

March 19, 1963

J. B. CLARKSON ET AL
SOCKET

3,082,397

Filed Feb. 4, 1960

Fig. 1

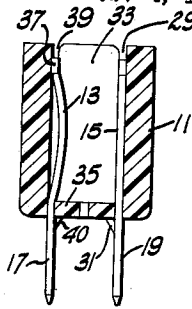
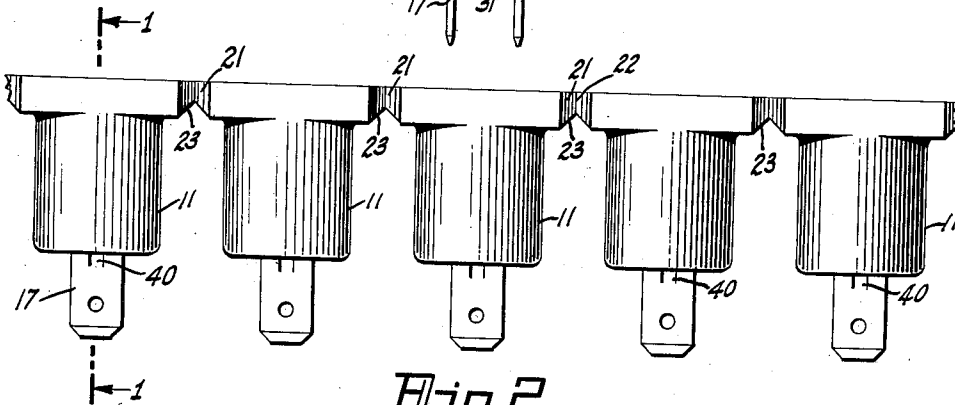


Fig. 2

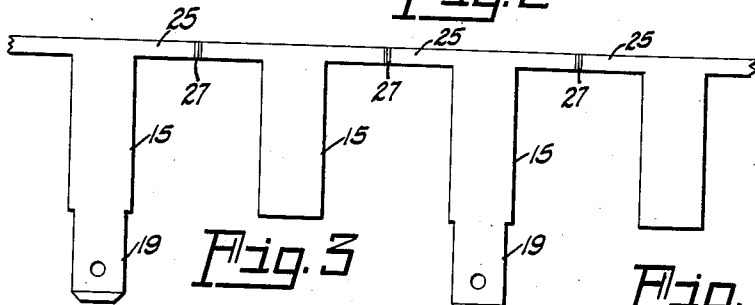


Fig. 3

Fig. 4

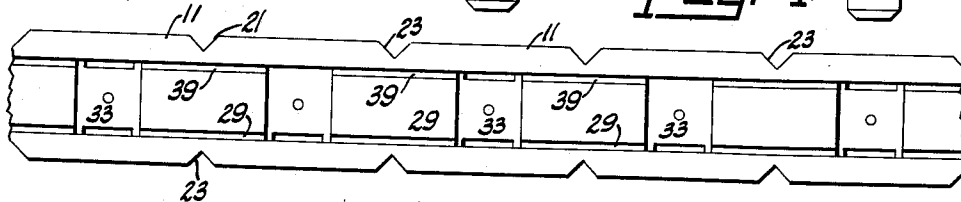


Fig. 5

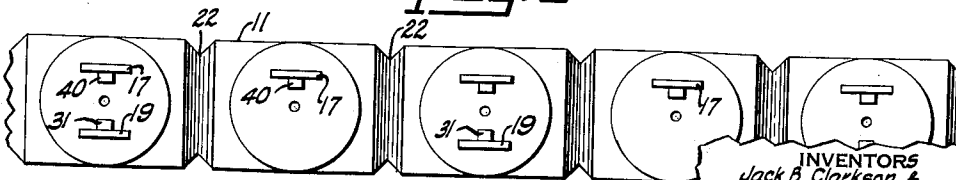


Fig. 6

INVENTORS
Jack B. Clarkson &
Robert G. Morgan
BY
Norman J. O'Malley
ATTORNEY

1

3,082,397
SOCKET

Jack B. Clarkson, Warren, and Robert G. Morgan, St. Marys, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 4, 1960, Ser. No. 6,797
2 Claims. (Cl. 339-157)

This invention relates generally to sockets and more specifically to an array of contact carrying sockets formed to receive a lamp or other electrical or electronic device.

Prior art teaching relative to circuit use of a plural array of sockets treats the problem as a mere multiplication of the problem encountered in using a single socket. In other words, instead of a support structure suitable for holding a single socket, additional provisions must be made, suitable for supporting each separate socket of the plural array; and instead of providing separate connecting wires to the terminals of one socket, additional separate connecting wires must be provided for each group of terminals in each socket of the plural array.

Thus for example, in circuits using socket supported switch indicating lamps, such as in an office type telephone receiver having a plurality of pushbutton indicating lamps, prior art practice teaches the use of a relatively expensive support structure designed to hold a plurality of separate indicating lamp sockets. Further, even though each indicating lamp socket may include what might be called a ground terminal, i.e., a terminal to be connected to a common reference potential, separate wiring must be used between the circuit and the ground terminals of each socket.

It would be desirable to provide a socket array wherein at least a portion of the terminals were interconnected when manufactured with provision for breaking such interconnection when desired. Further it would be desirable to provide an array of similarly formed sockets manufactured to include structural support interconnections of minimum spacing suitable for separation when desired.

Thus it is an object of this invention to minimize the space requirements in a string of similarly connected lamp sockets.

It is a further object of this invention to package similarly connected sockets in such manner as to make two or more sockets economically available on a given strip.

It is still a further object of this invention to provide the ultimate user of the sockets with an opportunity of selecting the length of socket strip desired up to a given number.

It is also an object of this invention to eliminate the need for more than one external common connecting wire between the circuit and electrically common socket terminals in a plural socket array.

Briefly, considering one aspect of the invention, there is provided a strip of interconnected sockets formed with interconnecting flanges containing one or more serially connecting conductors wherein the socket flanges and interconnecting conductors are scored or marked so as to be separable.

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following disclosure and appended claims in connection with the accompanying drawings in which:

FIG. 1 is a cross section of a lamp socket; and

FIG. 2 is a side view of a string of serially connected lamp sockets; and

FIG. 3 is a side view of an interconnected contact string; and

FIG. 4 is a side view of a single contact; and

2

FIG. 5 is a top view of a string of socket bodies without contacts; and

FIG. 6 is a bottom view of a series string of socket bodies with contacts and terminals.

Considering the invention in more detail and referring to FIGS. 1 and 2 of the drawings, there is shown an array of serially connected socket bodies 11 provided with internal contacts 13 and 15 at least some of which extend through the socket body to form terminal lugs 17 and 19 respectively. As can be seen in the side view of FIG. 2, socket bodies 11 are interconnected through integrally formed upper side flanges 21 which include a score line, or break-away line 22, at the center of groove 23. The serial array of socket bodies 11 and interconnecting flanges 21 are preferably compression or transfer molded from general purpose phenolic or other suitable plastic material though other insulating materials may be used, if desired.

Sockets built in accordance with one embodiment of the invention include a built-in interconnecting conductor between electrically common contact terminals. As shown in the contact strip of FIG. 3, interconnections between terminals 15 are made by conductor portions 25 including a score line or notch 27. When the contact strip of FIG. 3 is assembled in a strip of socket bodies 11 as shown in FIG. 5 with conductor portions 25 in grooves 29, the score line or notch 27 in conductor portions 25 coincides with the flange groove 23. If desired, contacts 15 and interconnecting conductors 25 may be molded directly into the socket bodies.

On every other contact 15 a terminal lug 19 is provided which extends beneath the socket body 11 to provide means for making an external electrical connection. Thus each terminal lug 19 acts as an external connection for at least two contacts 15, and only one external circuit connection need be made for contacts 15 in any plural array of interconnected sockets. Interlocking tongue 31 may be lanced or staked from the center or side of lugs 19 either before or after assembly of terminal 15 with socket body 11. Where contact terminal 15 is molded into place tongue 31 may be unnecessary.

The particular embodiment shown is intended to support lamps of substantially rectangular cross section, thus individual socket bodies 11 have been formed to provide a rectangular cross-sectioned aperture 33 extending down through the socket body to terminate the inner bottom wall portion 35. Contact 15 and contact 13 are positioned along the side walls of aperture 33 in such manner as to establish electrical contact with the lamp base to be inserted therein. A suitable lamp, without base, is shown in co-pending application, Serial Number 849,869 filed October 30, 1959, in the name of Ronald L. Bienbenue et al., assigned to the same assignee as the present application.

Contact 13, as best shown in FIG. 4, has a general T-shaped configuration with the upper ears 37 formed to be held in grooves 39. In other words, upper support ears 37 are similar to conductor portions 25 interconnecting contacts 15 except that the support ears 37 on contact 13 are shorter. Thus contacts 13 differ from contacts 15 in that contacts 13 are not interconnected when assembled, and must be individually connected into the external circuit.

Referring again to FIG. 1 it is to be noted that contact 13 is slightly bowed to hold the inserted lamp and to provide a wiping contact with the lamp base. It is also to be noted that contact 13 may be provided with a staked or lanced interlocking tongue portion 40 which is similar to the interlocking tongue 31 on contact 15. Interlocking tongue 40, whether formed before or after assembly of contact 13 in the socket body 11, interlocks

3

with the bottom surface of socket body 11 to retain the contact 13 in place.

Socket strips made in accordance with the invention may include any number of sockets desired. For example, a strip of twelve sockets has been found to be a practical length both from a packaging viewpoint and from a use viewpoint. For circuits using more than two sockets but less than the total number of sockets on the strip it is merely necessary to break off as many sockets as desired. Even a single socket may be broken off and used.

Groove 23 coinciding with conductor groove 27 makes a relatively frangible point for separating the sockets one from another. This may be done by applying pressure with the hands and fingers or, if desired, by using a pair of pliers or some similar tool.

The final plural socket array can be seen to include a continuous conductor 25 which interconnects the various contacts 15 making it necessary to make only one ground connection between the socket strip and the external circuit rather than a plurality of ground connections. In fact, only one terminal lug 19 need be provided for the whole strip. A plurality of terminal lugs 19 are usually provided in order to make a given number of sockets separable from the strip. Further, though the support chassis may be apertured to receive each individual socket body it is possible to provide a relatively simple support structure apertured to hold only the end sockets, depending upon the support provided by interconnecting flange portions 21.

While there has been shown and described what is at present considered the preferred embodiment of the invention, in view of this disclosure it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the appended claims.

4

1. In a socket assembly, the combination comprising a plurality of similar contact holding socket bodies formed in a serial strip with interconnecting weakened flange portions, conductor means having weakened portions aligned with the weakened portions of the flange portions, said conductor means extending through said flange portions and contacts, forming part of the conducting means, one each in each socket, said contacts of said conducting means in a restricted number only of said socket bodies extending beneath the socket body to form terminal lugs for said contacts, and a second discrete contact in each body, individual to that body, and extending beneath the body to form a terminal lug.

2. In a socket assembly, the combination comprising a socket body strip formed to provide a plurality of terminal holding sockets serially joined each to the next through relatively thin flange portions including a grooved central weakened portion, an electrical contact supported in each socket with only every other of said contacts including a solder lug extending from the bottom surface of the supporting socket body, a continuous conductor interconnecting said contacts through said flange portions, said conductor having a weakened section coinciding with each flange portion groove, and a second, discrete, contact in each body individual to that body, and extending beneath the body to form a terminal lug.

References Cited in the file of this patent

UNITED STATES PATENTS

30	2,231,976	Von Haltz	Feb. 18, 1941
	2,396,725	Thomas	Mar. 19, 1946
	2,544,180	Richards	Mar. 6, 1951
	2,611,800	Naughton	Sept. 23, 1952
	2,805,405	Batcheller	Sept. 3, 1957
35	2,887,558	Tally	May 19, 1959
	2,931,006	Klumpp	Mar. 29, 1960