United States Patent

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[73] Assignee **U.S. Philips Corporation**

[54] **CARRYING CASE AND DISPENSER FOR ELECTRICALLY HEATED HAIR CURLERS**
6 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **219/222,** 132/33, 211/49, 219/242, 219/506, 312/45, 312/236
[51] **Int. Cl.** **A45d 2/36,** A45d 4/16, H05b 1/00
[50] **Field of Search** 219/222–226, 242, 506; 132/33, 36, 39; 221/150; 312/45, 236; 211/49

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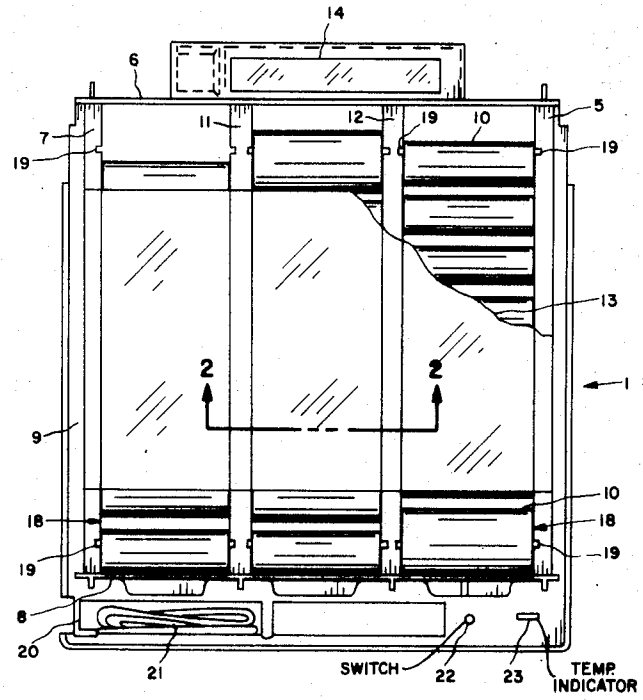
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ABSTRACT: A combination carrying case and dispensing unit for storing and dispensing electrically heated hair curlers of the type having a self-contained electric heating element and terminal projections at each end. The unit includes a dispensing tray arranged to be supported in an upright position by its cover. Parallel guide tracks are provided in the tray for accommodating a plurality of curlers in stacked relation. A loading station and a removal station are provided at the upper and lower ends, respectively, of the guide tracks whereby curlers inserted into the guide tracks at the upper loading station will be gravitationally supplied to the lower removal station whereat they can be removed for use. Electrically conductive rails within the guide tracks conductively engage the terminal end projections of the stacked curlers and permit electric power to be simultaneously applied to an entire stack of curlers to heat the same. A temperature indicator is provided for indicating when the curlers have been sufficiently heated and are ready for use. A lighted makeup mirror is provided across the front of the dispensing tray.



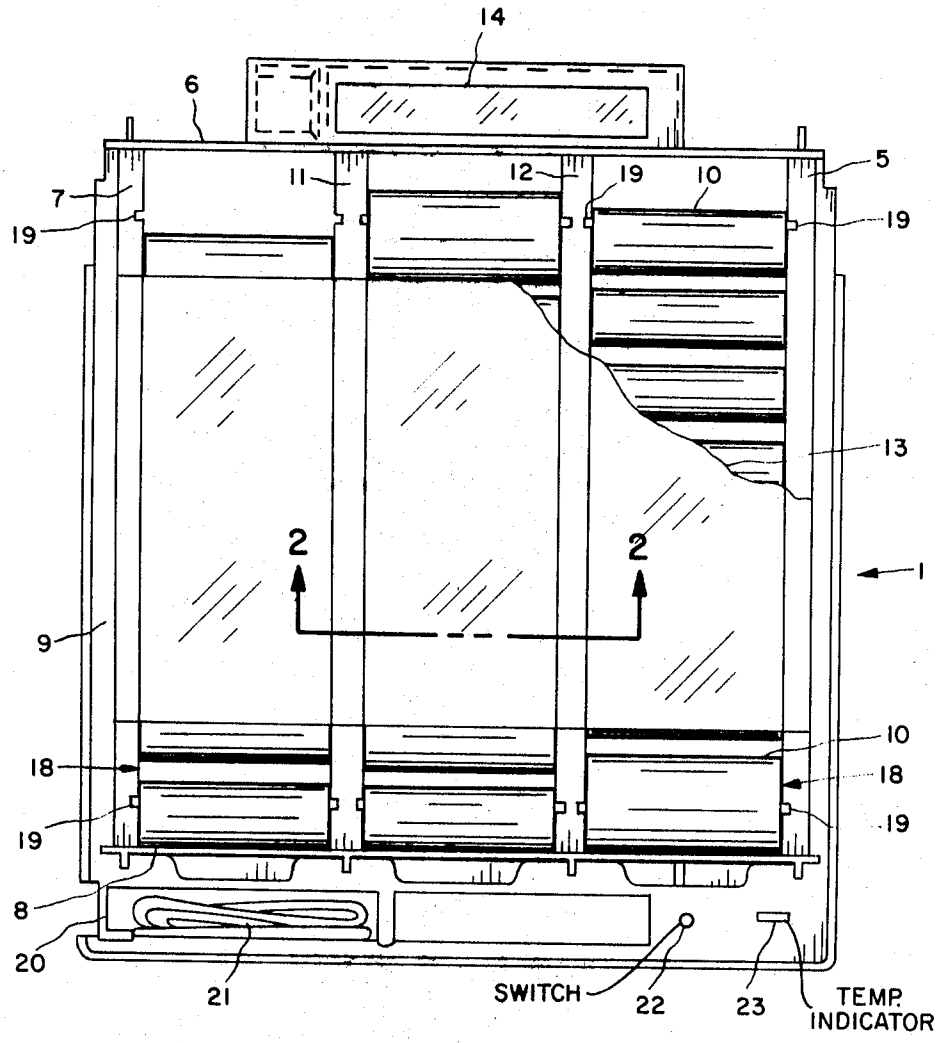


Fig. 1

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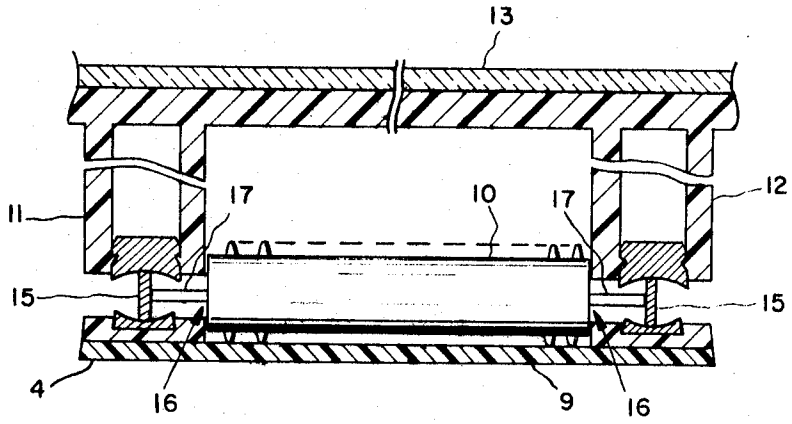


Fig. 2

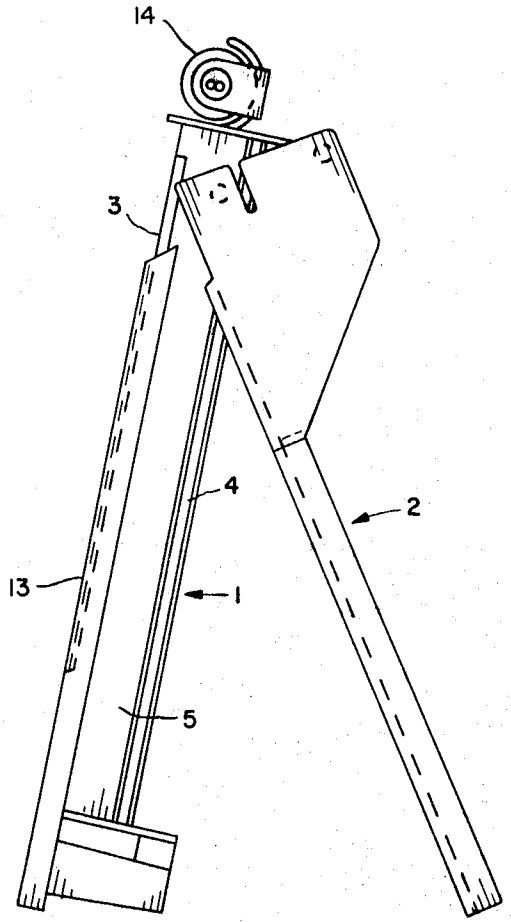


Fig. 3

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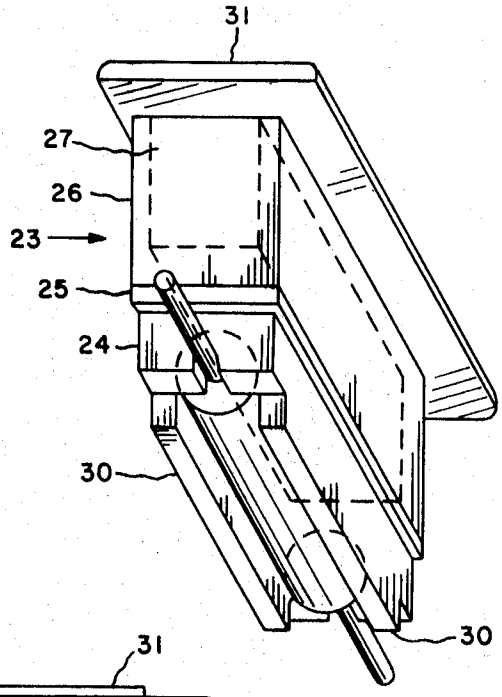


Fig. 4

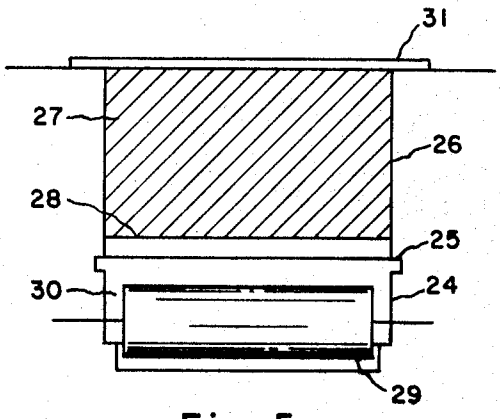


Fig. 5

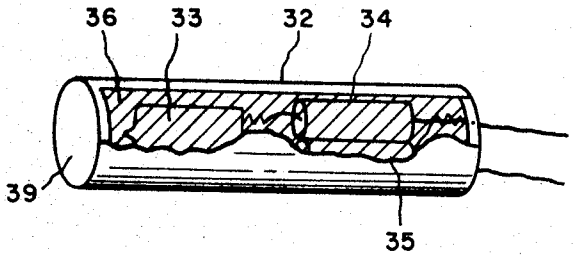


Fig. 6

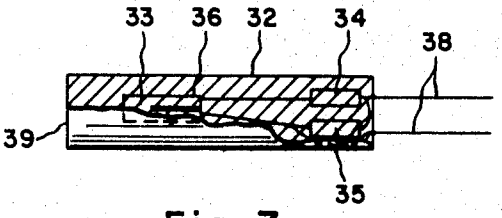


Fig. 7

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CARRYING CASE AND DISPENSER FOR ELECTRICALLY HEATED HAIR CURLERS

This invention concerns electrically heated hair curlers, in particular a combination carrying case and dispensing unit for storing, electrically heating, and dispensing hair curlers which can be used separately or in conjunction with the hair curlers and temperature indicator described respectively in the copending U.S. Patent application Ser. No. 883,418 filed Dec. 9, 1969 and Ser. No. 872,242 filed Oct. 29, 1969.

There are a number of devices commercially available for the storage and dispensing of electrically heated hair curlers; however, none of these devices provide the advantages and added conveniences of the present invention. The carrying case and dispenser of this invention was developed to meet the demand for a safe, reliable, and quickly heatable unit which also provides a temperature indicator to inform the user when the hair curlers are ready for use. Furthermore, the case has a gravity feed arrangement for dispensing the hair curlers, protective conductive heating rails which will eliminate accidental electrical contact and injury to the user, and a lighted makeup mirror for the convenience of the user.

The carrying case has a tray portion having a bottom, four upstanding sidewalls, and a cover. The interior of the tray is divided by longitudinal partition walls into three or more separate portions, each having a width corresponding to the length of the individual hair curlers such that a plurality of assorted hair curlers can be accommodated in a stacked and uniform arrangement. These curlers may be of the type as described in the copending application Ser. No. 883,418 previously referred to and each hair curler may be of a different size i.e. diametric dimension, so that the user is provided with an assortment of different sized curlers. The longitudinal partition walls are arranged parallel to each other and to two of the sidewalls of the tray and the confronting faces of these partitions and sidewalls have a track or groove defined therein which accommodates the protruding terminal projections extending from both ends of the hair curlers. An electrically conductive rail member is positioned in this track member such that a current can simultaneously be passed through all of the hair curlers contained within the tray to heat same. This current is also passed through the temperature indicator described more fully hereinafter, the temperature indicator will indicate to the user when the hair curlers are sufficiently heated and ready for use. Such a temperature indicator consists basically of an enclosed housing containing a temperature sensitive wax which is in a solid state and opaque at room temperature. A heat source is placed in close contact with the wax so that when sufficient heat is generated the wax will change to a liquid state and become transparent. The signaling means such as a painted surface which may be fluorescent or phosphorescent, a neon lamp, molded colored plastic, raised lettering or any other contrasting-type mark is placed below the wax material. This signaling means will not be clearly visible at room temperature and will only be clearly visible when the wax has been sufficiently heated and melted by the heat source, for example, an electrical resistor. When the cover is pivoted behind the bottom of the tray, it will support the tray in a substantially upright position and the curlers contained therein will by gravitational force be urged toward the lower portion of the tray. The hair curlers can be individually removed from the dispenser without danger of electrical shock to the user or accidental injury through immediate contact with the electrical rail or heating element. Furthermore, a mirror and mirror backing placed over the open side of the dispensing tray will serve to hold the hair curlers in the tray while in the upright position. This will also provide added convenience to the user. After usage, the curlers are replaced in the dispensing tray and the cover member is pivoted around and over the open side of the tray to lockingly engage the tray and provide a handy and useful carrying and storage case for the hair curlers.

It is an object of this invention to provide a compact and convenient combination carrying case and dispenser for electrically heated hair curlers.

It is another object of this invention to provide a dispenser for electrically heated hair curlers in which a plurality of hair curlers, of assorted sizes, are simultaneously and uniformly heated to a proper operating temperature and wherein indicating means inform the user when this temperature has been reached.

It is the further object of this invention to provide a dispenser for electrically heated hair curlers having a self contained supporting member for holding the dispenser in an upright position to provide for the individual dispensing of hair curlers by gravitational feeding of same to an opening in the dispenser.

The above and other objects, features and advantages of the present invention will be apparent from the following description of the preferred embodiments when considered in connection with the accompanying drawings wherein;

FIG. 1 shows a front elevation view of the dispenser tray with the hair curlers therein.

FIG. 2 is a sectional view along lines 2—2 of FIG. 1.

FIG. 3 is a side elevational view of the dispenser shown in the upright position.

FIG. 4 is a perspective view of a temperature indicator which may be used in the present invention wherein a fluorescent paint is used as the signaling means,

FIG. 5 is a sectional view of the temperature sensor of FIG. 4 in its mounted position,

FIG. 6 is a perspective view of another type of temperature indicator used in the present invention wherein a neon lamp is used as the signaling means, and

FIG. 7 is a cross-sectional view of the indicator shown in FIG. 6.

The carrying case and dispenser as shown in FIGS. 1 and 3 consists of a dispensing tray 1, and a cover member 2 pivotally attached to the dispensing tray. The cover member shown in FIG. 3 is in the open position and is also adapted to occupy a closed position wherein the cover member is disposed over the open face 3 of the dispensing tray and lockingly engages the tray so as to secure the hair curlers therein and to provide a convenient means of transporting or storing same. The dispensing tray consists of bottom surface 4 and four upstanding sidewalls 5, 6, 7 and 8, and may be mounted within a casing 9. The interior of the tray is partitioned by parallel walls to divide same into a plurality of separate compartments for accommodating the hair curlers 10, in this embodiment two parallel walls 11 and 12 on a position parallel to the upstanding side walls 5 and 7, it should be understood that any number of parallel walls can be used. A mirror 13 with an appropriate backing, is placed over these partitioned walls and separate compartments so as to enclose the hair curlers therein and to provide for the convenience of the user. Additionally, an illuminating lamp 14 may be attached to the dispensing tray, in this embodiment it is attached to the upstanding side wall 6 and serves to illuminate the working area and mirror for the user.

The partition walls 11 and 12 and parallel side walls 7 and 5 are spaced so as to accommodate a plurality of hair curlers therebetween and also for providing an electrically conductive circuit for passing a current through the curlers for the heating of same. This is accomplished by the positioning of conductive rails 15 as shown in FIG. 2 within the partition and side walls. A gap 16 is provided in these walls for permitting the insertion of the terminal end portion 17 of the curlers 10 so that electrically conductive contact can be made between the curlers and the conductive rails 15. As shown herein the partition walls may be hollow and the conductive rails shaped for complementary press-fit inside the hollow partition walls.

This method of positioning the curlers between the partition walls also serves to hold the curlers in a stacked formation when the dispensing tray is in its upright position. The recessed mounting of the electrically conductive rail prevents the possibility of accidental contact therewith by the user and also prevents any contact with the terminal end projections 17 which may be at an elevated temperature. The gap 16 extend-

ing longitudinally along the length of the side walls and partition walls form a conductive track for guiding the hair curlers to the openings **18** at one end of the dispensing tray when the tray is in the upright position and the curlers are gravitationally fed toward these openings. The notches or slots **19** contain in the upper and lower portions of the partition walls and sidewalls communicate with the conductive track and guide rail and will accommodate the terminal end portions of the hair curlers. These notches or slots **19** effectively provide for the terminal projections **17** a respective entrance to and exit from the conductive track.

In order to prevent the inadvertant exit of hair curlers from the notches located at the lower end of the dispensing tray, particularly when the tray is in the upright and gravitational feeding position, the notches are provided above the lowest end of the track so that the hair curler must manually be moved upwards to align the terminal end portions **17** with the notches **19** and the hair curler can then be withdrawn from the track.

The dispensing tray and cover can be made of a high-impact styrene. Similarly, the casing placed around and surrounding dispensing tray, can also be made of a high-impact styrene. The casing can also be provided with a special compartment such as shown at **20** for storage of the power cord **21**. Additionally, an on-off switch shown at **22** for activating the conductive track and a temperature indicator shown at **23**, examples of which are more fully described hereinafter may be mounted on the casing.

One type of temperature indicator which may be used in this invention is shown in FIGS. **4** and **5**, is referred to generally at **23** and consists of a housing which can be formed from a plastic material and comprises a base member **24**, having a ledge portion **25**, for snugly supporting and accommodating the upper housing **26**; thus forming a leakproof container for holding waxlike material **27** within the upper housing. A contrasting color paint which is easily discernible is applied upon the upper surface **28** of the base member, in this instance a fluorescent paint is used, however, it should be noted that other contrasting-type marks can be equally effective as a signaling means. An electrical resistor **29** is secured between two depending legs **30** of the base member.

In a typical installation such as in the electrically heated hair curler dispenser, the temperature sensor is mounted such that only the upper surface **31** of the housing is visible. The fluorescent painted surface is not visible at ordinary room temperature due to the solid opaque state of the wax **27**, but when a current is passed through the resistor **29** the heat generated therefrom will transform the wax to a liquid transparent state and the fluorescent paint will be visible through the surface **31**. It has been found that with this device a one-half watt carbon composition resistor will permit a lapse **111** heatup time of 12 to 15 minutes prior to melting the wax. Other types of heat sources can be utilized; the total elapsed time after heat is applied will be dependent upon the rate and quantity of heat generated. The temperature indicator as shown in FIGS. **6** and **7** consists of a housing **32** preferably made of A plastic material and containing therein a neon lamp **33** and two electrical resistor elements **34** and **35**. The space around the neon lamp is filled with a waxlike material **36** which is in a solid opaque state at room temperature. The resistor **34** is used to control the neon lamp current and the resistor **35** is used as the primary heat source. When power is applied to the terminals **38** the lamp gives off a soft glow through the semiopaque wax in the solid state; when the heating resistor **35** generates a sufficient amount of heat the wax melts and changes to a liquid transparent state. When the wax is in this liquified state the neon lamp gives off a bright normal glow and therefore serves as a signal means to indicate the elapsed or heatup time.

The temperature indicator can be mounted within the electrically heated hair curler dispenser so that only a portion of the surface such as at **39** is visible and will permit the observation of the bright rays from the neon lamp. The heat source and wax-melting temperature can similarly to the temperature sensor previously discussed, be chosen so as to control the elapsed or heatup time.

The usual mode of operation of this carrying case and dispenser would be to first pivot the cover from its closed position to a position behind the dispensing tray for supporting the dispensing tray in an upright position as shown in FIG. **3**. The hair curlers already stored within the dispensing tray and positioned within the conductive track in the partition and side walls is now conductively engaged in by electrical circuit which will simultaneously and uniformly heat all the curlers. In this particular apparatus when used with the hair curlers of the previously mentioned copending application, a period of duration of lapsed time of between twelve and fifteen minutes is sufficient to bring the hair curlers to the operational temperature between 180° and 190° fahrenheit. The user will be informed when these hair curlers are ready for use by the temperature indicator **23** which will so signal. Curlers can individually be removed from the dispensing tray at openings **18** by manually aligning the projecting end portions **17** of the curler with the slots **19**, then withdrawing the curler from the track. Another curler will be gravitationally fed to replace the curler just removed.

The above cited embodiments are intended as exemplary for while they have described the invention with a specific implementation and embodiment other modifications thereof will be apparent to those skilled in the art.

What is claimed is:

1. A combination carrying case and dispensing tray for electrically heated hair curlers of the type having terminal projections at both ends comprising, a tray member for the storage and dispensing of hair curlers, cover means pivotally mounted to the tray for covering the front of the tray and securing the curlers therein when in a closed position and pivotable to an open position behind the tray to provide support for maintaining the tray in an upright position, track means within the tray for accommodating a plurality of the stacked curlers, a loading station at the upper end of said track means whereat curlers may be inserted into the track means, a removal station at the lower end of the track means such that when the tray is in an upright position the curlers will be gravitationally supplied to the removal station at the lower end of the track whereat the curlers may be removed for use, said track means extending between said loading and removal stations, electrically conductive rail means within the track means for conductively engaging the terminal end projections of the curlers, and means for connecting said conductive rail means to a source of electric power for energizing said rail means so that heating current may be passed through said curlers.

2. A combination carrying case and dispensing tray as claimed in claim **1** wherein the tray member comprises a bottom wall and four upstanding sidewalls, two parallel longitudinal partition walls placed within the tray member and dividing the tray into three separate compartments, said track means including longitudinal recessed grooves formed in the side walls and respective longitudinal partition walls, so as to define a curler accommodating track within each compartment.

3. A combination carrying case and dispensing tray as claimed in claim **2** wherein said rail means comprises an electrically conductive rail positioned within said grooves in said longitudinal and sidewalls.

4. A combination carrying case and dispensing tray as claimed in claim **3** wherein slots are formed in the partition and sidewalls at said loading and removal stations for providing access to the track means for the terminal ends of the curler.

5. A combination carrying case and dispensing tray as claimed in claim **4** wherein a mirror is provided across the front of the dispensing tray.

6. A combination carrying case and dispensing tray as claimed in claim **5** wherein a temperature indicating means is provided for indicating when the hair curlers have been sufficiently heated and are ready for use.