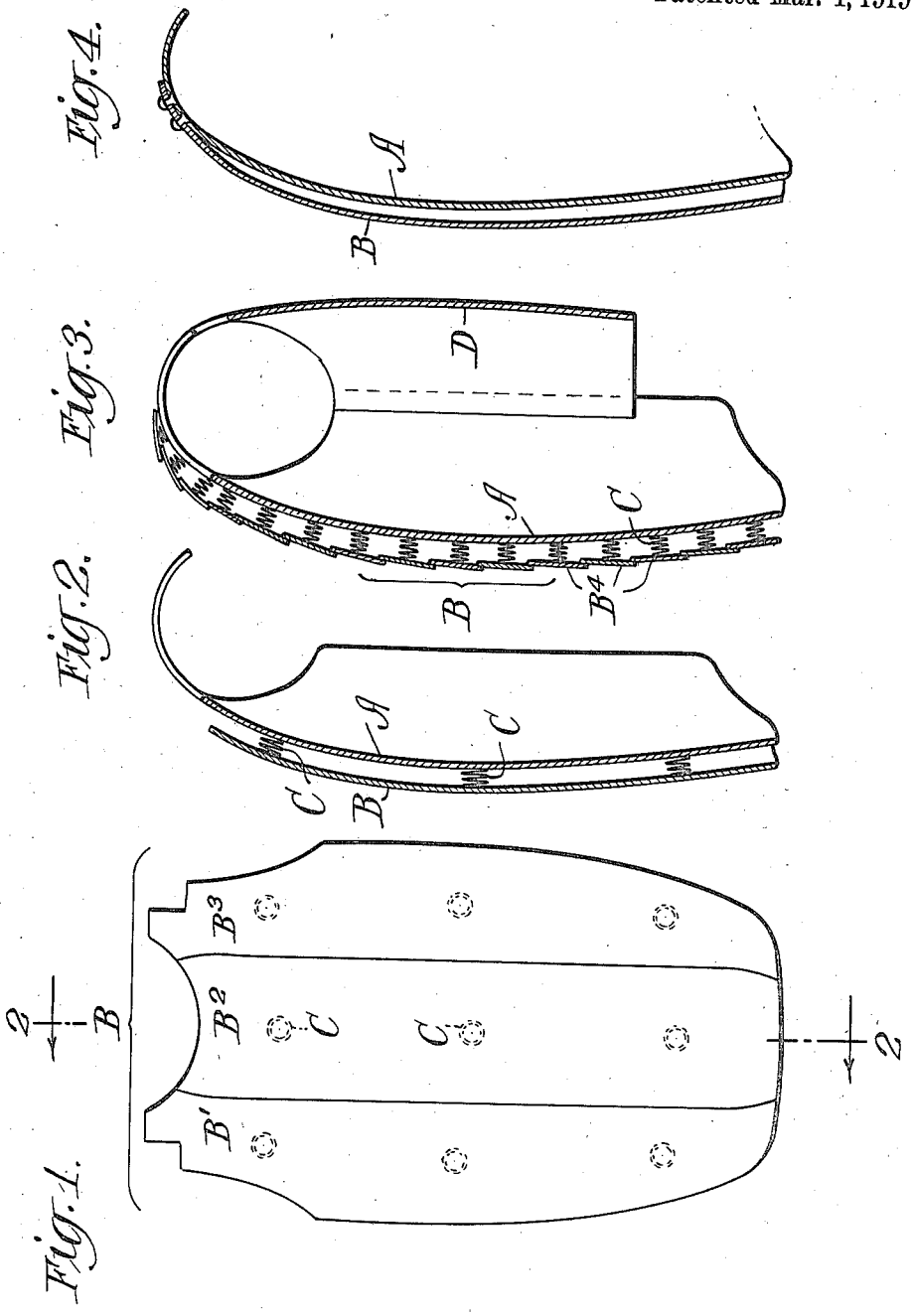
J. M. PERLMAN.

ARMOR.

APPLICATION FILED AUG. 22, 1918.

1,296,113.

Patented Mar. 4, 1919.



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ARMOR.

1,296,113. Specification of Letters Patent. Patented Mar. 4, 1919.

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To all whom it may concern:

Be it known that I, JACQUES M. PERLMAN, a citizen of the United States, residing in New York city, New York, have invented certain new and useful Improvements in Armor, of which the following is a specification.

My invention aims to provide certain improvements for rendering bullet-proof or at least bullet-resistant shields or body armor such as breast plates for example. I have shown the improvement applied to breast plates but it will be understood that the improvement may be applied also to covers for the head or other parts of the body, and to portable shields generally which have to be as light as is consistent with their ability to prevent or resist penetration. The same principle indeed may be applied in armor for ships for resisting projectiles of various sorts, and in shields or armor for various other stationary or portable structures, the weight of the protective piece, of course, being proportioned to the projectile to be resisted.

Figure 1 is a front elevation of a breast plate;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Figs. 3 and 4 are similar sections illustrating alternative constructions.

Referring now to the embodiments of the invention illustrated, the piece of armor is shaped to fit around the neck and over the shoulders and to cover the body down to approximately the waist line of the wearer. It may be of various other shapes and sizes depending on the mode of use and the part of the body to be protected.

In cross-section it comprises an inner or back plate A and, located a short distance in front of this, a front plate B which is held out by one or more springs so that it can yield to the impact of a bullet and thus considerably lessen the velocity thereof before it strikes the back plate A. Where the bullet strikes with low velocity it may be deflected from the outer plate B. Or with higher velocity it may penetrate the outer plate, but this will so diminish its velocity that it will not generally penetrate the back plate, or will not do so sufficiently to produce a serious wound.

The outer plate will preferably be of alloy steel or other composition specially adapted to resist the shock of impact, so that it can be made comparatively light. The inner or back plate is preferably of the same or similar composition, but it may be made of weaker material; and a considerable degree of protection will be afforded by the yielding front plate alone so that for some uses the back plate may be little or nothing more than a convenient support and may consequently be made of various kinds of steel or of various materials other than steel.

In Fig. 1 the plate B is shown divided into three vertical strips B′, B^2 and B^3 and these are held out from the back plate and at the same time supported by spiral springs C. Such a division of the front plate provides a quick yielding to the impact of a bullet and this is important because unless the yielding movement is very quick the bullet may penetrate before the yielding commences so that little or no spring effect will be secured. The inertia of each section is of course less than that of the entire outer member, being proportioned to the size of the separate section; consequently the separate section will yield more quickly than the entire outer member would. The chance of penetration by a bullet is correspondingly reduced. The best results will be obtained when the plate yields to the impact very easily at first and with gradually increasing resistance so as to continue its retarding effect through say two or three inches of movement of the bullet. This graduated resistance will be even more perfectly secured, though with a disadvantage arising from the increased number of parts, by the construction of Fig. 3 in which the length of the plate B (or the length of sections like B′, B^2 and B^3) is divided into a number of smaller plates B^4 each with one or more springs C supporting it yieldingly from the inner or back plate A. In this figure I have shown a single plate D supported from the shoulders and protecting the back of the user.

The front plate B, or sections like B′, B^2 and B^3 thereof may also be made and supported as in Fig. 4. In this case the plate or section is of spring steel and shaped so that when riveted on the shoulder as shown it will project outward and the greater part of it will lie two or three inches in front of the inner plate A. Or, instead of making the entire piece B of spring metal it may be made of other metal and fastened by leaf

springs of appropriate shape to the shoulders of the inner plate so that it will be held in the position indicated. Suitable hooks and straps of various sorts may be made for holding the armor on the body or in whatever position it is to be carried. Various other details may be added according to the use contemplated and various modifications may be made in the design and arrangement of the parts without departing from the invention as defined in the following claim.

What I claim is—

A shield or breast plate comprising a single integral projectile-resisting inner plate A and an outer plate B shaped to cover a man's breast and springs arranged to hold said plates at a distance from each other so that the outer plate may yield and gradually retard the speed of the projectile striking it, said outer plate B being in independent sections capable of yielding separately without substantial resistance from the adjacent sections; whereby a projectile striking the outer plate will be retarded thereby and passing through the outer plate will be practically stopped by the inner plate.

In witness whereof, I have hereunto signed my name.

JACQUES M. PERLMAN.