

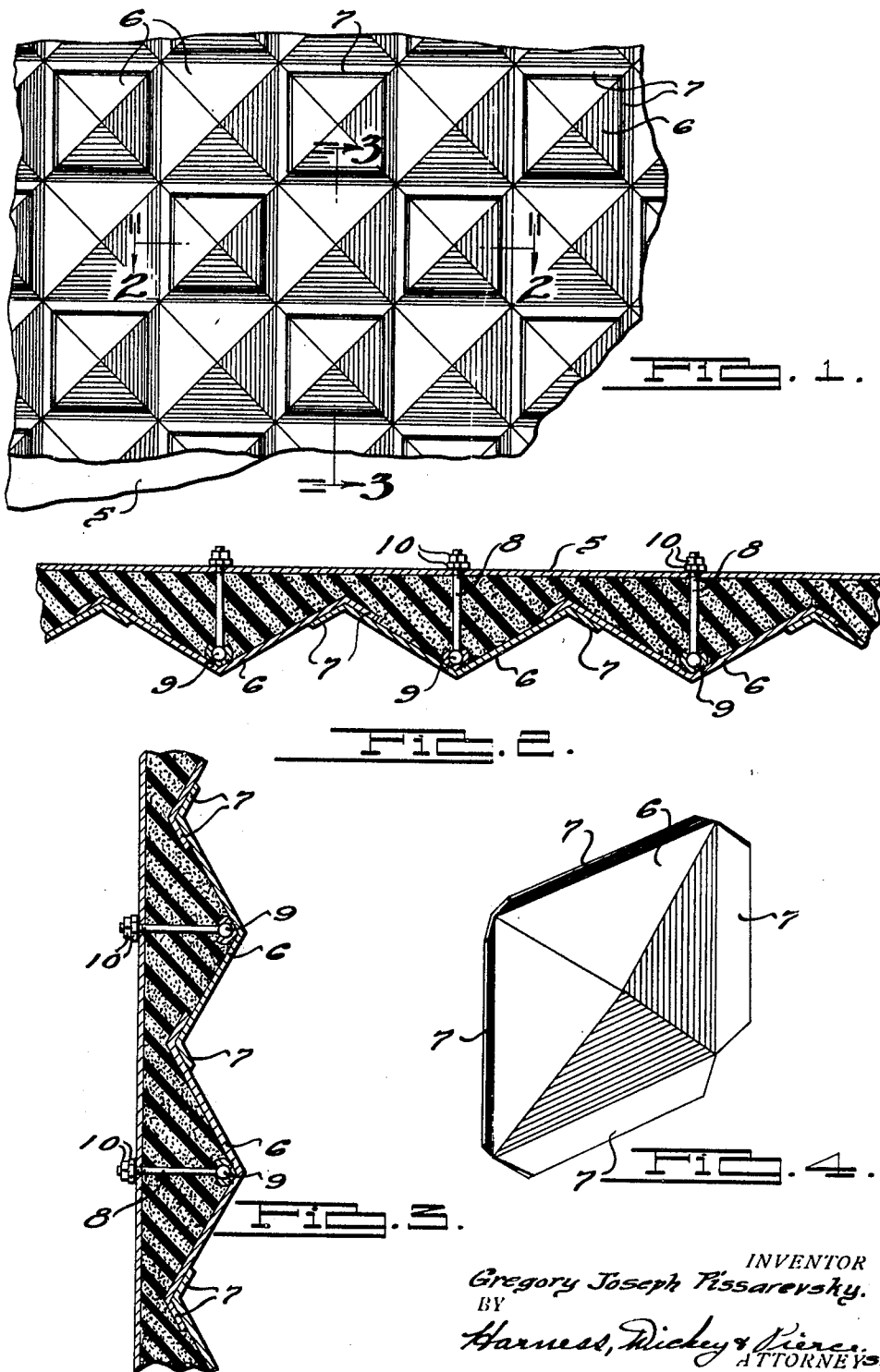
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ARMOR PLATE

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ARMOR PLATE

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This invention relates generally to armament structure and more particularly to a wall structure primarily designed for use as protective armament.

It is the primary object of the present invention to provide an armament structure which is so designed and constructed that it will be relatively light and at the same time will be extremely resistant to projectiles.

While the armament structures herein illustrated and described are particularly designed as wall structures for armored cars, tanks, and similar armored structures where lightness in weight is essential, it will be readily appreciated that the novel structure readily lends itself to use in bomb-proof shelters and other similar structures where light weight, simple, and easily fabricated armament structures are desired.

One of the objects of the present invention consists in the provision of an armament wall structure in which the wall is formed of two spaced separate walls of armament plate and which is so constructed and arranged that the inner wall member of armor plate may be rigidly secured to the structure to which the armament is applied while the outer wall member is resiliently mounted with respect to the inner wall in order to render the structure as a whole more resistant to projectiles.

Still further, the present invention contemplates the provision of an armor plate structure in which two separate walls of armor plate are provided and in which the outer wall is constructed of a plurality of preformed plates which are so formed and arranged that no portion of the outer wall structure is arranged in a plane parallel to the plane of the inner wall structure thereby making possible the substantial reduction in thickness of the armor plate used, thereby reducing weight, cost, and expense without at the same time reducing the resistance of the wall structure to the penetration of projectiles.

Yet another object of the present invention consists in the provision of a construction in which the wall structure comprises a pair of walls or armor plate so constructed and arranged that no portion of one wall is parallel to any portion of the other wall and which includes a body of resilient material such for example as sponge rubber interposed between the two wall structures in such a way as to mount the outer wall structure resiliently with respect to the inner wall and resiliently with respect to the body to which the structure as a whole is attached.

Still further, the present invention contem-

plates the provision of an armor plate construction comprising an armor plate inner wall structure and an armor plate outer wall structure in which the outer armor plate wall structure is composed of a plurality of separate, individually mounted plates arranged in overlapping relation in such a way that each plate is not only resiliently mounted but in which each plate making up the outer wall structure is mounted in such a way that it is tiltable or inclinable independently of the remaining plates.

Many other and further objects, advantages, and features of the present invention will become apparent from the following description when considered in connection with the accompanying drawing, forming a part hereof.

In the drawing:

Figure 1 is a fragmentary, elevational view of a portion of a wall structure embodying the improvements of the present invention.

Figure 2 is an enlarged, transverse, sectional view taken substantially along the line 2—2 of Figure 1 illustrating in detail the construction and arrangement of parts making up the improved wall structure.

Figure 3 is a transverse, sectional view taken substantially along the line 3—3 of Figure 1 further illustrating the interior construction and arrangement of parts of the improved wall structure.

Figure 4 is a perspective view of one of the individual plates used to make up the outer surface of the improved wall structure.

With more particular reference to the drawing, it will be readily appreciated that the specific embodiment of the invention illustrated therein is merely illustrative of one form which the invention may take. It will also be readily appreciated that the specific embodiment of the invention disclosed in the drawing has not been illustrated or described as used in connection with any particular article of manufacture because of the wide and varied number of uses and installations where the invention will be found practicable.

The wall structure disclosed in the drawing comprises a base wall 5 which may comprise a single sheet of steel normalized in the usual manner in order to provide a maximum resistance to penetration by projectiles. The outer wall surface comprises a plurality of plates 6 which may be made of conical or pyramidal form as shown, each marginal edge of each plate having a projecting ange 7 adapted to lie smoothly in

overlapping relation with the next adjacent plate as clearly seen in Figures 2 and 3.

Interposed between the inner wall 5 and the outer wall members 6 is a mass of resilient material which more or less serves to maintain the plates 6 making up the outer wall structure in resiliently spaced relation with respect to the inner wall structure. Each of the plates 6 is anchored in position by any suitable means and in the form of the invention shown this means comprises a bolt 8 having a universally jointed connection 9 serving to anchor one end of the bolt to the inner surface of one of the plates 6. This bolt 8 may extend through a suitable aperture in the inner wall member 6 and be anchored in position by means of suitable nuts 10. The universal jointed connection 9 provides a construction which permits tilting of the plate 6 to a limited extent in any direction. The purpose and function of this construction will become more readily apparent as the description of the invention proceeds.

It will be apparent that the above described construction will provide an outer wall surface of armor plate comprising a plurality of individually tiltable pyramidal structures resiliently mounted in spaced relation with respect to an inner wall member.

The above described construction is particularly advantageous for the following reasons. In the first place, it will be noted that the wall structure as a whole is highly resistant to penetration by projectiles because there is no portion of the pyramidal outer wall structure disposed in parallel relation with respect to the inner wall structures. As a result of this, it will be apparent that in the event a projectile strikes the outer wall surface 6 while traveling in a direction substantially perpendicular thereto, it is absolutely inherent that in the event such a projectile penetrates the outer wall surface, it will strike the inner wall surface 5 at a very substantial angle thus greatly reducing the likelihood of its penetrating through the wall structure as a whole.

Further, it will be appreciated that the resilient mounting of the plates making up the outer wall surface greatly increases their resistance to penetration. Still further, this resistance to penetration is increased by the fact that the plates making up the outer wall surface are not only resiliently mounted but are individually tilted with respect to each other thus providing a construction which is simple and economical to manufacture, but which at the same time is highly resistant to penetration.

The primary advantages of the above described construction reside in the fact that armor plate of extreme light weight may be used and at the same time obtain a maximum resistance to penetration.

It will be readily appreciated that the above described construction may be very substantially modified without departing from the spirit and scope of the invention as defined in the subjoined claims.

What I claim is:

1. An armor plate wall structure comprising an inner armor plate wall member and an outer armor plate wall structure spaced from said inner member, said outer wall structure comprising a plurality of separate individually mounted plates of generally pyramidal form arranged in overlapping relation, each of said plates being individually mounted with respect to the others and resilient means for mounting said outer wall structure with respect to said inner wall to maintain the same in resiliently spaced relation with respect thereto, the surfaces of said plates lying in planes substantially inclined to the plane of said inner wall member.

2. An armor plate wall structure comprising an inner armor plate wall member and an outer armor plate wall structure spaced from said inner member, said outer wall structure comprising a plurality of separate individually mounted plates of generally pyramidal form arranged in overlapping relation, each of said plates being individually mounted with respect to the others, and means for mounting the plates of said outer wall structure for universal movement, the surfaces of said plates lying in planes substantially inclined to the plane of said inner wall member.

3. An armor plate wall structure comprising an inner armor plate wall member and an outer armor plate wall structure spaced from said inner member, said outer wall structure comprising a plurality of separate individually mounted plates of generally pyramidal form arranged in overlapping relation, each of said plates being individually mounted with respect to the others, means for resiliently mounting said plates with respect to said inner wall member and means for permitting tilting movement of said plates, the surfaces of said plates lying in planes substantially inclined to the plane of said inner wall member.

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