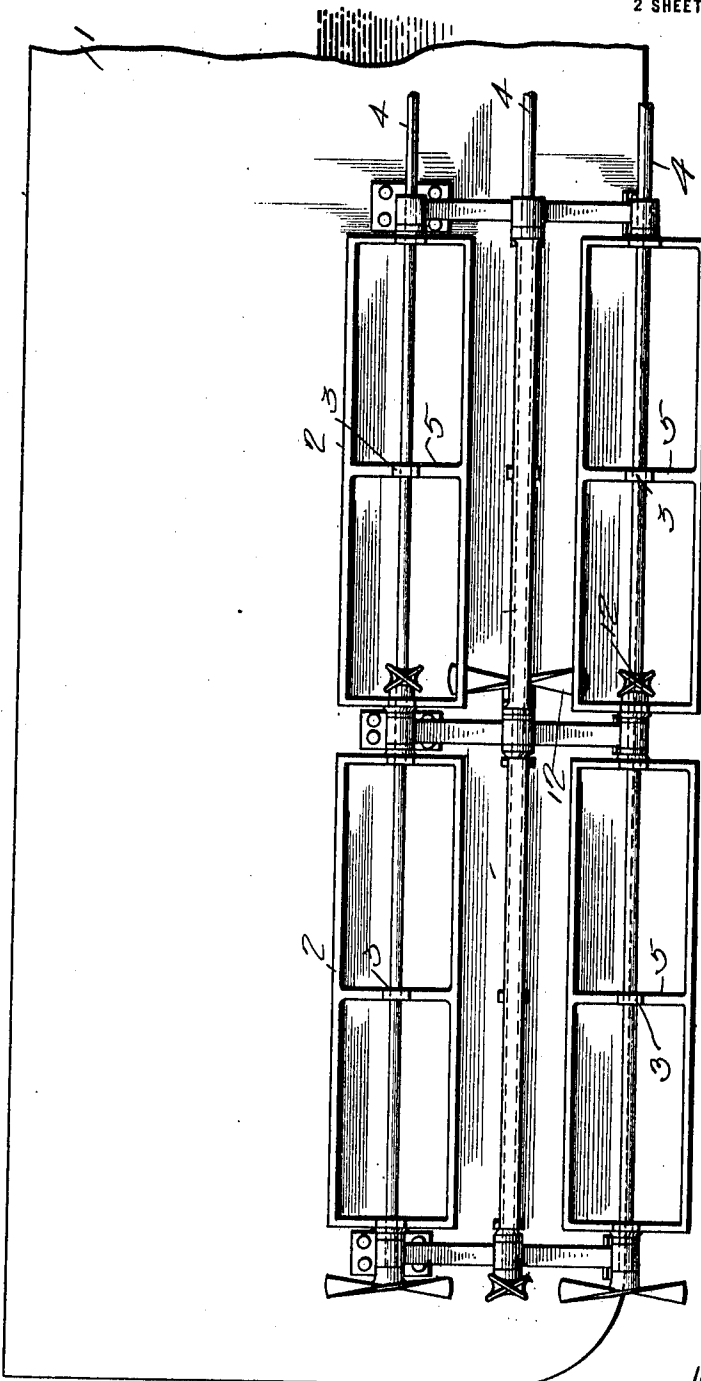


1,314,902.

A. REED.
SHIP PROTECTOR.
APPLICATION FILED OCT. 4, 1917.

Patented Sept. 2, 1919.
2 SHEETS—SHEET 1.

Fig. 1.



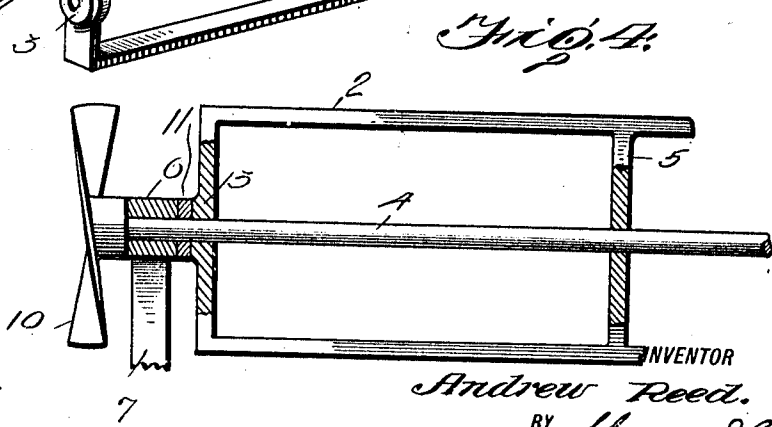
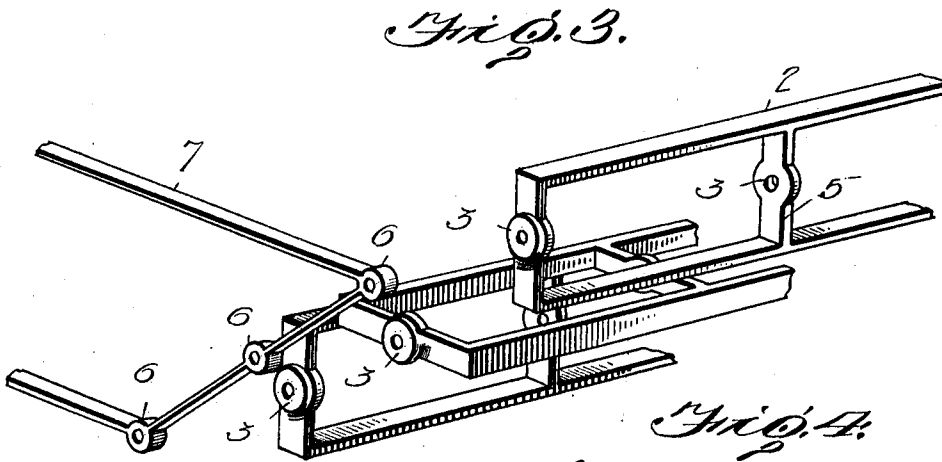
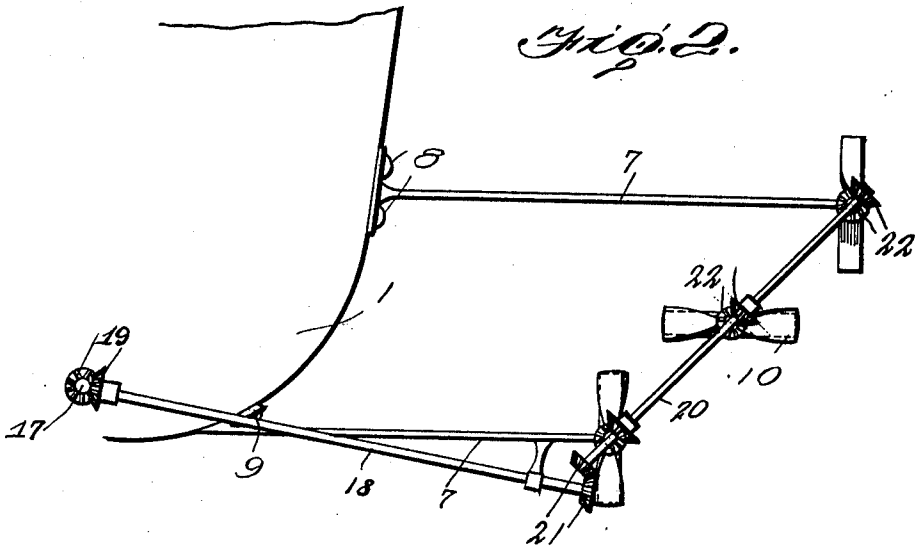
WITNESSES
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UNITED STATES PATENT OFFICE.

ANDREW REED, OF COFFEYVILLE, KANSAS.

SHIP-PROTECTOR.

1,314,902.

Specification of Letters Patent. Patented Sept. 2, 1919.

Application filed October 4, 1917. Serial No. 194,765.

To all whom it may concern:

Be it known that I, ANDREW REED, a citizen of the United States, and a resident of Coffeyville, in the county of Montgomery and State of Kansas, have made certain new and useful Improvements in Ship-Protectors, of which the following is a specification.

My invention is an improvement in ship protectors and has for its object to provide a device of the character specified adapted to engage and deflect or explode a torpedo or mine before the same can strike the hull of the vessel and injure said vessel, and wherein the protector is made in sections.

In the drawing:—

Figure 1 is a side view of the protector in use.

Fig. 2 is an end view.

Fig. 3 is a partial perspective view with the reels detached from their support, and, Fig. 4 is a longitudinal section through one of the reels.

The present embodiment of the invention is shown in connection with the hull 1 of a vessel, and my improvement comprises a series of reels which are supported for rotation in spaced relation with respect to the hull. Each of the said reels is a substantially rectangular frame 2 having bearings 3 at its ends and intermediate its ends for engagement by shafts 4 for supporting the reel. The bearings of reels intermediate their ends are in cross bars 5, and the shafts 4 are mounted in bearings 6, in brackets 7 of substantially U-shape, the bearing 6 being in the body of the bracket, while the arms of the brackets are connected to the hull, as indicated at 8 and 9 respectively. The connection 9 of the brackets is near the bottom of the hull, as shown in Fig. 2, and it will be noticed that the bodies of the brackets 7 are so arranged with respect to the arms that the said bodies incline inwardly and downwardly.

The body of each bracket has three bearings 6, namely, an upper, intermediate and lower bearing, and the said bearings are spaced apart from each other inwardly at regular intervals. The reels are thus arranged in three series, an upper, an intermediate and a lower series, and three series are provided at each side of the hull.

The reels of the upper and lower series have their planes parallel, while the reels of the intermediate series have their planes

at right angles to the planes of the upper and lower series. Preferably a propeller 10 is secured to the rear end of each shaft 4 and the long axes of the propellers on each shaft are in the same plane as the reels on the said shaft. The reels are arranged in sections, as will be evident from an inspection of Fig. 1, in such manner that should a mine or torpedo explode while in contact with a reel, or be exploded by the reel, it will injure only that portion of the device which it strikes, leaving the remainder in working order.

The reels are spaced a suitable distance from the hull to prevent injury to the hull should the said reels explode a torpedo, and they extend from the water line to below the bottom of the hull, as shown in Fig. 1. In this figure it will be noticed that the upper series of reels are at or just below the water line, while the lower series are below the hull when their planes are vertical. The reels of the series are near enough together to prevent passage of a torpedo or mine, and it will be evident that should a mine or torpedo strike the reels while they are rotating, the said mine or torpedo will be driven downward or deflected beneath the vessel.

In practice, should a torpedo approach, it will be engaged by the uppermost reel, which will drive it downward where it will be engaged by the intermediate reel, and then by the lower reel, being thus driven below the vessel. Should the mine or torpedo be exploded by the striking of the reel, only the reels will be damaged, and since they are sectional, it is not likely that the entire device will be put out of commission.

Referring to Fig. 4, it will be noticed that a thrust collar 11 is arranged between each reel and the adjacent bearing 6. Other propellers 12 are arranged on the shaft 4 in connection with certain sections of the reel.

The reels are driven from a shaft which may be the shaft operating the usual propellers. This shaft 17 is geared to a shaft 18 by bevel gearing 19, and the shaft 18 is geared to a shaft 20 by bevel gearing 21. The shaft 20 extends along the ends of the reel shafts and is connected to the said shafts by bevel gearing 22.

The propellers 12 mounted upon the reels assist in the propulsion of the vessel, while at the same time they create currents of water moving longitudinally of the vessel to assist in deflecting torpedoes and the like.

I claim:—

1. The combination with a vessel, of reels supported thereby in spaced relation and at the opposite sides of the vessel for deflect-
5 ing mines and torpedoes downward, means for rotating the said reels with their upper portions moving outward, said reels being arranged in series, one above the other and with the lower series spaced inwardly be-
10 yond the upper series, each reel consisting of a series of independent and substantially rectangular frames having bearings at their ends, and shafts supported by the vessel upon which the reels are arranged.
- 15 2. The combination with a vessel, of reels supported thereby in spaced relation and at the opposite sides of the vessel for deflecting mines and torpedoes downward, means for
20 rotating the said reels with their upper portions moving outward, said reels being ar-

ranged in series, one above the other and with the lower series spaced inwardly beyond the upper series.

3. The combination with a vessel, of reels supported thereby in spaced relation and at 25 the opposite sides of the vessel for deflecting mines and torpedoes downward, and means for rotating the said reels with their upper portions moving outward.

4. The combination with a vessel, of ro- 30 tatable reels supported thereby in spaced relation and upon opposite sides of the vessel for deflecting mines and torpedoes, propellers in connection with the reels, and means for rotating the reels and propellers.

ANDREW REED.

Witnesses:

LILLIAN D. HYDE,
W. N. BEATTIE.

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