

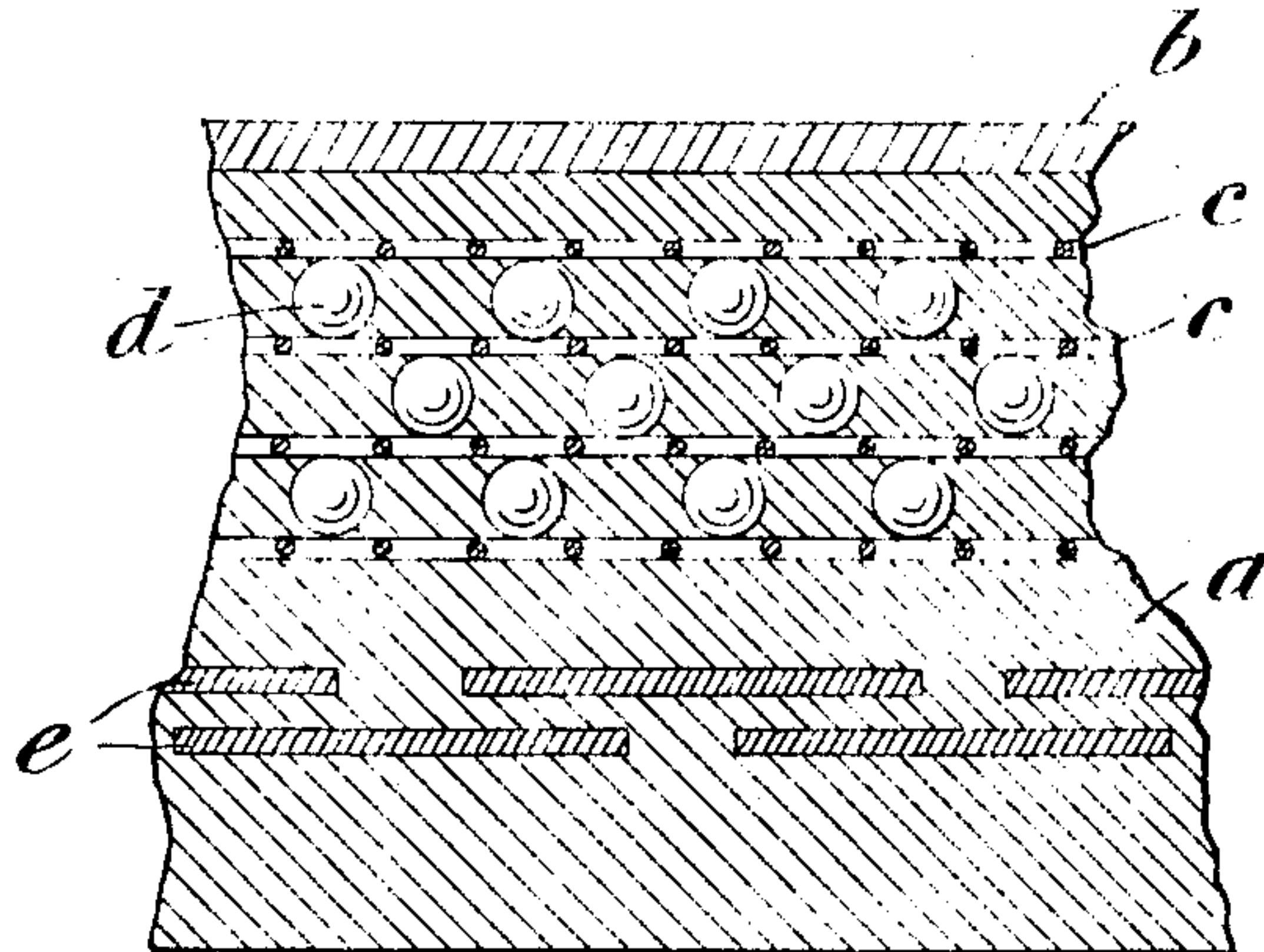
S. O. COWPER-COLES.

ARMOR PLATE.

APPLICATION FILED MAY 28, 1909.

952,877.

Patented Mar. 22, 1910.



Witnesses:

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UNITED STATES PATENT OFFICE.

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ARMOR-PLATE.

952,877.

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To all whom it may concern:

Be it known that I, SHERARD OSBORN COWPER-COLES, a subject of the King of Great Britain, residing at Grosvenor Mansions, 82 Victoria street, Westminster, London, England, have invented new and useful Improvements in Armor-Plate; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to armor plate and has for its object to provide an armor plate which shall be lighter than that at present manufactured of the same resisting power.

In order that my invention may be understood, I have illustrated it in the accompanying drawing which shows a cross section of armor plate made according to my invention.

Referring to the construction illustrated, *a* represents a body of cast aluminium, *b* a copper facing which is applied thereto, *c, c* being galvanized steel grids, *d* steel balls and *e* galvanized steel ribbons.

It has already been proposed to manufacture armor plate by casting aluminium or other metal around tubes which may or may not have wire cables inserted in them. Now, according to my invention I manufacture armor plate as follows, that is to say, I arrange in any suitable pattern or form hardened steel balls or fragments of hardened steel or short length tubes of steel or alloy of steel or hardened aluminium or a material such as carborundum and I cast around the said balls, fragments or the like, aluminium or a suitable alloy of aluminium with or without the addition of steel wire, ribbon or the equivalent to increase the strength of the plate produced.

In some cases the plate may be faced with a metal that resists the action of salt water and slowly exfoliates when placed in salt water such, for example, as copper. In such a case the bottom or side of the mold in which the armor-plate is cast may have placed in it a sheet of copper or of a copper

alloy which may be formed with projecting lugs or the equivalent on the surface to insure a more perfect union with the aluminium; or the plate may be faced with an ordinary alloy of zinc and iron which is very hard and non-corrosive. Or, I may obtain a hard facing or backing as follows, that is to say, I may introduce into the mold small pieces or plates of iron or steel, which are preferably coated with zinc or copper and with which the molten aluminium readily combines to form a hard alloy.

The balls and grids, it will be observed, are in the outer portion of the armor plate while the steel ribbons are in the inner portion. In order that this arrangement of the high impact resisting bodies shall give the best results in resisting the penetration of projectiles, the balls of one series are placed opposite the spaces between the balls of the next adjacent series and the ribbons of steel of one series are placed opposite and covering the spaces between the ribbons of the adjacent series.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An armor plate having in the outer portion thereof a series of separated steel grids and a series of steel balls interposed between said grids and in the inner portion a plurality of series of steel ribbons, all such parts being embedded in cast aluminium.

2. An armor plate having in its outer portion a series of separated steel grids and a series of steel balls interposed between said grids, the balls of one series being arranged opposite the spaces between the balls of the adjacent series, and in its inner portion a plurality of series of steel ribbons, the ribbons of one series covering the spaces of the adjacent series, all of said parts being embedded in cast aluminium.

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Witnesses:

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