June 30, 1936. M. W. McARDLE 2,046,200

ELECTRIC APPLIANCE

Filed Oct. 29, 1934

Fig. 1

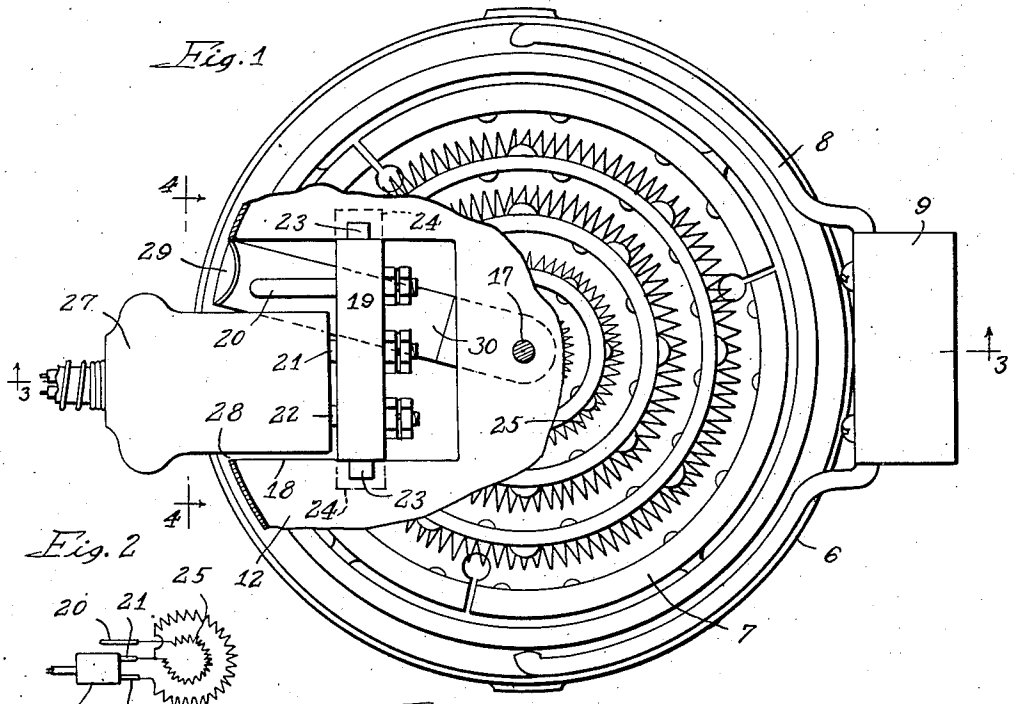


Fig. 2

Fig. 3

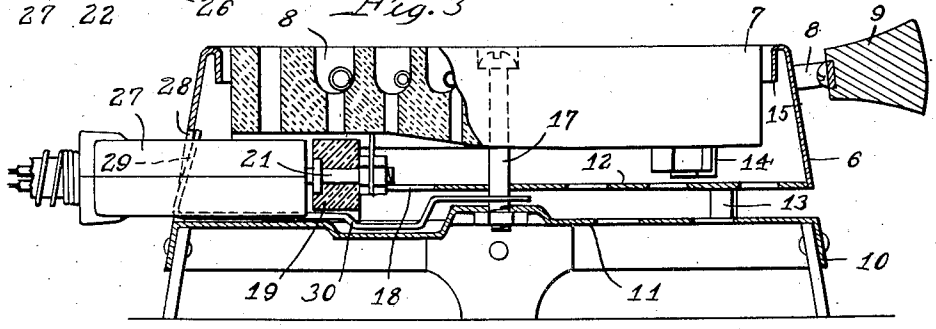


Fig. 4

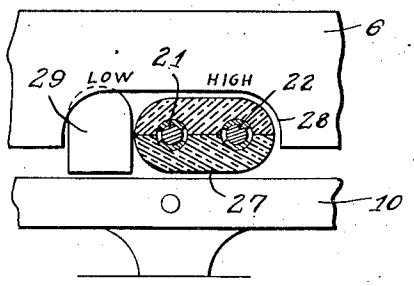
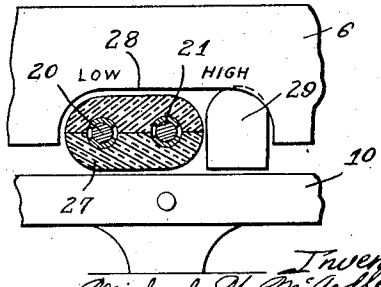


Fig. 5



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2,046,200

ELECTRIC APPLIANCE

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Application October 29, 1934, Serial No. 750,405

3 Claims. (Cl. 219—20)

This invention relates to electric appliances of the type having high and low heats such, for example, as in electric stoves, flatirons, percolators, and the like, and also to electric appliances having plural circuits or plural stage circuits. In this type of electric appliance either a switch or an attachment plug must be manipulated by the user to select one or the other circuit or heating element, as the case may be, according to the condition of use desired at the time.

The present invention has more particular reference to the electrical connector for supplying current to appliances of this type.

One of the objects of the invention is to improve electric appliances of this type, particularly in respect to the construction of the electrical connector on the appliance through means of which the user selects one or the other circuit for use. Heretofore appliances of this kind have been equipped with comparatively expensive switches or with expensive contact plugs which add to the cost of manufacture. The present improvement promotes economy in the cost of manufacture of electric appliances of this type because it eliminates switch structures and provides a simple form of terminal posts with which a standard connector plug may be used. The improvement includes provision for fool-proof and safe use of the connector so as to insure proper use and prevent harm to the user.

Other objects and attendant advantages will be appreciated by those skilled in this art as the invention becomes better understood by reference to the following description when considered in connection with the accompanying drawing, in which—

Figure 1 is a plan view of an electric appliance embodying my invention, with a part broken away to show the electrical connector;

Fig. 2 is a diagram of the electric circuit used in this appliance;

Fig. 3 is a vertical section taken substantially on the section line 3—3 of Figure 1;

Fig. 4 is a fragmentary vertical section taken substantially on the section line 4—4 of Figure 1, showing the plug connector in position for the high heat; and

Fig. 5 is a similar view showing the plug connector in position for the low heat.

My invention is here shown as applied to a small electric stove of the kind used on a table for heating coffee makers or percolators, but obviously adapted for other purposes. However, as above stated, the invention may be applied to other electric appliances for high and low heats or electric circuits for plural stage use.

The appliance shown has a suitable casing, designated generally by 6, within which is carried a block of insulation material 7 provided on its face with grooves 8 in which are located heating elements in the form of resistance wires. The casing is suitably supported to serve as a portable appliance and in this instance is equipped with a bail 8 having a handle 9 for convenience in moving the appliance when it is heated. As a means of economy in cost of manufacture and also to provide for circulation of air, the appliance is formed of two units consisting of a base 10 and the casing referred to containing the heating elements. The base has a horizontal perforated top 11 and the casing 6 has a perforated bottom 12 provided with legs 13 struck down and resting on the base part 11. The block of insulation material 7 forming the heating plate rests on a series of brackets 14 formed integral with the sheet metal casing as a continuation of the inwardly and downwardly turned flange 15 thereof. A center bolt 17 holds the heating plate 7, the casing 6 and the base 10 in assembled relation, as clearly shown in Fig. 2.

Referring to Figure 1, it will be observed that the bottom plate 12 of the casing is cut away to provide an opening 18 upon the opposed parallel walls of which is supported a cross-bar 19 of insulation material carrying three equally spaced plug-type terminal posts 20, 21 and 22. The bar 19 has a projection 23 at each end fitting in a complemental cut-out in the adjacent wall of the opening 18 so as to locate and hold the bar, as well as the terminal posts, in position and to take the thrust imposed when applying or removing a plug connector. Each end portion 24 of the bar 19 also overreaches the under side of the bottom plate 12, permitting assembly of the bar from the bottom. These end portions 24 are confined between the plates 11 and 12, thus locating the bar vertically.

As shown in Fig. 2, the terminal posts 20 and 21 are connected to the ends of the inner coil 25 which provides the low heat and the terminal post 22 is connected to one end of the coil 26, which provides the high heat, the opposite end of the coil 6 being connected to the terminal post 21.

It will be observed that the terminal posts are equally spaced apart in a common plane so that the attachment plug 27 of a standard cord set may be plugged onto either two adjoining terminal posts. When the attachment plug is placed

on the center and right hand posts 21 and 22, respectively, the high wattage coil is connected and when the plug is placed on the center and left hand posts 21 and 20, respectively, the low wattage heating coil is connected. In each such position of the attachment plug, the third terminal post is left exposed and inasmuch as all three terminal posts are energized when the attachment plug is placed in position and connected with the electric current, I have provided means for preventing access to the exposed post, which means also serves to prevent application of the attachment plug except in the proper manner. To this end I have provided an opening 28 in the upright wall of the casing 6 shaped to conform to the exterior of the plug body in both positions thereof, and I have also provided a closure 29 shaped to substantially close the open space in front of the exposed terminal post when either set of posts is plugged. In order to effectively use a single closure 29 for both positions, I have arranged it to swing back and forth in the yoke of the casing wall. This is effectively accomplished by forming the closure 29 on the outer end of a link 30 pivotally attached to the center bolt 17 and exposed beneath the post supporting bar 19. The part 29 projects sufficiently so that it may be easily swung laterally from one position to the other, being limited in its movement to each effective position by striking against the adjacent side wall of the opening 28.

It will be apparent that before the attachment plug may be plugged onto either set of terminal posts, the part 29 must be shifted to one side or the other to permit access of the plug body to the posts and that when this setting is obtained and the attachment plug is applied, the part 29 serves to effectively guard the exposed post and to prevent the user from touching this post accidentally or otherwise.

It will also be apparent that minor changes in the details of construction and arrangement of the parts may be made without departing from the spirit of the invention as set forth in the appended claims, in which I claim:

1. In an electric appliance, a casing, electric heating elements within the casing in two circuits providing for high and low heats, said circuits having three coplanar terminal posts the center post of which is common to both circuits, a two-socket plug connector adapted to be plugged onto either two adjoining terminal posts, said casing having an opening shaped to permit passage of said plug to either set of terminal posts, said opening leaving the third terminal post exposed when either set of posts is plugged, and a guard mounted and arranged for movement back and forth in the common plane of said terminal posts to close the opening in front of either such third post before the plug may be plugged onto the remaining set of posts.

2. An electric appliance comprising a casing having an opening in its outer wall for insertion of an attachment plug, electrical means adapted for plural stage operation and having three terminal posts arranged in a common plane within the casing in alignment with said opening, said terminal posts being spaced apart so that a two-socket attachment plug may be plugged onto either two adjoining posts, and a guard independent of the attachment plug located in said opening in the casing and movable back and forth in said common plane to close the space in front of each exposed terminal post when a pair of posts is plugged.

3. An electric appliance comprising a casing, heating elements within the casing, a center bolt holding said parts in assembled relation, the casing having an opening in its peripheral wall shaped to receive an attachment plug, three terminal posts mounted in a common plane within the casing in alignment with said opening and equally spaced apart so that either two adjoining posts may be plugged by a two-socket attachment plug, and a link pivoted on said center bolt and having a guard at its end disposed in said opening and arranged to be shifted in said common plane from one end of said opening to the other by swinging said link on said center bolt whereby to close the opening in front of either end post when the other two posts are plugged.

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