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(54) **Protective helmet, particularly for sports fights**

(57) A protective helmet (1) is disclosed, particularly for sports fights, comprising a protective structure (3) open on its rear side (7) to suit the helmet (1) to various sizes of heads and comprising at least one vertical elongated band (9) for protecting a rear head part engaged

with resilient keeping means; the vertical elongated band (9) is equipped with holding means (11), for example wings (13, 15), adapted to prevent the band (9) from going out of engagement with the resilient means when using the helmet (1).

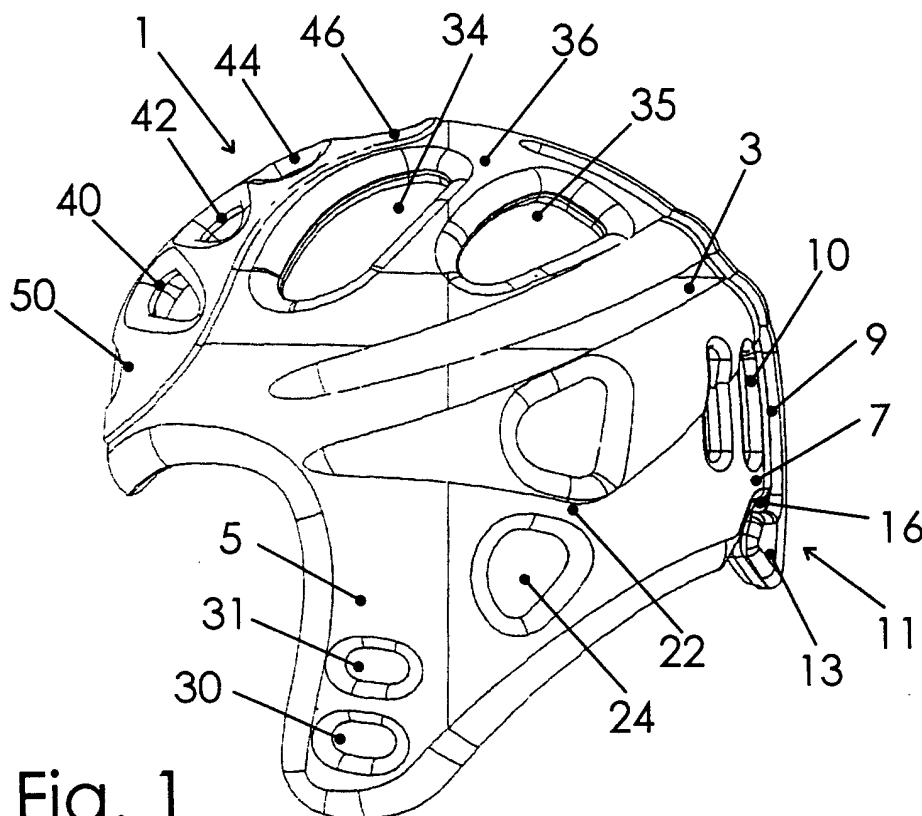


Fig. 1

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Description

[0001] The present invention refers to a protective helmet, that can be used in particular for sports fights such as boxing and/or martial arts.

[0002] The present invention will be described hereinbelow with reference to an embodiment for sports fights such as boxing, kick-boxing, taek-won-do and the like, but obviously the following examples are not limiting the scope of the invention, that is defined only by the enclosed claims.

[0003] Various types of protective helmets for sports fights are known, both for boxing and for martial arts, whose purpose is protecting the athletes' head from punches and kicks that could seriously damage it.

[0004] These helmets have to meet, due to sports regulations, some configuration constraints, such as for example the fact that the protection for athletes' cheeks is forbidden. As a common feature thereof, they leave the athlete's face free, protecting only his forehead, they protect temples and ears and on their back side they have an elongated vertical band protecting the cerebellum. This very rear side of such known helmets, realised "open" in order to be adapted to different sizes of heads, is equipped with a vertical protective band that bridges the two open ends on the rear side of the helmet, but has the problem that such band is kept pressed against the athlete's head only by a rear resilient element closing the helmet. During the movements and the hard blows to which the helmet is subjected during a fight, however, such band tends to go out of engagement with the resilient element and provides a potential danger both for the athlete wearing the helmet, and for the athlete punching it.

[0005] Moreover, the currently-known helmets, in order to provide more protection for the head, are very heavy and in the long run they are uncomfortable to wear and use in fights.

[0006] Object of the present invention is solving the above prior-art problems, by providing a protective helmet that prevents the rear protective band from going out during its use, guaranteeing a perfect hold with resilient closure means and providing a helmet that can be adapted to any type of head, that can be safely used by athletes and can be easily installed.

[0007] A further object of the present invention is providing a protective helmet of the above-mentioned type that, in addition to guaranteeing a perfect protection for an athlete's head, is also lightweight, and therefore comfortable to be used, because it is equipped with a series of weight-decreasing elements placed in positions in which the head is not damaged and that greatly reduce the helmet weight.

[0008] The above and other objects and advantages of the invention, as will appear from the following description, are obtained by a protective helmet as claimed in Claim 1. Preferred embodiments and non-trivial variations of the present invention are claimed in the de-

pendent Claims.

[0009] The present invention will be better described by some preferred embodiments thereof, given as a non-limiting example, with reference to the enclosed drawings, in which:

- Figure 1 is an outside lateral view of an embodiment of the protective helmet according to the present invention;
- Figure 2 is an outside top view of the helmet in Fig. 1;
- Figure 3 is an inside lateral view of the helmet in Fig. 1;
- Figure 4 is an outside front view of the helmet in Fig. 1;
- Figure 5 is an inside front view of the helmet in Fig. 1; and
- Figure 6 is an outside rear view of the helmet in Fig. 1.

[0010] With reference to the Figures, a preferred and non-limiting embodiment of the protective helmet 1 according to the present invention, is shown.

[0011] Such protective helmet 1 is adapted to be used, in particular, in sports fights, such as for example boxing competitions or martial arts competitions such as kick-boxing or taek-won-do or other competitions in which it is necessary to guard an athlete's head (not shown) from various types of blows. The protective helmet 1 substantially comprises a protective structure 3 equipped with lateral ear-protecting elongations 5 and open on a rear side 7 thereof in order to suit the helmet 1 to various sizes of heads. The structure 3 in its rear open part 7 comprises at least one vertical elongated band 9 for protecting the rear head part, and such band 9 is placed for covering the open part on the rear side 7 of the helmet 1. The band 9 is commonly engaged with resilient means (not shown, for example a common elastic band contained into suitable slits 10) for keeping the helmet 1 in position on the head. In an inventive way, the vertical elongated band 9 (that can also be provided in a number exceeding one) is equipped with holding means 11 adapted to prevent the band 9 from going out of engagement with the resilient means when using the helmet 1.

[0012] In particular, such holding means 11 are composed of one pair of wings 13, 15 (with various shapes and sizes) adapted to abut against corresponding recesses 16, 18 of the helmet 1 to prevent the band 9 from going out. The helmet 1, when worn, thereby assumes a compact configuration adapted to the athlete's head sizes, and such configuration remains unchanged (protecting the head itself) also during sports fights, guaranteeing a complete protection both to the athlete that wears the helmet 1 and to the athlete that punches such helmet 1, since the band 9 does not come out any more from the resilient means.

[0013] In order to improve on one side the protection

in some critical points of the head and to decrease on the other side the overall weight of the helmet 1, a series or arrangements are then provided that will be described below. Firstly, the protective helmet 1 of the invention is further equipped with at least one protective element 20 for each one of the temples placed on a respective side of the helmet 1.

[0014] Moreover, the protective helmet 1 is further equipped with at least one reinforcement band 22 for each one of the ears: such reinforcement band 22 is placed inside an opening 24 for each respective ear and, being realised in a single body with the structure 3 and with the same thickness thereof, is an improvement with respect to known helmets, that provided simple thin covering bands, that could easily be broken after a prolonged use of the helmet 1.

[0015] In order to further improve the protection, the helmet 1 is further equipped with at least one reinforcement band 23 for the forehead placed on its front part.

[0016] Instead, in order to reduce the overall weight, the protective helmet 1 of the invention is firstly equipped with at least one rear side, weight-decreasing element 26 placed on each side of the helmet 1: such element 26, that can be better seen only in Fig. 3 inside the helmet 1, is in practice realised by obtaining a recess (that is "digging" away and removing part of the material of the helmet 1) in positions that are scarcely subjected to dangers or that are already protected in nature. A similar reasoning is valid for the other weight-decreasing element, that is placed in a central position on each side of the helmet 1 and whose reference number is 28.

[0017] Another way for decreasing the weight of the helmet 1 is obtaining suitable openings, again in positions that are not dangerous for the athlete's head. For such purpose, the helmet 1 of the invention is equipped with at least one lower side, weight-decreasing opening 30 placed on each lateral elongation 5 for protecting the cheeks. Such openings are preferably two and are marked by reference numbers 30 and 31.

[0018] Moreover, at least one 34 (and preferably two, 34, 35) upper side, weight-decreasing opening is provided placed on each upper side part 36 for protecting the head. Such openings are of great sizes with respect to the other ones, since such part of the head is less exposed to blows with respect to the others.

[0019] Finally, the protective helmet 1 of the invention is further equipped with a series of openings on each upper front part 50 of the head, that is also less subjected to dangers. The openings can be one or more (in the embodiment show they are four and are marked by reference numbers 40, 42, 44, 46, of which 46 is the only opening that is common to both upper front parts 50) and usually have progressively-decreasing sizes starting from the front head part and going up rearwards.

Claims

1. Protective helmet (1), particularly for sports fights, comprising a protective structure (3) equipped with lateral ear-protecting elongations (5) and open on a rear side (7) thereof in order to suit the helmet (1) to various sizes of heads and comprising at least one vertical elongated band (9) for protecting a rear head part, said band (9) being placed for covering the open part on the rear side (7) of the helmet (1), said band (9) being engaged with resilient means for keeping the helmet (1) in position on the head, **characterised in that** said at least one vertical elongated band (9) is equipped with holding means (11) adapted to prevent said band (9) from going out of engagement with said resilient means when using the helmet (1).
2. Protective helmet (1) according to Claim 1, **characterised in that** said holding means (11) are composed of at least one pair of wings (13, 15) adapted to abut against corresponding recesses (16, 18) of the helmet (1) to prevent the band (9) from going out.
3. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one protective element (20) for each one of the temples placed on a respective side of the helmet (1).
4. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one reinforcement band (22) for each one of the ears, said reinforcement band (22) being placed inside an opening (24) for each respective ear.
5. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one reinforcement band (23) for the forehead placed on the front part of the helmet (1).
6. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one rear side, weight-decreasing element (26) placed on each side of the helmet (1).
7. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one central side, weight-decreasing element (28) placed on each side of the helmet (1).
8. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one lower side, weight-decreasing opening (30) placed on each lateral elongation (5) for protecting the cheeks.
9. Protective helmet (1) according to Claim 8, **characterised in that** it is further equipped with at least one upper side, weight-decreasing opening (34, 35) placed on each upper side part (36) for protecting the head.

terised in that the openings on each lateral elongation (5) are two (30, 31).

10. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one upper side, weight-decreasing opening (34) placed on each upper side part (36) for protecting the head. 5
11. Protective helmet (1) according to Claim 10, **characterised in that** the openings on each upper side part (36) are two (34, 35). 10
12. Protective helmet (1) according to Claim 1, **characterised in that** it is further equipped with at least one upper front, weight-decreasing opening (40) placed on each upper front part (50) for protecting the head. 15
13. Protective helmet (1) according to Claim 12, **characterised in that** the openings on each upper front part (50) are four (40, 42, 44, 46). 20
14. Protective helmet (1) according to any one of the previous Claims, **characterised in that** said helmet (1) is adapted to be used in boxing competitions. 25
15. Protective helmet (1) according to any one of Claims 1 to 13, **characterised in that** said helmet (1) is adapted to be used in martial arts competitions, in particular in kick-boxing and taek-won-do. 30

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