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(54) **HAIRDRYER CONTROL LOGIC AND INTERFACE**

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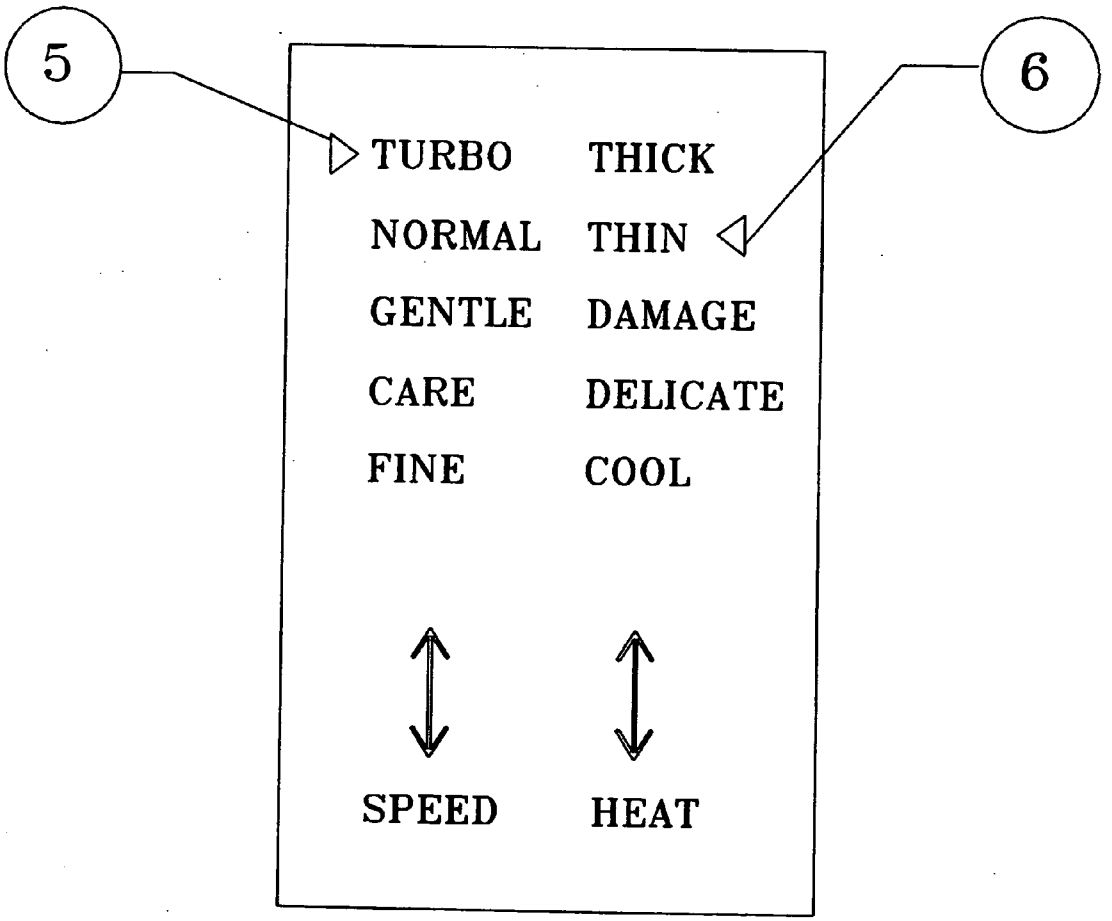
(57) **ABSTRACT**

A hairdryer control panel and switch system includes a fan speed switch (**1**), a heat setting switch (**2**), a "cool" switch (**3**) and a "turbo" switch (**4**). The speed switch (**1**) and heat switch (**2**) are bi-directional and, preferably, membrane switches. The "cool" switch (**3**) and the "turbo" switch are also, preferably, membrane switches. By advancing the speed switch (**1**) in either direction, a visual selection indicator (**5**) is moved among a displayed array of speed setting selections, corresponding to predetermined fan or motor speeds. Similarly, the heat switch (**2**) is manipulated to move a visual selection indicator (**6**) among various heat settings.



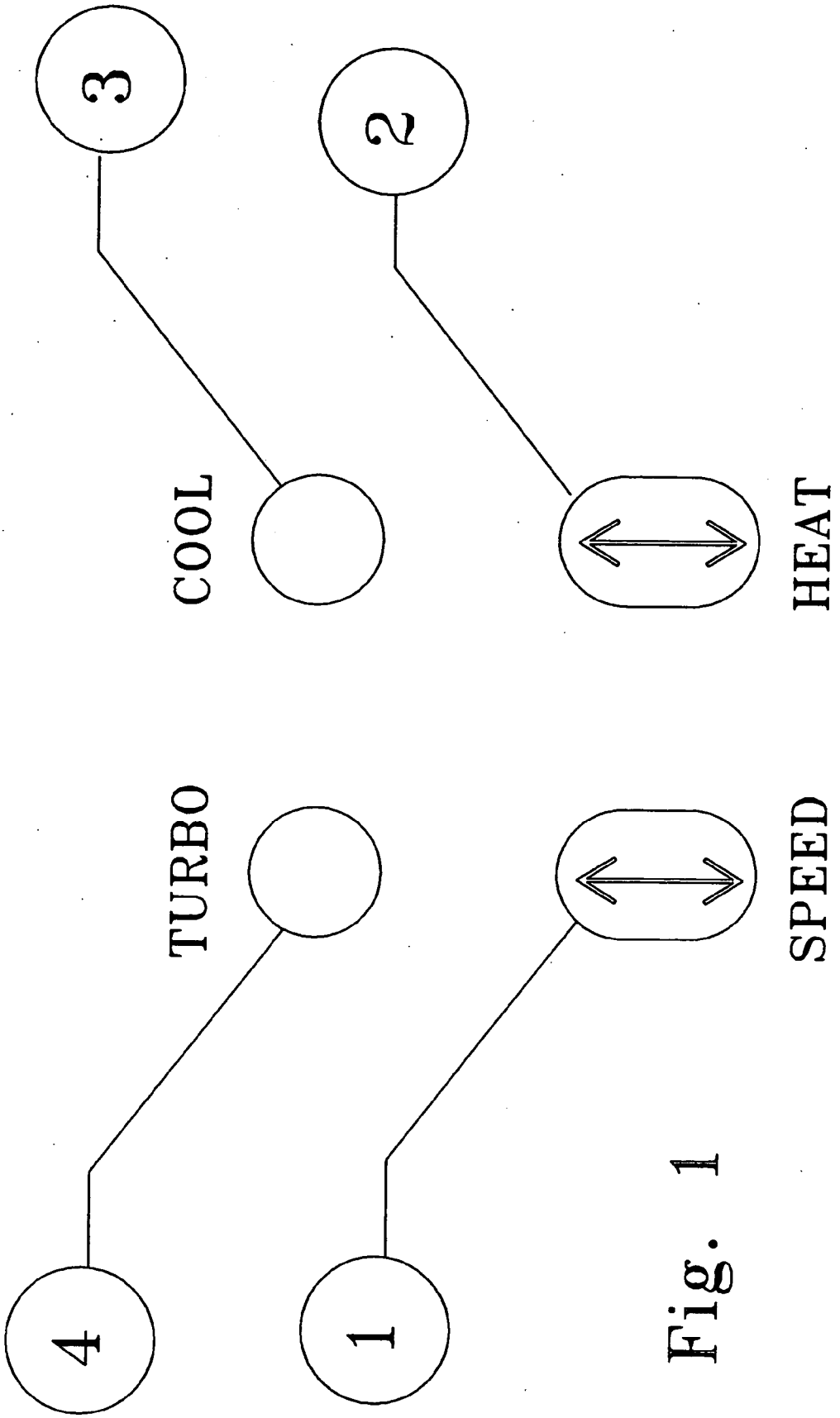


Fig. 1

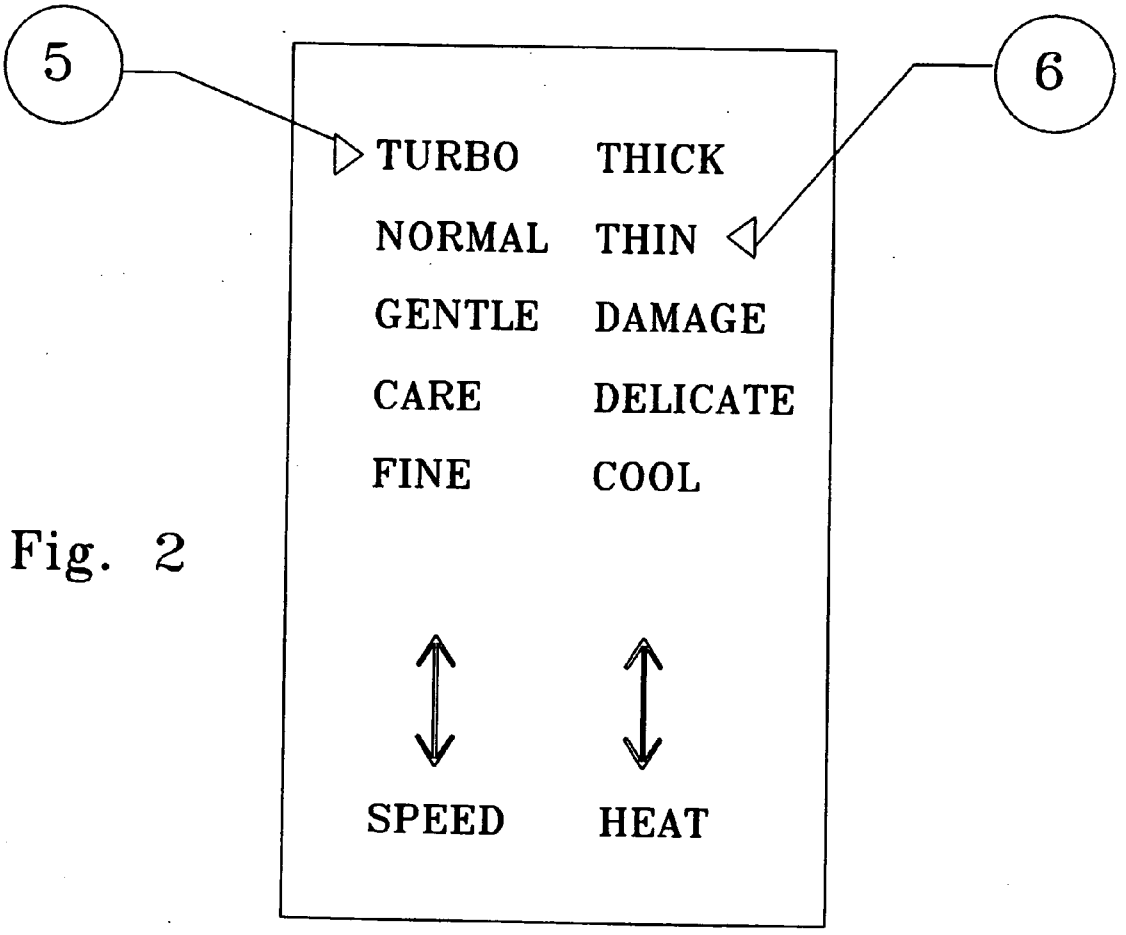

5
6
TURBO
THICK
NORMAL
THIN
GENTLE
DAMAGE
CARE
DELICATE
FINE
COOL
SPEED
HEAT

Fig. 2

HAIRDRYER CONTROL LOGIC AND INTERFACE

RELATED APPLICATIONS

[0001] This application is related to and claims priority from U.S. Provisional application 60/554,669 (filed 19 Mar. 2004).

TECHNICAL FIELD OF THE INVENTION

[0002] The present invention relates electrical hairdryers and, more particularly, to an improved hairdryer having an array of switches controlling functions and settings and an associated display panel corresponding to the functions and settings and their selections.

BACKGROUND OF THE INVENTION

[0003] It is known in the art to provide an electric hairdryer having separate heat and speed controls. It is also known to have separate switches associated with functions known as "cool shot" and "turbo" functions which, respectively, provide a blast of cooled air (as opposed to heated air) and a sudden increase in airflow. Typically, such switches are activated by spring-loaded buttons that, in the case of "cool shot" de-activate specific heater coils; and in the case of "turbo" de-activate some of the electrical resistance so that motor speed is increased.

[0004] It is also known in the art to provide visual display indicators of switch settings with LED or LCD displays. Such displays are useful when coupled with touch-pad switches and associated logic systems.

[0005] Conventional, mechanical switches on hairdryers are limited by space in that multi-position switches occupy enough space to accommodate each position. In addition, certain mechanical switches are cumbersome and prone to mechanical wear over time and are subject to moisture and heat damage. Known LED and LCD displays are typically limited to single function or condition status signals.

OBJECTS AND SUMMARY OF THE INVENTION

[0006] It is an object of the present invention to overcome the limitations of conventional switches and controls on known hairdryers to provide convenient, durable control switches that facilitate multiple options and settings in a limited environment. It is a further object to utilize LCD technology to facilitate a multi-option menu that is operated and displayed on a space-limited surface. These and other objects are achieved by the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] **FIG. 1** is a schematic illustration of a control panel according to the present invention.

[0008] **FIG. 2** is a schematic illustration of an LCD display according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0009] Referring to **FIG. 1**, according to the preferred embodiment of the present invention a handheld hairdryer (not shown) of a conventional type has on a conventional switch panel surface (not shown) a fan speed switch **(1)**, a heat setting switch **(2)**, a "cool" switch **(3)** and a "turbo" switch **(4)**. The speed switch **(1)** and heat switch **(2)** are bi-directional and, preferably, membrane switches. Mechanical toggle switches could also be used. The "cool" switch **(3)** and the "turbo" switch are also, preferably, membrane switches.

[0010] By advancing the speed switch **(1)** in either direction, a visual selection indicator **(5)** is moved among a displayed array of speed setting selections, corresponding to predetermined fan or motor speeds. For example, as shown in **FIG. 2**, various hair characteristic settings like "fine", "care", "gentle", "normal" and "turbo" correspond to increasing air flow speed settings. Similarly, the heat switch **(2)** is manipulated to move a visual selection indicator **(6)** among various heat settings such as "cool", "delicate", "damage", "thin" and "thick".

[0011] When the "cool" switch **(3)** is activated, one or a variety of heat elements (not shown) in the dryer are momentarily switched off and the temperature of the air emitting from the dryer is momentarily reduced. When the "turbo" switch **(4)** is activated, resistance is dropped so that the electrical motor speed increases, thereby increased fan speed and airflow speed.

[0012] While a preferred embodiment of the invention has been herein disclosed and described, it is understood that various modifications can be made without departing from the scope of the invention.

What is claimed is:

1. A control panel and display system for a hairdryer, said system comprising

a switch for controlling a multi-setting function of said hairdryer;

a display panel for displaying various settings relating to said function; and

a visual indicator signal that is selectively movable among said settings on said display in response to manipulation of said switch to select a function setting of said hairdryer.

2. A system according to claim 1, wherein

said switch is a membrane switch.

3. A system according to claim 2, wherein

said display panel is an LCD display.

4. A system according to claim 1, further comprising

a cooling switch that, when activated, causes at least one heat element in said hairdryer to de-activate, thereby reducing the temperature of air flowing out of said hairdryer.

5. A system according to claim 1, further comprising

an airspeed boost switch that, when activated, causes the speed of air flowing out of said hairdryer to increase.

6. A control panel and display system for a hairdryer, said system comprising

a first switch for controlling a first multi-setting function of said hairdryer;

a second switch for controlling a second multi-setting function of said hairdryer;

a display panel for displaying various settings relating to said first and second functions; and

a plurality of visual indicator signals that are selectively movable among said settings on said display in response to manipulation of said switch to select various function settings of said hairdryer

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