United States Patent [19]

Carter et al.

[11] **3,846,735**

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[54] **ELECTRICAL CONTACT TERMINAL WHICH CAN BE MATED WITH AN IDENTICAL TERMINAL OR WITH A DISSIMILAR TERMINAL**

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[21] Appl. No.: **357,429**

Related U.S. Application Data

[62] Division of Ser. No. 128,439, March 26, 1971, Pat. No. 3,732,525.

[52] **U.S. Cl.** ..... **339/47,** 339/258 R

[51] **Int. Cl.** **H01r 13/12**

[58] **Field of Search** 339/47-49, 339/256, 258, 176, 217, 276, 17

[56] **References Cited**

UNITED STATES PATENTS

3,047,831	7/1962	Majewski	339/258 P X
3,173,737	3/1965	Kinkaid et al.	339/176 MP
3,208,030	9/1965	Evans et al.	339/47 R
3,273,109	9/1966	Moulin	339/217 S
3,335,393	8/1967	Anderson	339/176 MP X
3,656,093	4/1972	Kincaid	339/217 S
3,713,080	1/1973	Kennedy	339/258 R

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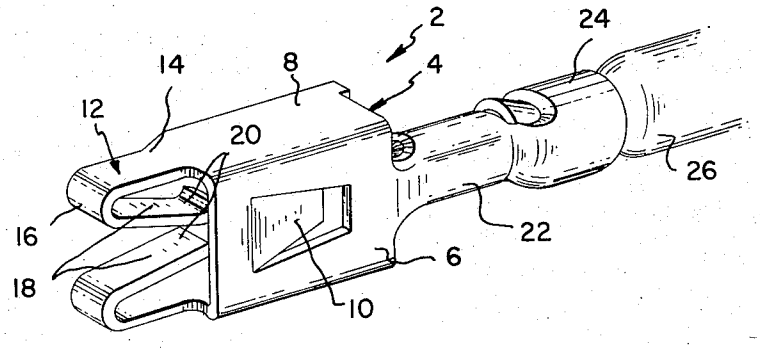
[57] **ABSTRACT**

Electrical contact terminal comprises channel-shaped body portion and contact spring portions. The spring portions extend centrally from the sidewalls of the body portion, are reversely bent inwardly towards each other, and then extend rearwardly towards the axis of the body portion. The terminal can be mated with an identical terminal or with certain dissimilar terminals.

3 Claims, 4 Drawing Figures



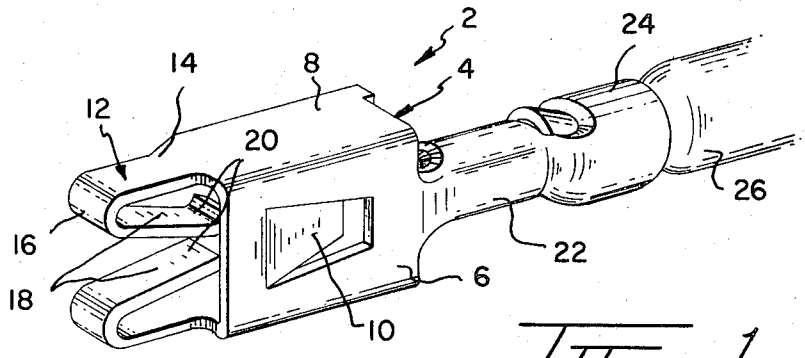


FIG. 1

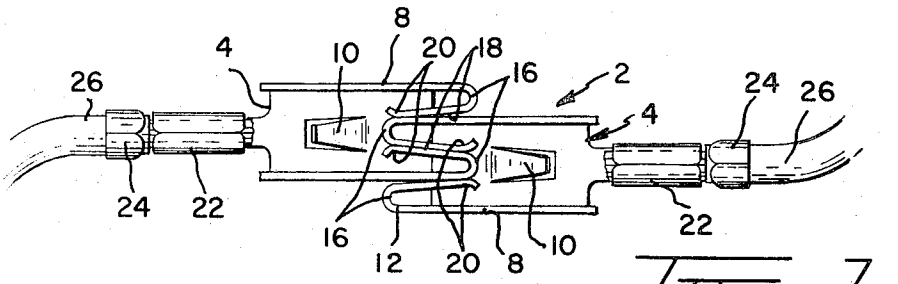


FIG. 2

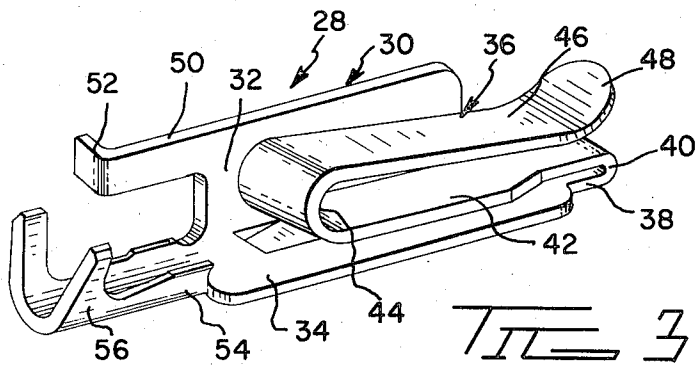


FIG. 3
(PRIOR ART)

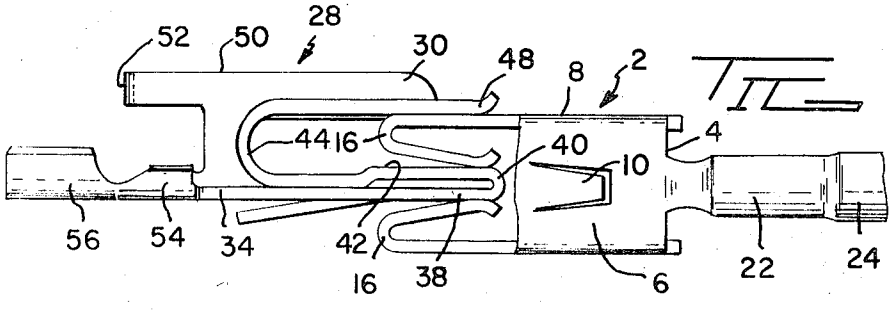


FIG. 4

ELECTRICAL CONTACT TERMINAL WHICH CAN BE MATED WITH AN IDENTICAL TERMINAL OR WITH A DISSIMILAR TERMINAL

BACKGROUND AND SPECIFICATION

This application is a division of application Ser. No. 128,439 filed Mar. 26, 1971, now U.S. Pat. No. 3,732,525 which is hereby incorporated by reference in its entirety.

IN THE DRAWING:

FIG. 1 is a perspective view of a contact terminal in accordance with the invention.

FIG. 2 is a side view of two terminals in accordance with the invention coupled to each other.

FIG. 3 is a perspective view of a known type of contact terminal with which terminals in accordance with the instant invention can be coupled.

FIG. 4 is a side view of a terminal in accordance with the invention coupled to a terminal of the type shown in FIG. 3.

A terminal 2 in accordance with the invention (FIG. 1) comprises a channel-shaped body portion 4 having a web 6 and sidewalls 8. A lance 10 is struck from the web 6 to retain the terminal in a cavity in a housing as described in U.S. Pat. No. 3,732,525. Contact springs 12 extend from each of the sidewalls 8, each spring comprising a planar extension 14 of its respective sidewall which is reversely bent at 16 so that the end portions 18 extend rearwardly and towards the axis of the body portion 4. The ends of the portions 18 are curled away from the axis of the body portion as shown at 20. It will be noted that the extensions 14 are somewhat more narrow than the sidewalls 8 and extend centrally from these sidewalls, a structural feature which permits terminals in accordance with the invention to be mated with identical terminals, to be mounted in housings as described in U.S. Pat. No. 3,732,525, and to be mated with dissimilar terminals as described below. The terminal 2 is secured to a conductor 26 by crimped connections 22 and 24 for the conducting core and the insulation of the wire respectively.

The terminal in accordance with the invention is mated with an identical terminal as shown in FIG. 2. The two terminals are disposed in opposed relationship with their axes offset and with their web portions 6 in the same plane. The terminals are then moved towards each other to the positions shown in FIG. 2.

FIG. 3 shows a terminal 28 of a type disclosed and claimed in the U.S. patent to Evans et al, U.S. Pat. No. 3,208,030. This terminal comprises a generally L-shaped frame section 30 having a base 34 and a sidewall 32. The base 34 has a serpentine extension which is of reduced width at 38 adjacent to the base. The section 38 is reversely bent at 40 to define an intermediate fold section 42 which fairs to an increased width and which extends rearwardly in spaced relationship to the base 34. The intermediate fold is reversely bent at 44 to provide a final fold 46 which extends past the leading end of the L-shaped frame section. This final fold is upwardly turned at its end 48 to facilitate coupling with a complementary terminal. An offset lug or tab 52 is provided on a rearwardly extending arm 50 which is integral with the sidewall 32 and U-shaped crimp portions 54, 56 are provided to crimp the terminal onto a conductor.

A terminal 2 in accordance with the instant invention can be coupled to a terminal 28 by positioning the terminals in opposed offset relationship such that when they are moved towards each other, the base 34 and the intermediate fold 42 of the terminal 28 will move between the springs 12 of the terminal 2. The final fold 46 of the terminal 2 will then be against the outside surface of the upper sidewall 8 as shown. It should be noted that the planes of the side 32 of the terminal 28 and the web 6 of the terminal 2 are spaced from each other.

A terminal 2 in accordance with the invention can also be engaged with a simple rectangular or square terminal post by moving the terminal over the post so that the surfaces of the contact springs engage opposite sides of the post.

Terminals in accordance with the invention are particularly useful for equipment used with computers. Many commercially available computers are equipped with connectors having terminals of the type shown in FIG. 3 therein and simple contact posts are also used to some extent. Peripheral equipment having connectors with terminals therein in accordance with the instant invention can thus be coupled to a variety of types of connectors used on the computer.

U.S. Pat. No. 3,732,525 discloses one suitable form of connector housing for use with contact terminals in accordance with the invention.

What is claimed is:

1. An electrical terminal which is adapted to be disengageably coupled with an identical terminal or with a dissimilar terminal, said terminal comprising:

a substantially flat web having sidewalls extending from the longitudinal edges thereof,

means on said terminal at one end of said web for securing said terminal to an electrical conductor,

a pair of contact springs on said terminal at the other end thereof, each of said contact springs comprising an extension on one of said sidewalls, each of said springs projecting co-planarly from its respective sidewall and being reversely bent and extending reversely inwardly and between said sidewalls, said springs each having a width which is less than the width of said sidewalls and said springs extending centrally from the forward ends of said sidewalls so that the sides of said springs are spaced from the edges of said sidewalls are spaced from said web, the reversely extending end portions of said springs extending convergently towards the longitudinal axis of said terminal and

a retention lance struck from said web, said lance extending obliquely from said web between said sidewalls, and towards said one end whereby,

said terminal and an identical terminal can be engaged with each other upon positioning said terminals in opposed axially offset relationship with the webs of said terminal and said coplanar terminal in a common plane so that said terminal on said identical terminal can be moved into engagement with each other with one sidewall and one contact spring of each terminal extending between the two contact springs of the other terminal.

2. An electrical terminal as set forth in claim 1 including stop means comprising a forwardly facing shoulder on one of said sidewalls for engagement with a stop shoulder in a contact receiving cavity.

3. A pair of electrical contact terminals disengageably coupled to each other, the first terminal of said pair comprising:

a web portion having sidewalls extending from the longitudinal edges thereof, said web and sidewalls defining a generally U-shaped cross-section, said web being secured to a conductor at one end thereof,

a pair of contact springs on said terminal at the other end thereof, each of said contact springs comprising a planar extension of one of said sidewalls, said springs extending forwardly from said sidewalls and being reversely bent, the end portions of said springs extending rearwardly towards said one end and converging towards the axis of said terminal,

said second terminal comprising:

a frame section

means on said frame at one end thereof securing said

frame to an electrical conductor,

a reduced width extension projecting from said frame at the other end thereof, said reduced width extension being reversely bent forwardly of said frame to define an intermediate fold extending rearwardly towards said one end of said frame section, said intermediate fold being reversely bent to define a final fold extending towards and past said other end of said frame,

said reduced width extension and said intermediate fold of said second terminal extending between the opposed surfaces of said contact springs of said first terminal, and one of said contact springs and one of said sidewalls of said first terminal being received between said intermediate fold and said final fold of said second terminal.

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