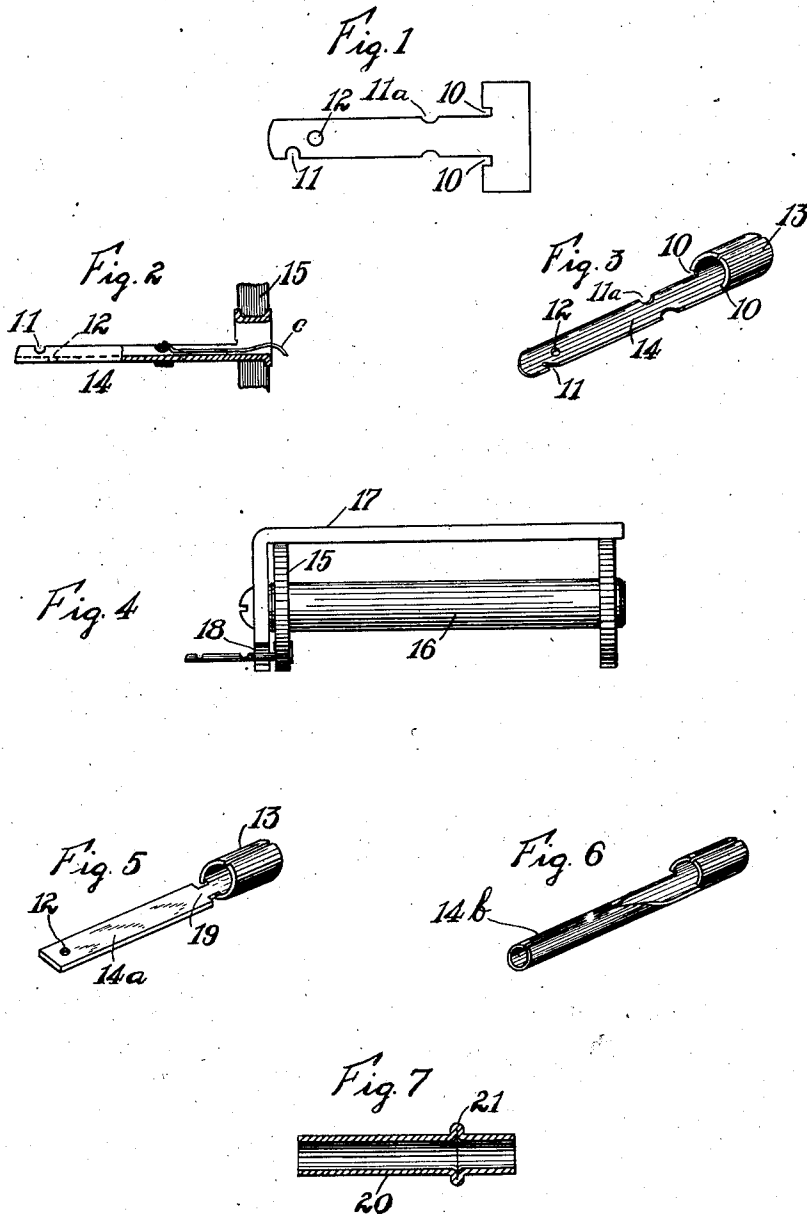


W. KAISLING.
MAGNET TERMINAL.
APPLICATION FILED MAR. 2, 1908.

1,011,439.

Patented Dec. 12, 1911.



Witnesses
G. E. Mueller
H. C. Olmstead.

By
WILLIAM KAISLING
Thomas H. Ferguson.
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM KAISLING, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
KELLOGG SWITCHBOARD & SUPPLY COMPANY, A CORPORATION OF ILLINOIS.

MAGNET-TERMINAL.

1,011,439.

Specification of Letters Patent. Patented Dec. 12, 1911.

Application filed March 2, 1906. Serial No. 303,871.

To all whom it may concern:

Be it known that I, WILLIAM KAISLING, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Magnet-Terminals, of which the following is a specification.

The present invention relates to electric terminals such as are used in telephone installations to bring the ends of the magnet windings out beyond the magnet supporting frames, so that ready electrical connection can be made therewith, and the object of the invention is to provide a simplified terminal for this purpose, which may be readily and firmly secured to the head of the magnet spool or other support. To this end, I so construct the terminal that a single opening through the supporting member is sufficient both for the mechanical attachment and support of the terminal and for the passage of the electric conductor to be secured thereto. Preferably, this is done by forming the portion of the terminal, to be located within said opening, into a tube of slightly greater length than the thickness of the supporting member and flaring the projecting ends into firm engagement with said member. Preferably also, the shank or projecting portion of the terminal is transversely bent so as to increase its rigidity.

The nature of the invention will be more fully understood upon reference to the following detailed description taken in connection with the accompanying drawing, and its scope will be indicated in the appended claims.

Figure 1 of said drawing is a plan view of a blank from which the preferred terminal is formed; Fig. 2 is a partial vertical section of the preferred terminal, attached to its support; Fig. 3 is a perspective view of the same before attachment to its support; Fig. 4 is an elevation of a complete magnet spool and its supporting frame, showing a terminal in position; Figs. 5 and 6 are perspective views of modified forms of the invention; and Fig. 7 is a longitudinal section of another modification.

The preferred form of the invention, which is shown in Figs. 1 to 4, is formed by punching out of a suitable sheet of metal stock a blank of the general T-shaped outline of Fig. 1 and provided with notches 10-11-11^a and an opening 12. The blank

thus formed is then shaped about a suitable mandrel so as to form a terminal having a tubular portion 13 and a transversely bent or curved shank 14, the latter forming a continuation of a portion of the wall of the former, as clearly shown in Fig. 3. In attaching the terminal to its supporting member, the tubular portion 13 is inserted into an opening in the member, and its ends are flared outwardly into engagement therewith so as to form a rigid mechanical connection. Preferably, the tubular portion is of greater length than the thickness of the support, so that when the ends are flared, they will firmly embrace the opposite sides of the supporting member, as illustrated in Fig. 2. It will be understood, however, that this, although desirable, is not absolutely necessary. The ends of the tubular portion are flared or flanged by means of suitable tools acting from opposite sides of the support, and the notches 10 permit the flange adjacent to the shank 14 to be readily and neatly formed. It will be apparent however that, at the time of forming the tubular portion 13, either of its ends might be flanged, thus leaving only one end to be flanged after the insertion of the terminal into the aperture of the support. The transverse curvature of the shank 14 materially increases its rigidity over a flat shank.

The hole 12 and the notch 11 at the outer end of the shank provide means for the ready connection of wire conductors thereto. This may be done by passing the end of the wire through the hole 12 and soldering it to the terminal, by wrapping it about the shank at the notch 11 and soldering it, or by soldering it directly to the end of the shank without employing the notch 11 or opening 12. At the opposite end of the terminal, the connecting conductor is led through the opening in the tubular portion 13 and connected to the adjacent portion of the shank in any suitable manner. This is preferably done as illustrated in Fig. 2, where the conductor *c* extends from the right of the support 15 through the opening and is wrapped about the shank at the notches 11^a and soldered in place.

Fig. 4 illustrates one of the more common applications of the use of the terminal. In this figure, the support 15 constitutes the head of a magnet spool 16 carried by an angle frame 17, which is notched at 18 to

permit the passage of the terminal. It should be understood that this figure illustrates only one of the applications of the invention, which is capable of use in many other and varied relations.

Obviously, the construction above described may be modified in certain details without departing from the spirit and scope of my invention. For example, in Fig. 5 I have illustrated a terminal having a tubular portion 13 like that heretofore described, but having a flat shank 14^a. It will be noted that in this form, the shank is also reduced somewhat in width at the point 19 so as to permit the tubular portion 13 to be more perfectly formed. Again, instead of maintaining all the parts of the shank of equal width or curved as in the preferred form, the outer end may be made somewhat wider and turned up into tubular form, as shown at 14^b in Fig. 6. Another form, which may be advantageously employed, is shown in Fig. 7. This form is made by taking a straight tube 20 and striking up a rib 21 thereon by causing a portion of the center of the tube to buckle outward, as illustrated. In this form, the terminal is to be secured in place by flanging its end after insertion into the opening in the support, as heretofore described.

It will be understood that, in practicing my invention, the tubular portions of the different forms of the invention need not be circular in cross section, but may be otherwise shaped. It will be apparent also that other alterations and modifications may be made without departing from the spirit and scope of the invention. I, therefore, do not wish to be limited to the specific matter disclosed, but aim to cover by the terms of the appended claims all such alterations and modifications.

What I claim as new and desire to secure by Letters Patent of the United States is:—

1. The combination with an apertured support, of an electric terminal comprising

a tubular portion located within said aperture and a shank forming a continuation of a portion of the tube wall beyond said support, said tubular portion having its free ends flared into engagement with said support so as to form a rigid connection therewith and the shank being transversely bent to increase its rigidity.

2. The combination with an apertured support, of an electric terminal comprising a tubular portion located within said aperture and a shank forming a continuation of a portion of the tube wall beyond said support, the ends of the tubular portion being flared outwardly into engagement with opposite sides of the support to form a rigid connection therewith.

3. As an article of manufacture, an electric terminal comprising a tubular portion and a transversely curved shank having the same degree of curvature as said tubular portion and having a peripheral width less than the periphery of said tubular portion and notches in the end of the tube at points adjacent to the edges of the shank.

4. The combination with a support, of an electric conducting terminal comprising a tubular portion extending through an aperture in said support and a shank forming a continuation of a portion of the tube wall extending outward from said support, the ends of the tubular portion being flared outwardly into engagement with the opposite sides of said support to form a rigid connection therewith while leaving an opening through its center for the passage of an electric conductor, and the outer end of the shank being adapted for connection to a second conductor.

In witness whereof, I hereunto subscribe my name this 27 day of February, A. D., 1906.

WILLIAM KAISLING.

Witnesses:

L. D. KELLOGG,
T. H. FERGUSON.