

The present invention relates to telephone instruments and has in view certain improved means for fixing the several parts of the instrument together.

When a telephone instrument is made in separate parts of which one or more is moulded from mouldable material it is desirable that a comparative large or light moulding is not rigidly secured to its adjacent part, which may or may not be moulded, so that excessive stresses are not set up in the moulded part or parts by the act of securing the adjacent parts together. Small inaccuracies in the mouldings or the necessity for a gap between adjacent faces immediately around the point of fixture, to ensure a good external joint between the two parts, may if the parts are rigidly secured together introduce stresses in the moulded part, or parts sufficient to cause fracture. This may occur in securing the parts together, or subsequently, if subjected to shock.

In the present invention a moulded part is secured to its adjacent part by screws or the like through the medium of one or more flexible members, arrangements being provided however which limits the amount of stress exerted by the flexible member or members on the two parts when they are drawn together.

The flexible members may be so arranged that whilst being directly associated with one part, they are associated with the other part by means of the screws or the like which pass through clearance holes in the first part and are secured into the adjacent part, so that tightening the screw the resilient member is tensioned. However, each screw is preferably spaced from the adjacent part by means of a spacing member which limits the amount of tension to be imparted to the flexible member.

The flexible members may be strips of resilient metal or spring washers.

In order to cover the resilient members and guard against their scratching any surface, webs may project from the parts of the instrument about the position occupied by the flexible members, the webs being of such dimensions as to surround or partly surround and project beyond the depth of the members.

The accompanying drawings illustrate by way of example several methods of carrying out the invention.

In the drawings Figs.1 and 3 show modifications of one method of resiliently fixing the case to the base, Figs.2 and 4 being the respective underside views of these arrangements. Figs.6 and 8 show modifications of a further method of fixing, Figs.5 and 7 being the respective underside views.

In the various figures the same reference numerals are used to indicate corresponding items.

Referring to Fig.1, 1 is the case and 2 the base of the instrument, both of which are moulded from mouldable material such as a phenol aldehyde condensation product. Moulded integrally with the case 1 are shoulders such as 3 into which shoulders are embedded metal inserts or bushes 10. A resilient flat metal member 6 is secured at one end to a small protuberance on the underside of the base by screw 7 and nut 8, the free end of the member 6 being provided with a tapped hole so as to allow ample lateral movement of the comparatively small shank of the screw 5 but only allowing the withdrawal of the screw by unscrewing. The members 6 may be riveted to the base or secured by inserting the fixed end in the moulding in the moulding process.

The threaded end of the screw 5 passes through the base of the instrument and engages with a threaded hole

in the bush 10. A distance piece 9 is located between the member 6 and the bush 10 the distance piece limiting the distance between the two items and also the stress exerted by the member 6. The distance piece may be loosely placed between the two items and afterwards, tightened by clamping, or it may be secured in any suitable manner to either one item. Instead of the member 6 being threaded to prevent the complete withdrawal of the screw 5, the distance piece 9 may be threaded, as shown in Figs.1 and 3, whilst an ample clearance hole is provided in the member 6. Depending from the underside of the base 1 on either side of the resilient member 6 are webs 4, the depth of the webs being slightly greater than the distance of projection of the screws 7 and 5, the object being to guard against the liability of the screw heads damaging the surface on which the instrument is resting.

It is obvious that the base 2 and case 1 can be tightly clamped without placing any undue strain on the mouldable parts, irregularities between the clamping surfaces and relative strains between the two parts during movement of the instrument, being taken up in the twisting and bending of the resilient member 6.

In Fig.3 the resilient member comprises a split or spring washer 11 placed between the head of the screw 5 and the underside of the base 2 of the instrument the spacing piece 9 being used to limit the amount of stress in the washer.

Two or more fixings of either type as described above may be arranged between the case and base of the instrument according to the size or the rigidity required between the respective parts.

In Fig.6 the resilient member 6 is shown as clamped at each end to a protuberance from the underside of the base by the screws 7 and nuts 8, the fixing between the

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4
member and the case being made at the centre or at a convenient point of the resilient member by the screw 5 and distance piece 9. Two of such fixings are shown one at either side of the instrument. The webs 4 are provided at either side of the resilient members as in the previous examples.

Rubber feet 12 are attached to the base 2 by screws 13.

The resilient member 6 in Figs.7 and 8 is secured at its centre at a point approximately at the centre of the base by the screw 7 and nut 8, the fixing to the case being made at each end of the member by the screws 5 and spacing member 9.

Shoulders 3 with metal inserts 10 can be moulded at any position on the inside wall of the casing to accommodate for fixing at any required position.

It is not necessary in carrying out the invention that both of the adjacent parts be moulded. For example the case or the base may be cast or metal stamping, to which is resiliently fixed the opposite part. It will still be necessary to relieve the stress liable to be exerted on the moulded part.

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