

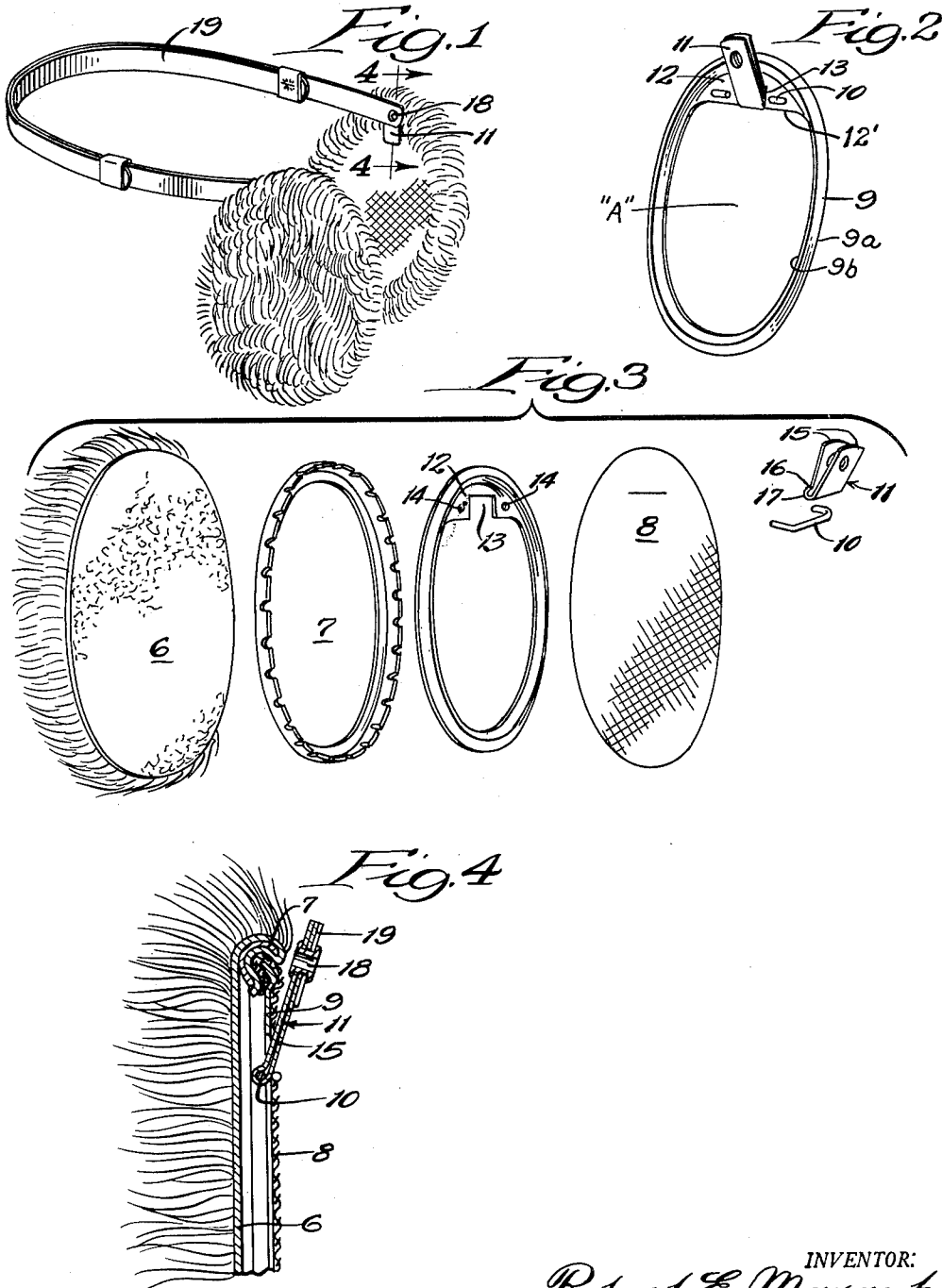
Oct. 28, 1952

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2,615,169

EAR MUFF FRAME AND MOUNTING

Filed Feb. 28, 1950



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## UNITED STATES PATENT OFFICE

2,615,169

## EAR MUFF FRAME AND MOUNTING

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Application February 28, 1950, Serial No. 146,799

10 Claims. (Cl. 2-209)

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This invention relates to the supporting frame and the mounting whereby ear muffs are hinged and swiveled on a head piece, either a head band alone or one concealed in a cap.

Heretofore, ear muffs, of the type where the fur or pile fabric has been secured to a stamped metal frame, have not been provided with a frame and mounting which would appropriately coact to yieldingly hold the ear muff in a fixed angular relationship to the supporting head piece. Generally such frame and mounting has been so loose that the ear muff could not be made to press against the head of the wearer or be retained in a position away from the ears if the wearer desired. Such ear muffs, when worn in high wind, are quite likely to flap or stand out away from the ears of the wearer or flop down around the ears when the user did not want them on the ears, but wanted to retain the band or cap on the head. Moreover, the former manner of attaching the mounting to the frame presented a construction so weak that careless movements of the muff would often result in the distortion of the mounting or a breaking off of the muff from the head band.

The main objects of this invention, therefore, are to provide an improved form of frame construction for ear muffs which provides for a mounting that permits these muffs, when attached to a head piece, to be retained on the head piece in practically any position desired by the wearer; to provide an improved construction of this kind which insures a firm friction grip of the muff mounting on the muff frame so as to insure the retention of the muff in any angular disposition to which it might be set; and to provide an improved frame and mounting of this kind which is economical to manufacture and durable in use.

In the accompanying drawings:

Fig. 1 is a perspective view of a complete ear muff with the individual muffs assembled on the ends of an expansible spring head piece;

Fig. 2 is a perspective view of the improved frame and mounting on which the pile material or fur piece is assembled;

Fig. 3 is an exploded view of the several parts of an ear muff embodying this improved frame and mounting;

Fig. 4 is an enlarged fragmentary sectional detail of an ear muff and this improved frame and mounting taken on the line 4-4 of Fig. 1.

An ear muff formed with a frame and mounting embodying this invention, comprises a pile fabric or fur pad 6 secured around the peripheries and between the frame member 9 and a retainer ring 7, and with which is usually associated a liner 8.

These several parts are assembled on a machine such as shown in Patent No. 2,324,009.

This invention relates primarily to the construction of the frame 9 whereon is secured a wire 10 to which is hinged the mounting member 11.

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As clearly indicated in the drawings, particularly in Fig. 2, the frame member 9 is a ring-like sheet metal stamping, slightly elliptical, embossed circumferentially between the outer and inner peripheries or bounding edges 9a and 9b thereof so as to enhance its rigidity. Adjacent one of the lesser arcs of the frame there is formed an integral web 12 which is notched at 13 and bridged by the wire 10. The web 12 is formed by increasing the amount of metal between the outer and inner peripheries 9a and 9b. Preferably this web 12 is so formed that the inner bounding edge thereof constitutes a chord or free edge 12' located at one side of what generally may be termed the axis or center A of the frame member 9. The notch 13 extends inwardly from the chord or free edge 12' of the web toward the periphery 9a.

The wire is round and the ends extend through apertures 14 in the web 12 which ends, as herein shown, are bent outwardly to firmly secure the wire 10 in place. Obviously, the wire ends could be bent inwardly if desired. The wire 10 is thus in effect disposed in the plane of the web 12 and bridges the notch 13 thereby constituting a cylindrical bearing for the mounting member 11.

The mounting 11 is a strap of spring metal bent U-shaped with at least one of the leg parts 15 crimped as at 16, so that both leg parts are normally disposed close together and the bend 17 conforms to the shape of the wire and is in contact with the wire throughout the major periphery of the bend 17. By virtue of this formation of the mounting member 11 it has a relatively large area of contact with the wire 10, and even prior to the insertion of the fastener 18 will tend to maintain an angular position to which it is set. When the parts 15 are compressed together by the fastener 18 the mounting 11 will positively retain any desired angular position with respect to the frame 9 to which it may be adjusted.

The fastener 18 is herein shown in the form of an eyelet 18 (see Fig. 1). It could be a rivet if preferred. Such a fastener also serves to secure the ear muff to the head piece and provide a swivel connection which permits the muff to be swung on the head piece 19 through 360 degrees in the plane of the frame 9 and yieldingly retained at any point in said 360 degrees of swinging.

The fastener 18 so disposes and holds these leg parts 15 that the bend 17 will so firmly maintain its friction contact with the wire 10 and allows the muff to be disposed and yieldingly held at any angular position in which it may be placed with respect to the frame member 9 within the range of practically 180 degrees. Accordingly, when an ear muff with a frame and mounting of this kind is attached to a head piece 19 the wearer is assured that the muffs will be held firmly in any desired position: against the ears or away from the ears, upwardly above the ears or rearwardly or forwardly of the ears.

Moreover, if worn in a heavy wind there will be no flapping of the muffs. Furthermore, the wire 10, fixed as it is on the web 12 of the frame 9 affords a support for the mounting 11 of such strength that it is not easily distorted or broken if one hurriedly or carelessly unfolds or folds the muffs and head piece or stores the device when not desired for use.

The head piece 19 may be either a pair of spring-metal, relatively-adjustable bands, as shown in Fig. 1, or a single spring band concealed in the band of a cap.

Variations and modifications in the details of the structure and arrangement of parts may be restored to within the spirit and coverage of the appended claims.

I claim:

1. A mounting for an ear muff comprising, a ring-like stamping member, means forming a cylindrical bearing across said member in a flat plane thereof on a chord of an arc spaced from the center of said member, a U-shaped member of spring material embracing said bearing, and a fastener attaching the parallel parts of said U-shaped member to cause it to retain a friction grip on said bearing for any radially disposed angular position.

2. A mounting for an ear muff comprising, a ring-like endless stamping member, a round element anchored to said member in a flat plane thereof on a chord of an arc spaced from the center of said member, a U-shaped member of spring material embracing said element, and a fastener attaching the parallel parts of said U-shaped member to cause it to retain a friction grip on said element for any radially disposed angular position.

3. A mounting for an ear muff comprising, a ring-like endless and substantially flat metal stamping member, a separately-formed round wire anchored to said member in a flat plane thereof on a chord of an arc spaced from the center of said member, a U-shaped member of spring metal having an arcuately formed crimp in one leg to embrace and firmly fit around said wire, and a fastener attaching the parallel parts of said U-shaped member to cause it to retain a friction grip on said wire for any radially disposed angular position.

4. A mounting for an ear muff comprising, a ring-like metal stamping member, a round wire disposed in a flat plane thereof on a chord of an arc spaced from the center of said member and having the ends inserted through apertures in said member between its inner and outer peripheries to anchor said wire in place, a U-shaped member of spring metal embracing said wire, and a fastener attaching the parallel parts of said U-shaped member to cause it to retain a friction grip on said wire for any radially disposed angular position.

5. A mounting for an ear muff comprising an elliptical ring-like metal stamping member with an integral inwardly extending web at a selected portion of the member, said web having a notch formed therein extending outwardly from the inner periphery of said member, a wire bridging said notch and having the ends thereof inserted through apertures located in said web between the inner and outer peripheries of said member, a U-shaped member of spring metal embracing said wire, and a fastener attaching the parallel parts of said U-shaped member to cause it to retain a friction grip on said wire for any radially disposed angular position.

6. A mounting for an ear muff comprising an elliptical ring-like metal stamping member with an integral inwardly extending web at a selected portion of the member, said web having a notch formed therein extending outwardly from the inner periphery of said stamping, a wire bridging said notch having the ends thereof inserted through apertures located in said web between the inner and outer peripheries of said member, a U-shaped member of spring metal having one of the legs crimped coextensive with the bend to embrace and firmly fit around said wire, and a fastener attaching the parallel parts of said U-shaped member to cause it to retain a friction grip on said wire for any radially disposed angular position.

7. An ear muff frame member of ring-like form and a separately-formed round wire anchored to said member in a flat plane thereof on a chord of an arc across said member spaced from the center thereof to form a bearing adapted to support a mounting for attaching said frame to a head-piece.

8. An ear muff frame member of ring-like form, and a separately-formed round wire anchored to said member in a flat plane thereof on a chord of an arc across said member spaced from the center of said member to form a bearing, and a U-shaped spring mounting member having a crimp therein adjacent the bend of the U-shaped member embracing and frictionally contacting said wire whereby said frame member is adapted to be attached to a head-piece.

9. An ear muff frame in the form of a ring-like stamping member having an inwardly extending web on a part thereof, the web having a free edge spaced from a portion of the frame, the web having a notch formed therein inwardly from the free edge, the web also having apertures formed therein between the notch and the annular part of the frame, and a round wire having its ends inserted through said apertures and spanning said notch to form a bearing adapted to support a mounting for attaching said frame to a head piece.

10. An ear muff frame in the form of a ring-like stamping member having an inwardly extending web on a part thereof, the web having a free edge spaced from a portion of the frame, the web having a notch formed therein inwardly from the free edge, the web also having apertures formed therein between the notch and the annular part of the frame, and a round wire having its ends inserted through said apertures and spanning said notch to form a bearing adapted to support a mounting for attaching said frame to a head piece, a U-shaped member of spring metal having a crimp formed therein embracing said bearing, and a fastener attaching the parallel parts of said U-shaped member causing it to retain a friction grip on said wire for any radially-disposed angular position.

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#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
188,292	Greenwood	Mar. 13, 1877
2,216,954	McDonough	Oct. 8, 1940
2,246,031	Baritz et al.	June 17, 1941
2,447,073	Maxant	Aug. 17, 1948