

E. P. WATSON, Sr.
 BATTLESHIP ARMOR.
 APPLICATION FILED JULY 1, 1909.

948,196.

Patented Feb. 1, 1910.

3 SHEETS—SHEET 1.

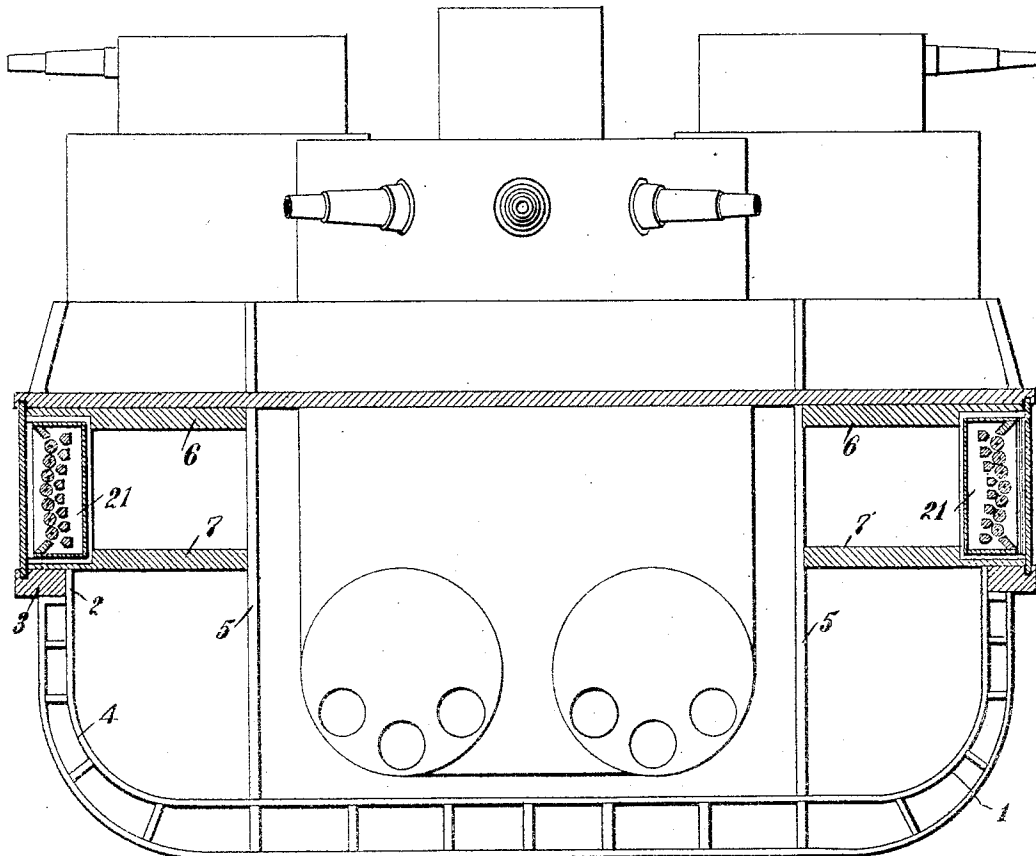


Fig. 1.

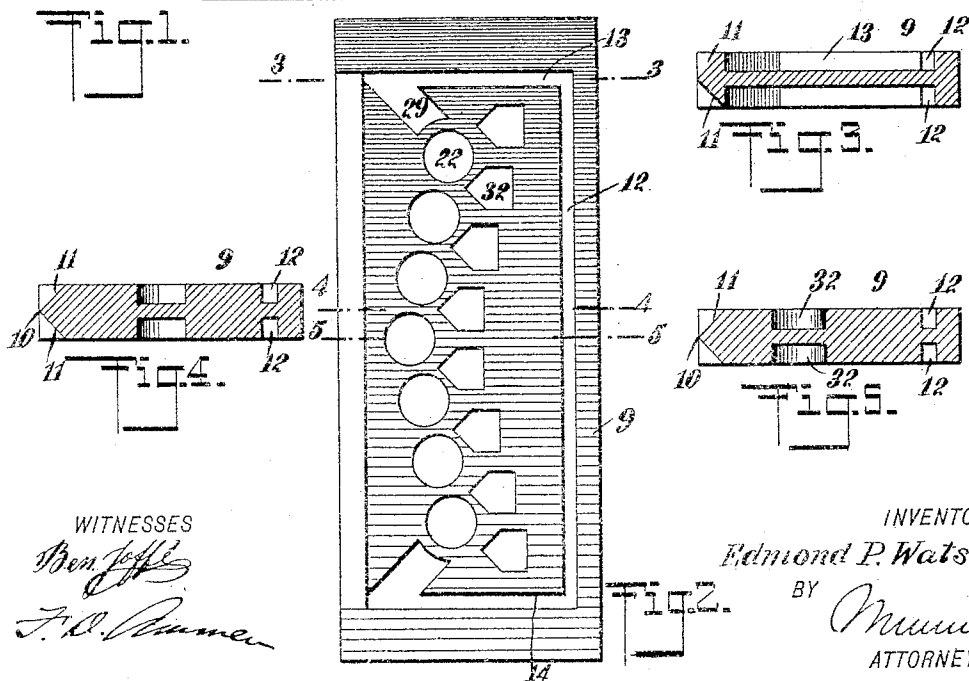


Fig. 2.

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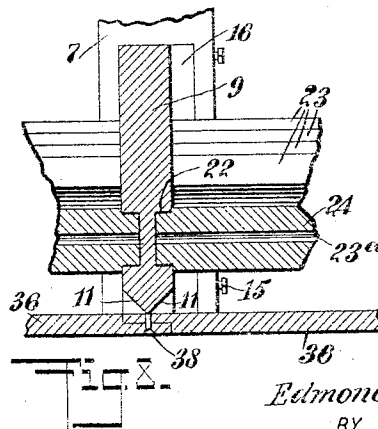
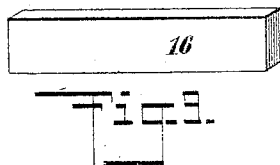
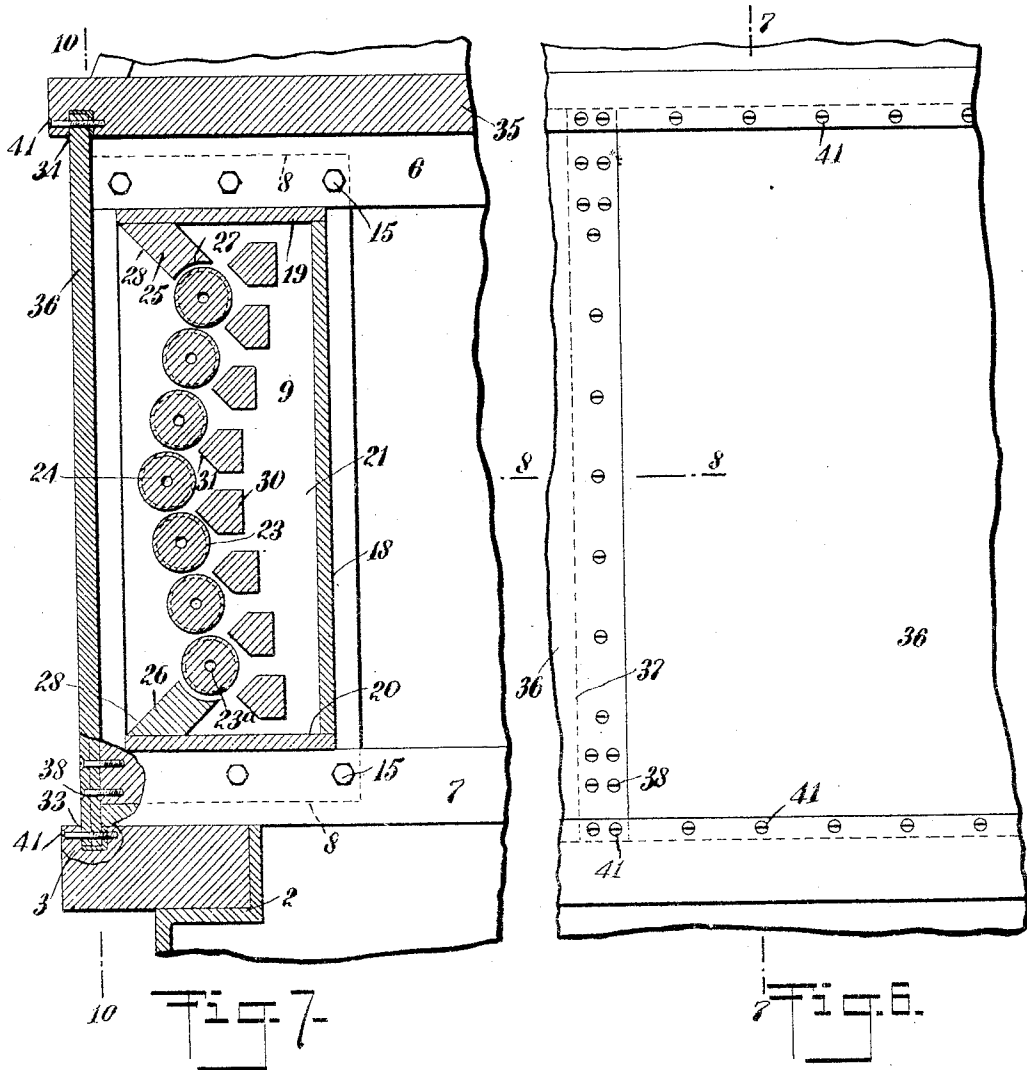
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3 SHEETS—SHEET 3.

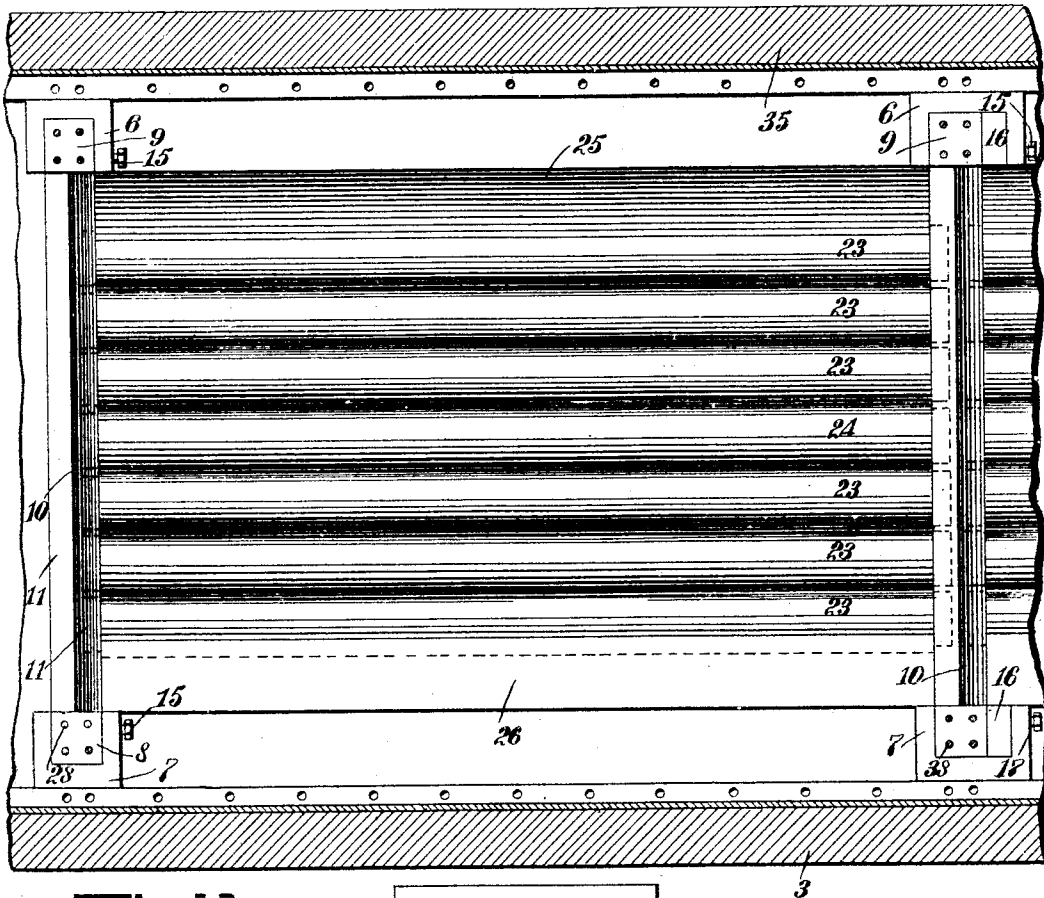


Fig. 10.

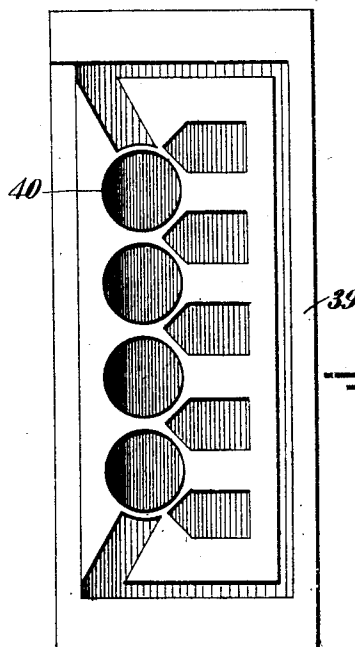


Fig. 11.

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EDMOND PENN WATSON, SR., OF BENTONVILLE, ARKANSAS.

BATTLESHIP-ARMOR.

948,196.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed July 1, 1909. Serial No. 505,338.

To all whom it may concern:

Be it known that I, EDMOND PENN WATSON, Sr., a citizen of the United States, and a resident of Bentonville, in the county of Benton and State of Arkansas, have invented a new and Improved Battleship-Armor, of which the following is a full, clear, and exact description.

This invention relates to armor such as carried by battleships, protected cruisers, and other warships.

An object of the invention is to provide armor which will operate effectively to prevent the entrance of a projectile to the interior of the ship.

A further object is to construct the armor in such a way that it can be readily placed in position or removed.

Merchant ships can be constructed near the water-line in accordance with the present invention, but the shell-resisting parts of the armor may be omitted during peace, but applied to the ships so as to transform them into armored ships of war.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a midship section showing the location and arrangement of the armor belt; Fig. 2 is an inside elevation of a header plate, these header plates are arranged vertically in the ship's side and support between them the shell-resisting members; Fig. 3 is a vertical section through this header plate taken on the line 3—3 of Fig. 2; Fig. 4 is a cross section on the line 4—4 of Fig. 2; Fig. 5 is a cross section on the line 5—5 of Fig. 2; Fig. 6 is a side elevation showing a portion of the armor belt of the ship; Fig. 7 is a vertical section taken on the line 7—7 of Fig. 6 and showing the construction of the armor belt in detail; Fig. 8 is a horizontal section taken on the line 8—8 of Fig. 6; Fig. 9 is a perspective showing a filler block which constitutes a feature of the invention; Fig. 10 is a section taken on the line 10—10 of Fig. 7 and particularly illustrating the details of the armor; and Fig. 11 is a side elevation of a modified form

of header plate which produces a different arrangement of the shell-resisting members.

Referring more particularly to the parts, and especially to Fig. 1, 1 represents the body of the ship, near the water-line of which an armor shelf 2 is formed. In forming this armor shelf I provide a continuous guard 3 which extends longitudinally of the ship, the same being supported on the frame 4 thereof, as indicated. The ship is provided with longitudinal bulkheads 5, 5. Along the armored part of the ship I provide upper beams 6 and lower beams 7, which extend transversely of the ship. The inner ends of these beams abut against the bulkheads 5, 5, as shown. As indicated most clearly in Figs. 7 and 10, the outer parts of these beams 6 and 7 are formed with channels or grooves 8, and these grooves receive the upper edges of header plates 9. One of these header plates is very clearly illustrated in Fig. 2. Each header plate is formed with a sharp forward edge 10 which presents inwardly inclined side faces or cheeks 11. The side faces of these header plates are provided with vertical grooves 12 near their rear edges, and horizontal grooves 13 and 14 near their upper and lower edges. These grooves communicate with each other, as shown. The upper and lower edges of the plate are not beveled, but are rectangular so as to fit the grooves 8 in the beams, as shown in Fig. 10. When these header plates are set in position they are securely held by clamping bolts 15 which screw into the sides of the beams, as indicated. As shown in Fig. 10, the beams at the left are supposed to be located at the end of the armor strip. In the beams at the right the grooves 8 are unusually wide so as to provide for adjusting the position of the intermediate headers, and these grooves are provided with removable blocks or fillers 16 which are held in position by clamping bolts 17, as shown. The grooves 12 receive the vertical edges of back plates 18, and the grooves 13 receive the ends of cover plates 19. Bottom plates 20 are received in the grooves 14, and these plates come together as indicated in Fig. 10, so as to form an armor box 21.

On the faces of the header plates a plurality of sockets 22 are formed which receive the reduced ends of rollers 23. These rollers extend horizontally between the plates, and are preferably arranged as indicated in Fig.

7, with the middle roller 24 projecting a greater distance than the others. The other rollers are arranged along an inclined line so that the rollers above the roller 24 incline gradually rearwardly, and the rollers below also incline rearwardly. The faces of these rollers are disposed adjacent, but a slight distance apart, as indicated, and the rollers are preferably disposed equidistant from each other. Adjacent to the uppermost and lowermost rollers, deflectors 25 and 26 are provided. These deflectors are formed of narrow armor plates which incline rearwardly, and toward the interior of the box. Their inner edges are provided with concaved faces 27 which lie adjacent to the faces of the nearest rollers, as shown. They present inclined outer faces 28 which are adapted to deflect a projectile inwardly when struck. The ends of these deflectors 25 and 26 are secured in grooves or sockets 29 formed in the faces of the header plates, as shown in Fig. 2.

The rollers 23 and 24 may be considered as forming a massive grating. Behind this grating I form a grid which is composed of a plurality of horizontal bars 30. These bars present inclined or wedge-shaped forward edges 31, and their ends are received in sockets 32 formed in the faces of the header plates. The bars 30 are disposed immediately with respect to the rollers so that each bar presents its forward edge just behind the opening or slot between two adjacent rollers.

The upper face of the guard 3 is provided with a longitudinal groove 33, and a similar groove 34 is formed in the under side of the deck armor 35 which is laid over the armor belt. These grooves 33 and 34 receive the edges of plates 36. These plates form lapped joints 37, which joints are scarf joints, as indicated in Fig. 8, the laps of the plates being connected by screws 38, the inner ends of which are secured in the forward edges of the header plates.

Instead of arranging the rollers 23 and 24 in the manner indicated in Fig. 7, I may arrange them in the same straight line, as indicated in Fig. 11. Referring to this figure, 39 represents one of the header plates, and these header plates are provided with circular sockets 40 to receive the ends of the rollers, said sockets being arranged in the same vertical straight line, as indicated. In this view I have represented four of these sockets so as to receive four rollers, but in practice there may be more or less of these rollers, as desired.

The outer plates or skin plates 36 are held in the grooves 33 and 34 by screws 41 which are applied in the edge of the deck armor 35, and in the edge of the guard 3, as indicated most clearly in Fig. 7.

With an armor belt constructed as described it will be evident that if a shell should pierce the skin plating 36 it will come in contact with the rollers 23 or 24. It is highly improbable that a projectile would strike any roller on a line normal with respect to its curved face. A projectile which struck in any other manner would be deflected laterally and toward the opening or slot between the roller struck and the adjacent roller. The impact of the projectile would tend to rotate the rollers so that the projectile would be flattened out and its shape destroyed. If the shell should pass between the rollers it would come in contact with the grid formed of the bars 30 and the wedge-shaped forward edges of these bars would tend to deflect the projectile and resist its passing to the interior. The boxes 21 are water-tight so that even if the skin plates 36 are shattered the water in the boxes cannot penetrate to the interior of the ship. If the projectile should strike the deflectors 25 and 26 it will be immediately thrown inwardly toward the rollers.

Special attention is called to the fact that the rear edges of the header plates abut solidly against the inner ends of the grooves in the beams. In this way a solid backing is formed to receive the impact of the shell.

The rollers 23 are provided with central bores 23^a of small diameter.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. Ship armor, comprising a plurality of rollers disposed close together and adapted to rotate when struck by a projectile.

2. Armor, comprising a plurality of rollers disposed close together and adapted to rotate when struck by a projectile, and deflector plates near the outermost rollers adapted to deflect a shell inwardly toward said rollers or outwardly from the ship.

3. Armor, comprising a plurality of rollers disposed close together and adapted to rotate when struck by a projectile, and a plurality of bars arranged behind said rollers disposed respectively opposite the spaces between the rollers.

4. Armor, consisting of a plurality of substantially parallel rollers, and a grid formed behind said rollers and consisting of bars presenting wedge-shaped forward edges and disposed intermediate with respect to said rollers.

5. In armor construction, in combination, header plates disposed in a substantially vertical position, and a plurality of rollers supported between said header plates.

6. In armor construction, in combination, header plates disposed in a substantially vertical position, a plurality of rollers supported between said header plates, said

rollers being rotatable, and a plurality of bars also supported between said header plates and forming a grid behind said rollers.

7. In armor construction, in combination, 5
upper members having grooves therein, lower members having grooves therein, header plates disposed substantially vertically and having their upper and lower edges received respectively in said grooves, 10
and shell-resisting members mounted between said header plates and supported thereby.

8. In armor construction, in combination, upper beams, lower beams, vertical header 15
plates having their ends attached to said beams, and a plurality of shell-resisting members mounted between said header plates and supported thereby.

9. In armor construction, in combination, 20
upper beams, lower beams, header plates having their ends attached to said beams, shell-resisting members mounted between said header plates and supported thereby, and means for receiving the impact at the 25
inner ends of said beams.

10. In armor construction, in combination, a substantially water-tight box mounted in the side of the ship, and a plurality of members mounted in said box presenting inclined 30
faces adapted to deflect a projectile.

11. In armor construction, in combination, a substantially water-tight box mounted in the side of the ship, and a plurality of substantially cylindrical members mounted in 35
said box in parallel arrangement and adapted to deflect an incoming shell, said members being disposed slightly apart.

12. In armor construction, in combination, a substantially water-tight box mounted in 40
the side of the ship, a plurality of rollers rotatably mounted in said box, and deflector plates at the upper and lower edges of said box adapted to deflect a projectile toward said rollers or away from the ship.

45 13. In armor construction, in combination, a substantially water-tight box mounted in the side of the ship, a plurality of rollers rotatably mounted in said box, deflector plates at the upper and lower edges of said box

adapted to deflect a projectile toward said 50
rollers or away from the ship, and a plurality of bars mounted in said box substantially parallel with said rollers and forming a grid behind the same.

14. In armor construction, in combination, 55
header plates, means for supporting the same in a substantially vertical position, a plurality of rollers mounted between said header plates, said header plates having sockets receiving the ends of said rollers, and 60
a plurality of bars mounted behind said rollers, said header plates having sockets receiving the ends of said bars.

15. In armor construction, in combination, header plates, means for supporting the 65
same in a substantially vertical position, a plurality of rollers mounted between said header plates, said header plates having sockets receiving the ends of said rollers, a plurality of bars mounted behind said rollers, 70
said header plates having sockets receiving the ends of said bars, and deflector plates disposed adjacent to the upper and lower rollers, said header plates having sockets receiving the ends of said deflector 75
plates.

16. Armor consisting of a plurality of elongated members arranged parallel and having their axes disposed in a plane inclined from a vertical line, said members 80
having curved faces adapted to deflect a projectile.

17. In armor construction, in combination, a massive guard extending longitudinally of the ship and mounted in the side thereof, 85
header plates rigidly secured above said guard, shell-resisting members supported between said header plates, deck armor over said header plates, and plating connecting said deck armor and said guard and conceal- 90
ing said shell-resisting members.

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

EDMOND PENN WATSON, SR.

Witnesses:

MARION DOUGLAS,
MARTIN BROWN.