

UNITED STATES PATENT OFFICE.

JAMES E. EMERSON AND THOMAS MIDGLEY, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNORS OF ONE-THIRD TO JOHN LYNCH, OF WASHINGTON, DISTRICT OF COLUMBIA.

SHIELD FOR GUNNERS.

SPECIFICATION forming part of Letters Patent No. 478,506, dated July 5, 1892.

Application filed February 3, 1892. Serial No. 420,151. (No model.)

To all whom it may concern:

Be it known that we, JAMES E. EMERSON and THOMAS MIDGLEY, citizens of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Shields for Gunners; and we 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.

Our present invention relates to shields or screens for gunners, and is designed to be suspended upon suitable supports around guns on the decks of vessels or in fortifications to protect gunners and others engaged in operating guns against injury from fragmentary shells and small missiles from an enemy.

The invention will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation of our improved shield applied to the deck of a vessel, and Fig. 2 a section showing the end of a helix and its covering.

Reference being had to the drawings and the letters thereon, A indicates the deck of a vessel or the floor of a fortification; B, the bulwark; C, a gun, (shown in dotted lines;) D D, stanchions; E, a cable secured to the stanchions and upon which a flexible shield or screen F is suspended. The shield or screen F consists of a sheet formed of sections *a* of intertwined coiled-wire helices composed of several strands of wire twisted together in the form of a cable to secure great strength and resistance after having been coiled into a helix. The ends of the sections *a* are covered in a flexible casing *b* of leather, canvas, rubber, or other soft and pliable material which will not interfere with the flexibility of the shield; but will effectually cover the ends of the sections and prevent injury to men by coming in contact with the edges of the shield.

The casing *b* is secured to the shield by a

strand *c*, which may be soft wire of any kind, which is interlaced with the helices and the edges of the casing. This form of casing can be readily applied or repaired on board ship or anywhere the shield is used, as it requires no skilled labor to apply it.

In coiling the helices the pitch of the spiral is such as to produce a fabric with large interstices, so that it will be sufficiently open to enable the men protected by the shield or screen to see through it and observe the movements of the enemy and yet be fine enough to intercept and arrest any fragments of shells capable of doing them injury and small missiles from muskets, rifles, and side arms, such are used by sharpshooters and a body of men attempting to board a vessel or storm a fortification.

While the shield or screen admits of seeing through by persons close to it and sheltered and protected by it, an enemy cannot discern the men behind it until they get into close quarters.

The shield may be secured to the cable E in any approved manner so that it may be adjusted thereon longitudinally and so that it will swing laterally, the latter movement being designed for the twofold purpose of yielding to the force of large pieces of shell that may strike it, and thereby arrest their momentum or velocity more readily and effectually than it could do if fixed, and to be pushed aside to enable the men to pass through the inclosure formed by several sections of the shield and have it resume its normal position automatically. For the purpose of illustration we have shown the cable passed through the upper section of the shield; but it is obvious that it may be secured by rings or hooks.

The shield may be arranged to surround a gun on all sides by leaving a port-hole for the muzzle of the gun to pass through; or in use upon vessels a section of the shield may be suspended above the bulwark of the ship and over the gun-port. The shield thus constructed is very flexible and comparatively light, while it possesses great power to resist penetration of missiles and is readily and con-

veniently handled in placing it in position and taking it down and can be stored in a small place.

Having thus fully described our invention,
5 what we claim is—

1. As an improved article of manufacture, a shield for gunners, consisting of a sheet of intertwined coiled-wire helices having their ends incased.
- 10 2. As an improved article of manufacture, a shield for gunners, consisting of a sheet of intertwined coiled-wire helices having their ends incased in flexible material.

3. As an improved article of manufacture, a shield for gunners, consisting of a sheet of 15 intertwined coiled-wire helices composed of a plurality of twisted strands of wire having their ends incased.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES E. EMERSON.
THOMAS MIDGLEY.

Witnesses:

JOHN REEVES,
J. F. MERRIMAN.