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FACE CONFORMING RESPIRATOR MASK

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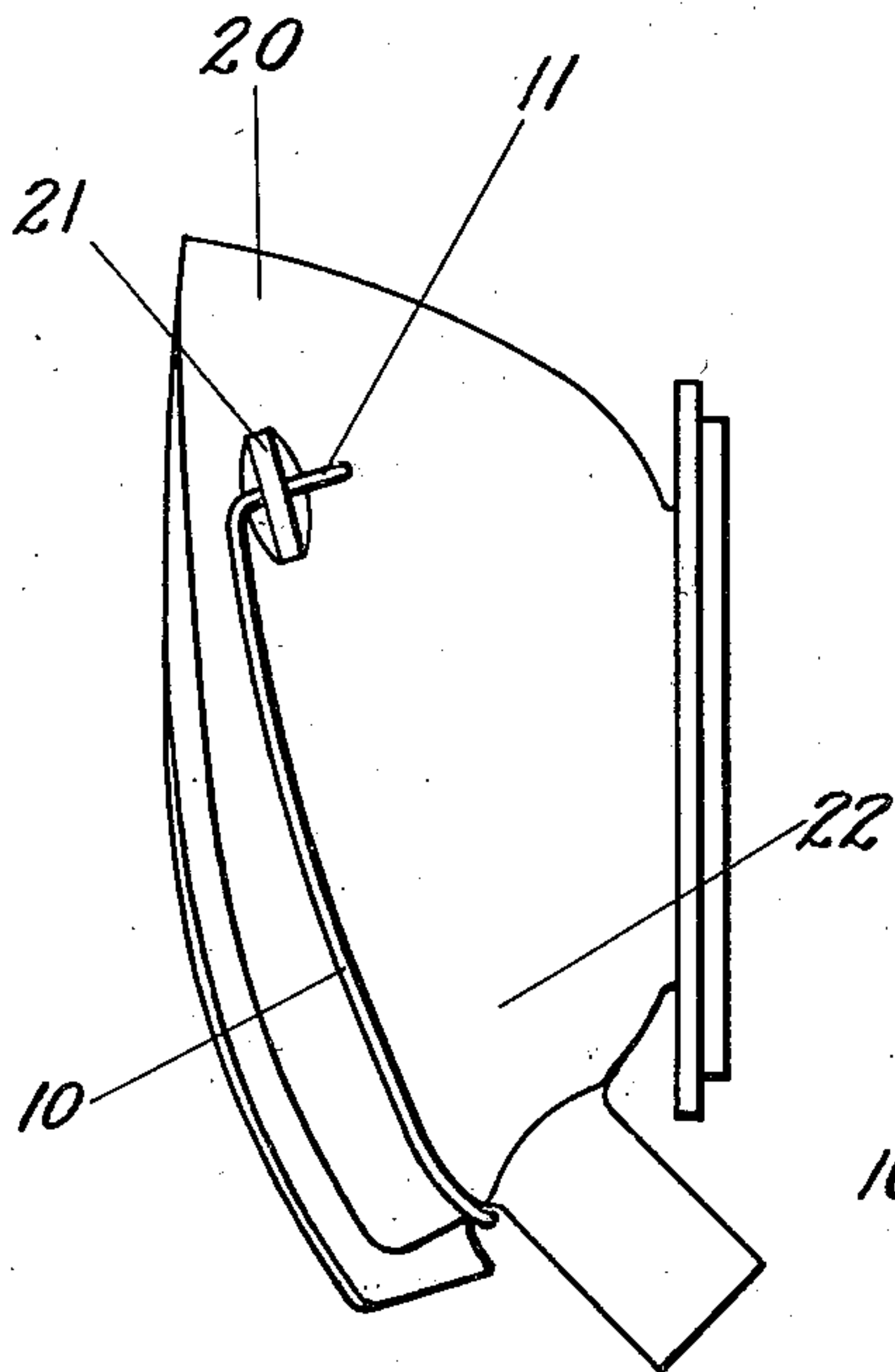


Fig. 1

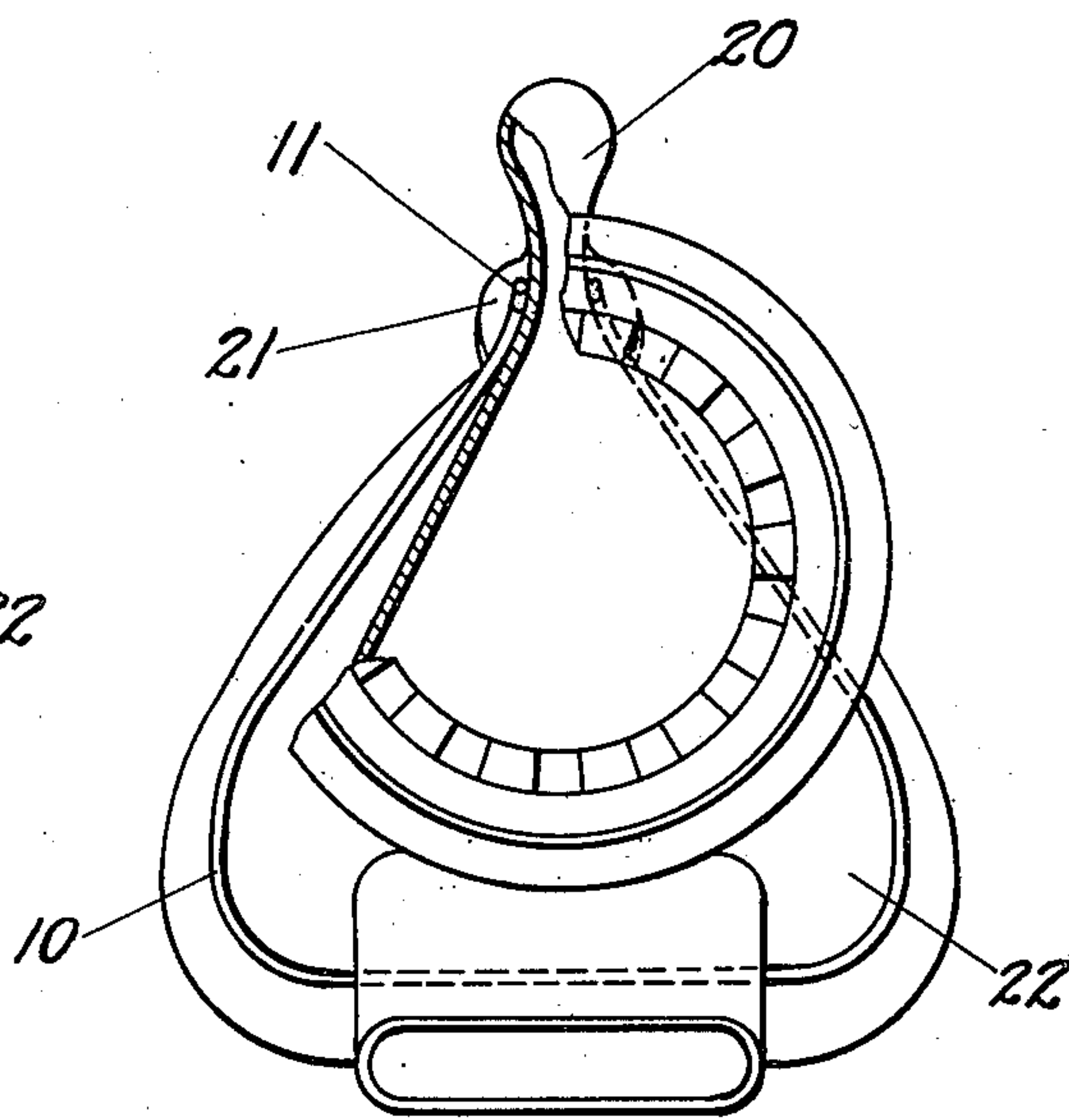


Fig. 2

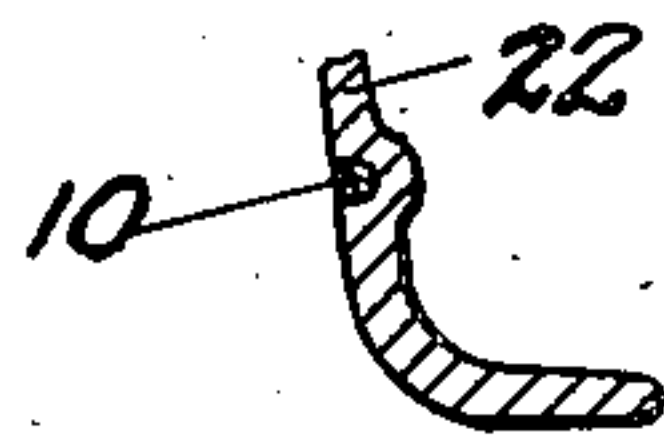


Fig. 5

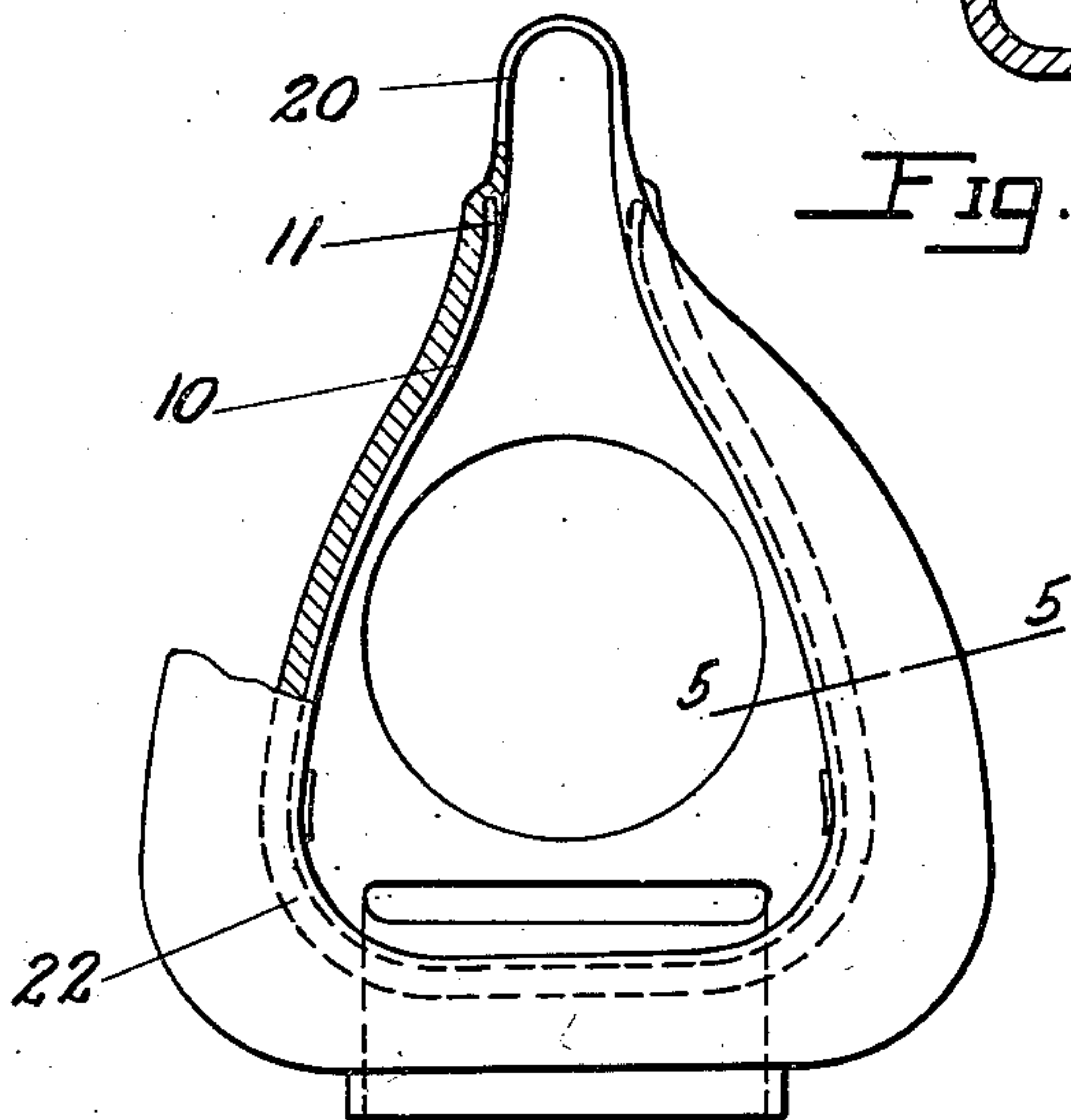


Fig. 4

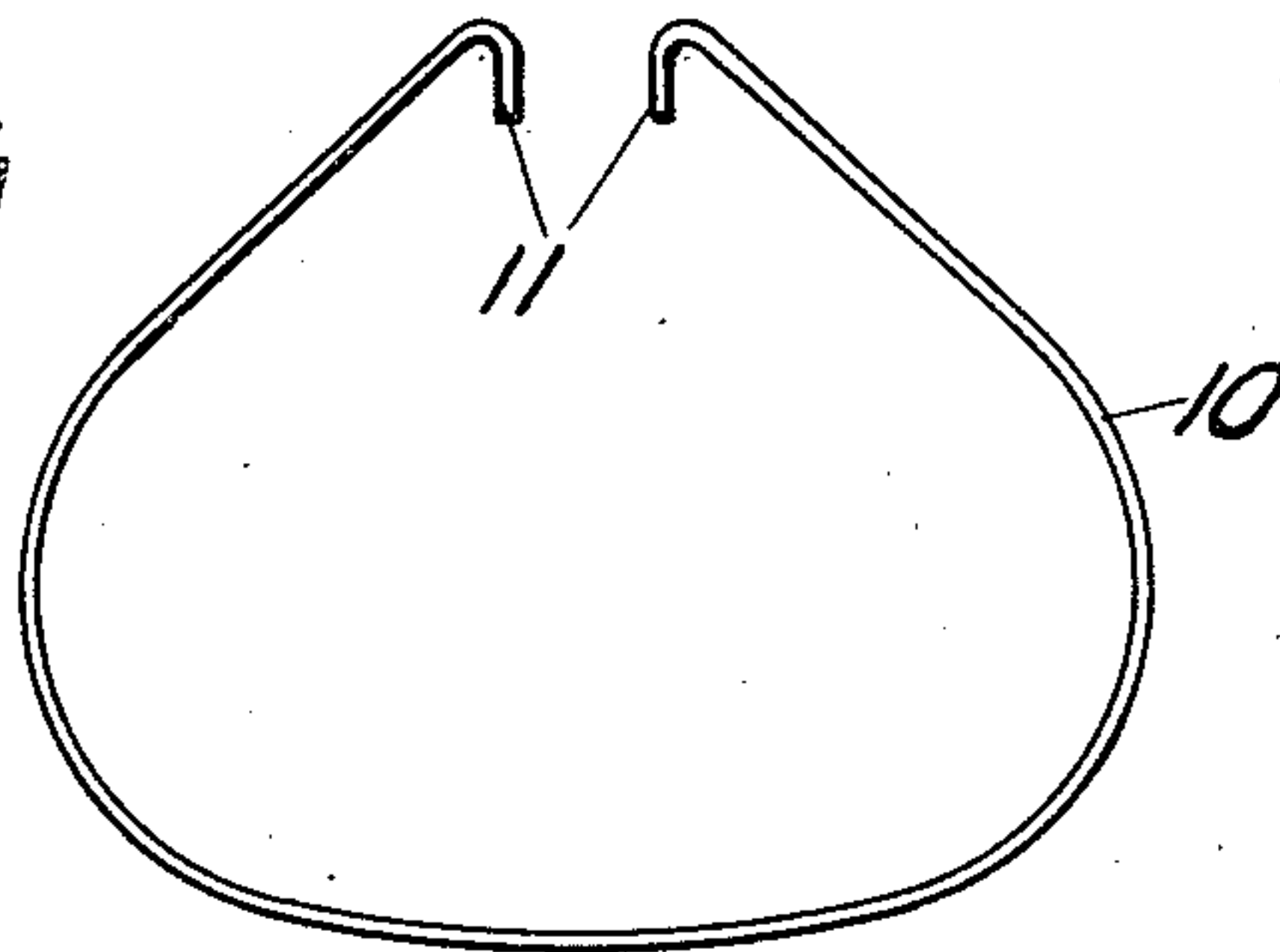


Fig. 3

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## UNITED STATES PATENT OFFICE

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## FACE-CONFORMING RESPIRATOR MASK

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3 Claims. (Cl. 128—146)

My invention relates to respirators having face-fitting masks provided with means for insuring a filtered-air supply to the user; and it consists particularly in improved clipping means for con-  
5 forming the mask to the face of the wearer so as to most satisfactorily secure the same with reduction of the dead-air space in the mask and without interference with nasal breathing. The invention is fully set forth in connection with  
10 the accompanying drawing and is specifically defined in the subjoined claims.

The type of respirator to which my invention particularly relates, and the general purpose of my present improvement, is indicated in prior  
15 Patent No. 1,317,947 issued October 7, 1919 and later assigned to the predecessor of my present assignee.

Fig. 1 is a side elevation indicating a respirator mask of well known construction having my im-  
20 proved clip device applied thereto in preferred manner.

Fig. 2 is a front elevation of same, with a portion of the filter-supporting mouth-enclosing portion broken away so as to fully show one end  
25 of the device, with its attached nose-enclosing wall of the mask compressed thereby so as to yieldingly hug the nose when in use.

Fig. 3 is a separate perspective view of my improved device indicating the formation thereof  
30 as hereinafter specifically described.

Fig. 4 indicates a modified construction in which the device is applied to the interior of the mouth-enclosing portion of the mask, in-  
35 stead of exteriorly thereof; a partial cross-section of the latter on the line 5—5 being shown in Fig. 5.

I have found from actual experience with service conditions, that the most satisfactory attainment of desired results from clipping the col-  
40 lapsible portion of the mask to the nose, calls for the insuring of only a moderate clipping pressure notwithstanding varying sizes and contour of the latter, and that such pressure be applied against the sides of the nasal bone struc-  
45 ture so as to clear the nostril passages and firmly hold the conformed mask without obstructing nasal breathing of the user.

In order to secure these practically important results, it is primarily essential that the op-  
50 posed nose-pressing ends 11, 11 of the spring-clip loop 10, be substantially spreadable as may be variously required, without materially varying the gripping pressure exerted in actual use upon the collapsible nose-enclosing portion 20 of the mask.  
55 This is most satisfactorily accomplished by pro-

viding a large depending loop 10 substantially conformed to the enlarged mouth-enclosing portion 22 of the mask, so that the opposed ends 11, 11, may be spread more or less as required  
5 without materially varying the nose-engaging pressure exerted thereby and without danger of overstraining the loop material so as to effect any change in its normal shape. To permit the employment of such a large loop construction I  
10 shape the same so that it will extend around the mouth-enclosing portion 22 of the mask preferably in loosely retained exterior position thereon as indicated, so as to permit of only a limited  
15 spreading of said mouth-enclosing portion when the mask is applied to the face.

The engagement of the opposed end portions 11, 11 of the loop with the collapsible nose-enclosing portion 20 of the mask may be conveniently effected by forming the nose-enclosing wall with clip-engaging means, as indicated by  
20 the molded projections 21, in which they may be readily secured. As shown, these engaged ends 11, 11 are bent outwardly so as to extend beyond the projections 21 and provide contact with the  
25 opposite sides of the nose substantially conforming with the swelled side portions of the nasal bone of the user, whereby collapsing of the nasal passages is avoided; and a moderate and uniform pressure is insured adapted to satis-  
30 factorily secure the properly collapsed mask.

It will be readily understood that the enlarged loop 10 of my improved device may extend around the mouth-enclosing portion 22 of the mask, interiorly of the latter instead of exteriorly thereof, as indicated in the modified applica-  
35 tion shown in Fig. 4; in which arrangement it may be set into a receiving groove formed in the wall of the mask, with the upper ends of the device set to lightly push the nose-enclosing mask wall against the nasal-bone structure with-  
40 out interfering with free nasal breathing.

What I claim is:

1. The combination with a respirator mask formed of flexible molded material and comprising an air-connecting mouth-enclosing portion,  
45 and a laterally collapsible nose-enclosing wall having clip-engaging means, of means adapted to conformingly collapse said nose-enclosing wall and resist spread of said mouth-enclosing portion comprising, a spring wire having its ends en-  
50 gaged in said clip-engaging means and a connecting loop depending around and engaging opposite sides of said mouth-enclosing portion.

2. The combination with a respirator mask formed of flexible molded material and compris-  
55



ing an air-connecting mouth-enclosing portion,  
and a laterally collapsible nose-enclosing wall  
having clip-engaging means, of means adapted  
to resist spread of said mouth-enclosing portion  
5 and conformingly collapse said nose-enclosing  
wall comprising, a loop of spring wire depending  
around the outer wall at a distance spaced from  
the face-contacting edge of the latter and en-  
gaging opposite sides of said mouth-enclosing  
10 portion, said wire loop having angularly bent  
clip-engaging ends extending substantially cross-  
wise of said nose wall so as to reversely press the  
latter against the side swellings of an enclosed  
nasal bone.  
15 3. The combination with a respirator mask  
formed of flexible molded material and compris-

ing an air-connecting mouth-enclosing portion,  
and a laterally collapsible nose-enclosing wall  
having interior clip-engaging means, of means  
adapted to resist spread of said mouth-enclosing  
portion and conformingly collapse said nose- 5  
enclosing wall comprising, a loop of spring wire  
depending around the inner wall at a distance  
spaced from the face-contacting edge of the  
latter and engaging opposite inner sides of said  
mouth-enclosing portion, said wire loop having 10  
angularly-bent clip-engaging ends extending  
substantially cross-wise of said nose wall so as to  
reversely press the latter against the side swell-  
ings of an enclosed nasal bone.

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