

C. KEILL.
BULLET PROOF QUIRASS.
APPLICATION FILED MAR. 23, 1908.

1,003,270.

Patented Sept. 12, 1911.

Fig. 1.

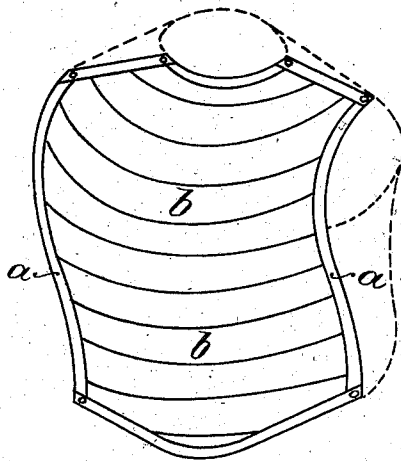


Fig. 2.

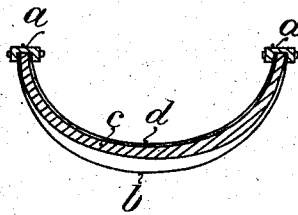
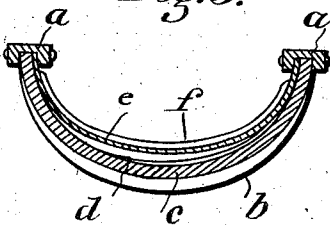


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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BULLET-PROOF CUIRASS.

1,003,270.

Specification of Letters Patent. Patented Sept. 12, 1911.

Application filed March 23, 1908. Serial No. 422,835.

To all whom it may concern:

Be it known that I, CARL KEILL, citizen of Germany, residing at Munich, Bavaria, Germany, have invented certain new and useful Improvements in Bullet-Proof Cuirasses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a bullet-proof cuirass, consisting of a protective sheathing of one or more layers of steel bands and plates of india rubber or similar elastic material, arranged on or in a frame of aluminium.

A narrow space is left free between the single steel bands, so that the concussion of a bullet affects only the band on which it strikes and does not influence the neighboring steel bands; a plate of rubber or similar material arranged at a small distance behind the steel bands then deadens the concussion; for this latter purpose a second layer of steel bands may also be provided.

Reference being had to the accompanying drawing, Figure 1 shows the front part of such a cuirass in perspective, Fig. 2 is a cross section through this front part and Fig. 3 a similar view of a modification.

As may be seen from this drawing, this part of the cuirass consists of a frame, *a*, of aluminium, in this case of U-shaped section, to which the single units of the protective sheathing are riveted or screwed. This sheathing consists in the first place of a number of steel bands (*b*), arranged flatwise parallel or nearly parallel to one another and at a distance of about $1/25$ of an inch from each other. Behind these steel bands, and at a distance from them of about one half inch, a plate of india-rubber *c* or other similar elastic material, *c*, approximately one half inch thick, is arranged; if necessary, a further protective sheathing of steel bands (*d*) may be arranged directly behind this plate of india rubber. It is advisable to add a further plate of padded aluminium, in order to insure a uniform and easy fitting of the cuirass on the body of the wearer; this latter plate is represented in Fig. 3. —As shown in this figure, this modified construction of the cuirass consists of the flatwise substantially parallel steel bands *b*, *d* secured to the frame *a* together with the elastic plate *c* in the same manner as described

for the form illustrated in Figs. 1 and 2. This modification differs from that form however, in that the inner side of the same is provided with a further plate of padded aluminium consisting of the inner aluminium sheet *f* and the elastic padding sheet *e* interposed between the same and the bands *d*.

If the cuirass is required only for front protection, that is to say, as a breast plate, straps attached to holes or the like of the aluminium frame (*a*) are passed over the back of the wearer to secure the cuirass to his body.

It will be obvious that an armor plate of the kind here described may serve not only as a body protection, but may also be adapted for the protection of ships or the like.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In a bullet-proof cuirass, an open frame of rigid material, in combination with a series of substantially parallel outwardly curved bands of rigid resisting material arranged flatwise and mounted in and spanning the open space within the periphery of the frame so as to leave narrow spaces between the bands, and a backing sheet of elastic material arranged behind the bands.

2. In a bullet-proof cuirass, an open frame and a series of substantially parallel outwardly curved metal bands arranged flatwise and spanning the open space in said frame so as to leave narrow spaces between the adjacent bands, in combination with an elastic backing also mounted in said frame.

3. In a bullet-proof cuirass, an open frame having upright stays arranged to be adjacent to the side of the wearer, in combination with a series of substantially parallel transverse outwardly curved bands of rigid resisting material arranged flatwise between and secured with their ends to said upright stays, whereby said transverse bands are supported independently of the body of the wearer.

4. In a bullet-proof cuirass, an open metal frame having upright stays arranged to be adjacent to the sides of the wearer and U-shaped in cross-section, in combination with a series of substantially parallel outwardly curved bands, arranged flatwise between and secured with their ends to said upright stays, whereby said transverse bands are supported independently of the body of the wearer.

5. In a bullet-proof cuirass, an open metal

- frame of aluminum having upright stays arranged to be adjacent to the body of the wearer, in combination with a series of substantially parallel resilient outwardly curved metal bands, arranged flatwise within the open space of said frame and secured at their ends to said upright stays, whereby said transverse bands are supported independently of the body of the wearer.
- 5 6. In a bullet-proof cuirass, an open metal frame of aluminum having upright stays arranged to be adjacent to the side of the wearer, in combination with a series of substantially parallel outwardly curved resilient metal bands, arranged flatwise within the open space of said frame and secured at their ends to said upright stays whereby said bands are held in position independently of the body of the wearer, the said bands being separated by narrow spaces.
- 10 7. In a bullet-proof cuirass, an open frame of resisting material, in combination with a series of substantially parallel outwardly curved bands of resisting material secured at their ends to the frame and spanning the opening within the periphery of the frame.
- 15 8. In a bullet-proof cuirass, a frame having upright supporting stays arranged to be adjacent to the sides of the wearer, in combination with a series of substantially parallel outwardly curved bands arranged flatwise and secured with their ends to the stays and a backing sheet of elastic material arranged behind the bands.
- 20 9. In a bullet-proof cuirass, a frame and a series of substantially parallel metal bands mounted in said frame and separated by narrow spaces between the adjacent bands, in combination with an elastic backing and a second series of substantially parallel metal bands arranged behind the elastic backing and also mounted in the frame.
- 25 10. In a bullet-proof cuirass, an aluminum frame in combination with a series of substantially parallel steel bands secured with their ends to the frame and having narrow spaces between the adjacent bands, and an india rubber backing sheet also secured to the frame.
- 30 35 40 45 50

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CARL KEILL.

Witnesses:

ABRAHAM SCHLESINGER,
LOUIS F. MUELLER.