

June 22, 1948.

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2,443,799

CRADLE-TYPE TELEPHONE SUBSET

Filed April 3, 1944

2 Sheets-Sheet 1

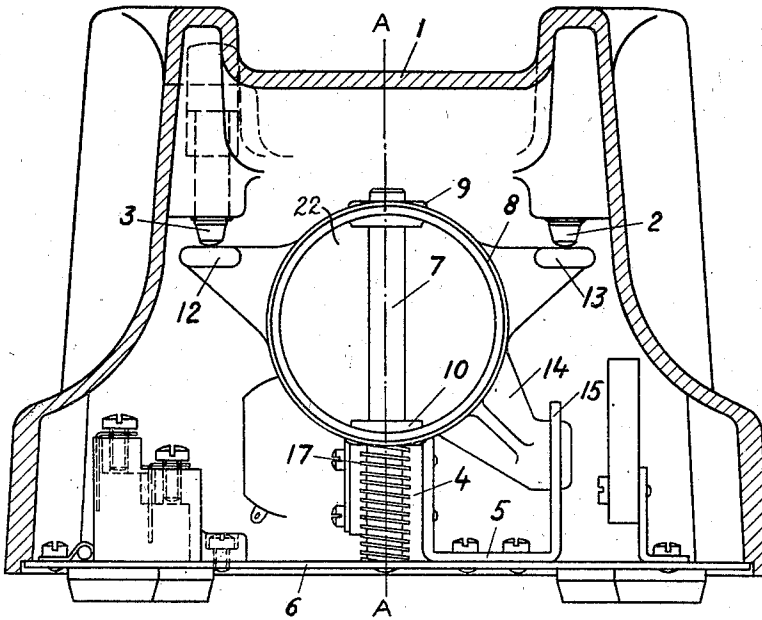


Fig. 1

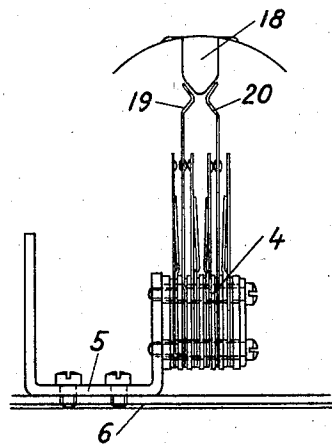


Fig. 2

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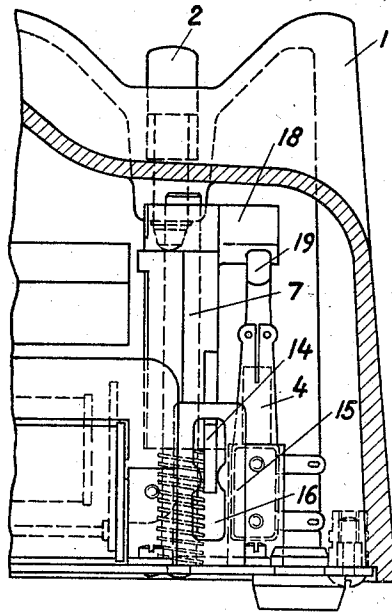


Fig. 3

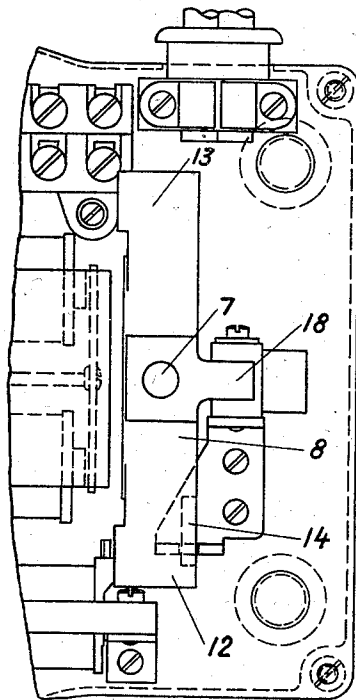


Fig. 4

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UNITED STATES PATENT OFFICE

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CRADLE-TYPE TELEPHONE SUBSET

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2 Claims. (Cl. 179-164)

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The invention relates to telephone instruments in which the contact springs arranged in the instrument are actuated by means of two pins movably arranged in the cradle of the casing. In known instruments of this kind the motive mechanism between said pins and contact springs consists of a bridge supported on a horizontal shaft, one part of the bridge being operated by the pins and the other part operating the contact springs. Said shaft is thereby supported in a rack fixed to a base plate. Said motive mechanism which thus is composed of a number of details causes a comparatively strong friction. Besides the friction produced in the supporting points of the bridge, friction is also produced on account of the displacement of the point of application of the pins on the bridge and on account of lateral pressure on the pins, since the direction of the pressure acting between the bridge and the pins does not coincide with the longitudinal direction of the pins. On account of the comparatively high friction the spring used to maintain the bridge in an idle position must be powerfully built. Due to this the weight of the handset should not fall below a given value. As a low weight of the handset is wanted, as small a friction as possible is desirable.

The invention has the object of providing a motive mechanism of said kind having an exceedingly low friction and, moreover, being very simple of design and easily mounted. The invention will be described more in detail with reference to accompanying drawings which show an embodiment.

Fig. 1 is a cross section of the instrument. Fig. 2 is a side elevation of the contact springs. Fig. 3 is a cross section of a portion of the instrument along the line A—A in Fig. 1, and Fig. 4 shows a portion of the base plate and the details mounted thereon.

1 signifies the instrument casing, 2 and 3 are the pins movably arranged in the cradle. The contact springs 4 are fixed to the base plate 6 by means of a bent plate 5. The shaft 7 is in one end riveted to the base plate 6. A member 8 of insulating material in the shape of a cylindrical ring provided with a bottom 22 and top and bottom bearings 9, 10 enabling it to slide on the shaft 7, is provided. Said member is performed with stop surfaces 12, 13 for the pins 3, 2 and with a wedge-shaped stud 18 which, on the movement of the member, operates the springs 4. As a sufficient space between the bearings 9 and 10 is desired in order to secure a good guidance, but the height of the casing at the same time is

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to be kept down, one of the bearings 9 has been placed above a plane running through the stop surface 12, 13 and perpendicularly to the shaft 7.

Around the shaft 7 a coil-spring 17 is arranged between the member 8 and the base plate 6 which spring tends to move said member and pins 2, 3 to their upper position in which the stud 18 does not operate the springs 4 and which position is taken up by said member when the handset is lifted from the cradle. When the handset is restored the member 8 is displaced downwardly against the effect of the spring 17, the stud 18 thereby actuating the springs 4.

The member 8 is centered in its vertical movement by cooperation between the wedge 18 and the springs 19, 20 which are arranged with their longitudinal direction vertical. In order to prevent that the member 8 during mounting or adjusting, when the casing is removed, is unintentionally turned, thereby injuring the springs, said member is provided with an arm 14 which engages a guide 15 consisting of one leg of the U-shaped plate 5 and having a hole 16, shaped as an hour-glass. At a correct adjustment of the springs 19, 20 no friction is caused between the arm 14 and the guide 15 during the vertical movement of the member 8.

On account of the design of the motive mechanism according to the invention, i. e., a member 8 slidable along a fixedly arranged shaft, the longitudinal axis of which coincides with that of the pins, it has been possible firstly to considerably reduce the friction, thus enabling the use of a light handset and, secondly, to simplify the manufacture and mounting of said motive mechanism. An instrument according to the invention enables the use of a handset, the weight of which is 20% less than the weight of a handset used in hitherto known instruments. The shaft 7 may be made of raw material which need not be treated in any other way than forming the one end into a tap which is then riveted to the base plate. The member with its arms 12, 13, 14 and the stud 18 are cast in a single structure, for instance in Bakelite. The cylindrical shape of the member 8 is shown in the embodiment considerably simplifies the manufacture in case said member is pressed in Bakelite.

I claim:

1. In a cradle telephone having a removable handset, a casing, two pins pushed downwards when the handset is placed on the cradle and moved upwards when the handset is removed from the cradle, contact springs operated upon placing and removing of the handset, a shaft fix-

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edly arranged within said casing and disposed parallel with the pins, a member having the shape of a cylindrical ring of press-material, the axis of which is perpendicular to said shaft, said ring member being slidably arranged on said shaft at two diametrically opposed points, said member being pushed down by means of said pins when the handset is placed on the cradle, spring means for moving said member upwardly when the handset is removed from the cradle, and means on said member for operating said contact springs upon movement of said member.

2. In a cradle telephone having a removable handset, a casing, two pins pushed downwards when the handset is placed on the cradle and moved upwards when the handset is removed from the cradle, contact springs operated upon placing and removing of the handset, a shaft fixedly arranged within said casing and disposed parallel with the pins, a member having the shape of a cylindrical ring of press-material, the axis

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of which is perpendicular to said shaft, stop surfaces on said ring member engaged by said pins, said ring member being slidably arranged on said shaft at two diametrically opposed points, the upper one of said points lying above a plane passing through said stop surfaces, said member being pushed down by means of said pins, when the handset is placed on the cradle, spring means to raise said member, and means on said member for operating said springs upon movement of said member.

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15 The following references are of record in the file of this patent:

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