

P. DE CATER'S.
ARMOR PLATE.

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1,063,957.

Patented June 10, 1913.

Fig. 1.

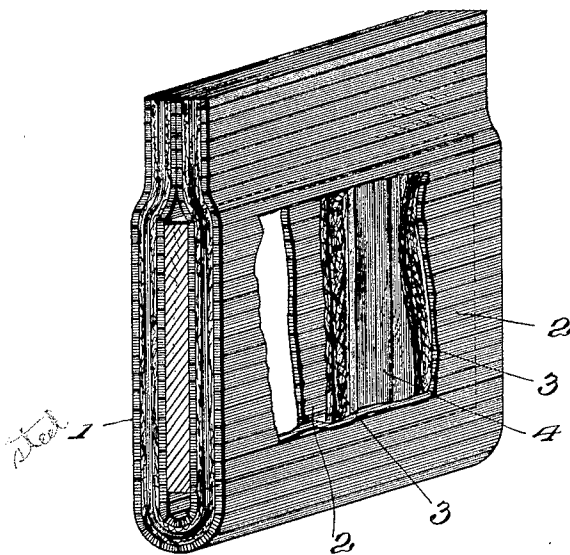
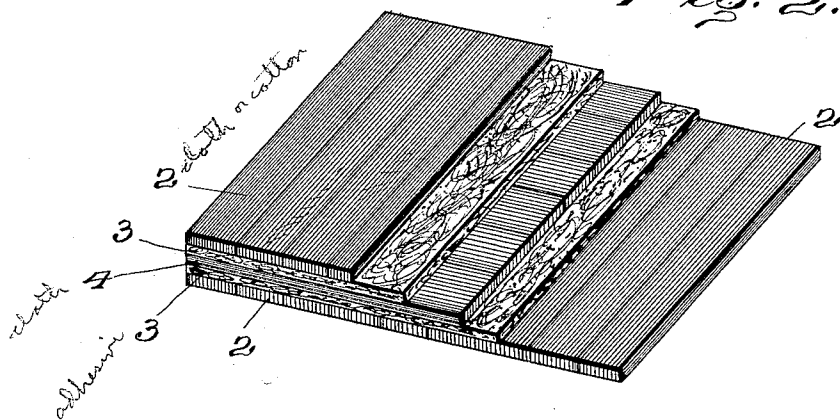


Fig. 2.



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PIERRE DE CETERS, OF BERCHEM-LES-ANTWERP, BELGIUM.

ARMOR-PLATE.

1,063,957.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed April 8, 1912. Serial No. 689,384.

To all whom it may concern:

Be it known that I, BARON PIERRE DE CETERS, a subject of the King of Belgium, and residing at 14 Avenue de la Chapelle, Berchem-les-Antwerp, Belgium, have invented certain new and useful Improvements in Armor-Plates, of which the following is a specification.

This invention relates to armor plates and particularly to bullet-proof shields and has for its object to increase for a given weight the resistance of an armor plate or covering to the penetration of projectiles of any kind, and to provide an armor plate perfectly imperforable whatever the nature of the projectiles fired against the same (hard or soft projectiles, or semihard or steel tipped and other projectiles); moreover an armor plate constructed according to this invention will be able to withstand the action of water or high temperatures; lastly any projectile striking the armor plate is completely annihilated so that it does not rebound even if it strikes at a large angle, and there is no scattering of fragments about the point of impact.

In the accompanying drawings is illustrated one constructional form of my invention in which,

Figure 1 is a perspective view with parts broken away, showing one embodiment of my improvement, and Fig. 2 is an enlarged diagrammatic view showing a detail of the armor covering.

The improved armor plate construction according to this invention is as follows: The armor plate, in the case of a shield, consists of a thickness of steel 1, to which is attached in any manner a thickness of cotton or cloth; this thickness of cotton or cloth may be formed by one of the following methods: A series of strips of cloth 2, joined together and arranged parallel, are prepared; on these strips there is pasted a coating of adhesive 3 of a nature hereinafter described; on the whole there is then arranged a second series of parallel strips of cloth 4 disposed at right angles to the underlying strips and on the second series of strips another layer of adhesive is pasted, and so on; the whole is sewn together before the adhesive dries, since this latter when dry is of such hardness that the needle could not be used therewith. The adhesive referred to and the method in which it is used is the following: Each layer of cotton or series of

strips of cloth is pasted with strong glue to which has been added in any suitable proportion and melted therewith in any way a mixture of colophony or similar resin and wood tar in sensibly equal parts; on this first layer of adhesive there is applied a layer formed of a mixture of one part of borax with three parts of colophony. There is applied to the metallic part of the armor plate a sufficient thickness of cloth which has been previously impregnated with the substances above referred to in a bath in which the said substances are mixed: the cloth is immersed in this bath subjected to a prolonged boiling; it is then withdrawn, allowed to drip, pressed, and dried; before drying it is applied on the armor plate which may be, for example, partly or completely surrounded by it.

It should be noted that the present invention is not limited to the application of the above mentioned mixture of colophony, wood tar, and borax; it includes any combination of a resin, a tar or similar agglomerant, and a composition rich in active oxygen, such as, borates, perborates, peroxids and the like. Interesting results can also be obtained with a gelatin hardened by formol and mixed with a substance rich in active oxygen.

The plate of steel on which the cloth covering is applied should be made of steel of sufficient hardness, without the same however being tempered too hard or brittle.

There is obtained in this manner a resistance of a special character to the effects of a projectile, the projectile being one might say absorbed by the mattress of impregnated cloth, completely annihilated and to some extent volatilized before being able to reach the surface of the metal sheltered behind this hardened mattress.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In an armor plate, a steel plate, and a covering or mattress of fabric impregnated with a mixture of strong glue, colophony, tar, and a substance rich in active oxygen.

2. In an armor plate, a steel plate, and a covering or mattress of strips of cloth alternated with layers of a mixture of strong glue, colophony, tar, and borax.

3. In an armor plate, a steel plate, and a covering or mattress of strips of cloth alternated with layers of a mixture of strong glue, colophony, tar, and borax, said cover-

ing being sewn up in a bag conforming to the shape of the armor plate and enveloping the same.

4. In an armor plate, a steel plate, and a
5 covering or mattress of cotton wool impregnated with a mixture of strong glue, colophony, tar, and borax.

5. In an armor plate, a steel plate, and a
10 covering or mattress of cotton wool impregnated with a mixture of strong glue, colophony, tar, and borax, said covering be-

ing sewn up in a bag conforming to the shape of the armor plate and enveloping the same.

In testimony whereof I have signed my 15 name to this specification in the presence of two subscribing witnesses.

PIERRE DE CETERS.

Witnesses:

H. C. COXE,

MIGUEL FERLOLO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
