June 13, 1944. O. W. HENRIKSON 2,351,125

HAND TELEPHONE MOUNTING

Filed May 25, 1942 2 Sheets-Sheet 1

FIG. 1

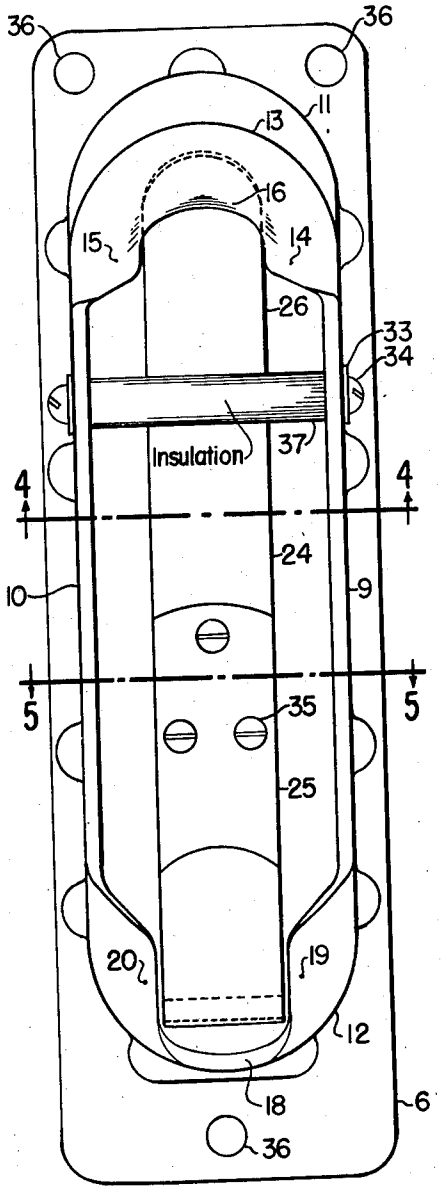
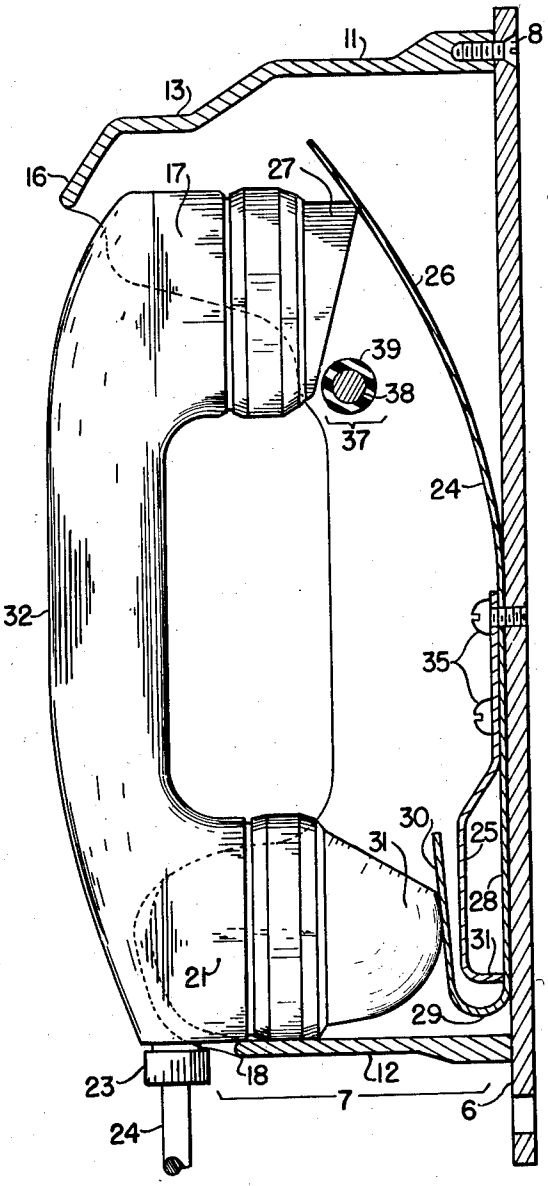


FIG. 2



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FIG. 4

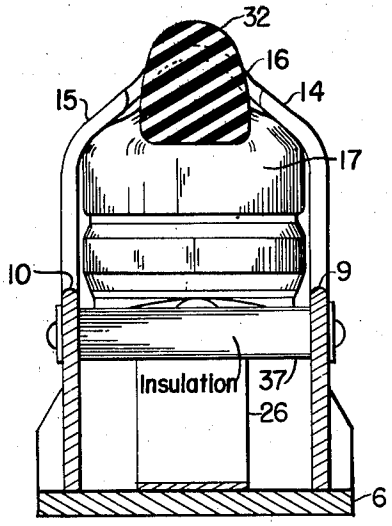


FIG. 5

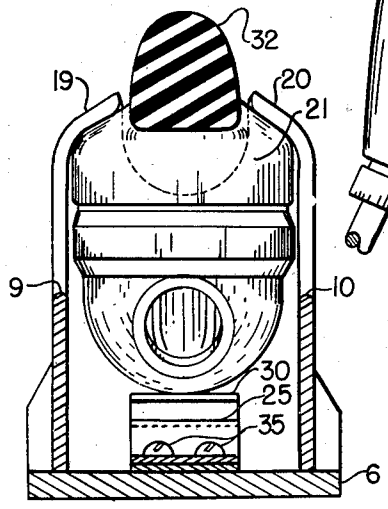
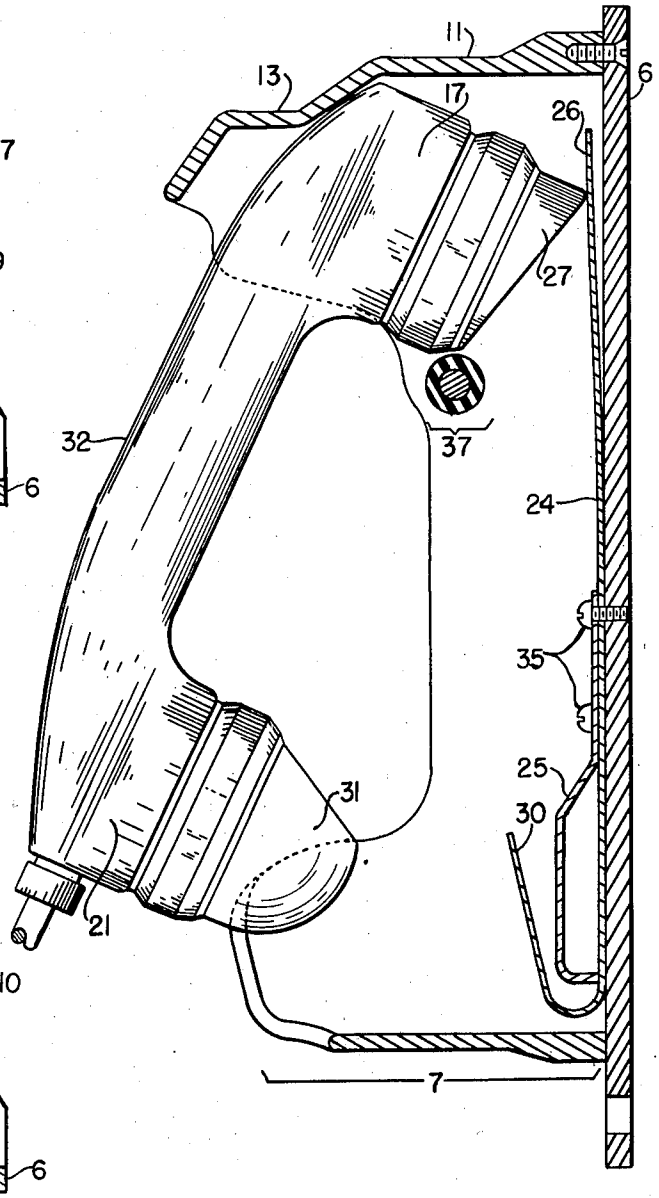


FIG. 3



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HAND TELEPHONE MOUNTING

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Application May 25, 1942, Serial No. 444,364

20 Claims. (Cl. 179—146)

This invention relates to mountings for acoustic devices and more particularly to mountings for handset telephones adapted to be supported on a vertical surface.

One object of the invention is to provide a mounting unit for a handset telephone which will enable easy removal of the handset from the mounting by the user thereof while preventing accidental removal therefrom under extraordinary adverse conditions.

Another object of the invention is to provide a mounting unit for a handset telephone which will maintain the handset in position on the mounting unit under severe conditions such as encountered at battle stations or in gun turrets of fighting units in actual combat.

It is a further object of the invention to provide a mounting unit of the type described which is extremely rugged in construction and which embodies a new and improved arrangement for facilitating replacing and removing of the handset telephone from the mounting unit.

The foregoing objects and features thereof will be described hereinafter with reference to the accompanying drawings, in which:

Fig. 1 is a front view of the mounting unit with the telephone handset omitted in order to more clearly illustrate the interior of the mounting unit;

Fig. 2 is a cross-sectional side view of the mounting unit illustrated in Fig. 1 taken from the right along the center line thereof with the handset unit mounted thereon;

Fig. 3 is another cross-section side view of the mounting unit illustrating the position of the telephone handset with respect to the mounting unit when the handset is being removed from or is being inserted in place upon the mounting unit;

Fig. 4 is a cross-sectional view of the mounting unit illustrated in Fig. 1 taken along line 4—4 thereof with the handset unit mounted thereon as is illustrated in Fig. 2, and also shown in section;

Fig. 5 is a cross-sectional view of the mounting unit illustrated in Fig. 1 taken along line 5—5 thereof with the handset unit mounted thereon as illustrated in Fig. 2, and also shown in section.

Referring now to the drawings, there is shown a mounting unit or support illustrative of this invention, for a telephone handset 32, which mounting unit comprises a supporting base plate 6 and a casing or well-shaped member generally indicated as 7 which is preferably made of cast brass formed in the shape indicated to conform with the general contour of the handset 32. A plurality of mounting holes 36 are provided in the base plate 6 for securing the mounting unit to a vertical wall or support not shown. The casing 7 is securely fastened to the base plate 6 by means of a plurality of screws 8 threaded into the casing 7 and comprises two parallel side wall portions 9 and 10 (Fig. 1), an upper curved wall portion 11 joining the two parallel sides, and a lower curved wall portion 12 joining the parallel sides, thereby forming a cavity portion within the confines of the casing.

The upper curved wall portion 11 continues outwardly away from the base plate 6 and converges into an inverted cup-shaped member 13 provided with two shoulder portions 14 and 15 joined by a bridge portion 16 thus forming a receiver receptacle. Shoulder portions 14 and 15 are formed or moulded to fit the general contour of the receiver end 17 of the telephone handset 32, as is shown in Fig. 4, to thereby provide retaining members for the receiver end of handset 32 when it is in place in the mounting unit. The bridge-shaped member 16 is slightly raised from the general contour of the inverted cup-shaped member 13, between the shoulders 14 and 15, to provide sufficient clearance for the raised part of the handle portion where it joins the receiver end 17 of the telephone handset 32 when it is removed from or inserted in place upon the mounting unit in the manner shown in Fig. 3.

The lower curved wall portion 12 also continues outwardly from the base plate 6 and converges into an upright cup-shaped member 18 provided with two shoulder portions 19 and 20 forming a transmitter receptacle. Shoulder portions 19 and 20 are formed or moulded to fit the general contour of the transmitter end 21 of the telephone handset 32, as is shown in Fig. 5, to thereby provide the retaining members for the transmitter end of the handset 32 when it is placed in the mounting unit. The central portion of the upright cup-shaped member 18 between the shoulders 19 and 20 has been left open to permit the coupling unit 23 and the cord 24, which extend from the transmitter end of the handset 32, to protrude through the rather close fitting shoulder portions 19 and 20 of the upright cup-shaped member 18.

Referring to Fig. 2, the spring member 24 and the L-shaped stop bracket 25 are secured to the supporting base 6 by means of a plurality of screws 35 threaded into the base 6. Upper portion 26 of the spring member 24 is tensioned outwardly away from base 6 to engage the tip end of the receiver cap 27 of the telephone handset 32 and thereby tends to force the receiver end 17 thereof into engagement with the shoulder portions 14 and 15 (Fig. 4) of the inverted cup-shaped member 13 when the handset is mounted in place on said mounting unit. It should be noted that the shoulder portions 14 and 15, which are formed to fit the general contour of the near surfaces of the transmitter 17, as is shown in Fig. 4, prevent the upper portion 26

of the spring member 24 from forcing the raised part of the handle portion where it joins the receiver end 17 of the handset 32 into the space shown in Fig. 2 between the raised handle portion and the bridge portion 16. Spring 24 at end 26 thereof, also tends to force the handset unit 32 downward by exerting a pressure on the tip end of the receiver cap 27 to maintain the transmitter end 21 in engagement with the upright cup-shaped member 18. The lower portion 28 of the spring member 24 is clamped between the base plate 6 and the end portion 31 of the L-shaped stop bracket 25 to prevent undue vibration of the portion 28 of the spring member 24. The spring member 24 is also bent back upon itself at 29 and extends upward and over the L-shaped end of stop bracket 25 to provide an engaging spring portion 30, which portion is tensioned away from stop member 25 to engage the mouthpiece portion 31 on the transmitter end 21 of the handset 32 and thereby tends to force the transmitter end 21 thereof into engagement with the shoulder portions 19 and 20 of the upright cup-shaped member 18 when the handset is mounted in place upon said mounting unit.

In order to prevent the receiver end 17 of the handset 32 from overcoming the tension of the upper portion 26 of the spring member 24 by inertia resulting from a severe shock or blow either on the mounting or on the handset a stop member 37 is provided which is adapted to be engaged by the receiver cap 27 of the receiver unit 17. The stop member 37 comprises a rod 38, preferably made from screw stock material, covered by a tube 39, preferably made from a phenol fabric product, which will withstand severe shocks or blows. The stop member 37 is suitably secured between the walls 9 and 10, respectively, for example, by means of washers 33 and screws 34 passing through the wall portions 9 and 10, and threaded into the rod 38.

As is clearly shown in Fig. 2, the receiver end 17 of the handset 32 fits into the inverted cup-shaped member 13 and the rear surfaces of the receiver 17 are held into engagement with the shoulder portions 14 and 15 by means of the upper portion 26 of the spring member 24. In addition, the transmitter end 21 of the handset 32 fits into the upright cup-shaped member 18 and the rear surfaces of the transmitter 21 are held into engagement with the shoulder portions 19 and 20 by means of the engaging spring portion 30 of the spring member 24.

It should be understood that a force, such as caused by a bomb exploding in the vicinity of the front or rear of the mounting unit, might cause the handset unit to momentarily overcome the tension of the end portions 26 and 30 of the spring member 24 but that the extent of movement of the handset 32 is limited at the receiver end 17 by stop member 37 and is limited at the transmitter end 21 by stop member 25. Furthermore, the shoulder portions 14 and 15 of the inverted cup-shaped member 13 and the shoulder portions 19 and 20 of the upright cup-shaped member 18 prevent the handset 32 from being dislodged from the mounting unit. Although the force or explosion may be as high as 2000 foot pounds, the handset unit 32 will neither become dislodged from the mounting unit nor will any of the parts thereof, including the handset, become broken, distorted or unusable.

Since the opening for placing the handset unit 32 upon the mounting unit and for removing the handset unit therefrom is limited by the distance between the shoulder members 14 and 15 and the shoulder members 19 and 20 and since this distance is considerably less than the overall length of the handset unit 32, the handset can only be placed upon and removed from the mounting unit by a series of definite predetermined movements, as will be described hereinafter.

Referring now to Fig. 3, a description will be given of the placing of the handset 32 upon the mounting unit. In order to place the handset 32 upon the mounting unit the receiver end 17 of the handset 32 is inserted at an angle of approximately 45 degrees into the cavity of the mounting unit formed by the upper curved wall portion 11, the parallel side walls 9 and 10, and the inverted cup-shaped member 13, above the stop member 37. After the tip end of the receiver cap 27 has engaged the upper portion 26 of the spring member 24 and the tension thereof has been overcome by manual pressure exerted upon the handset 32 so that the spring member 24 is flat against the base 6, as is clearly shown in Fig. 3, the transmitter end 21 of the handset 32 is in a position to pass clear of the shoulders 19 and 20. Using the inner surfaces of the spring 26 and the upper curved wall portion 11 as and with continued manual pressure against the portion 26 of spring 24, the transmitter end 21 of the handset 32 is manually rotated into the casing 7 until the mouthpiece portion 31 on the transmitter end of the handset 32 engages the spring portion 30 of the spring member 24 and compresses the same. It is to be noted that during this rotation of the handset 32 in the above described movement the transmitter end 21 passes clear of the shoulder portions 19 and 20 of the upright cup-shaped member 18. Upon engagement with the spring portion 30 of the spring member 24, and as manual pressure is relieved on the receiver end 17 of the handset 32, the tension in the spring portion 30 and that of spring portion 26 causes the mouthpiece portion 31 to slide downwardly on the slanting surface of spring 30. Thus, when the pressure is applied to the transmitter end 21, the pressure is simultaneously released from the receiver end 17 of the handset 32, consequently, the tension in the upper portion 26 of the spring member 24 exerts a force upon the tip end of the receiver cap 27 forcing the receiver end 17 of the handset outwardly away from the base 6 and causes the rear surfaces of the receiver end 17 to engage the shoulder portions 14 and 15 of the inverted cup-shaped member 13. Simultaneous with the action of the upper portion 26 of the spring member 24 in forcing the receiver end 17 of the handset 32 outwardly, the pressure exerted upon the transmitter end 21 thereof on the slanting surface of the spring portion 30 together with the downward spring pressure exerted on the tip of the receiver cap 27 causes the transmitter end 21 to engage the lower curve wall portion 12. When the pressure on the transmitter end 21 of the handset 32 is removed, the tension in the spring portion 30 forces the rear surfaces of the transmitter end 21 to engage the shoulder portions 19 and 20 of the upright cup-shaped member 18. The handset 32 is now in position on the mounting unit and cannot be dislodged therefrom even under extraordinary adverse conditions, however, the handset 32 may be easily removed from the mounting unit by a series of movements along a predetermined path as will be described hereinafter.

The handset 32 may be easily removed from the mounting unit by a series of the predetermined movements, which movements follow generally in reverse order the above described movements for placing the handset upon the mounting unit. Referring to Figs. 2, 4, and 5, it will be noted that the handset is positioned in the mounting unit with the transmitter end 21 thereof and the receiver end 17 engaging the shoulder portions 19 and 20, and 14 and 15, respectively, under the pressure of spring portions 30 and 26, respectively. In order to remove the handset 32 from the mounting unit the handset is first moved in a vertical direction with manual pressure applied to the receiver end 17 thereof against the tension of spring 26. When the receiver cap 27 has been raised sufficiently to pass clear of the stop member 30, the tip end of the receiver cap, has compressed the spring portion 26 until it is flat against the base 6. With the handset 32 raised to the maximum position, that is, with the top portion of the receiver end 17 thereof engaging the inner surface of the casing 7 at the upper curved wall portion 11 and with the spring portion 26 compressed against the inner surface of the base 6, the transmitter end 21 of the handset 32 may be rotated about the bearings comprising the surfaces of the curved wall portion 11 and the spring portion 26, and will pass clear of the shoulders 19 and 20, as is clearly shown in Fig. 3. When the handset 32 is at an angle of approximately 45 degrees with respect to the base 6, the receiver end 17 thereof may be removed from the cavity in the mounting unit.

While one embodiment of the invention has been disclosed, it will be understood that various modifications may be made therein which are within true spirit and scope of the invention.

What is claimed is:

1. A mounting for a handset telephone having transmitter and receiver units, said mounting comprising a cup-shaped member for receiving the receiver unit of the handset, a cup-shaped member for receiving the transmitter unit of the handset, and means directly engaging one of said units to maintain each of said units in engagement with its associated cup-shaped member.

2. A handset mounting comprising a receiver receptacle for receiving the receiver unit of a handset, a transmitter receptacle for receiving the transmitter unit of a handset, and a spring member for directly engaging one of said units to maintain the said units in engagement with said receptacles, when a handset is placed on said mounting.

3. A mounting for a handset telephone having transmitter and receiver units, said mounting comprising a receiver receptacle adapted to be engaged by the receiver unit of the telephone handset, a transmitter receptacle adapted to be engaged by the transmitter unit of the handset telephone, and means directly engaging said units to maintain said receiver and transmitter units in engagement with said receptacles.

4. A handset mounting comprising a first cup-shaped member for receiving the receiver of a handset telephone, a second cup-shaped member for receiving the transmitter of a handset, and means tensioned to directly engage said receiver and transmitter to maintain said receiver and transmitter in engagement with said cup-shaped members, when a handset is placed on said mounting.

5. A mounting for a hand telephone set comprising a base plate, a housing secured to said base plate for receiving both the receiver and transmitter of said hand telephone set, a pair of cup-shaped members integral with said housing for respectively encompassing the receiver and transmitter portions of said handset, and means within said housing for pressing said receiver and transmitter into engagement with said cup-shaped members.

6. A mounting for a hand telephone set comprising a base member, a casing mounted on said base member, a pair of receptacles for the transmitter and receiver portions of said handset telephone, resilient means engaging said transmitter and receiver respectively to maintain said transmitter and receiver portions in engagement with said receptacles, and a pair of stop members limiting the extent of movement of said transmitter and receiver portions respectively when a force applied to the handset unit is greater than the tension of said resilient means.

7. A mounting for a hand telephone including a handle and telephonic instruments mounted in spaced relation on said handle, comprising a base portion adapted to be secured to a support, a casing secured to said base portion, said casing having an instrument receiving portion thereof conforming to a part of one of said instruments, and having another instrument receiving portion conforming to a part of the other of said instruments, and a resilient member tensioned away from said base member for frictionally engaging said instruments and forcing said instruments against said instrument receiving portions.

8. A mounting for a hand telephone unit comprising a casing including a receiver receptacle and a transmitter receptacle spaced apart from one another, said receiver receptacle provided with a pair of shoulders adapted to be engaged by the rear surface of the receiver end of a hand telephone set, said transmitter receptacle provided with a pair of shoulders adapted to be engaged by the rear surface of the transmitter end of a hand telephone set, and means forcing the rear surfaces of said receiver and transmitter ends of said hand telephone into engagement with said shoulders.

9. A mounting for a hand telephone including a handle and telephone instruments mounted in spaced relation on said handle, comprising a base, a casing including a pair of receptacles extending outwardly away from said base for receiving the instruments of said handset, and retaining means for exerting a force against said telephone to maintain said instruments in position in said casing in engagement with said receptacles.

10. A mounting for a hand telephone including a handle and telephone instruments mounted in spaced relation on said handle, comprising a base, a casing, a pair of receptacles spaced apart on said casing providing an opening therein which is less than the overall length of said hand telephone, whereby one of the instruments of said hand telephone must be inserted through said opening before the other instrument of said hand telephone is inserted through said opening to place said instruments in said receptacles, and retaining means for maintaining said instruments in engagement with said receptacles.

11. A mounting for a hand telephone including a handle and telephone instruments mounted in spaced relation on said handle, comprising a base, and a casing including an inverted cup-shaped member and an upright cup-shaped member for receiving the instruments of

said handset, said casing and cup-shaped members providing a predetermined path which must be followed by the instruments of said handset in placing the instruments in said cup-shaped members, whereby one of the instruments of said handset must be inserted into said inverted cup-shaped member before the other instrument of said handset can be inserted into said upright cup-shaped member.

12. A mounting for a hand telephone including a handle and telephone instruments mounted in spaced relation on said handle, comprising a base, a casing including an inverted cup-shaped member and an upright cup-shaped member for receiving the instruments of said handset, said casing and cup-shaped members providing a predetermined path which must be followed by the instruments of said handset in placing the instruments in said cup-shaped members, whereby one of the instruments of said handset must be inserted into said inverted cup-shaped member before the other instrument of said handset can be inserted into said upright cup-shaped member, and means for preventing displacement of said instruments from said cup-shaped members by shock or concussion.

13. A mounting for a hand telephone including a handle and telephone instruments mounted in spaced relation on said handle, comprising a base, a casing including a pair of cup-shaped members in spaced relation on said casing providing an opening in said casing which is less than the over-all length of said handset, whereby the mounting of said instruments in said cup-shaped member requires longitudinal movement of one of said instruments into said casing in close proximity to one of said cup-shaped members and rotational movement of the other of said instruments into said casing in close proximity to the other of said cup-shaped members, and spring means engaging said instrument for forcing said instruments into engagement with said cup-shaped members.

14. A mounting for a hand telephone comprising a casing, and a pair of cup-shaped members spaced apart on said casing for engaging portions of the receiver and transmitter of a hand telephone and forming a partial enclosure with said casing for the receiver and transmitter, said enclosure requiring removal of the hand telephone from said mounting by a first movement of the receiver portion of the hand telephone away from its associated cup-shaped member into the body of said casing before the transmitter portion of the hand telephone is sufficiently clear of its associated cup-shaped member to permit removal of the hand telephone from said casing.

15. A mounting for a hand telephone comprising a base, a casing secured thereto forming a cavity of greater length than the overall length of a handset telephone, and a first and a second arcuate receptacle portion projecting outwardly from said casing for accommodating the receiver and the transmitter portions of a hand telephone and forming an opening for said casing which is less than the overall length of a hand telephone, said opening necessitating insertion of the hand telephone through said opening into said cavity at an angle with respect to said base to permit passage of the hand telephone into said cavity and the straightening of the hand telephone to a position parallel to said base with the receiver and transmitter of a hand telephone in engagement with said first and said second arcuate receptacles.

16. A mounting for a hand telephone having a pair of acoustic devices, said mounting comprising a first retaining means including a pair of shoulder portions adapted to be engaged by a surface of one of said acoustic devices, a second retaining means including a pair of shoulders adapted to be engaged by a surface of the other of said acoustic devices, and means engaging opposite surfaces on said acoustic devices from the surfaces thereon engaged by said shoulder portions for maintaining said acoustic devices in engagement with said shoulders.

17. A mounting for a hand telephone having transmitter and receiver units, said mounting comprising a first retaining means including a pair of shoulder portions adapted to be engaged by the rear surface of the receiver unit, a second retaining means including a pair of shoulders adapted to be engaged by the rear surface of the transmitter unit, and means engaging the front surfaces of the receiver and transmitter units for maintaining the rear surfaces thereof in engagement with said shoulders.

18. A mounting for a hand telephone having transmitter and receiver units, said mounting comprising a first retaining means adapted to be engaged by the rear surface of the receiver unit, a second retaining means adapted to be engaged by the rear surface of the transmitter unit, resilient means engaging the front surfaces of the receiver and transmitter units for maintaining the rear surfaces of the said units in engagement with said retaining means, and stop members adapted to be engaged by the front surfaces of said transmitter and receiver units to limit lateral movement of said hand telephone when it is in place in engagement with said retaining means, said resilient means permitting longitudinal movement of the handset in said retaining means when removing it from the mounting.

19. A mounting for a hand telephone having a transmitter and a receiver thereon, comprising a support, a pair of extensions on said support, resilient means on said support under said extensions, said extensions requiring pressure of the hand telephone against said means in order to place the telephone on said mounting with the transmitter and receiver under said extensions, said means acting after such pressure is relieved to force the telephone away from said support and press the transmitter and receiver against said extensions.

20. A mounting for a hand telephone having a handle and enlarged ends containing acoustic devices, said mounting comprising a pair of spaced apart retaining brackets, the space between said brackets being less than the length of said hand telephone, resilient means under each of said brackets normally exerting tension toward its associated bracket, said mounting requiring engagement of the hand telephone with said resilient means to over come its tension and permit insertion of the ends thereof under said brackets, said means thereafter forcing said hand telephone back with its ends against said brackets.

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