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(12) # EUROPEAN PATENT SPECIFICATION

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Description

This invention relates to protective helmets, which are used by, for example, motor cyclists and pedal cyclists, scooter riders and moped riders, and which are of a type provided with chin straps in order that the helmet may be held securely to the user's head. The most commonly known protective helmet for motor cyclists have chin straps which are secured by means of metallic pins or iron plates which plates in turn are rivotted to the inside of the helmet shell.

There are known other fixing arrangements in protective helmets, but invariably these arrangements include metallic connecting parts (CH—A—767591).

When metallic parts are used, it frequently happens that due to the action of inclement weather or because of perspiration of the user, the metallic parts become oxidised, and if made of iron or steel rusting, which on the one hand makes them unsightly, and on the other hand and more seriously weakens them to such an extent that they may fail in use when subject to stress which could be extremely dangerous in the case of impacts and accidents.

The present invention seeks to provide a protective helmet, whereby the utilisation of metallic parts for the fixing of the chin strap of the helmet is obviated thereby avoiding the abovementioned drawbacks.

In accordance with the present invention, there is provided a protective helmet comprising a head protecting shell of non-metallic material and a chin strap mountings at respective sides thereof, said mountings including a support integral with the shell, and a locking member which is also of non-metallic material and which co-operates with the support thereby to lock the chin strap to the shell, characterised in that the support comprises a bridge stamped out from, or moulded with the protective shell the bridge 12 being supported and spaced inwardly of the inner surface of the shell by bridge legs at the end of the bridge so as to define a bridge slot through which an end loop of the chin strap passes; a complementary part of said bridge comprising a locking pin which is greater in diameter than the width of said slot and which passes through the said loop of the chin strap, said locking pin having resilient locking legs which respectively resiliently lock to the bridge legs to prevent the locking pin in use from moving upwardly relative to the bridge; an aperture being formed in the shell to allow the stamping or moulding of said bridge, which aperture is closed by a cover of synthetic plastics material by which is sprung into position by means of resilient projections from the outside of the shell, so as to close said aperture; said bridge, legs and locking pin being located on the inner surface of the shell and the cover being flush with the outer surface of the shell so that said outer surface is smooth and can be moulded in synthetic resin, in order to avoid the use of rivets screws, studs or other metallic parts.

The said locking pin may be provided with two resilient locking legs provided with projections which are adapted to spring into locking engagement with recesses or ledges in the bridge legs, thereby to prevent the movement of the locking pin upwards relative to the bridge.

With the formation of each bridge there may be formed an aperture in the outside of the shell, and such aperture is preferably covered by means of a cover plate which is provided with resilient projections which serve resiliently to lock the cover plate in position covering said aperture.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, wherein:—

Fig. 1 is a view of one side of the inside of the helmet shell, showing the integral support at that side, a similar support being provided at the other side;

Fig. 2 shows the support shown in Fig. 1 when viewed from the outside of the helmet;

Fig. 3 is a cross-section taken through the support shown in Figs. 1 and 2;

Fig. 4 is a view similar to Fig. 1, but showing the locking pin in operative position;

Fig. 5 is a side view of the locking pin shown in Fig. 4;

Fig. 6 is a plan view of an outer cover plate;

Fig. 7 is a cross-sectional view of a cover plate shown in Fig. 6; and

Fig. 8 is a cross-section similar to Fig. 3, but showing the complete assembly, and the loop end of the chin strap held by the assembly, and the cover plate applied.

Referring to the various figures, it is to be mentioned that the helmet shell 1 is provided with two chin strap mountings, one at each side and one only of which is described, and the said shell is made in this example of stampable elastic synthetic resin (it may be of polyester resin reinforced with glass fibres), and has formed by stamping or mechanical moulding on each side a locking bridge 2 which is spaced from the inside of the helmet by means of bridge legs at the ends of bridge 2, so as to define a slot or loop hole 3, 4 to receive the looped end of the chin strap 5. The looped end may be formed by folding the end of the strap and sewing the folded end to the remainder. The looped end is indicated by numeral 5′ in Fig. 8. Received in the looped end 5′ is a locking pin 6, which is also made of synthetic resinous material and terminates in two resilient legs 7 and 8 as shown in Figs. 4 and 5, which are provided with projections 7′ and 8′ which are resiliently received in the recesses 2 and 2″ of the bridge 2, to prevent the movement of the pin 6, and therefore the loop 5′, upwards in use.

The diameter of the pin 6 is greater than the

width of the slot 3 of the bridge, to prevent the loop 5′ from slipping through the slot 3, 4.

Each mounting is provided with a cover plate 9 which is also of synthetic plastics material, and is provided with resilient projections 9 and 9″, which serve to hold the cover in the opening 3′, as shown in Fig. 2, to cover said opening. The opening 3′ occurs with the stamping out of the bridge 2.

It will be clear that in the arrangement described there are no metallic parts, and therefore oxidation, corrosion and wear of parts due to oxidation and corrosion are excluded absolutely, ensuring the long term efficiency of the strap attachments.

Claims

1. A protective helmet comprising a head protecting shell of non-metallic material and a chin strap mountings at respective sides thereof, said mountings including a support integral with the shell, and a locking member which is also of non-metallic material and which cooperates with the support thereby to lock the chin strap to the shell, characterised in that the support comprises a bridge (2) stamped out from, or moulded with the protective shell (1) the bridge (12) being supported and spaced inwardly of the inner surface of the shell by bridge legs (2′, 2″) at the end of the bridge (2) so as to define a bridge slot (3) through which an end loop (5′) of the chin strap (5) passes; a complementary part (6) of said bridge (2) comprising a locking pin (6) which is greater in diameter than the width of said slot (3, 4) and which passes through the said loop (5′) of the chin strap, said locking pin (6) having resilient locking legs (7, 8), which respectively resiliently lock to the bridge legs to prevent the locking pin (6) in use from moving upwardly relative to the bridge (2); an aperture (3′) being formed in the shell (1) to allow the stamping or moulding of said bridge (2), which aperture (3) is closed by a cover (9) of synthetic plastics material which is sprung into position by means of resilient projections (9′, 9″), from the outside of the shell, so as to close said aperture (3′); said bridge (2), legs (2, 2′) and locking pin (6) being located on the inner surface of the shell (1) and the cover (9) being flush with the outer surface of the shell so that said outer surface is smooth and can be moulded in synthetic resin, in order to avoid the use of rivets screws, studs or other metallic parts.

2. A helmet according to claim 1, characterised in that the shell (1) and all the parts forming the chin strap mountings are of polyester resin reinforced with glass fibre.

Patentansprüche

1. Schutzhelm mit einer Kopfschutzschale aus nichtmetallischem Material sowie einer an jeder Seite ausgebildeten Kinnriemenbefestigung, die eine mit der Schutzschale einstückige Halterung und ein ebenfalls aus nichtmetallischem Material bestehendes Riegelglied umfaßt, das mit der Halterung zur Verriegelung des Kinnriemens an der Schutzschale zusammenarbeitet, dadurch gekennzeichnet, daß die Halterung einen aus der Schutzschale (1) herausgepreßten oder mit der Schutzschale geformten Steg (2) umfaßt, der mit Abstand einwärts von der Innenoberfläche der Schutzschale an dieser durch Stegschenkel (2′, 2″) an den Enden des Steges (2) abgestützt ist und einen Durchtritt (3) bildet, der von einer endseitigen Schlaufe (5′) des Kinnriemens durchsetzt ist, daß ein Komplementärteil (6) des Steges (2) als Riegelbolzen (6) ausgebildet ist, der einen gegenüber der Weite des Durchtritts (3, 4) größeren Durchmesser hat sowie die Schlaufe (5′) des Kinnriemens durchsetzt und mit federnden Riegelschenkeln (7, 8) versehen ist, welche sich jeweils federnd mit den Stegschenkeln zur Unterbindung einer Aufwärtsbewegung des Riegelbolzens (6) im Gebrauch mit Bezug zum Steg (2) verriegeln, daß in der Schutzschale (1) eine das Herauspressen oder Formen des Steges (2) zulassende Öffnung (3′) ausgestaltet wird, welche von einer aus synthetischem Kunstoffmaterial bestehenden Abdeckung (9) verschlossen wird, die von der Außenseite der Schutzschale mittels federnder Nasen (9′, 9″) zum Schließen der Öffnung (3′) in ihre Lage eingeschnappt wird, und daß der Steg (2), die Schenkel (2′, 2″) sowie der Riegelbolzen (6) an der Innenfläche der Schultzschale (1) angeordnet sind und die Abdeckung (9) bündig mit der Außenfläche der Schutzschale ist, so daß diese Ausßenfläche glatt und aus Kunstharz formbar ist, um die Verwendung von Nieten, Schrauben, Stiften oder anderen Metallteilen zu vermeiden.

2. Schutzhelm nach Anspruch 1, dadurch gekennzeichnet, daß die Schutzschale (1) sowie alle die Kinnriemenbefestigung bildenden Teile aus einem mit Glasfasern verstärkten Polyesterharz sind.

Revendications

1. Casque de protection comprenant une paroi protégeant la tête en matière non-métallique et des montures pour une mentonnière su les côtés respectifs du casque, lesdites montures comprenant un support faisant corps avec la paroi et un organe de retenue qui est aussi en matière non-métallique et qui coopère avec le support pour retenir ainsi la mentionnière à la paroi, caractérisé en ce que le support comprend un point (2) embouti ou moulé avec la paroi protectrice (1), le pont (2) étant supporté et écarté intérieurement de la face intérieure de la paroi par des montants de pont (2′, 2″) à l'extrémité du pont (2) de façon à ménager une fente de pont (3) à travers laquelle passe une boucle d'extrémité (5′) de la mentonnière (5); une partie complémentaire (6)

dudit pont (2) comprenant une broche de retenue (6) qui est d'un diamètre supérieur à la largeur de ladite fente (3, 4) et qui passe à travers ladite boucle (5') de la mentonnière, ladite broche de retenue (6) ayant des pattes élastiques de verrouillage (7, 8) qui s'enclenchent respectivement de façon élastique aux branches de pont pour empêcher la broche de retenue (6) en service de se déplacer vers le haut par rapport au pont (2); une ouverture (3') étant formée dans la paroi (1) pour permettre l'emboutissage ou le moulage dudit point (2), laquelle ouverture (3') est fermée par un couvercle (9) en matière plastique synthétique qui est mis en position au moyen de saillies élastiques (9', 9") par l'extérieur de la paroi de façon à fermer ladite ouverture (3'); ledit pont (2), les branches (2', 2") et la broche de retenue (6) étant placés sur la surface intérieure de la paroi (1) et le couvercle (9) étant à fleur de la surface extérieure de la paroi de façon que ladite surface extérieure soit lisse et puisse être moulée en résine synthétique afin d'éviter l'utilisation de rivets, vis, goujons ou autres parties métalliques.

2. Casque selon la revendication 1, caractérisé en ce que la paroi (1) et toutes les parties formant les montures de mentonnière sont en résine de polyester renforcée par des fibres de verre.

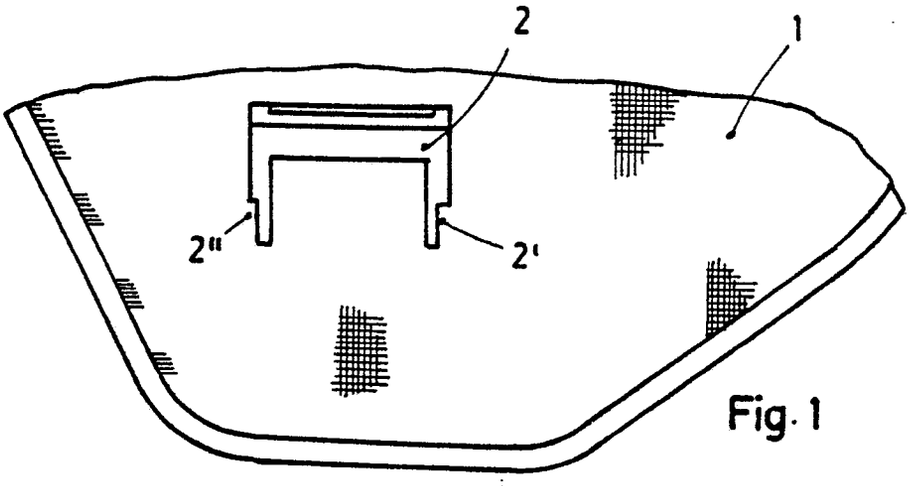

Fig. 1

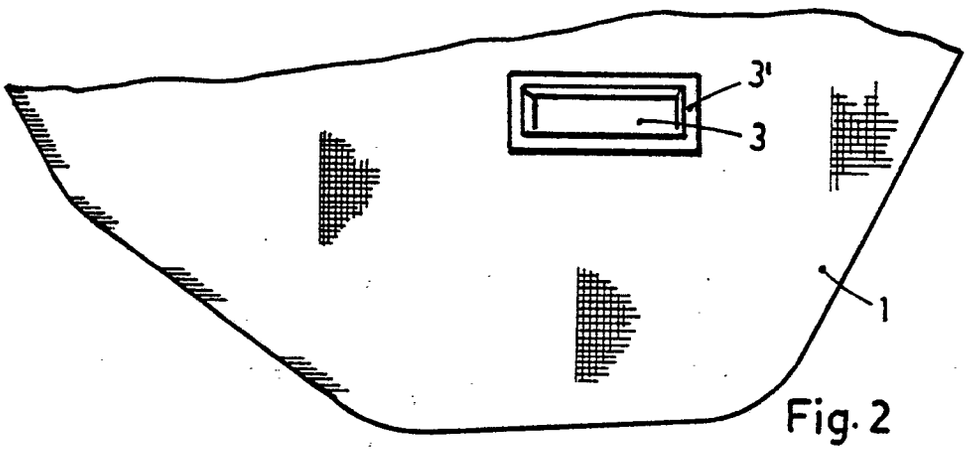

Fig. 2

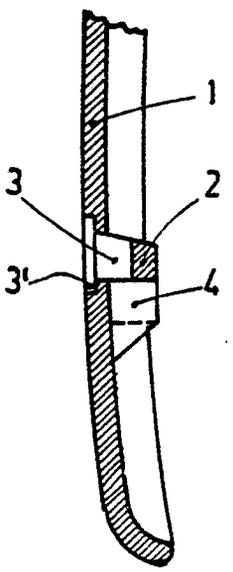

Fig. 3

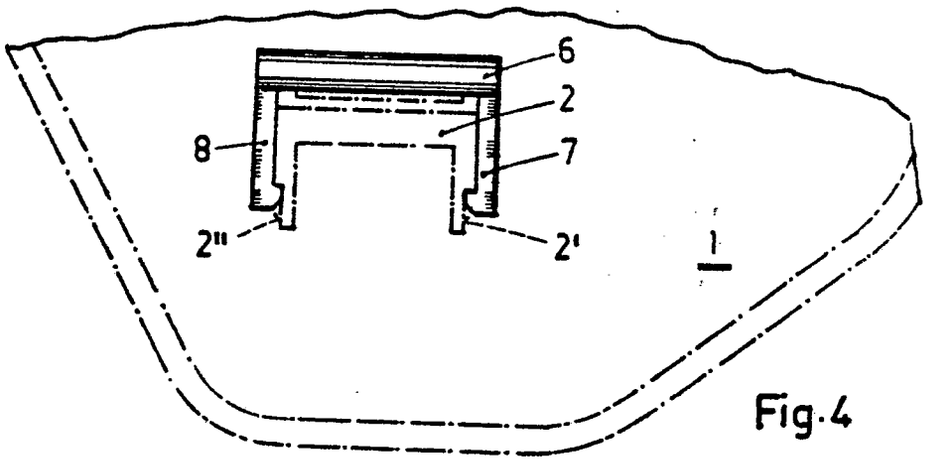

Fig.4

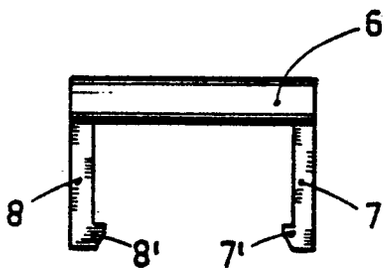

Fig.5

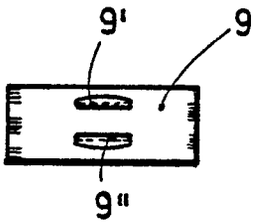

Fig.6

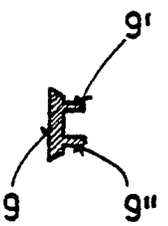

Fig.7

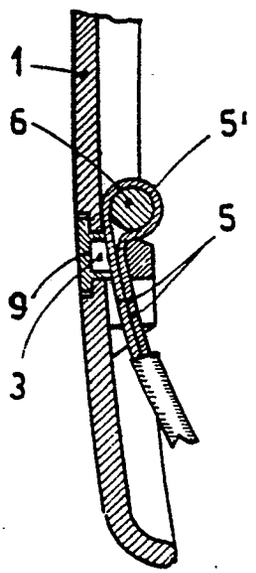

Fig.8