A. A. ZIEGLER.

CIRCUIT WIRE TERMINAL.

APPLICATION FILED JAN. 8, 1913.

1,141,598. Patented June 1, 1915.

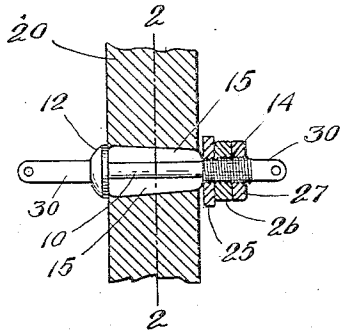


Fig. 1.

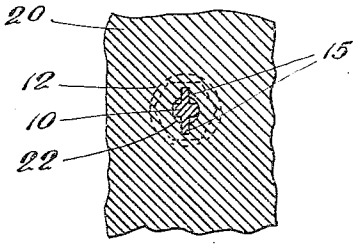


Fig. 2.

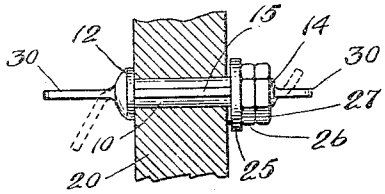


Fig. 3.

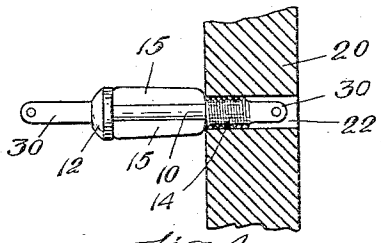


Fig. 4.

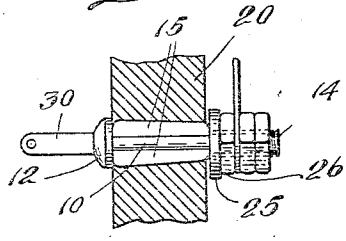


Fig. 5.

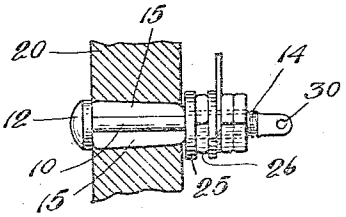


Fig. 6.

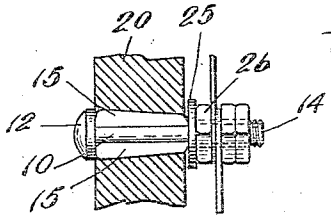


Fig. 7.

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UNITED STATES PATENT OFFICE.

ALFRED A. ZIEGLER, OF BOSTON, MASSACHUSETTS.

CIRCUIT-WIRE TERMINAL.

1,141,598. Specification of Letters Patent. Patented June 1, 1915.

Continuation of application Serial No. 701,976, filed February 6, 1912. This application filed January 8, 1913. Serial No. 740,774.

To all whom it may concern:

Be it known that I, ALFRED A. ZIEGLER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Circuit-Wire Terminals, of which the following is a specification.

This invention relates to circuit-wire terminals especially constructed for use on wooden boards, and an electric connection obtained which is very secure at all times, regardless of the shrinking and swelling of the wood, yet it is adapted for other uses, particularly on account of its cheapness and its capability of being adjusted.

The terminal embodying my invention is intended to be extended entirely through the board and is provided with means whereby it is held frictionally in the wood against withdrawal, and also held from rotation, and is constructed and arranged to be secured by means independent of the board, so that the board may swell and shrink without disturbing the permanency of the terminal.

The terminal is designed to be formed of a single piece of metal, such as wire, which is swaged or formed by suitable dies subjected to pressure, and comprises essentially a cylindrical body having a head at one end and a screw-threaded portion at the other end and having fins extended radially from the body, preferably throughout its length, and the ends of the fins thus terminating at the screw-threaded portion are made flat to form an abutment for the holding-means, which is arranged on said screw-threaded portion, and said body is made long enough to extend entirely through the board so that the ends of the fins next the screw-threaded portion project slightly beyond the side of the board for the engagement therewith of the holding-means. In case the fins are not extended throughout the length of the body they will still act to frictionally engage the wood and to hold the terminal from rotation. The terminal may also have extensions formed on both of its ends for the connection therewith of circuit-wires, or on one of its ends only; or such connection may be made in the usual manner by binding-nuts arranged on the screw-threaded portion of the terminal. Said extensions are formed integral with the body, and the whole may be made of soft metal so that said extensions may be bent in different directions, which is a great advantage.

Figure 1 is a side elevation of a circuit-wire terminal embodying this invention. Fig. 2 is a transverse section of the terminal taken on the dotted line 2—2, Fig. 1. Fig. 3 is a plan view of the terminal shown in Fig. 1. Fig. 4 is a side view of the terminal in position to be driven into a hole in a wooden board. Fig. 5 is a modified form of terminal having a connection for a circuit-wire at one end only. Fig. 6 is a similar modification, and Fig. 7 is a modified form of terminal having binding-nuts for holding the circuit-wire.

10 represents the cylindrical body of the terminal, 12 a circular flattened head at one end of said body, and 14 a cylindrical screw-threaded portion at the other end of said body.

15, 15, represent fins extended radially from the body, as here shown, throughout its length, that is to say, from the head 12 to the screw-threaded portion 14, two fins being shown, although any number may be provided. They may, and preferably will taper slightly in a direction from the screw-threaded portion to the head, as shown. The ends of the fins next the screw-threaded portion are made flat, with or without the corners being rounded off, and said flat ends serve as abutments for the holding-means which is arranged on the screw-threaded portion, whereby the terminal is secured to the board 20, yet the holding-means is prevented from engaging said board.

The board 20 will have a circular hole 22 bored through it for the terminal, of a diameter corresponding to the diameter of the screw-threaded portion and body of the terminal, as represented in Fig. 4, and the terminal will be driven into said hole, the fins cutting their way along the wall of the hole, so that the terminal is thus held against withdrawal and also from rotation.

The body is made slightly longer than the thickness of the board 20, so that when the head 12 engages one side of the board the fins 15 will project slightly beyond the other side of the board, as represented in Fig. 1. It will be understood that the fins may not extend throughout the length of the body, and yet act to engage the board and hold the terminal against rotation. The holding-

means, as here shown, comprises a washer 25, a holding-nut 26, and a check-nut 27, all of which are arranged on the screw-threaded portion of the terminal.

In the embodiment of the invention, as shown in Figs 1 to 4, an extension 30 is provided at each end of the terminal, which is made at a flattened ear, perforated near its extremity for the connection therewith of a circuit-wire.

In the embodiment of the invention, as shown in Figs. 5 and 6, an extension, as 30, is provided at one end only of the terminal, and the binding-nuts which are arranged on the screw-threaded portion may be employed if desired to hold a circuit-wire.

In the embodiment of the invention, as shown in Fig. 7, the binding-nuts on the screw-threaded portion are employed as the sole means for holding the circuit-wires.

In all the forms of the invention here shown the terminal is composed of a single piece of metal, such for instance as wire, which is subjected to the action of suitable dies, and thus swaged or formed by pressure. The metal composing the terminal is brass or some equivalent metal, sufficiently soft to enable the extension to be bent in different directions, and in Fig. 3, said extensions are represented in dotted lines as bent in various ways.

Forming the extensions as here shown, integral with the body, is of decided advantage, as it avoids providing separate pieces for the circuit-wire connections and connecting them with the body, particularly when the whole is made of soft metal whereby the extensions may be bent. Terminals thus constructed may be cheaply manufactured, and easily and quickly secured to a board by unskilled labor. If desired the screw-threaded portion may be chased by a suitable chasing-tool, but ordinarily the nuts will serve this purpose.

I claim:—

A wire terminal consisting of a cylinder body having a head at one end and a threaded portion at the opposite end, the body intermediate the head and threaded portion being formed with radial fins extending longitudinally of the body and of gradually decreasing projection from the head toward the threaded end, the body being extended beyond the head and threaded portion to provide flexible fins.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ALFRED A. ZIEGLER.

Witnesses:
B. J. NOYES,
H. B. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."