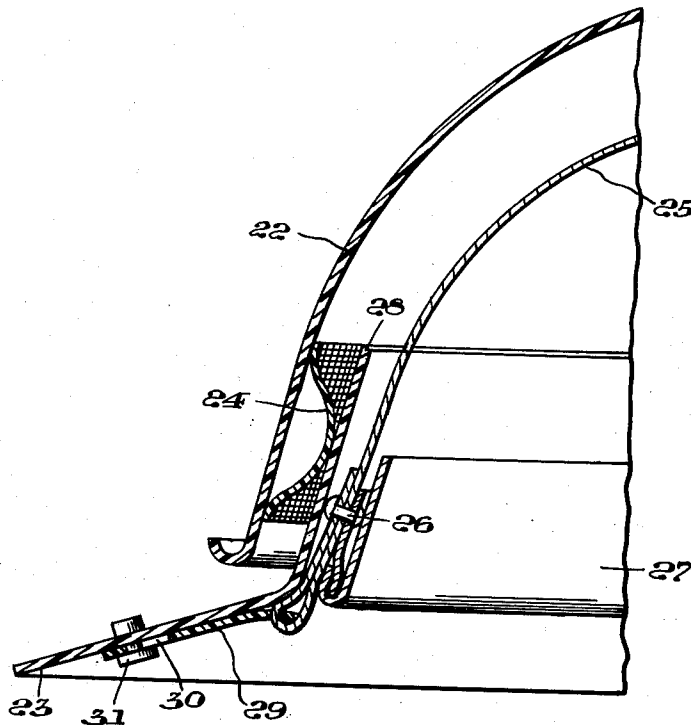


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SAFETY HELMET

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3,063,055

SAFETY HELMET

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3 Claims. (Cl. 2-3)

This invention relates to helmets such as are worn by industrial workers. This application is a division of my copending application, Serial Number 739,052, filed June 2, 1958, now Patent No. 2,971,195.

It is among the objects of this invention to provide a protective helmet which will effectively absorb energy directed against it from the top, sides, front or back; which has easily replaceable parts; which utilize a single size, shape and design crown for different size heads; and which is of simple construction.

In accordance with this invention, a rigid brim is supported by the lower part of a cradle which fits over the head. A rigid crown covers the cradle and is spaced from it. The brim extends laterally away from the cradle beneath the crown and has an upwardly extending inner portion that supports permanently stretchable material. The lower part of the crown is supported by the stretchable material to hold the crown in place. When, during use, the crown accidentally receives an impact of sufficient force, the stretchable material will be stretched permanently, and in stretching will absorb energy and thereby absorb the shock of the impact.

The invention is illustrated in the accompanying drawing, in which the single FIGURE is a fragmentary vertical section through a helmet incorporating this invention.

Referring to the drawing, the crown 22 of the helmet may be made of any material that will give it the necessary strength and rigidity, either metal or a molded composition. Such crowns are well known and are generally surrounded by an integral inclined brim, but in this case the crown has no such brim. Inside the crown there is a cradle, which may be formed from straps 25 that pass over the head. The straps may be connected together at the top in any desired manner. The lower ends of the straps are turned back upon themselves and fastened with rivets 26 to form loops. The rivets also extend through the outer portion of a headband 27 that fits around the head.

The cradle straps support a rigid brim that is separate from the crown. The brim has a laterally projecting lower portion 23 and also an integral inner portion 28 extending up between the cradle and the surrounding crown. The loops in the lower ends of the straps pass through slots in relatively stiff retaining members 29 engaging the lower surface of the brim. Each of these retaining members has a keyhole slot 30 in its outer end that receives a stud 31 anchored in the brim. Consequently, the brim is supported around the head by the cradle.

A feature of the invention is that the brim supports permanently distortable means, which in turn supports the crown spaced from the brim so that the shock of a blow against the crown will be absorbed by the distortable means. The distortable means is a continuous or discontinuous strip 24 of material secured to both the crown and the brim in any suitable way, such as by cementing. The

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strip is folded or bent lengthwise along its center so that its edges can be secured to the crown and its central portion to the upper part 28 of the brim. Of course, the strip could be turned around without affecting its usefulness.

The strip is made of permanently stretchable or elongatable material that will absorb energy as it is lengthened. For example, it can be made of undrawn plastic material, such as nylon. Or, it can take the form of woven material in which the threads are connected at their intersections by a binding composition that will rupture when a predetermined tensile force is applied. Such a material is disclosed in Voss and Theodore Patent 2,921,318. If the crown receives a blow above a predetermined value, it will stretch the strip 24 downward. In elongating, the strip will absorb energy and thereby reduce the shock reaching the brim.

According to the provisions of the patent statutes, I have explained the principle of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. A safety helmet comprising a cradle adapted to fit over the head and be supported thereby, a rigid brim supported by the lower part of the cradle and extending laterally away from it, the brim having an integral inner portion extending upwardly from the inner edge of a laterally projecting portion, a rigid crown covering the cradle and surrounding said inner portion of the brim in spaced relation thereto and to said laterally projecting portion, and permanently stretchable material secured to said inner portion of the brim and to the inside of the crown encircling it to suspend the crown from the brim in a predetermined position until the crown receives a blow above a predetermined value.

2. A safety helmet comprising a cradle adapted to fit over the head and be supported thereby, a rigid brim supported by the lower part of the cradle and extending laterally away from it, the brim having an integral inner portion extending upwardly from the inner edge of a laterally projecting portion, a rigid crown covering the cradle and surrounding said inner portion of the brim in spaced relation thereto and to said laterally projecting portion, and a flexible strip of permanently stretchable energy absorbing material extending around said inner portion and spanning the space between it and the crown, the strip being secured to the crown and brim and suspending the crown from the brim in a predetermined position until the crown receives a blow above a predetermined value.

3. A helmet according to claim 2, in which said strip is substantially V-shaped in cross section, with its edges secured to the crown and its central area secured to said inner portion of the brim, whereby to suspend the crown from the brim.

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