

March 23, 1937.

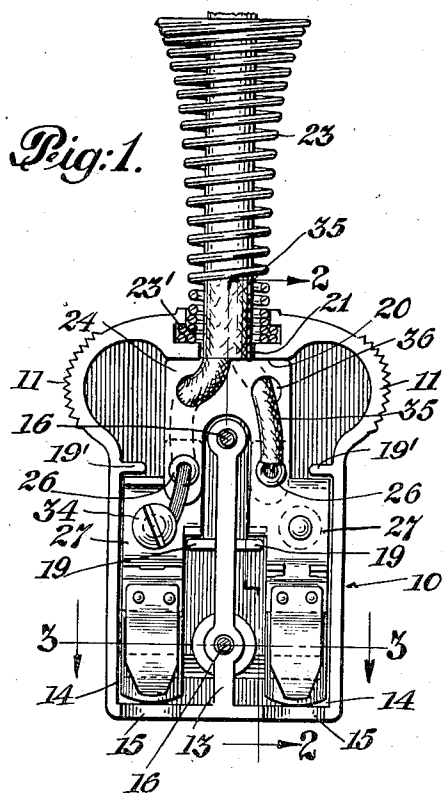
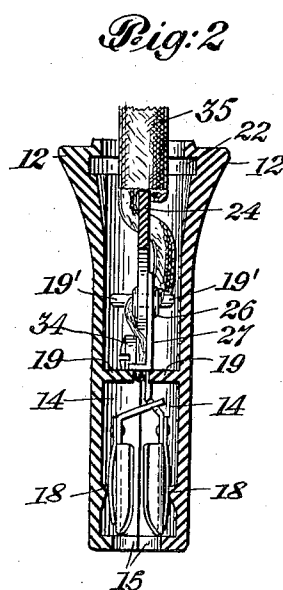
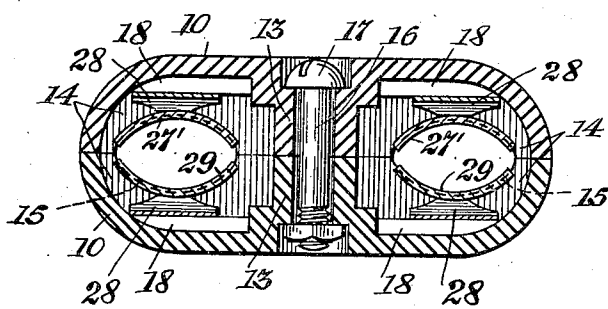
N. CHIRELSTEIN

2,074,958

COUPLING

Filed Oct. 10, 1935

2 Sheets-Sheet 1



INVENTOR
Nathan Chirelstein
BY
Ashley & Ashley
ATTORNEYS

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Fig. 4.

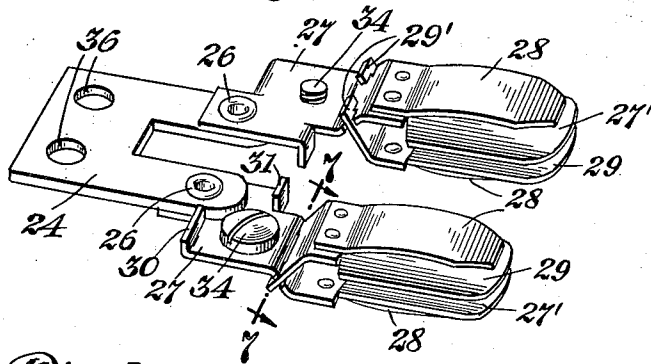


Fig. 5.

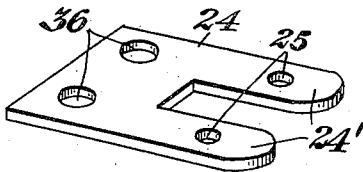
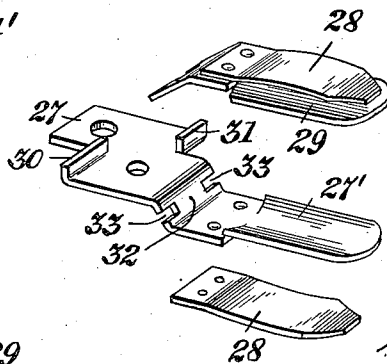


Fig. 6.

Fig. 7.

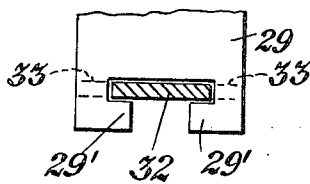
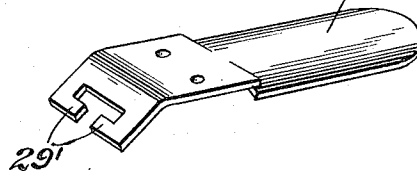


Fig. 8.



INVENTOR
Nathan Chirelstein
BY
Ashley & Ashley
ATTORNEYS

UNITED STATES PATENT OFFICE

2,074,958

COUPLING

Nathan Chirelstein, Newark, N. J.

Application October 10, 1935, Serial No. 44,380

2 Claims. (Cl. 173-332)

My invention relates to couplings for use with electrical heating devices.

The object of my invention is to provide an electrical coupling in which the jaw members are provided with springs to keep them in firm electrical contact with the terminal blades carried by the heating devices.

A further object is to provide socket members which will not be injured by undue heating of the spring members, and in which the spring members carry little of the current of electricity flowing thru the conductors.

A further object is to provide a construction in which the positive and negative conductors are perfectly insulated from each other, and which may be completely assembled prior to their inclosure in the casing.

A further object is to provide a wire guard and body combination so constructed as to permit the guard to be attached to the body in separable relation in a novel manner.

Referring to the drawings which form a part of this specification:

Fig. 1 is an elevational view of a coupling embodying my invention, disclosing the interior of the coupling with the electrical parts assembled therein.

Fig. 2 is a vertical side sectional view taken on line 2-2 of Figure 1.

Fig. 3 is a cross sectional view taken on line 3-3 of Figure 1.

Fig. 4 is a perspective view of the socket members and parts connected in fixed relation.

Fig. 5 is a perspective view of a formed plate of insulating material such as vulcanite fibre.

Fig. 6 is a perspective view of the jaw members as they appear when disassembled.

Fig. 7 is a sectional view taken on line 7-7 of Figure 4.

Fig. 8 is a perspective view of one of the swinging jaw members prior to the addition of the spring member normally carried thereon.

10 indicates the body portion of the coupling which is made of moulded insulating material and is formed in two half parts which are duplicates of each other.

The upper end of the body is formed with outwardly extending gripping surfaces 11-11 and 12-12 respectively, to facilitate handling.

Each of the body parts is provided with a vertically extending wall 13 which forms a partition by means of which two chambers 14-14 are formed, said chambers being open at their lower ends in the usual way.

The body is formed with bores 16-16 respectively, which extend thru the partition 13 as shown, and the respective side portions are held together by a bolt and nut construction 17 therein, in the usual manner.

Inwardly extending abutments 18-18 respectively, are formed integral with the body near its lower end, and inwardly extending shoulders 19-19 and 19'-19' respectively are also formed integral therewith.

The top of the partition 13 terminates at a distance from the inner top wall 20 of the body, as shown.

A central opening 21 is formed in the top of the body and also an annular recess 22 is formed adjacent thereto.

23 indicates a helical wire guard, the lower end of which is wound to form an annular ring 23' which fits into the annular groove 22 as shown.

24 indicates a formed bifurcated plate of insulating material such as Vulcanite, and each branch 24' is provided with a hole 25 thru which extends an eyelet 26 by means of which a metal plate 27 is riveted rigidly thereon.

It will be noted that one of said metal plates 27 is mounted on one side of the plate 24 and one on the opposite side thereof, as shown clearly in Figure 4.

The plate 27 is formed as shown in Figure 6, to provide one of the jaw elements 27' on the outer side of which is riveted a steel leaf spring 28, one end of which rests on the plane surface shank portion of the jaw 27' to which it is attached, and its free end rests near the outer end of the jaw, the spring being arched as shown.

A similar spring is mounted on the movable jaw member 29 in the same manner.

The plate 27 is formed with flanges 30 and 31 which extend at a right angle to its plane surface, and it is also formed with an offset inclined neck 32 having recesses 33-33 respectively formed in its sides for engagement with the bifurcated end 29' of the swinging jaw member 29 to form an interlocking toggle hinge.

The rigid jaw members are alike in form and when assembled with the swinging members together with their respective springs, they are mounted on opposite sides of the plate 24 and therefore the flanges 30 and 31 on one plate extend in the opposite direction from those on the opposite plate, and the terminal screws 34 also extend in opposite directions.

In assembling the metal parts the cable 35 is

passed thru the wire guard, then the lead-in wires 35' are each passed from opposite sides thru the holes 36—36 respectively, and then thru the eyelets 28—28 respectively, and the ends of the wires are then attached to the plates 27—27 respectively, by the binding screws 34.

The parts thus assembled are then placed in the body portion in position as shown in Figure 1, the flanges carried by the plates 27 resting between the inwardly extending shoulders 18 and 19' and the plate 24 resting between the under side of the top of the body portion and the top of the partition.

The springs carried by the jaw members rest in contact with the abutments 18 which separate them from contact with the thin portion of the casing wall and also press against the middle part of the springs to cause them to function properly.

In making and assembling coupling constructions heretofore, it has been the general practice to firmly clamp the conducting elements rigidly between the side parts of the casing, thus requiring great care in making the parts to fit properly and in properly assembling them, and when the casing parts become loose by reason of the nuts becoming loose on the bolts, etc. the conductors jammed when the coupling was being connected to the heating vessel.

In the present case, the metal parts may be supported in the body in a relatively loose manner without danger of injury to the parts or failure to operate properly, this result being accomplished by the form of the plate 24 which abuts the under side of the body at 20 and extends laterally a considerable distance to prevent rocking on the top of the partition, and also due to the flanges located as described on the inner sides of the body.

By this construction, no part of the inner plane surfaces of the body portion is brought into contact with the metal conductors, they being supported by the flanges only.

It will also be noted that the electric conductors or lead-in wires, extend directly to the jaw

members and are held firmly in position by reason of their bent form in passing thru the plate of insulating material.

It will also be noted that the steel springs are so formed that they contact with the jaws only at the ends and carry a very small part of the current and therefore they do not become hot enough at any time to lose their elasticity and become useless for the purpose designed.

The means used for holding the guard to the body portion is cheap and effective, and no strain is transmitted to the cable in attaching or detaching the coupling from a heating utensil.

Having thus described my invention I claim as new:

1. A coupling of the character described comprising a body of insulating material made in two parts and formed with a central partition to provide two chambers, socket contacts in said chambers, a bifurcated plate connecting said socket contacts and made of insulating material mounted on the upper end of said partition and having holes through which lead-in wires may pass and be supported, and each branch of which is connected to one of said socket contacts, and means for holding said body parts together.

2. A coupling of the character described comprising a body of insulating material made in two parts and formed with a central partition to provide two chambers having openings in their ends, socket contacts in said chambers, a bifurcated plate of insulating material extending across said partition to hold lead-in wires, each branch of which is connected to one of said socket contacts; said body having shoulders extending from its inner walls into said chambers and shoulders extending from said partition into said chambers; coupling members comprising plates each of which is formed with shoulders which rest between the shoulders formed in the body to hold said coupling members in position, and means for holding said body parts together in separable relation.

NATHAN CHIRELSTEIN.