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(54) **ELEMENT OR ADDITION FOR PROTECTING THE FINGERS OF SAFETY GLOVES**

(57) Protective element or attachment to place on a glove finger, consisting in a resistant, hard piece with a half-round shape, closed at its end and open at the opposite end and partly on its lateral sides. Moreover, said element has its top part in the shape of an elongated

semicircle connected to a half-ring. Additionally, the safety glove having at least one protective element located at the top dorsal part of one of the glove fingers is described.

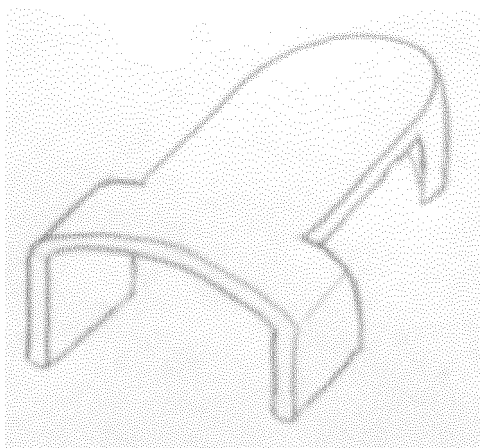


Figure 1

Description

Field of the invention

[0001] The present invention relates to the field of industrial safety, more specifically to the safety of the fingertips.

[0002] The present invention consists in a protective element for fingers corresponding to a special attachment which is fixed to the fingertips of a safety glove, so that the fingertips are protected from smashes, bumps, scratches, cuts or pricks in carrying out a potentially dangerous job. The attachment is a piece made of hard, resistant material with a shape similar to that of a half-round closed on one end, which provides protection and does not interfere with fine motor skill and the sense of comfort in its use.

Background of the invention

[0003] In order to protect workers from all the risks arising from handling sharp tools or materials, cutting edges, metal swarf, certain bumps and many other physical risks, appropriate Workplace Safety measures need to be taken to prevent accidents.

[0004] Particularly for protecting hands from the described risks, there are different types of Gloves made from different materials which conform to Workplace Safety requirements.

[0005] Safety gloves must be worn by all Company personnel, both production and supervision, exposed to the detailed risks. Thus, the present invention solves the problem of workplace safety, since a third of work accidents in the industry involves fingers, hands and arms.

[0006] A myriad of work gloves used in the industry are widely known, which have incorporated specific elements according to the activity to be carried out. The most widely used gloves are leather gloves, which have been modified, e.g. reinforced by incorporating a larger number of layers in those areas which are more exposed to damages by cuts, scratches, etc. Moreover, their stitching design has been modified, making them more resistant, or elements like rubber or PVC (polyvinyl chloride) dots have been incorporated so as to make them non-slip.

[0007] Some researches have addressed the problem of finger protection, e.g. with metal elements, such as patent US2008216209 which incorporates metal rings around the fingers, incorporated in the glove; however, this will only provide a certain degree of protection to the fingers. With these rings, the glove does not lose flexibility or ease of handling, but provides only partial protection.

[0008] Furthermore, numerous patents have attempted to solve the problem of protecting specific areas of the hand, such as nails, e.g. patent US20110041225, which refers to a glove having protective pads located inside the glove at the top dorsal part of the fingertips to prevent the top of the fingers from being damaged due

to contact with the outside and rubbing or friction against the inner surface of the glove. The protective pads can be made of a soft or smooth material to avoid scratching, filing or damaging nails.

[0009] Another example is patent US20100071114, which relates to a construction glove comprising a glove in the shape of a human hand, said glove having end portions associated therewith, and a plurality of protectors in the form of elongated members extending substantially along the length of the fingers and thumb, adjacent portions of the tips of the fingers and thumb, a layer having upper and lower surfaces. However, this design prevents the development of an activity requiring fine motor skill, since the protective elements incorporated at the finger length makes it very rigid.

[0010] In patent JP2009062649, a hand protector is incorporated, obtained by covering finger parts corresponding to the second finger through the fifth finger of a glove with a tubular reinforcement comprising a plurality of tubes, wherein workability is reduced because the reinforcement elements are tubular. This patent incorporates tubular elements along the entire length of the finger, i.e. the inner and outer sides of the finger, thereby making handling very difficult.

[0011] Thus, the present invention addresses a problem which has no solution in the prior art, fully satisfying safety requirements without compromising fine motor skill for manipulation.

[0012] Therefore, the object of the present invention is to develop a protective element for a glove finger.

Summary of the invention

[0013] The present invention consists in a protective element or attachment for a glove finger and a glove having at least one of said elements, corresponding to a protective attachment made of a resistant material.

Brief description of the figures

[0014] To better explain the present invention, reference is made to the following accompanying figures, which are illustrative and not limiting of the invention.

Figure 1 schematically depicts the finger protecting attachment.

Figure 2 schematically shows any finger, the contour of the glove (2) and the protective element (1) located at the tip of the glove.

Figure 3 shows the side view of the protective element of the present invention proposed herein.

Figure 4 shows the rear view of the protective element of the present invention.

Figure 5 shows the top view of the protective element

of the present invention.

Detailed description of the invention

[0015] The need of a protecting element for the fingers, without reducing mobility and comfort, leads to the idea of incorporating a special attachment at the ends of the glove fingers protecting the fingertips from bumps, cuts, scratches, pricks or hard smashes, such that there is one protective element or attachment per finger and every glove may contain as many protective elements as fingers. This attachment is a piece with a shape similar to that shown in Figure 1.

[0016] The present invention consists in a protective element or attachment made of different resistant materials, such as, but not limited to: hard plastic, polymeric materials such as polyamide, glass fiber or metal. This attachment is glued or fixed firmly to each end of the glove, either on the inside or outside thereof, and contemplates a height carefully designed not to obstruct handling. The piece may undergo minor variations in shape and size depending on the finger to which this attachment will be attached, with the possibility of being incorporated to one or more fingers, as required, but the concept will remain the same - to serve as protection for the fingers.

[0017] The protecting element or attachment differs significantly from the existing inventions having the same objective, mainly because its shape considers not only factors regarding the effective protection of extremities, which is the main objective, but also ergonomic factors which provide incomparable benefits as to the fine motor skill and sense of comfort in its use, as compared to the models comprising a full protective cover of the extremity. This is explained by the fact that the protective covers proposed herein rarely contact each other, given they are located on the glove fingers, generating less friction and interference among the fingers when the glove is being used. This is also because the inventive protective element contemplates the back supports at the height of the first phalanges of the fingers, which are naturally located at different distances from the base of the hand in accordance with the different lengths of the fingers.

[0018] The protective element or attachment may be made of various hard materials and has a half-round shape closed on its end and open at the opposite end and partly on its lateral sides, wherein said attachment is located at the distal end of the back of the glove fingers, and said element has its top in the shape of an elongated semicircle connected to a half-ring, its lateral side is discontinuous and the front end closed.

[0019] The glove having at least one of said protective elements or accessories is also described.

Claims

1. A protective element or attachment to place on a glove finger, consisting in a resistant, hard piece with

a half-round shape, closed at its end and open at the opposite end and partly on its lateral sides.

2. The protective element or attachment according to claim 1, wherein the glove is a safety glove and wherein at least one protective element is located at the top dorsal part of one of the glove fingers and said element has its top in the shape of an elongated semicircle connected to a half-ring.
3. The protective element or attachment of claim 1, wherein at least two protective elements are located at the top dorsal part of at least two glove fingers, such that the glove has a protective element on each of the two fingers and said elements have their top part in the shape of an elongated semicircle connected to a half-ring.
4. The protective element or attachment according to any one of claims 1 to 3, wherein said attachment is made of metal.
5. The protective element or attachment according to any one of claims 1 to 3, wherein said attachment is made of hard plastic.
6. The protective element or attachment according to any one of claims 1 to 3, wherein said attachment is made of glass fiber.
7. The protective element or attachment according to any one of claims 1 to 3, wherein said attachment is made of polymeric materials such as polyamide.
8. A safety glove comprising at least one protective element or attachment which is glued or fixed to the top dorsal part of at least one of the fingers of said glove and wherein said protective element or attachment consists of a hard, resistant piece with a half-round shape, closed on its end and open on the opposite end and partly on its lateral sides.
9. A safety glove according to claim 8, wherein at least two protective elements are located at the top dorsal part of at least two glove fingers, such that the glove has a protective element on each of the two fingers and said elements have their top part in the shape of an elongated semicircle connected to a half-ring.
10. A safety glove according to claim 8 or 9, wherein said attachment is made of metal.
11. A safety glove according to claim 8 or 9, wherein said attachment is made of hard plastic.
12. A safety glove according to claim 8 or 9, wherein said attachment is made of glass fiber.

13. A safety glove according to claim 8 or 9, wherein said attachment is made of polymeric materials such as polyamide.

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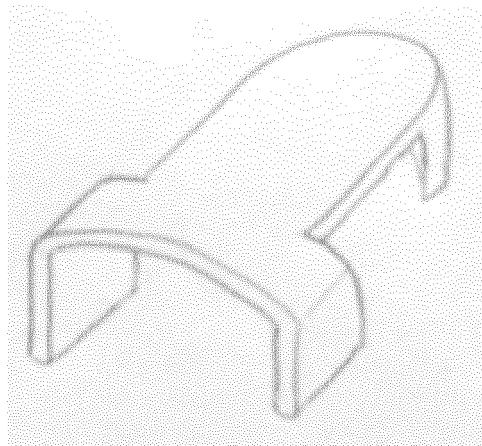


Figure 1

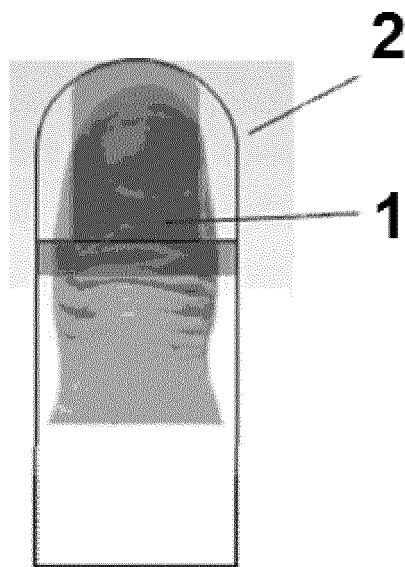


Figure 2



Figure 3

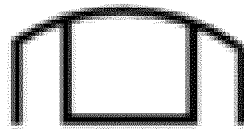


Figure 4

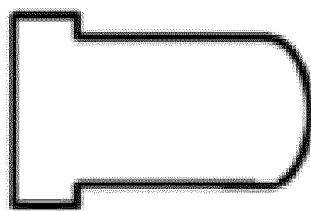


Figure 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CL2012/000032

A. CLASSIFICATION OF SUBJECT MATTER

A41D19/015 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A41D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES, WPI, EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 956484 C (AUGUST KNOEBEL) 17/01/1957, the whole document.	1-13
X	EP 0196637 A1 (DAIDO STEEL CO LTD) 08/10/1986, paragraphs 3 - 9; figures 4-6	1-13
A	US 2437886 A (MILLARD IRWIN W ET AL.) 16/03/1948, column 1, line 40 - column 2, line 54; figures	1-13
A	CN 201919744 U (HUA ZHANG) 10/08/2011, figures & Abstract from DataBase EPODOC. Retrieved of EPOQUE; AN CN-201120010624-U	1-13
A	CN 201471920 U (NAN NING) 19/05/2010, figures & abstract from DataBase EPODOC. Retrieved of EPOQUE; AN CN-200920225527-U	1-13

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.	
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CL2012/000032

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 201213460 Y (YI XUE) 01/04/2009, figures & abstract from DataBase EPODOC. Retrieved from EPOQUE; AN CN-200820088603-U	1-13
A	CA 2227033 A1 (BARTOK JOSEPH L) 23/09/1999, the whole document.	1-13
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PCT/CL2012/000032

Information on patent family members

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REFERENCES CITED IN THE DESCRIPTION

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- JP 2009062649 B [0010]