May 6, 1947. S. HURST 2,420,245

PLASTIC EAR MUFF

Filed Oct. 26, 1945

Fig. 1.

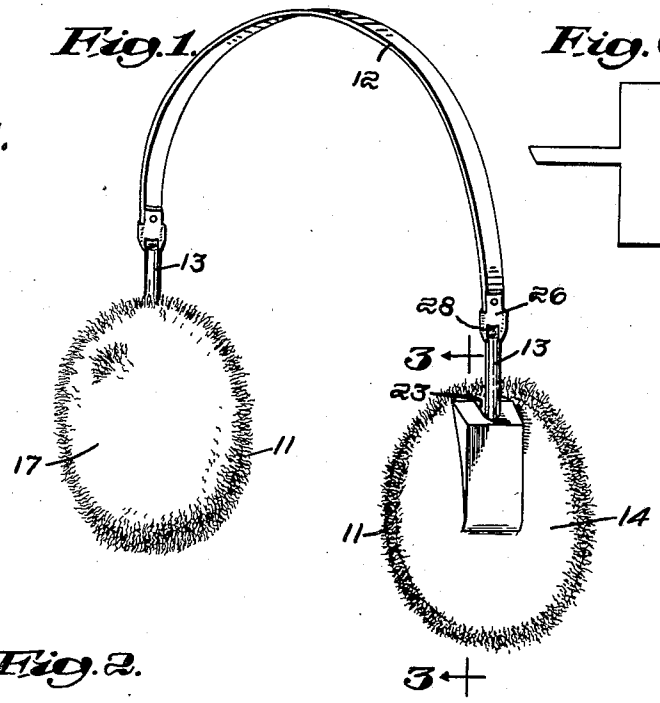


Fig. 6.

Fig. 5.

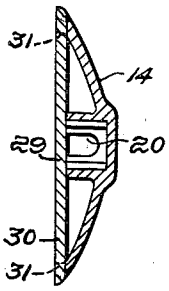


Fig. 2.

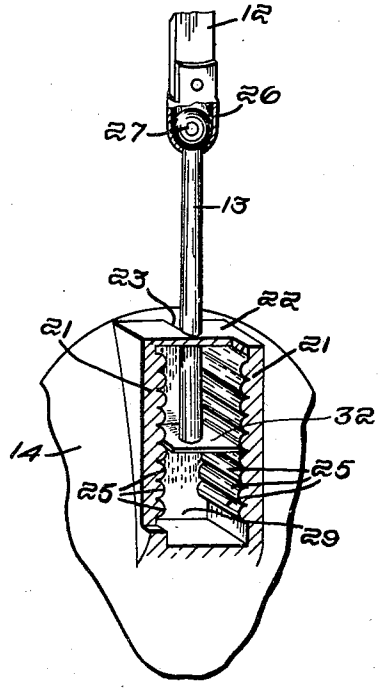


Fig. 3.

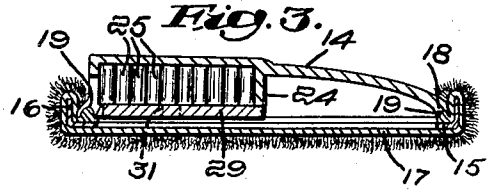
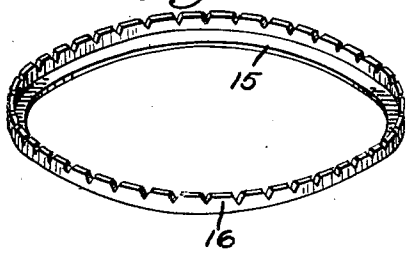


Fig. 4.



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Patented May 6, 1947 2,420,245

UNITED STATES PATENT OFFICE

2,420,245

PLASTIC EAR MUFF

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Application October 26, 1945, Serial No. 624,661

7 Claims. (Cl. 2—209)

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This invention relates to improvements in ear muffs, and the principal purpose of the invention is to provide an efficient, economical and attractive ear muff having an outer body of molded plastic material which may be colored or ornamented to provide a neat and decorative appearance for sport or dress wear, and which affords a durable, protective backing for a pad of fur, felt or other soft material for covering the ear of the wearer.

Another object of the invention is to furnish a simple and easily operable, adjustable connection between the backing and an end link of the head band which connects a pair of the improved ear muffs, whereby the effective length of the head band may be manually regulated.

A further object is to enhance the fit and comfort of the ear muffs by providing a swivel joint between the head band and the end links thereof, so that the links may be moved in at least two directions with respect to the band, thus permitting the ear muffs to adjust themselves to the head of the wearer.

Additional advantages of the improved construction will be apparent from the following description of the recommended embodiment of the invention shown in the accompanying drawings, but it will be understood that the structural details of the ear muffs herein illustrated and described may be varied to suit particular purposes or conditions without departing from the essence of the invention as defined in the appended claims.

In the drawings,

Fig. 1 is a perspective view of a pair of the improved ear muffs with the head band attached in accordance with this invention;

Fig. 2 is an enlarged fragmentary view of the outer side of one of the backing members and its adjustable connecting link and pivoted band, a chamber of the backing member and parts of the swivel joint being broken away;

Fig. 3 is a section of one of the ear muffs, taken on line 3—3 of Fig. 1, the adjustable link being omitted;

Fig. 4 is a perspective view of a retaining ring for fastening the muff pad on the backing;

Fig. 5 is a transverse section of the backing member, taken through the chamber thereof and looking toward an opening to the chamber; and

Fig. 6 is a plan view of a plate forming the bottom of said chamber.

The improved ear muff comprises a pair of oval ear protectors 11, and a head band 12 having end links 13 adjustably connected to the protectors so that the effective length of the band may be manually regulated. The head band may thus consist of a single strip of flexible material, preferably pyroxylin or other plastic which may be made in any desired color or shade, thus avoiding the necessity of utilizing two slidable spring steel strips to effect the adjustment, as in the conventional head band.

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The ear protectors are similar, and each comprises a backing member 14 preferably of molded plastic material, a metal retaining ring 15 having a flange 16 which is preferably notched around its edge, and a sheet or pad 17 of fur, felt or other soft textile material which presses comfortably against the ears when the protectors are in place. The backing member is dished or cup-shaped and has a peripheral rim 18, preferably formed with a groove or recess 19 in its edge to receive the edge of the pad when the parts are assembled.

The flange of the retaining ring 15 is larger than the rim 18, and the margin of the pad is folded over the ring 15 and its flange 16, so that its edge is gripped in the groove 19 when the covered ring is pressed over the rim of the backing member and its flange crimped over the rim 18, to secure the pad in place on the bottom of the backing.

The top of the backing 14 is formed with a chamber 20 having parallel side walls 21, an outer wall 22 having an opening 23 therein, and an inner wall 24 extending into the space between the cupped plate and the pad 17. The interior surfaces of the side walls 21 are ribbed or serrated at 25, to provide a rack for an adjustable anchor carried by the link or connector 13. The outer end of link 13 extends into the chamber 20 through the slot 23, and carries a transverse anchor or pawl 32 consisting of a thin sheet of resilient metal. The sides of the pawl frictionally engage between the serrated racks 25 to secure the link in adjusted position, but the link may be easily moved inwardly or outwardly to vary the setting, according to the desired effective length of the head band 12.

The links 13 are preferably connected to the head band by a ball and socket or swivel joint which permits relative movement therebetween in at least two directions. As illustrated, the joint consists of a socket member 26, and a ball member 27 on the link 13 received in the socket. The link is thus rotatable with respect to the head band, and the socket member is formed with a slot 28 permitting the link to move angularly (inwardly and outwardly) relatively to the band

12, so that the ear muffs will automatically adjust themselves to rest comfortably against the ears of the wearer. A full universal joint could obviously be employed in place of the swivel connection herein shown, for the same purpose.

The bottom of the chamber 20 of the backing 15 is preferably closed by a plate 29 having laterally projecting arms 30, the ends of which are pressed into recesses 31 in the edge of the rim 18. Plate 29 serves as a guide for the movable pawl 32 and a protective guard for the pad 17.

Ear muffs constructed as herein described are simple and economical to manufacture, easy to assemble, convenient to apply and comfortable to the wearer; and the handy adjustment of the effective length of the head band and the relative angular position of the protectors affords correct fit as well as comfort. The plastic backing members which are visible on the outside of the applied protectors may, as aforesaid, be colored or ornamented to enhance the appearace of the protectors, and the head band may be of the same color as the backers or of a harmonizing or contrasting color, as desired.

I claim:

1. An ear muff comprising a molded plastic backing having a peripheral rim, a retaining ring having a flange larger than said rim, and a pad having its margins folded over said flange and under said rim and secured between said flange and rim, the edge of the backing rim having a groove receiving the edge of the pad.

2. An ear muff comprising a molded plastic backing having a peripheral rim, a retaining ring having a flange larger than said rim, and a pad having its margins folded over said flange and under said rim and secured between said flange and rim, the backing having a chamber, a head band, and interengaging relatively movable means in said chamber connecting said head band to said backing whereby the effective length of the band may be manually adjusted.

3. An ear muff comprising a backing having a peripheral rim, a retaining ring having a flange larger than said rim, and a pad having its margins folded over said flange and under said rim and secured between said flange and rim, the backing having a chamber formed with a serrated, interior wall, a head band having its end received in said chamber, and a pawl on said end slidably engaging the serrations of said wall, whereby the effective length of the band may be adjusted according to the position of the pawl in the chamber.

4. An ear muff comprising a cupped backing member, a pad applied to the open side of said member, and means securing the pad thereto, the backing having parallel walls defining an interior chamber, and said walls having serrated inner surfaces, a head band having an end link received in said chamber, and a flexible pawl on said link slidably engaging the serrations of said walls, whereby the effective length of the head band may be adjusted by regulating the position of the pawl within the chamber.

5. An ear muff comprising a cupped backing member, a pad applied to the open side of said member, and means securing the pad thereto, the backing having parallel walls defining an interior chamber and said walls having serrated inner surfaces, a head band having an end link received in said chamber, and a flexible pawl on said link slidably engaging the serrations of said walls, whereby the effective length of the head band may be adjusted by regulating the position of the pawl within the chamber, and a plate on the bottom of said chamber, said plate having lateral arms engaging the rim of the backing member.

6. An ear muff comprising a cupped backing member, a pad applied to the open side of said member, and means securing the pad thereto, the backing having parallel walls defining an interior chamber and said walls having serrated inner surfaces, a head band having an end link received in said chamber, and a flexible pawl on said link slidably engaging the serrations of said walls, whereby the effective length of the head band may be adjusted by regulating the position of the pawl within the chamber, and a swivel joint between said head and end link, whereby the link may be moved angularly relative to the band.

7. An ear muff comprising a backing having a peripheral rim, a retaining ring having a flange larger than said rim, and a pad having its margins folded over said flange and under said rim and secured by said ring, the backing having a chamber, a head band having its end received in said chamber and slideable therein, and means in said chamber for frictionally resisting sliding movement of said end, whereby the effective length of the band may be adjusted according to the position of said end in said chamber.

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