only the mass of the heel being of transparent material, but the surfaces, particularly the rear and side surfaces thereof, being transparent either by being so formed as to be transparent or as by being actually polished after being formed to the desired shape or curve.

In Fig. 9 there is shown the shoe-engaging end of another heel, in side elevation, which is provided with another form of my invention in that instead of indentations or grooves projecting down into the body of the heel there are provided slight vertically arranged or upright projections or protuberances extending outwardly from the heel in the form of ridges **34**. These outwardly projecting surface variations are still within the scope of my invention in that they disturb the regular transmission of light through the surfaces of the heel enough to accomplish the main purpose of the variations or grooves used in other forms of my invention.

What I claim as new and desire to secure by Letter Patent is:

1. A transparent heel having fastening means projecting into its shoe-engaging end for fastening the heel to a shoe, said heel having a series of grooves projecting into its surface along its sides and rear in a zone near its shoe-engaging end for the purpose of drawing the attention of the observer to such grooves and the refractions and reflections thereof and away from the sight of the heel-holding means.

2. A transparent heel having its side and rear faces polished and having fastening means projecting into its shoe-engaging end for fastening the heel to a shoe, said heel having a series of grooves projecting into its surface along its sides and rear in a zone near its shoe-engaging end for the purpose of drawing the attention of the observer to such grooves and the refractions and reflections thereof and away from the sight of the heel-holding means.

3. A transparent heel having its side and rear faces polished and having fastening means projecting into its shoe-engaging end for fastening the heel to a shoe, said heel having a series of U-shaped grooves projecting into its surface along its sides and rear in a zone near its shoe-engaging end for the purpose of drawing the attention of the observer to such grooves and the refractions and reflections thereof and away from the sight of the heel-holding means.

4. A transparent heel having its side and rear faces polished and having fastening means projecting into its shoe-engaging end for fastening the heel to a shoe, said heel having a series of curved-bottomed grooves projecting into its surface along its sides and rear in a zone near its shoe-engaging end for the purpose of drawing the attention of the observer to such grooves and the refractions and reflections thereof and away from the sight of the heel-holding means.

5. A transparent heel having its side and rear faces polished and having fastening means projecting into its shoe-engaging end for fastening the heel to a shoe, said heel having a series of surface variations formed upon its surface along its sides and rear in a zone near its shoe-engaging end for the purpose of drawing the attention of the observer to such variations and the refractions and reflections thereof and away from the sight of the heel-holding means.

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