June 2, 1953 F. F. LEHR 2,640,968

ELECTRIC CUP CONNECTOR

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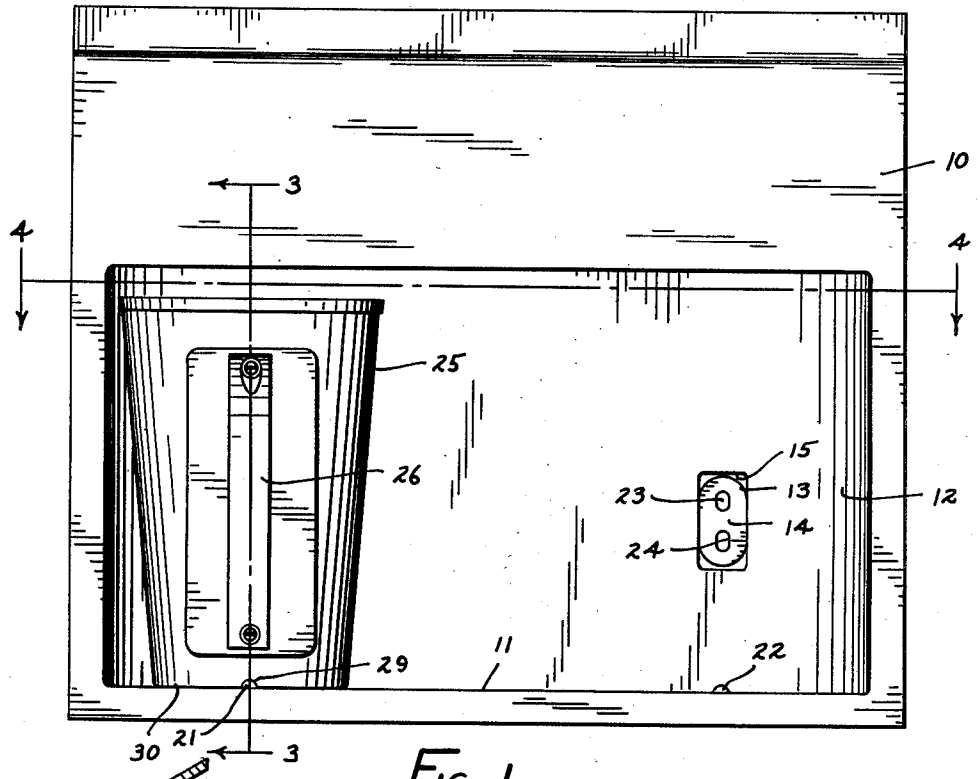


FIG. 1.

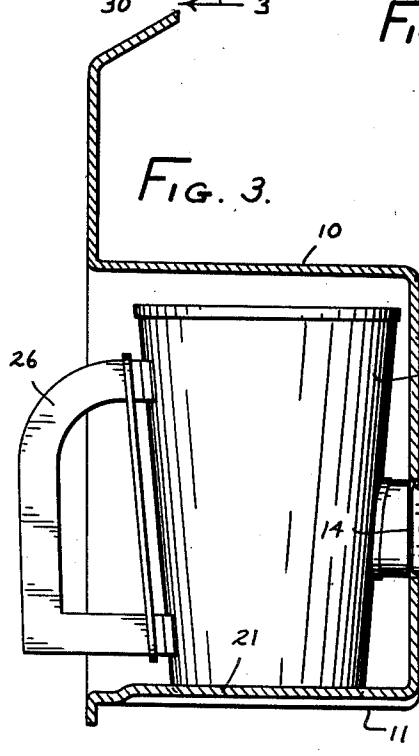


FIG. 3.

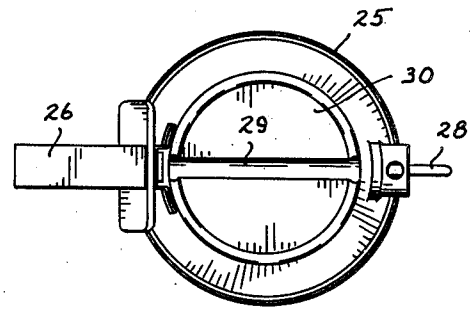


FIG. 2.

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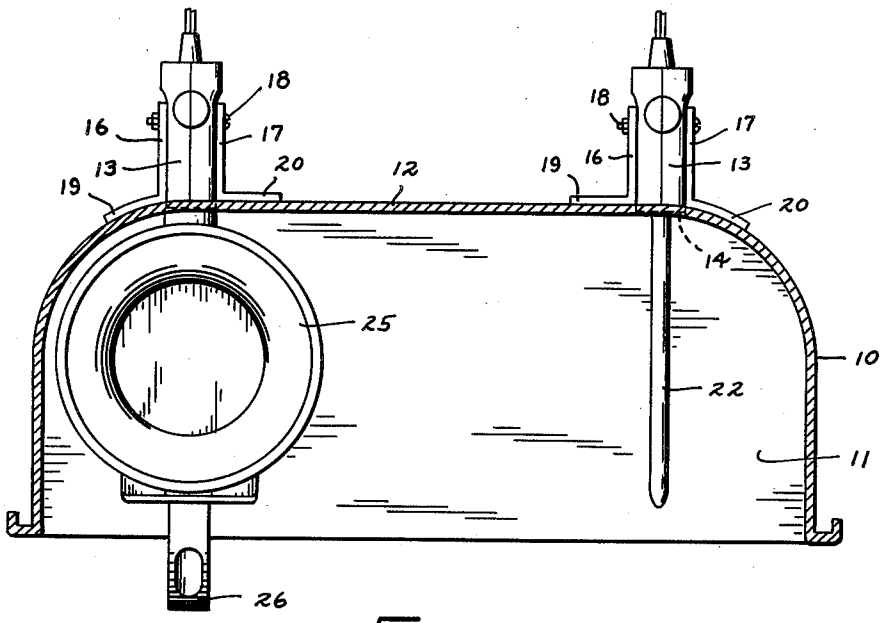


FIG. 4.

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Patented June 2, 1953

2,640,968

UNITED STATES PATENT OFFICE

2,640,968

ELECTRIC CUP CONNECTOR

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Application June 7, 1950, Serial No. 166,729

1 Claim. (Cl. 339—66)

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This invention relates in general to a cup carrying an electrically energized heating element for the purpose of heating the contents of canned goods. More particularly, the invention relates to means for interconnecting the cup element with a plug in such manner that the plug will always be entered by the male connecting portions which are provided on the cup, without damage to those connecting portions, and with assurance that the interconnection between those prongs of the cup and the plug will always be made simply by moving the cup toward the plug.

The invention is particularly adapted for use in conjunction with the display of canned goods such as soups, beans, and the like which are to be served across the counter on short orders. Generally such goods are arranged in a displayed manner in a cabinet, above a lower recessed portion. Within the recessed portion, there is space provided for the insertion of one or more cups which carry electrical heating elements, and are sized to receive the contents of one of the cans, and upon the cup being filled, the cup is pushed back into the recess to bring it into connection with the source of current for heating the contents.

The problem has been to provide a suitable plug to receive the male prongs extending from the cup in such manner that the cup will always align itself, or automatically be brought into alignment, with the plug itself to insure electrical connection being made, and at the same time to prevent breaking of the plug.

It is a primary purpose of this invention to provide a structure whereby the cup will automatically center itself to align the connecting prongs with the plug, in such manner, that the plug itself may be rigidly mounted and not have to swivel or rock as has been the case heretofore in structures commonly employed for the purpose.

These and many other objects and advantages of the invention, including the extreme simplicity of construction with a minimum cost of production, will be apparent to those versed in the art in the following description of one particular form of the invention as illustrated in the accompanying drawings, in which

Fig. 1 is a view in front elevation of a cup receptacle embodying the invention;

Fig. 2 is a view in bottom plan of a cup;

Fig. 3 is a view in vertical section through the receptacle on the line 3—3 in Fig. 1; and

Fig. 4 is a view in transverse horizontal section on the line 4—4 in Fig. 1.

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A generally rectangular receptacle 10 is formed to have a floor 11 and a back wall 12. On the back wall 12 one or more plugs 13, herein shown as two in number, is mounted to be fixed in position, and to have their receiving face 14 appear in a window 15 of the wall 12.

In the present showing, each plug 13 is mounted by being inserted between two angle brackets 16 and 17 and having a bolt 18 carried through the brackets and the plug to secure the plug in fixed position. The feet 19 and 20 of the brackets 16 and 17 are secured to the back face of the wall 12 in any suitable manner, such as by welding.

On the floor 11 there is formed below each of the plugs 13, a bead 21 and 22 respectively. The center lines of these beads 21 and 22 are in a plane which extends vertically through the central portions of the plugs 13 in each instance. That is the bead 22 for example is in alignment with the holes 23 and 24 through the face 14 of the plug 13, Fig. 1, so as to be centered on the central line passing through those holes, vertically.

The cup 25 of the usual and well known construction is provided with a handle 26 on the outer side, and a pair of electrical terminals in the shape of prongs 27 and 28, Fig. 3, one mounted above the other, to extend rearwardly from the cup. The cup is formed to have a groove 29 extending diametrically across the bottom 30. This groove 29 enters the bottom 30 and is centrally aligned on a plane vertically extending through the handle 26 and the two prongs 27 and 28.

When the cup 25 is desired to be heated, it is simply placed on the floor 11 of the receptacle 10, to have the groove 29 fit over the bead 21, for example, and then the cup is simply pushed back into the receptacle toward the back wall 12, whereupon the prongs 27 and 28 will be automatically aligned with the holes 23 and 24 of the plug 13 so that these prongs will enter therein simply by pushing the cup theretoward. In this manner, a very firm connection is made by the prongs 27 and 28 with the plug 13, without any looseness in the plug 13, particularly in its mounting in respect to the receptacle 10. The cup 25 does not have to be rocked around sidewise in any manner in order to align the prongs 27 and 28 properly with the plug 13. Moreover accidentally placing the cup 25 to rest on the floor 11 between the beads 21 and 22 will prohibit the entrance of the prongs 27 and 28, or rather the tendency for them to enter the holes 23 and 24 since they cannot be aligned therewith

until the cup is physically picked up, placed in proper alignment on the bead 21 or 22, and then pushed inwardly for the electrical connection.

While I have herein shown and described my invention in the one particular form, it is obvious that structural changes may be employed without departing from the spirit of the invention, and I therefore do not desire to be limited to that precise form beyond the limitations which may be imposed by the following claim.

I claim:

A connector structure for a hot cup having side projecting terminal prongs, and a receptacle to receive said prongs; said structure comprising a table; means for fixedly holding said receptacle at one side of and above said table; a bead raised from the table to be longitudinally centered in a vertical plane extending centrally through said receptacle; a floor on said cup to rest on said table; said floor having a groove extending diametrically across the under side of the cup floor; and said bead being of that length in relation to said cup floor and said prongs to enter said groove when the cup is placed thereover and to maintain said cup against rotation on the cup vertical axis and prevent shifting over the floor laterally from said bead prior to reception of said prongs in said receptacle.

FREDERIC F. LEHR.

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