June 2, 1970 M. M. VAN DER PAS 3,515,822

QUICK RELEASE SPRING LATCH FOR HEARING AID CASING

Filed July 6, 1966

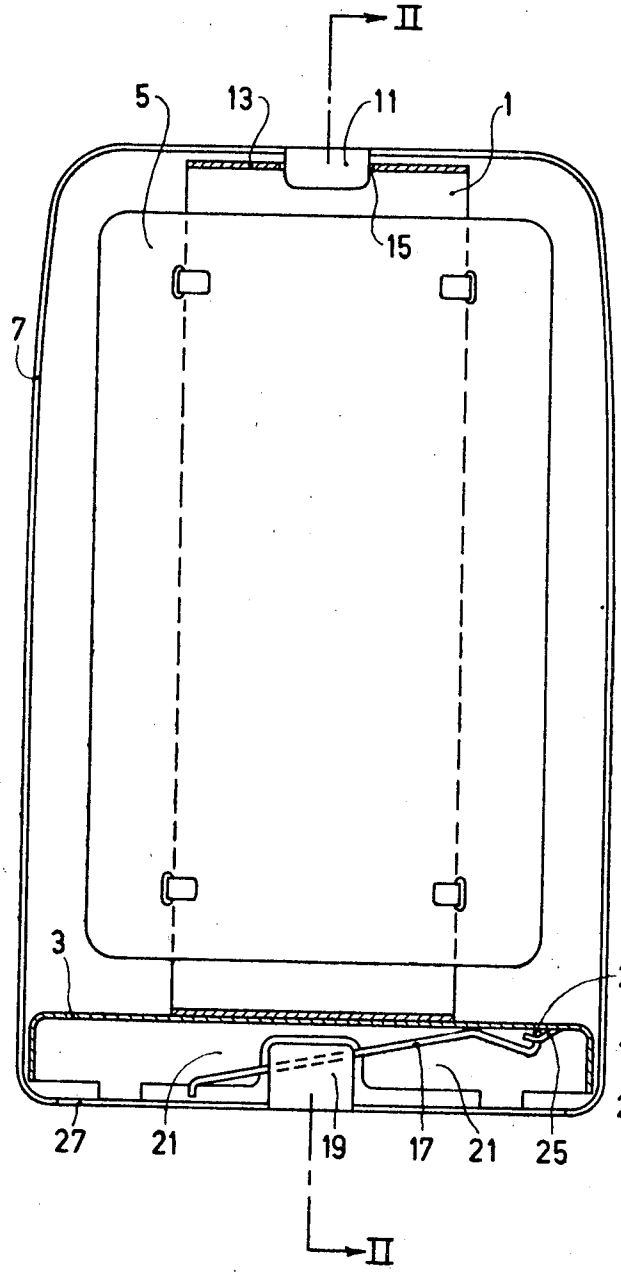

FIG. 1

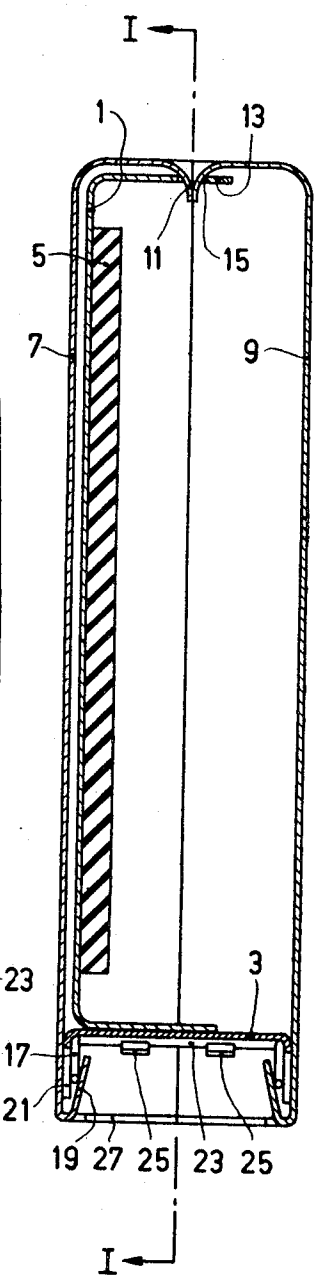

FIG. 2

INVENTOR.
MARTINUS M. VAN DER PAS

BY
Frank R. Trifari
AGENT

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QUICK RELEASE SPRING LATCH FOR HEARING AID CASING

Martinus Marinus van der Pas, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

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Int. Cl. H04r 25/00
U.S. Cl. 179—179 3 Claims

ABSTRACT OF THE DISCLOSURE

A hearing aid casing having two complementary shaped enveloping lids for containing therebetween the component parts of the hearing air. The lids are held together in a closed position by a wire spring within the casing which can be released from without through an aperture formed in the bottom by the lids.

The invention relates to a casing, more particularly for a hearing aid, consisting of a frame and at least one lid, one edge of which is provided with a tag hooked into the frame, while the opposite edge is secured to the frame by means of a bolt member. This structure has the advantage that the lids—generally two—can be entirely smooth on the outer side, which permits of carrying the apparatus beneath the clothes or in a pocket thereof.

Hearing aid casings of the prior art usually have bolt members for joining the two lids of the casing. These bolt members are slidably journalled on the frame and are tightened by means of screws. A disadvantage of this arrangement is that the screws frequently loosen as while the case is being carried in a pocket or other place beneath the clothes.

The construction in accordance with this invention does away with the conventional bolt member fastening means and in its place uses a wire spring which clamps the two lids in a closed position. An object therefore of this invention is to provide a simplified construction for a hearing aid casing.

An embodiment of the invention is shown in the accompanying drawing, in which:

FIG. 1 is a cross-sectional view taken on a plane parallel to the large surfaces of the flat casing, while

FIG. 2 is a cross-sectional view taken on the line II—II of FIG. 1.

The drawing shows the metal casing of a hearing aid to be carried at or beneath the clothes (a so-called pocket device). The casing has a metal frame consisting of a substantially strip-shaped part **1** to one end of which—in the drawing to the lower end—a base part **3** is secured which extends at right angles to the longitudinal direction of the strip **1**. The strip-shaped frame part **1** supports a preferably insulating chassis plate **5** on which are mounted a plurality of component parts of the hearing aid—which are not shown for the sake of clarity. The casing of the device further consists of two preferably identical adjoining lids **7** and **9** the first of which will be described more fully hereinafter. Instead of consisting of a frame and two lids, as shown, the casing could also consist of a frame which at the same time constitutes one half of the casing and one lid fitting thereto.

The slightly box-shaped lid **7** is at one of its edges—in this case at the upper edge—provided with a securing tag **11** which is hooked together with a corresponding tag on the other lid **9** into a fitting slot **15** formed in a rectangularly bent portion **13** of the frame part **1**. The opposite—in this case the lower—edge of the lid **7** is secured to the

frame part **3** by means of a wire spring **17** substantially extending along the said lower edge. At least one of the ends of the wire spring **17** yields freely and is located under a spring pressure parallel to the lid **7** and directed towards the said lower edge between a tag **19** formed on this lower edge and a tag **21** extending in opposite direction formed on the frame part **3**. As shown in the figures, the tag **19** is bent over towards the inner side of the lid **7**, while the tag **21** has two extended portions each located on either side of the tag **19**, completely engages the inner surface of the lid and consists of a portion of the downwardly protruding or locking edge of the box-shaped frame part **3**. The wire spring **17**, at its resilient free end, is clamped between the tags **19** and **21**, tag **19** being directed obliquely towards the centre of the box, as shown in FIG. 2. The downwardly directed spring pressure pushes the comparatively stiff wire spring **17** into the wedge-shaped space (see FIG. 2) between the tags **19** and **21**, which results in the lid being drawn tightly and in a rattle-free manner against the edge of tag **21** of the frame part.

The wire spring **17** is preferably U-shaped and its two respective limbs serve for securing the two lids **7** and **9**. The base portion **23** of the U-shaped wire spring is secured to the lower side of the frame part **3**, for example, by means of a few tags **25** cut out of this frame part; as shown in FIG. 1, each of the limbs of the wire spring has a kink and each limb engages in the kink point in a direction opposite the said spring pressure the lower side of the frame part **3**.

The wire spring is accessible through an aperture **27** provided in the lower edges of the two lids **7** and **9**; in normal operation, this aperture is closed, for example, by a pivotal lower lid locked by means of a catch (which is not shown for the sake of clarity). If the lid **7** should be detached, as after opening the casing, the freely yielding end of the said wire spring **17** is lifted against the spring pressure out of the said wedge-shaped space between the tags **19** and **21** and placed on the other side of the tag **19**. The tag **19** can now pass unhindered through the recess between the tag portions **21** and subsequently the tag **11** formed on the upper edge of the lid can be hooked out of the slot **15** without the use of further means. The lid **7** is secured in that, after this lid has been put in place, the freely yielding end of the wire spring **17** is again placed between the tags **19** and **21**.

It is apparent from the foregoing that the structure described consists of relatively few component parts which are simple in construction, and owing to the pressure exerted by the spring, the lids cannot be detached unintentionally.

In a modification of the embodiment described in which the wire spring is U-shaped, the spring consists of two separate substantially straight wires. The spring wire associated, for example, with the lid **7** may be secured either to one of the tag portions **21** or to an additional tag to be formed beside the tag **19** on the lower edge of the lid **7**. In this alternative embodiment, the tag **19** is parallel to the lid **7** and the space between the tags **19** and **21** is shaped into the form of a wedge in that the tag **21** or at least its parts adjacent the tag **19** are slightly bent inwards. In the position shown in FIG. 2, however, the bolt spring **17** can be more readily lifted and then closed again.

The lid **7** can be detached most easily if the tag **21**, as shown in FIG. 1, consists of two extended portions each located in a direction on either side of tag **19** which allow the lip to pass freely between them. The aperture of passage may alternatively be slightly shifted, provided that the structure is such that, after the spring has been detached, the lid can be displaced through a corresponding distance.

A modified construction is feasible having only one

tag **21** also fall within the scope of the invention, which tag may also be directed upwards instead of downwards; however, a stronger spring **17** is then generally required, since this spring is supported only on one side of the tag **19**.

What is claimed is:

1. A spring latch locking arrangement for a hearing aid casing comprising a frame member for supporting the component parts of the hearing aid, two substantially parallel lid members enveloping the frame member, said lid members having upper and lower edges and removably engageable along their upper edges to the frame member, tag members formed from inwardly directed portions of the lower edges of each of the lid members, said tag members being positioned for coacting with openings formed on either side of the frame member by extended portions of said member, a wire spring attached to the frame member having resilient legs engageable between the extended portions of the frame member and the tag members to urge the respective lid members together and to prevent their separation by blocking the opening formed by the extended portions of the frame.

2. A spring latch locking arrangement for a hearing aid casing as claimed in claim **1** wherein the lower edges of the lid members define an aperture therebetween for providing access to the wire spring for engagement or disengagement of the resilient legs.

3. A spring latch locking arrangement for a hearing aid casing as claimed in claim **1** wherein the wire spring has a U shape, with each of the legs of the U having a kink which engages the frame member to bias the ends of the legs toward the tag members.

References Cited

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KATHLEEN H. CLAFFY, Primary Examiner

T. W. BROWN, Assistant Examiner

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,515,822 Dated June 2, 1970

Inventor(s) MARTINUS MARINUS VAN DER PAS

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 18, "air" should be --aid--

Column 3, line 1, delete "also fall within the scope of the invention"

SIGNED AND
SEALED
SEP 22 1970

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents

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