

June 23, 1964

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3,137,859

SAFETY HELMET HEAD SUSPENSION

Filed Oct. 10, 1962

2 Sheets-Sheet 1

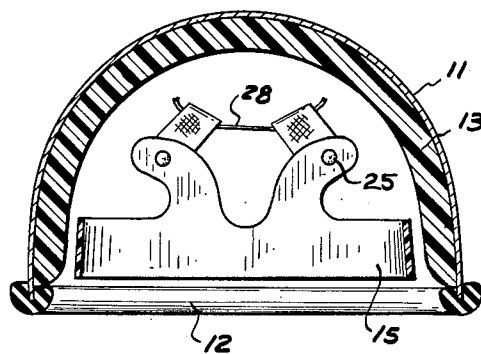
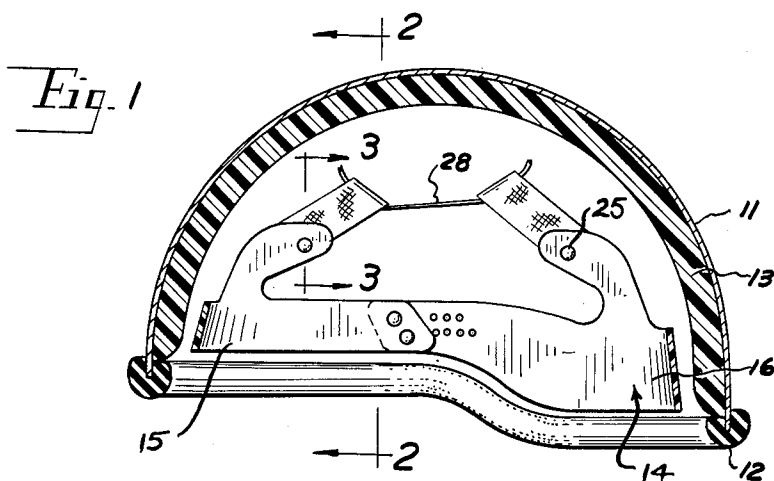
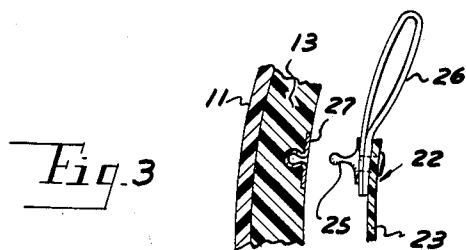


Fig. 2



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Fig. 4

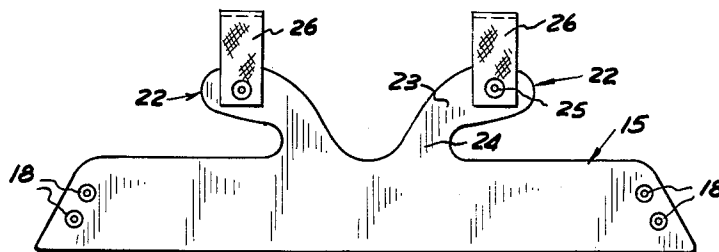
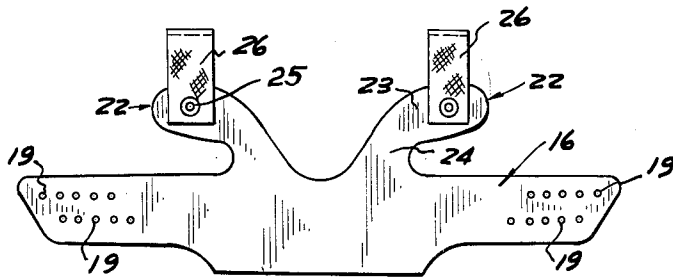


Fig. 5

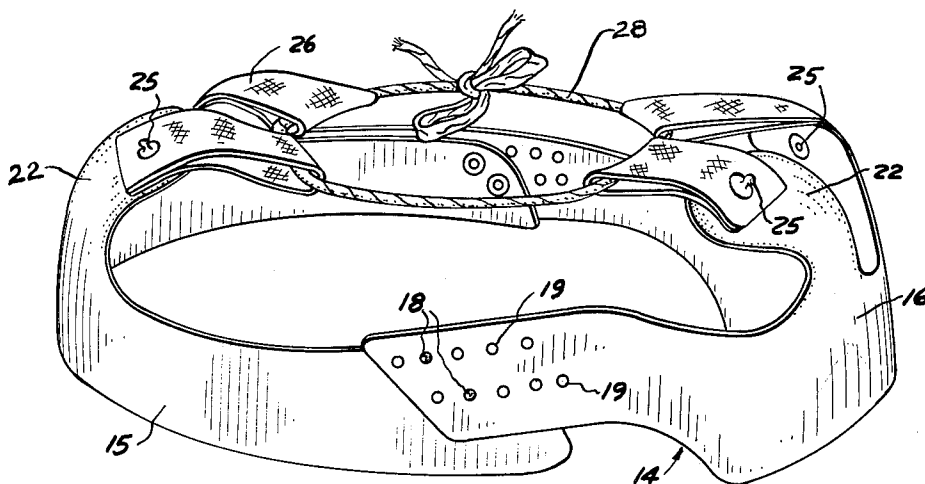


Fig. 6

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SAFETY HELMET HEAD SUSPENSION
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Buegeleisen Co., Southfield, Mich.
Filed Oct. 10, 1962, Ser. No. 229,573
2 Claims. (Cl. 2—3)

This invention relates to a safety helmet head sus-
pension.

Objects of this invention are to provide a safety helmet
head suspension which is removably secured to the helmet
shell, which is readily adjustable in size to fit various
size heads, and which is formed to distribute loads at
four wide zones along the top and sides of the human
skull and around the horizontal circumference of the
skull to thus avoid localized impacts and thereby protect
the head.

These and other objects and advantages of this in-
vention will become apparent upon reading the following
description of which the attached drawings form a part.

In these drawings:

FIG. 1 is a cross-sectional view of the helmet.

FIG. 2 is a cross-sectional view taken in the direction
of arrows 2—2 of FIG. 1.

FIG. 3 is an enlarged cross-sectional view taken as if
in the direction of arrows 3—3 of FIG. 1.

FIG. 4 is an elevational view of the rear section of
the headband and

FIG. 5 is an elevational view of the front section of
the headband.

FIG. 6 is a perspective view of the head supporting
cradle, per se.

The helmet 10 is formed of an inverted bowl-shaped,
hard, outer protective shell 11 having a resilient edge
bead 12 and an inner, relatively thick, resilient liner 13
secured to the inner wall of the shell. The liner may be
formed of a resilient plastic material such as foamed
polystyrene or the like.

Arranged within the shell is a head-supporting sus-
pension or cradle 14 which is formed of a headband
consisting of a front section 15 and a rear section 16
formed of a relatively thin, resilient but stiff sheet ma-
terial such as polyethylene plastic sheet or the like of about
.040 of an inch in thickness, thus being stiff but still
resiliently bendable or springy.

The opposite ends of the front part 15 are provided
with pairs of male snap fastener halves 18 arranged to
snap fit within pairs of openings 19 when the opposite
ends of the front and rear sections are overlapped. The
openings 19 are of a sufficient diameter and depth to
function as female snap fastener halves.

Each of the headband sections or parts are provided
with integral upwardly extending tabs 22 whose upper
ends are horizontally widened at 23 and connected by
narrowed portions 24 to their respective headband parts.
Each tab has a male snap fastener half 25 secured thereto,
which fastener half also secures a cloth loop band 26 to
the respective tab.

As shown in FIG. 3, female snap fastener halves 27
are secured to the liner 13 at locations corresponding
to the locations of the tab fastener halves 25 for inter-
connecting therewith. Also, the looped bands 26 are
interconnected by a string or cord 28.

The size of the headband is adjusted by overlapping the
respective ends of the headband parts and securing the
snap fastener halves 18 within the particular holes 19

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which provide the desired circumferential size to fit the
head of the wearer. The cord 28, being knotted and
passing through the loops 26 can be adjusted in length
for proper fitting. In this manner, the cradle can be
easily adjusted to the size of the wearer's head before
connecting it within the shell. Then the tab snap fas-
teners 25 are engaged with the liner fastener halves 27
so that the headband is connected to the helmet shell
at four locations and is otherwise free of connection to
the shell. When the headband becomes dirty or dam-
aged, it can be easily replaced while preserving the
relatively expensive shell and liner for reuse.

The arrangement of the tabs including their widened
upper ends results in distributing impact loads over four
wide zones of the head as well as circumferentially, thus
preventing localized impact to the skull.

This invention may be further developed within the
scope of the following claims. Accordingly, it is desired
that the foregoing description be read as being merely
illustrative of an operative embodiment of this invention
and not in a strictly limiting sense.

I now claim:

1. A safety helmet comprising an inverted bowl-shaped
shell having a forward end and a rear end and a head
supporting cradle arranged within the shell, the cradle
comprising a substantially horizontally arranged head
band adapted to encircle and closely receive a human
head and being formed of a thin, stiff, but relatively re-
silient sheet material; said head band having a forward
pair and a rear pair of oppositely aligned integral tabs,
each tab extending upwardly above the upper edge of
the head band a considerable distance and being widened
in a horizontal direction at its upper end and being in-
tegrally connected to the head band by a narrow portion,
the widened portions of the two pairs of tabs being
adapted to contact the human head at locations relatively
close to the top thereof; a snap fastener half secured
upon the widened portion of each of said tabs and being
normally connected to a corresponding snap fastener half
secured to the shell, the four snap fasteners forming
the only connection between the cradle and the shell;
each tab having a cloth loop permanently secured thereto
by its respective snap fastener half, the free ends of the
four loops being joined together by a cord passing through
each of them, the loops thus forming upper extensions
of the tabs to form the upper portion of the cradle and
being adapted to rest upon the upper portion of the hu-
man head.

2. A construction as defined in claim 1 and including
the narrowed portions of the two tabs of each pair of
tabs being relatively close to each other, with the widened
portions thereof extending horizontally away from each
other and with said snap fastener halves each being lo-
cated approximately centrally of its respective tab widened
portion.

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