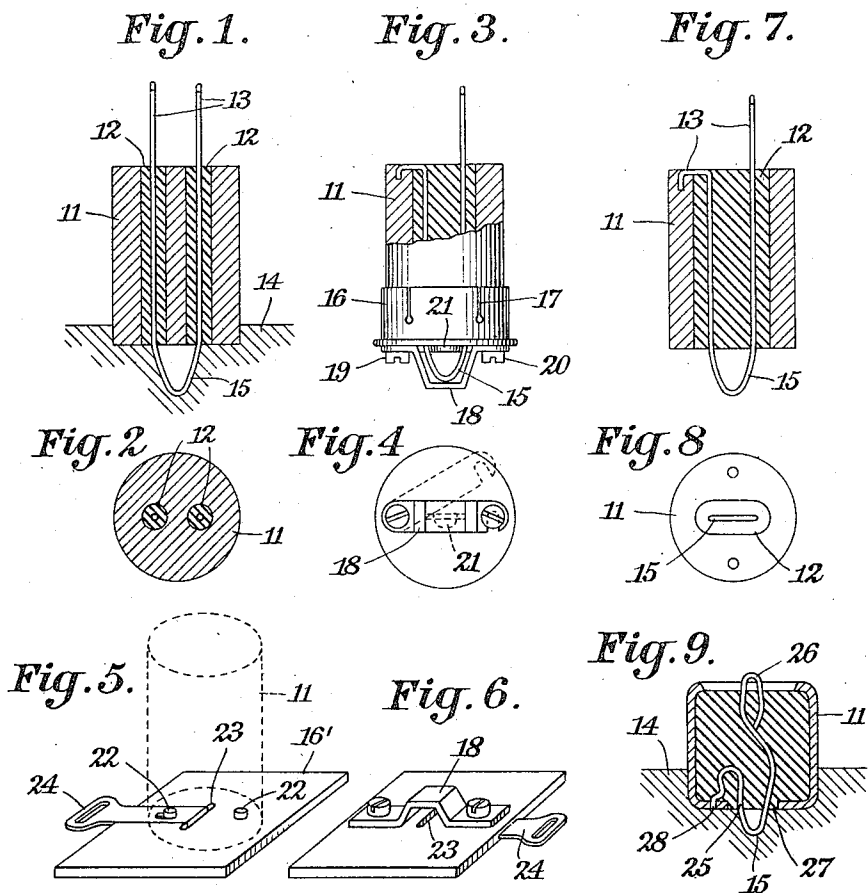


B. GWÓŹDŹ.
THERMOTELEPHONE OR THE LIKE.
APPLICATION FILED NOV. 15, 1912.

1,064,471.

Patented June 10, 1913.



Witnesses:
John Murtagh
F. Hogg.

Inventor:
Browislaw Gwóźdź
by George Goepel
Attorneys

UNITED STATES PATENT OFFICE.

BRONISLAW GWOZDZ, OF SCHÖNEICHE, NEAR BERLIN, GERMANY.

THERMOTELEPHONE OR THE LIKE.

1,064,471.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed November 15, 1912. Serial No. 731,557.

To all whom it may concern:

Be it known that I, BRONISLAW GWOZDZ, a subject of the Czar of Russia, residing at Schöneiche, near Berlin, Germany, have invented certain new and useful Improvements in Thermotelephones or the Like, of which the following is a specification.

My invention relates to thermo-telephones or the like of the type described and illustrated in my United States Patent No. 998965. In this patent the entire cast surrounding the hot wire is produced from a liquid or plastic, subsequently hardening mass, whose composition may vary in itself but is preferably a wax composition, because such a one can be best treated. In cases in which it is probable that the hot wire will be subjected to somewhat severe mechanical influences, and in which consequently, a cast consisting of the mentioned mass might under certain circumstances be injured, I prefer to make the same of a firm and hard material *e. g.* metal, ebonite or the like, in the manner which will be understood from the accompanying drawings, and suitably to embed the Wollaston wire in it.

In the accompanying drawings Figure 1 shows a vertical section of the body and Fig. 2 a bottom view of Fig. 1. Fig. 3 another form of the body and Fig. 4 a bottom view of Fig. 3. Figs. 5 and 6 show details. Fig. 7 shows a vertical section and Fig. 8 a bottom view of another embodiment of the invention and Fig. 9 a further embodiment of the invention.

In the form shown in Fig. 1 the numeral 11 designates such a block-like body composed of metal, ebonite, wood or the like having two holes 12 through it. These holes may be either smooth or tapped or provided with internal projections in order certainly to secure the filling material therein. The two ends 13 of Wollaston wire are placed through these holes 12 in the block 11 and into a templet 14 having a recess whose sides correspond to that of the bow 15 of the Wollaston wire. The shape of this templet may be as desired; it is preferable however to employ the form shown in Figs. 3 and 4 or in Figs. 5 and 6. In the illustrative embodiment shown in Figs. 3 and 4 the templet has the form of a socket 16 which is elastic owing to incisions 17, so that the block-like body 11 placed in this socket is securely held. In the bottom of

the socket 16 is a slot-like hole corresponding to the breadth of the wire bow. In addition, on the end of the socket 16 is arranged a preferably V or U-shaped bow or handle 18 which is preferably rotatable on the one side about a pin or screw 19 and can be held on the other side by a screw 20 or other suitable means. This bow 18 has a lug 21 of such a size and so arranged that it enters into the space between the limbs of the wire bow, so that this lug almost completely covers the slot in the end of the socket 16 and allows only the limbs of the wire bow to pass through the same. This lateral lug 21 is preferably so united with the V-shaped bow 18 that it must participate in the rotation of this bow and in the one position of the wire bow 15 projects freely through the slot of the templet 16, but in the closed position closes the slot in the above described manner. Simultaneously, the length of the wire bow 15 is exactly determined by the V-shaped bow 18.

In the illustrative embodiment represented in Figs. 5 and 6 the special socket 16 is omitted, but a plate 16' solely is used which however has preferably dowel-like projections 22 on which the block-like body 11, having corresponding recesses, is placed, so that the position of this body is exactly determined by the projections 22. The plate 16' has also a slot-like aperture 23 through which the wire bow passes, and attached to the bottom of this plate is a V or U-shaped member 18 which however does not require to be rotatable.

If after placing the block 11 and the wire bow carried thereby on the plate 16' it is wished to close the remainder of the aperture or slot 23 in order to prevent the mass poured into the holes 12 flowing thereout, a slide-like body 24 may be employed which is guided in dove-tail grooves in the plate and is stopped by one of the projections 22. This slide can be shifted so that in its one end position it leaves the slot 23 perfectly free for the insertion of the wire bow, while in its other end position it covers over a part of the slot 23 and allows only the limbs of the wire bow to pass through. Obviously, other forms of templet may be employed without departing from the scope of the invention.

When the length of the wire bow has been exactly determined by inserting the block 11 in the templet 14 (Fig. 1) the holes 12 in

the block are filled with any suitable plastic or liquid, subsequently hardening mass, by the same being poured, pressed or squirted in. It is then only necessary to perform the
 5 corrosive process in order to liberate the wire bow 15 from its envelop of silver. If the block 11 is composed of acid-resisting material, after the holes 12 have been filled with the said mass, which is likewise pre-
 10 erably acid-resisting, the corrosive process can be at once carried out. If, however, the block 11 is composed of a material soluble in acid, *e. g.* brass, the mass filled into the holes 12 on the one hand serves as insulation
 15 for the Wollaston wire, but, on the other hand, before the corrosive process is carried out, this block must be provided with a coat which is composed of a material of any kind insoluble in acid. This coat can be pro-
 20 duced, for example, by applying a liquid material by means of a brush even before the wire bow has been fixed in position if desired, and at least that surface of the block-like body from which the portion of
 25 wire which is to be corroded projects must be provided in this manner with such a coat. When this coat is employed, therefore, the metal block cannot be impaired by the corrosive process. Such a metal block is pre-
 30 ferable in certain cases, because it can be at once employed as an electrically conducting body in the case of the telephone, in which event the one limb 13 of the Wollaston wire must be electrically connected with it, *e. g.*
 35 by soldering, as will be understood from Figs. 3 to 7.

In the illustrative embodiment shown in Figs. 7 and 8 the principle and mode of operation are substantially the same, but
 40 here the block-like body 11 has through it only one single hole 12 in which are located the two limbs 13 of the Wollaston wire secured in position by the mass filled into the body 11. The size and the shape of the wire
 45 bow 15 can be determined by a special templet 14, using if preferred the means represented in Figs. 3 and 4 or those in Figs. 5 and 6.

Fig. 9 shows a somewhat modified form, in which the Wollaston wire is not U-
 50 shaped, as in the other forms, but its one end has a hook-like bend 25 running into the wire bow 15 which is subsequently preserved as the hot wire, while its other end is formed
 55 as an eye or loop 26 of such a size and so mounted that it projects out of the block. Further, I employ for making the block a case 11, having for example the shape of a cylindrical cup, of metal or other suitable
 60 material and having in its bottom a hole 27, whereas the edge of its upper part is bent somewhat inward. In addition, near the edge of the hole 27 is a second small hole 28 into which the lower end of the Wollaston
 65 wire is inserted and secured preferably by

soldering, riveting or otherwise. When this has been done the case and the Wollaston wire are inserted in a templet or mold, *e. g.* of the kind shown in Figs. 3 and 4 or in
 70 Figs. 5 and 6, which securely holds the case 11 in its position and also exactly determines the size and length of the wire bow 15. When these preliminaries are completed the case 11 is filled with a suitable insulat-
 75 ing material insoluble in acid, preferably a wax composition, so that with the exception of that end of the bow 15 which is subsequently to form the hot wire and a part of the eye 26 at its other end which can be used
 80 as a contact the Wollaston wire is completely enveloped. This case 11 is here assumed to be of metal so that it can be used as a contact as the one end of the Wollaston wire is attached to it. Obviously,
 85 the case must be provided with an acid-proof coating before the corrosive process takes place. This coat can be provided without difficulty by an average workman, particularly so that the wire bow to be
 90 treated by the corrosive is not contacted by or covered with the coating. In this form the block-like body may have any desired section without departing from the scope of the invention; likewise, a cylinder may be
 95 used instead of the case or box. Obviously, a Wollaston band instead of a Wollaston wire may be employed without departing from the scope of the invention.

What I claim is:—

1. In a thermo-telephone, the combination
 100 with a plastic hardening body, of a Wollaston wire passing through the body and having a bent portion thereof projecting out of the same, and a hard body surrounding and protecting the plastic hardening body.
 105

2. In a thermo-telephone, the combination
 110 with a plastic hardening body, of a Wollaston wire passing through the body and having a bent portion projecting out of the same, and a metal body surrounding and protecting the plastic hardening body.
 115

3. In a thermo-telephone, the combination
 120 with a plastic hardening body, of a Wollaston wire passing through the body and having a bent portion projecting out of the same, and a metal body surrounding and protecting the plastic hardening body and electrically connected to one end of the said Wollaston wire.
 125

4. In a thermo-telephone, the combination
 130 with a plastic hardening body, of a Wollaston wire passing through the body and having a bent portion projecting out of the same, a metal body surrounding and protecting the plastic hardening body, and a
 135 socket carrying the outer body and adapted to protect the said bent portion of the wire.

5. In a thermo-telephone, the combination
 140 with a plastic hardening body, of a Wollaston wire passing through the body and

5 having a bent portion projecting out of the same, a metal body surrounding and protecting the plastic hardening body, and a socket carrying the outer body, the socket being provided with a bow for supporting and protecting the said bent portion of the wire.

10 6. In a thermo-telephone, the combination with a plastic hardening body, of a Wollaston wire passing through the body and having a bent portion projecting out of the same a metal body surrounding and protecting the plastic hardening body, a socket carrying the outer body, the socket being

provided with a rotatable bow for supporting and protecting the said bent portion of the wire, and a bridge connecting the ends of and fixed to the rotatable bow, the said bridge being provided with a lug entering the bent portion of the said wire. 15 20

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

BRONISLAW GWÓZDŹ.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.