July 12, 1966 J. N. SIMPSON ET AL 3,259,908

FACESHIELD CLIP-ON VISOR

Filed April 13, 1964

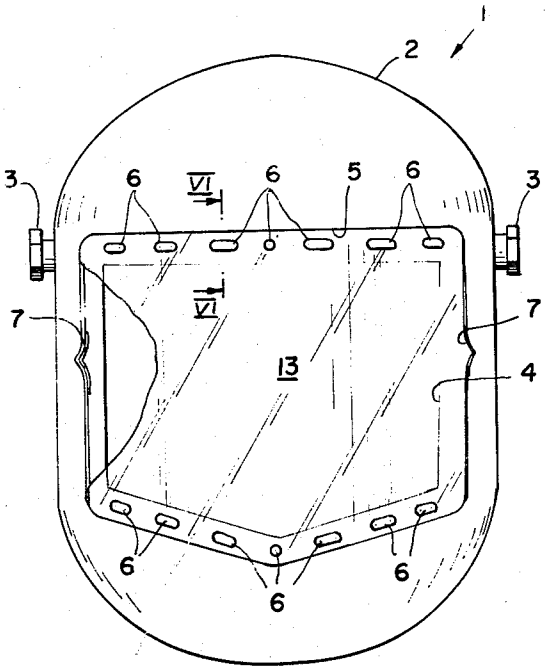

Fig. 1.

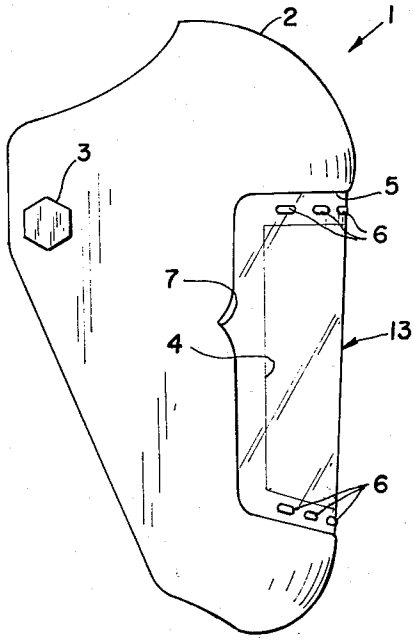

Fig. 2.

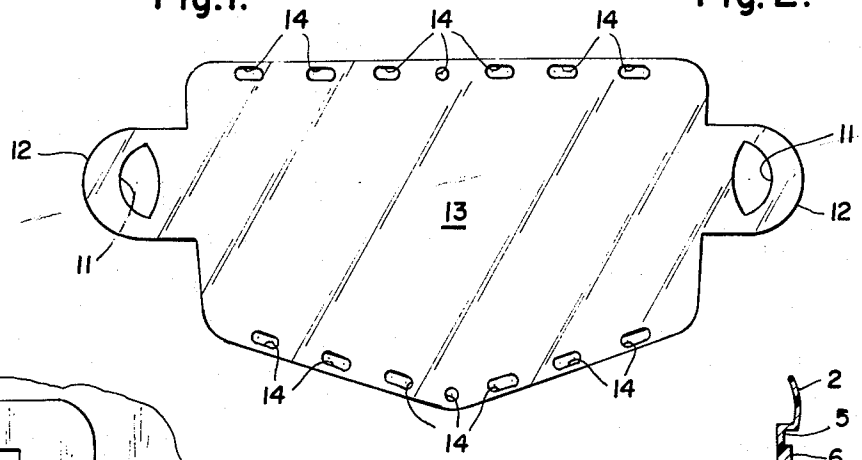

Fig. 3.

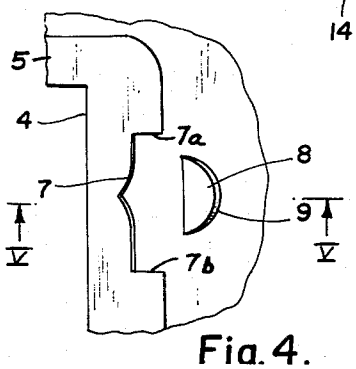

Fig. 4.

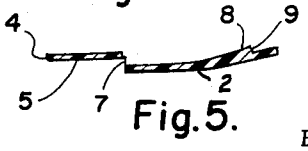

Fig. 5.

Fig. 6.

INVENTORS
JACK N. SIMPSON and
CHARLES J. BOYER

BY

William J. Ruano

their ATTORNEY

United States Patent Office 3,259,908 Patented July 12, 1966

3,259,908

FACESHIELD CLIP-ON VISOR

Jack N. Simpson, Reading, and Charles J. Boyer, West Reading, Pa., assignors to The Electric Storage Battery Company, Philadelphia, Pa.

Filed Apr. 13, 1964, Ser. No. 359,240
3 Claims. (Cl. 2—9)

This invention relates to a face-protective shield or helmet and, more particularly, to means for detachably clipping a transparent window or visor on such shield so that it may be readily replaceable.

An outstanding disadvantage of conventional face-protective shields or helmets has been that the visor is of a given thickness and may not be easily varied in thickness at will to enable the user to select a thickness he desires for different operations, such as .015 inch on very light work and thicker, such as .020, .030, .040, and .060 inch, as hazards increase. Another disadvantage of conventional protective shields is that they are relatively expensive, involve difficulty and a time consuming operation for replacement, requiring in some cases, tools for this purpose.

An object of the present invention is to provide a novel visor construction and a readily detachable mounting thereof on a faceshield so as to overcome the above-named disadvantages and permit the use and substitution of visors of various thickness for different hazards, also to effect such substitution or replacement easily and quickly by a mere clip-on operation.

A further object of the invention is to provide a visor of relatively simple and inexpensive construction and which may be attached onto or detached from the faceshield without the necessity of tools.

Other objects of the invention will become more apparent from a study of the following description taken with the accompanying drawing wherein:

FIG. 1 is a front view of a faceshield or helmet on which is detachably mounted a visor **13** embodying the principles of the present invention;

FIG. 2 is a side view of the faceshield shown in FIG. 1;

FIG. 3 is a plan view of the visor **13** shown in FIGS. 1 and 2;

FIG. 4 is an enlarged, elevational view of an inside portion of the shield at one side thereof, more clearly showing means for anchoring an extension of the visor;

FIG. 5 is a cross-sectional view taken along V—V of FIG. 4;

FIG. 6 is a vertical, cross-sectional view showing the top portion of frame **5**.

Referring more particularly to FIGS. 1 and 2 of the drawing, numeral **1** generally denotes a faceshield or helmet **2** of rigid plastic or other suitable material which is slightly flexible so that the side portions may be slightly sprung apart. Numeral **3** denotes a nut for pivotally mounting the shield on a headband suspension (not shown).

The present invention is specifically directed to the mounting for the transparent plastic window or visor **13**, of acetate, vinyl or other suitable material, to make the visor easily and quickly replaceable or detachable. Shield **2** has a window opening **4** in a frame portion **5** which has top and bottom portions having a plurality of spaced, outwardly extending protuberances or beads **6** which are adapted to fit into corresponding holes **14** (see FIGS. 3 and 6) provided in the visor.

Between the frame **5** and laterally offset portion **2** of the shield there is provided, on each side, a slot or opening **7** extending from *7a* to *7b* (see FIGS. 4 and 5) and through which the ears or side extensions **12** of the plastic visor **13** may be inserted and slid along the inner surface of shield **2**. Such extensions **12** are provided with holes

11 which are shaped so as to snugly encircle integral projections **8** formed on opposite sides of the inner surfaces of the shield. Thus, to mount the visor, the extensions **12** are gradually pushed into the slots **7** and as soon as holes **11** come into registry with projections **8**, the extensions **12**, by virtue of their stiffness and flexibility, snap into locking position by closely hugging the inner surfaces of the shield, at which time edge surfaces **9** of the projections **8** serve as stops to prevent the extension from pulling out forwardly of the faceshield.

It should be especially noted that visor **13** does not have its peripheral portion sandwiched between two parts as in conventional mountings but instead, its inner peripheral surface is uncovered since the only force necessary to hold the visor in place is the tendency of the slightly folded visor to unfold into its natural flat shape as shown in FIG. 2. This provides the outstanding advantage of enabling visors of different thickness to be used for different hazardous conditions, such as a thickness of .015 inch for light hazards and thicknesses of .020, .030, .040, and .060" for greater hazards.

To remove visor **13** it is necessary merely to pull the extensions or ears **12** sufficiently away from the inner surface of shield **2** so as to clear projections **8**, whereupon by pushing the ears **12** forwardly, visor **13** is detached from locking engagement with beads **14**. A new visor may then be mounted merely by inserting its ears **12** through slots **7** from the front of shield **2** after slight arcuate bending of visor **13** and pushing the visor inwardly until openings **11** come into registry with projections **8**, whereupon the ears will automatically spring into locking position by engaging the inner surfaces of shield **2** by virtue of the springiness of the visor **13**, that is, its tendency to spring back into its normal flat shape.

Thus it will be seen that we have provided an efficient means for easily and quickly attaching or detaching a transparent plastic visor in a face protective shield, welding shield, or any other face protective unit, by depending solely upon the springiness of the plastic visor; furthermore, we have provided a faceshield mounting which does not require sandwiching of the peripheral portion of the visor, therefore, which enables substitution of visors of varying thickness, ranging from the cheapest type for lesser hazards to thicker and more expensive types for greater hazards; furthermore, we have provided a mounting for a faceshield visor which is relatively simple and inexpensive to manufacture and which enables very quick and easy attachment or detachment without the necessity of tools.

While we have illustrated and described a single specific embodiment of our invention, it will be understood that this is by way of illustration only, and that various changes and modifications may be made within the contemplation of our invention and within the scope of the following claims.

We claim:

1. A face protective shield having a window opening defined by a slightly offset frame portion, a slot on each side of the shield between the frame portion and the shield, a projection on the inner surface of each side of the shield closely adjacent one of said slots, and a visor of flexible and springy, transparent plastic material which is normally flat and which is provided with a pair of laterally extending ears, each of said ears having a hole corresponding in outline to each of said projections, said ears projecting into the front of said shield through said slots, and said projections extending through said holes and releasably locking said visor upon said shield, whereby the springiness of the ears and visor cause said ears to lock in place by moving closely to the inner surface of said visor, and whereby said projections act as stops for preventing forward displacement of said visor.

2. The combination recited in claim 1 wherein said frame is provided with a plurality of spaced integral projections along its top and bottom portion and wherein said visor is provided with a plurality of corresponding slots along its top and bottom perimetrical portions, said projections extending through said slots and releasably engaging said visor to firmly lock the visor to the shield.

3. A face protective shield for pivotal mounting on a headgear, said shield having a window opening defined by an inwardly offset frame portion, a pair of slots extending between side portions of said frame portion and said shield, a substantially semi-circular projection integrally formed on the inner surface of said shield adjacent each of said slots with its diameter closest to the slot, a visor of transparent, plastic material which is flexible and springy but sufficiently rigid to tend to assume a flat shape and being of substantially rectangular outline with laterally extending ears extending through said slots and, each of said ears having a substantially semi-circular cut-out, said projections extending through said cut-outs and releasably engaging said visor, a plurality of integral projections extending along the top and bottom perimeters of said frame portion, and a plurality of correspondingly shaped holes along the top and bottom margins of said visor, said projections extending through said holes and releasably locking said visor on said frame, whereby the springiness of said visor and extensions hold said extensions in locked position against the inner surface of the shield.

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JORDAN FRANKLIN, *Primary Examiner.*

FRANK J. COHEN, *Examiner.*

J. R. BOLER, *Assistant Examiner.*