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CONNECTING MECHANISM BETWEEN A HEADSTRAP
AND DEVICES CONNECTED TO IT
Filed Sept. 22, 1961

3,104,398

FIG. 1.

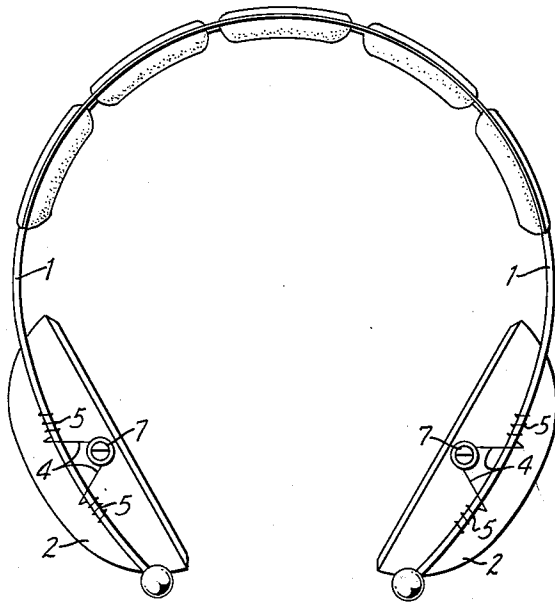


FIG. 2.

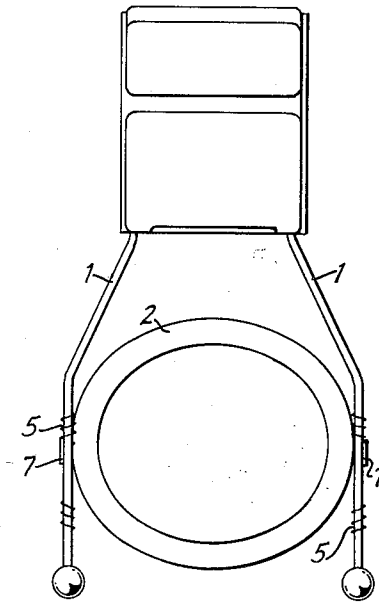


FIG. 3.

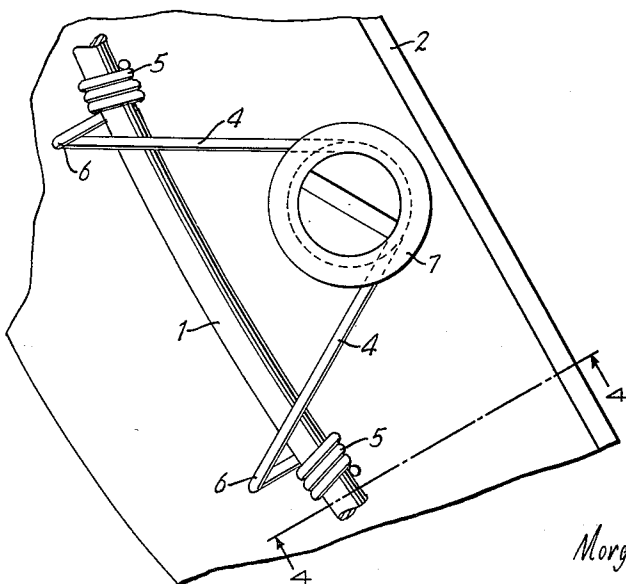
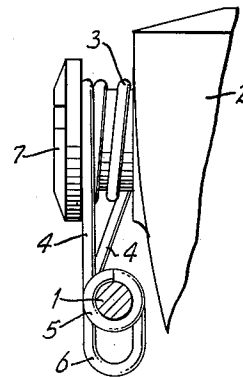


FIG. 4.



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CONNECTING MECHANISM BETWEEN A HEAD-STRAP AND DEVICES CONNECTED TO IT
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The invention concerns a connecting mechanism between a head strap and, for example, an ear muff.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combination pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate an embodiment of the invention, and together with the description, serve to explain the principles of the invention.

The purpose of the invention is to furnish a mechanism which permits sliding and turning motion between the muff and the strap. In this way the muff can easily be adjusted into a position such that the pressure about the ear is even, although this region may be moving during speech etc. The mechanism should not produce any sounds during such motions.

Tests have been made with different connecting mechanisms between two-wire soft head straps and ear muffs and it has been found that the two-wire type of straps, although satisfactory both in regard to construction and performance, usually have complicated and delicate connecting mechanisms for the muffs, and the connecting mechanisms destroy the flexibility of the straps. Measurements of head shapes and sizes have shown that in order to have great flexibility, the point of pressure between the strap and the muff should be located at a comparatively large distance from the cheek to prevent the ends of the strap wires from touching the cheek. Further tests have shown that the point about which the muff can turn must be located close to the surface of contact with the cheek. Otherwise leakage may easily result between the cheek and the flange of the muff as a result of the vibrations produced when a person runs. This requirement is particularly important when the flange is filled with a liquid with a high viscosity. In addition it has been found that it is preferable that the muffs can be turned along the cheek individually to compensate for asymmetry of the face and to make it possible to carry the strap under the chin. Thus, the various tests and measurements have shown that a sliding motion up and down along the cheek along a curved path, preferably with varying radius, is required. This sliding motion should take place at a comparatively large distance from the head and should normally have large friction. However, it should be possible to reduce the friction with a simple operation. Furthermore it should be possible to turn the muff without resistance for proper positioning of the pressure flange of the muff, approximately parallel with the surface around the ear. To make this turning motion stable the center of rotation should be located as close to the cheek as possible. Small turning motions in other directions are required for proper positioning of the muffs and it should be possible to perform these motions with a certain resistance in order to prevent deformation of the head strap.

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These requirements are fulfilled in the present invention. The connecting mechanism consists of an approximately U or V-shaped springy element for example in the form of a wire clip, with its center portion forming a bearing for a pin, on the ear muff. This bearing is close to the contact surface of the muff. The ends of the connecting mechanism form bearings which can slide along the strap wires. The springy element can be a metal wire or sheet metal or a pressed or cast piece of plastic.

One form of the invention is shown in the attached drawing. FIGURES 1 and 2 show front and side views of the head strap with ear muffs which are fastened by means of the connecting mechanism described. FIGURES 3 and 4 show enlarged front and side views of the connecting mechanism.

The connecting mechanism between the head strap 1 and the ear muff 2 in this version of the invention consists of a springy wire formed into a bearing 3 with two springy supporting members 4 terminated by a bearing 5. This bearing, which can be formed by turning the ends of the supporting member 4 into a spiral, can slide, within certain limits, with large friction along the wires of the head strap. The connecting mechanism is furnished with a protrusion or finger grip 6, by means of which the spring tension can be eliminated and the friction reduced. Since the bearing 3 consists of a spiral spring with few turns and is supporting the shaft 7 connected to the muff, it has a tight fit but nevertheless allows a certain motion other than a turning motion for which it was designed in the first place.

If the connecting mechanism is made of pressed or cast plastic, the spiral wound bearings 5 can be replaced by more or less smooth bearings and the bearing 3 can be made in the form of a springy partly slotted bushing.

The invention in its broader aspects is not limited to the specific elements shown and described, but departures may be made therefrom, within the scope of the accompanying claims, without departing from the principles of the invention and without sacrificing its chief advantages.

What is claimed is:

1. In apparatus to be worn on the head for affecting functions of the wearer and comprising a head strap, muff member, and connecting means for adjustably coupling said strap and member, the improvement in connecting means comprising a pivot on said member close to the interior surface thereof, resilient connecting means having a pair of legs interconnected at one end to form bearing means coupled to said pivot, said legs being spaced at their opposite ends and having at said opposite ends additional bearing means coupled to said strap.

2. Apparatus according to claim 1 in which said connecting means include a protrusion which allows a simple adjustment of said legs.

3. Apparatus according to claim 1, in which said bearing means is coupled axially to, and disposed around, said pivot.

References Cited in the file of this patent

UNITED STATES PATENTS

2,149,341	Harrison	Mar. 7, 1939
2,946,860	Jansen et al.	July 26, 1960

FOREIGN PATENTS

229,836	Great Britain	Mar. 5, 1925
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