

No. 615,039.

Patented Nov. 29, 1898.

A. L. NORTON.
ARMOR CLAD SHIP.

(Application filed Dec. 2, 1897.)

(No Model.)

Fig. 1.

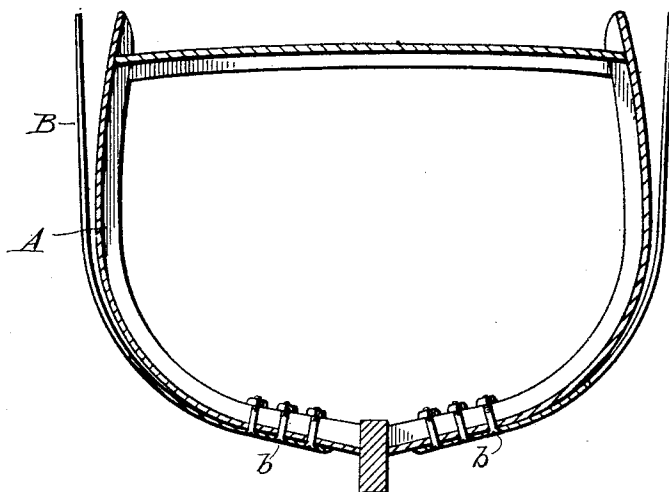


Fig. 2.

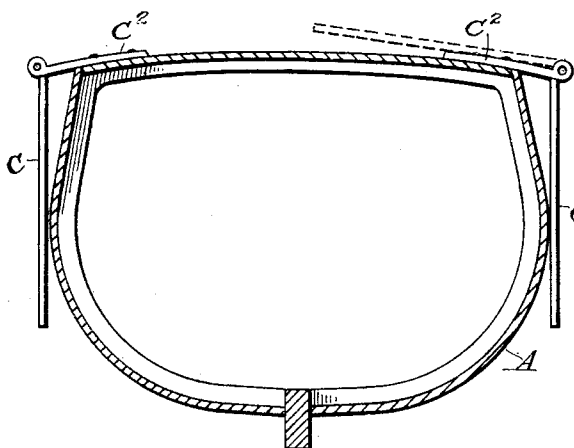


Fig. 3.

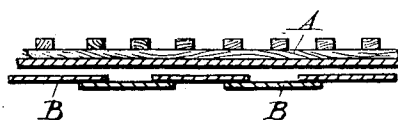
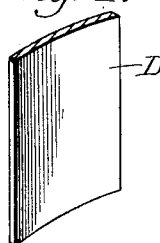


Fig. 4.



Witnesses:

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by
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UNITED STATES PATENT OFFICE.

ARTHUR L. NORTON, OF CALUMET, MISSOURI.

ARMOR-CLAD SHIP.

SPECIFICATION forming part of Letters Patent No. 615,039, dated November 29, 1898.

Application filed December 2, 1897. Serial No. 660,564. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. NORTON, a citizen of the United States, residing at Calumet, in the county of Pike and State of Missouri, have invented certain new and useful Improvements in Armor-Clad Ships; 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.

This invention relates to armoring ships.

The object is to provide armoring that will present thorough and effective resistance to penetration and that will contain less metal and therefore will be much lighter than the armor-plate in common use, that will be easy of repair in case of injury by collision or otherwise, and that will be adapted for ready securement in place.

With these objects in view the invention consists in the peculiar manner of armoring ships, as will be hereinafter fully described and claimed.

In armoring ships in accordance with my invention I provide not only against penetration by projectiles and a ready and efficient means for disengagement from the armoring of half-penetrated balls or shells, but also present requisite and efficient means for protecting ships from injury by collision.

As is well known, in armoring ships in the manner universally adopted by shipbuilders at present the armor-plates are rigidly secured in sections to the frame of the ship, and consequently present dead resistance to penetration. In case of the armor being of sufficient hardness to resist penetration the result will be that if the plate is struck a number of times in or about the same point the plate will crack up in such manner as to become worthless and necessitate replacement. Moreover, should a shell of certain kind be shot into the armor and fail to penetrate and pass beyond the same, but lodge therein, the ensuing explosion would tend to rupture not only the plate in which the shell may be embedded, but also those adjacent to it. The armor in common use is also objectionable for the reason that it has to be made of great thickness to prevent penetration, and this not only adds enormously to the weight of a ship, but also to its cost of production.

By the peculiar and novel form of armoring employed by me and its manner of assemblage with the ship I can by using a comparatively thin armor and making the same of a resilient character in itself obtain the same resistance to penetration as that afforded by armor of great thickness and by this reduction of weight of the armor not only cheapen the initial cost of production of the ship, but also provide for future ready and rapid repair in case of injury. To effect these results, I employ as an armor comparatively thin sheets of resilient metal, preferably of steel, and secure the same to the sides of a ship near the keel and allow the free end to project upward and outward from the sides of a ship. That portion of the armor below the water-line will closely hug the side of the ship and that portion above the water-line will be free from the ship, and the space between these two will gradually increase, until near the deck-line there will be a considerable space between the armor and the side of the ship. The result will be that in case a shell strikes one of these plates it will yield inward and will present a progressively-increasing resilient resistance to penetration, so that when the armor is forced against the side of the ship, even if the shell has slightly penetrated it, upon rebound the plate will throw the shell clear of the ship.

The armor is put on in strips in such manner as to permit of its being readily removed when necessary. The strips may be arranged side by side or may be in two or more thicknesses, the outer row or thickness covering or overlapping the meeting edges of the inner row of armor.

Instead of having the armor secured to the side of the ship near the keel the same may be suspended from the deck by having the armor in sections, each section being suitably supported from the deck by a hinge. This armor will not lie against the side of the ship, but will normally project some distance beyond the same, so that when struck by a shell it will yield in the same manner as that just described.

In addition to protecting the side of a ship from penetration of projectiles this resilient armor will also afford protection to a ship against collision, as the armor will act in the

same manner to prevent damage to the ship as it does in preventing entrance of a shell.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated a form of embodiment of my invention, together with a modified form thereof, although it is to be understood that other forms of embodiment of the same may be employed without departing from the spirit of the invention.

In the drawings, Figure 1 is a transverse sectional view through a ship, showing the sides armored with my preferred form of armoring. Fig. 2 is a similar view showing an armoring of a modified character. Fig. 3 is a sectional plan view of a portion of the side of a ship, showing the armoring arranged in two layers or thicknesses, so as to obviate presentation of a recess or gap through which a shell might find entrance and enter laterally between the armoring and the sides of the ship; and Fig. 4 is a perspective view of a modified form of armoring.

Referring to the drawings, A designates the hull or body of a ship, which may be constructed of any suitable material and in any suitable manner.

B designates the armor, which, as shown in Fig. 1, may consist of strips of thoroughly-tempered steel secured at their lower ends near or to the keel by bolts or screws *b* and projecting at their upper ends beyond the sides of a ship. Instead of having the armor mounted in this manner it may be assembled with relation to the ship in the manner shown in Fig. 2, wherein the armoring C is hinged to plates C², secured in this instance to the deck, the hinge permitting the armor to be folded back out of the way, as shown in dotted lines in Fig. 2.

As shown in Fig. 3, the armoring may be arranged in two or more layers, overlapping each other in break-joint style, this to prevent the presentation of an opening at the meeting edges of the armoring, which would be objectionable in some cases.

In Fig. 4 I have shown the armoring as slightly concave, the object of this construction being to assist in causing a shell or ball to glance when it strikes the same.

I am aware that it is not new to secure resilient plates to or near the keel of a vessel and have the upper ends thereof free from the sides of the vessel, or to hinge a plate to the upper portion or deck of a vessel and have it hang down over the side of the same, or to provide a plurality of plates hinged to the side of a vessel, each plate overhanging the other, but free from it; but in each of these cases there are springs interposed between the armor-plate and the side of the vessel. That which strongly distinguishes my invention from constructions such as these is that the inherent resiliency of the plate itself renders it absolutely unnecessary to employ coiled, helical, or bow springs interposed between the armor-plate and the sides of a vessel, these being objectionable on account of expense, trouble in placing them in position, and liability of breakage in use.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An armor for ships comprising resilient strips of metal rigidly secured to a part of a ship at one end and projecting free from the same at the other end, the inherent resiliency of the metal, itself, serving to present a projectile-proof armor, substantially as described.

2. An armor for ships comprising strips of resilient metal secured at their lower ends near the keel of the ship and having their upper ends projecting out from the side of the ship, the inherent resiliency of the metal, itself, serving to present a projectile-proof armor, substantially as described.

3. An armor for ships comprising strips of resilient metal rigidly secured to a part of a ship at one end and projecting free from the same at the other end, the strips overlapping each other in break-joint order, the inherent resiliency of the metal, itself, serving to present a projectile-proof armor, substantially as and for the purpose specified.

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

ARTHUR L. NORTON.

Witnesses:

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