No. 833,745. PATENTED OCT. 23, 1906.

J. A. LOFF.

TELEPHONE TRANSMITTER ARM.

APPLICATION FILED DEC. 6, 1901.

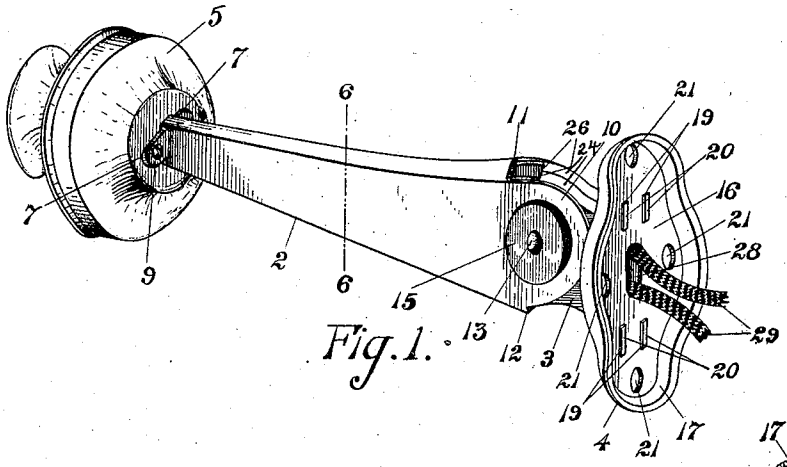

Fig. 1.

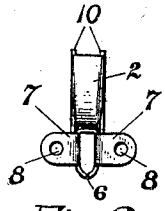

Fig. 2.

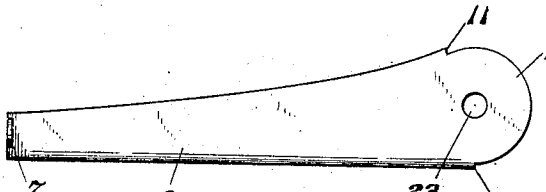

Fig. 3.

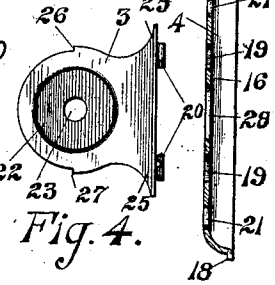

Fig. 4.

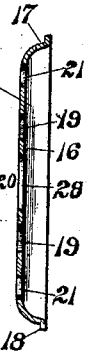

Fig. 5.

Fig. 6.

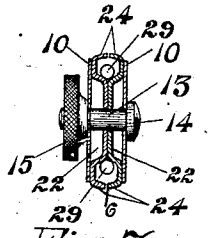

Fig. 7.

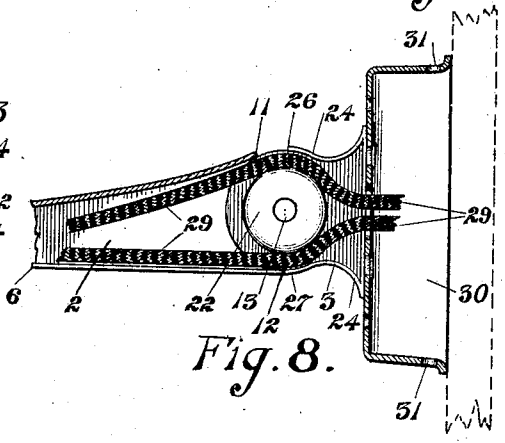

Fig. 8.

Witnesses.
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UNITED STATES PATENT OFFICE.

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TELEPHONE TRANSMITTER-ARM.

No. 833,745. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed December 6, 1901. Serial No. 84,876.

To all whom it may concern:

Be it known that I, JOHN A. LOFF, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Telephone Transmitter-Arms, of which the following is a specification.

My invention relates to improvements in transmitter-arms designed for use in connection with subscribers' telephone sets.

Heretofore transmitter-arms, especially of the hollow type, have been made from cast-iron; but such arms are heavy and unwieldy, besides being liable to frequent breakage when handling the same in large numbers, as well as drilling, tapping, and otherwise finishing the product, and in installing them for use. Moreover, such cast arms are expensive.

This invention has specifically in contemplation a hollow transmitter-arm of sheet metal which is manufactured by the various processes of stamping, drawing, and forming the sheet metal, so as to produce a complete device that is at once light, strong, durable, and efficient, and one that readily lends itself without risk of damage to the various steps and stages necessary to be undergone during the process of manufacture and installation.

Further objects are the provision of such a device which shall combine with its other advantageous features those of cheapness of manufacture and convenience of assembling and installing.

To the accomplishment of these objects and such others as may hereinafter appear the invention consists of the parts and combinations of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, in which the same reference characters designate like parts throughout the several views, and in which—

Figure 1 is a perspective view of one form of the invention. Fig. 2 is a front end view thereof. Fig. 3 is a side elevation of the same. Fig. 4 is a side view of the pivot-support or pedestal for the arm proper. Fig. 5 is a sectional view of the base to which the pedestal or pivot-support is secured. Fig. 6 is a cross-section of the arm at about the line 6 6, Fig. 1. Fig. 7 is a cross-section through the pivot or tongue, and Fig. 8 is a longitudinal sectional view of a modification in which an induction-coil may be housed in the pedestal or base.

In the figures, 2 designates the arm proper, which is pivoted at its rear end upon a support or pedestal 3, carried upon the base or plate 4. At the forward end of the arm the transmitter-head 5 is supported. The arm 2 is made from sheet metal of the proper thickness and kind, preferably sheet-iron. It is first blanked or stamped out of the sheet metal of the proper size and shape and is then bent and folded or formed over by means of suitable dies into the shape shown in the drawings with the meeting edges of the blank arranged centrally of the arm in its lower edge, as indicated at 6 in Figs. 2, 6, 7, and 8. These edges may be brazed or otherwise secured together, but are preferably left separate, as shown. By forming the arm as described it is hollow from end to end, and the transmitter circuit-cords may be passed therethrough, a light but strong structure being thus obtained. The particular cross-section shown need not be utilized, though it is preferred, but any other desired hollow section may be employed.

At the forward end of the arm 2 laterally-extending ears or lugs 7 are formed and are adapted to support the transmitter-head 5, suitable apertures 8 being formed in the lugs for the reception of screws 9, adapted to be threaded into the back case of the transmitter-head. These ears or lugs 7 preferably extend in the plane at right angles or perpendicular to the sides of the arm, but it will be understood that they may be given other directions and be made of other forms.

At the back end of the arm the sides thereof are extended, as at 10, to form circular pivot members, the web or edge members of the said hollow part being cut away at the upper and lower edges at the points 11 and 12, respectively, so as to permit a slight vibrational movement of the free end of the arm and to thereby permit the raising and lowering of the transmitter to adapt it to persons of different heights. These circular ends 10 are centrally apertured for the passage of the pivot screw or bolt 13, having a head 14, adapted to bear upon one member 10, and a thumb-nut 15 for the threaded end thereof to press against the other side 10.

The pedestal or support upon which the arm is supported comprises a base 4, which is also formed of sheet metal stamped in the desired form, with a flat portion 16, having a backwardly-curved rim 17, provided with the outturned edge 18. Holes 19 are punched in the flat portion 16, through which tongues 20, carried by the members forming the standard 3, are adapted to project and to be upset or clenched upon the inner face of said base, by means of which the device may be secured by screws to the backboard or similar part of the subscriber's telephone set.

The standard 3 comprises two like members of the kind shown in the drawings adapted to be placed together face to face and each having the tongues 20 formed integrally with their back edges. They each consist of a stamping of sheet metal having the circular forward end portions provided with the central depression 22 to furnish a good bearing and bracing surface between the two members and to provide space for the side members 10 to spring or yield when the nut 15 on bolt 13 is tightened. A central aperture 23 for the pivot-screw 13 is formed in these depressed portions. The edges 24 of these standard pieces are bent inward to close the hollow standard, and the rear edges of the pieces are flared or widened vertically, as at 25, to form a firm footing. The edge portions 24 are cut away at 26 and 27 and constitute stops for the like parts 11 and 12 of the arm. The two parts may or may not be secured together, as by brazing.

When the device is assembled, the pedestal is made up by securing the members of the standard 3 to the base 4, as described. The arm or lever 2 is then placed in position, as shown in Fig. 1, with the members 10 outside the pedestal 3. The pivot-bolt 13 is then inserted and properly adjusted. The exterior plates 10 present a neat appearance and provide a yielding spring-bearing for the head and nut of screw 13. The device is now ready for installing, and to secure the same in place suitable screws passing through holes 21 may be used. A central aperture 28 in the pedestal permits the passage of the transmitter-conductors 29, which are insulated wires and preferably two in number, though the arm itself could be depended upon, if desired, to complete one side of the circuit. These conductors pass through the base-standard and around the depressed portions 22 of the standard 3, as shown in Fig. 8, and through the arm to its forward end, where they connect with the terminals of the transmitter. By this means the transmitter-cords may be said to be entirely concealed, as they do not appear either at the forward end, at the pivot, or at the standard of the arm. They are suitably connected in the circuit on the back of the backboard of the telephone set, an aperture therethrough for their passage being provided or in any desired manner.

In the form of Fig. 8 the base is made deeper, with a receptacle 30 in the rear, in which receptacle or box a talking induction-coil may be housed, the conductors thereof being led out in any desired way, as through the backboard or through apertures 31. The construction in this form is otherwise the same as before described, and all parts are made from sheet metal by the usual processes of punching, stamping, drawing, &c.

From the foregoing it will be apparent that I have produced a transmitter-arm that is at once cheap, light, and strong, that is not easily broken and is convenient to install, and one that is of pleasing appearance, durable, and efficient in actual use. This arm is, moreover, more easy to enamel than the cast arms referred to above, in view of the rough and porous nature of the cast-iron.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and I therefore do not wish to be limited to the exact arrangement and construction shown.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a transmitter-arm having rearwardly-extending pivot members, of a standard upon which said arm is adapted to be pivoted, said standard having depressions on each outer side over which said members fit, and a pivot-pin passing through said members and pedestal and provided with means to engage each said members and hold them tightly against the standard, the said depressions and members thus forming a yielding connection between the arm and pedestal, substantially as described.

2. The combination with a transmitter-arm having rearwardly-extending pivot members, of a pivot-standard consisting of two plates having inturned edges and a depressed portion in its forward portion, said plates being placed together with the said edges meeting and the depressed portions resting against each other, whereby the edges of the standard are closed and the standard is strongly braced at the forward end, substantially as described.

3. The combination with a transmitter-arm, of a pedestal to which the arm is adapted to be pivoted, said pedestal comprising a base-plate of sheet metal and a pivoting extension of two stamped pieces placed face to face and riveted to said plate, said stamped pieces being formed to give frictional resistance to the movement of the arm only at points at some radial distance from the pivot, whereby extreme pressure between frictional surfaces is not necessary, substantially as described.

4. The combination with a transmitter-

arm, of a support to which said arm is pivotally connected, said support comprising two plates having cup-shaped depressions in each and carrying the arm so that frictional resistance to the movement of the arm upon the pivot only occurs beyond the outer edge of said cup-shaped depression, whereby a slight pressure between the parts of said arm and its support will cause considerable frictional resistance, substantially as described.

5. A transmitter-arm consisting of a single piece of sheet metal having integrally-formed pivot members upon one end thereof, and integrally-formed lateral projections carried upon the opposite end thereof, to which the transmitter is adapted to be secured, a pedestal consisting of two sheet-metal parts having their edges joined together and their outer surfaces depressed, said depressions being adapted to be engaged by said pivot members to form a frictional support for said arm, and an adjusting-screw passing through said pivot members and said pedestal and yieldingly pressing said members into said depressions, substantially as described.

6. A transmitter-arm consisting of a single piece of sheet metal carrying pivot members upon one end thereof, and laterally-extending projections upon the other end thereof, to which the transmitter is adapted to be secured, said pivot members and said projections being formed integrally from said sheet-metal piece, the longitudinal edges of said piece being disposed upon the under side of said arm, whereby the seam in the arm is concealed from view, a sheet metal pedestal adapted to be engaged upon either side by said pivot members, said pedestal having inwardly-formed depressions contiguous to said pivot members, and an adjustable screw passing through said pedestal and said members, adapted to yieldingly press said pivot members into said depressions, whereby a frictional support is provided for said arm, substantially as described.

In witness whereof I hereunto subscribe my name in the presence of two witnesses.

JOHN A. LOFF.

Witnesses:
JOSEPH C. BELDEN,
ROBERT LEWIS AMES.