## THE MONITOR TURRETS.

We have no desire to enter into a controversy with our trans-Atlantic contemporary, the *Mechanics' Magazine*, upon the respective merits of Captain Coles's turrets and Captain Ericsson's turrets; time has proved, and will still further prove, that what we have said about our vessels is fully sustained by their merits, and our article published on page 201 of the current volume of the SCIENTIFIC AMERICAN, commenting upon the two kinds of vessels, was called forth by the production in the *Mechanics' Magazine* of elaborate and extensive engravings of the two turrets—Coles's and Ericsson's—in such a manifestly unfair manner that we could not pass them without comment. The *Artizan*, another English journal, has since published a series of engravings, purporting to be representations of the monitor turrets, or United States floating batteries, and we also commented upon them, as we felt it our duty. Since the drawings in the *Artizan* are so widely different from those in the *Mechanics' Magazine*, surely the editor of the latter will see that our criticisms and strictures were not unjust. If these drawings represent the knowledge the English possess of our turrets so much the better for us, and the worse for them. It is unreasonable to publish such abortions, to father them upon Americans as the inventors of them, and then expect us to hold our peace.

In regard to the endurance of the monitors, let us examine the facts and leave speculation for awhile. The monitor *Montauk* has been struck 214 times with 9 and 10-inch shot at close range, and the *Weehawken*, before she sunk, 187 times, almost entirely by 10-inch shot. Now the former vessel is as good to-day as she ever was, notwithstanding this tremendous pounding, and can go anywhere under fire. The turrets of these ships are made wholly of the despised thin plates, built up in sections, which, when damaged, are easily removed and replaced, and the tests they have withstood prove them worthy of confidence. "But," says the *Mechanics' Magazine*, in another paragraph, "if our engravings are wrong why does not the SCIENTIFIC AMERICAN present correct ones?" There are good reasons for our declining this proposition, which will be apparent on reflection.

The *Mechanics' Magazine* exposes the source from whence it derives its knowledge of the monitors by referring to the official report after the engagement of April 19th, 1863; it is not the only journal, at home or abroad, that has been deceived byit. If the editor had reflected a moment he would have discovered that the defects he criticises and publishes engravings of, were those discovered in new ships immediately after the engagement, and did not refer to the condition of the turrets and the ships the next morning, or ten hours thereafter. This fact was stated in our first article, and it strikes us as singular that the editor overlooked it. The difficulty experienced by the pilots in the turret—in obtaining a clear view ahead—was solely the result of the suggestions made to Captain Ericsson by naval officers. These persons thought that a simple round hole in the pilot-house wall, deeply flaring or counter-sunk inwards, would afford sufficient range of vision. This idea was proved to be an erroneous one, and the plan adopted on the first monitor is in use in all, and a range of 120° of the horizon is now obtained *through one sight-hole*; there are five in all, we believe, in the pilot house, and the view of the vicinity is almost unlimited. The broken bolts we referred to in our previous article, and accounted for the solitary disaster which occurred from them; not the slightest trouble has since been felt from them. Why does our contemporary quote the report to prove us wrong? The heavy wrought-iron ring which shields the base of the turret and the pilot-house and prevents broken shot from entering between it and the deck, was not mentioned in the reports previously referred to, for very good reasons—doubtless somewhat similar in character to these which prompted the officers to find all the fault they could, but to refrain from expressing any favorable opinion of the monitors, or of any iron-clad built on their plans. Shot might be heaped to the muzzle of the guns without interfering with the rotation of the Ericsson turret.

Our contemporary seems to have rather confused ideas in respect to laminated armor and its application to the defense of ships. He ascribes more knowledge on the subject to us than combined Europe possesses, and asks somewhat superfluously, "Whaton earth have our armor-plate committees been about all this time?" As this question may be asked in future, we leave it for time alone to answer, but we beg permission to call the attention of our foreign contemporary to the reports of the experiments at Shoeburyness, which have been published from time to time in his own journal. Does he not read therein that the thick armor plates have been repeatedly smashed, cracked, and penetrated? Have they ever stood against heavy shot in cases enough to warrant their adoption?

We have read edifying reports in the English journals, wherein it was stated that some public functionary (a Lord of the Admiralty it might be, who knows as much about iron plates and the effect of shot upon them as he does about Lord Rosse's telescope) peered curiously at the indentation caused by the shot, or at the remains of the plates, and surveying the cracks and the shattered condition of the armor, sits down and writes reports that the plates are impervious, and that 5½-inch armor is heavy enough for any ship, and proof against the best modern artillery. Does the editor of the *Mechanics' Magazine* not know that the best 6-inch solid plates made in France, have been smashed in fragments by our 15-inch gun at reasonable range? If not then we can tell him something new, and point to the system of laminated armor covering a heavy slab as novel, useful, and a defence which is invulnerable to the heaviest projectiles and charges we fire here, and they are not 68-pounders, but 380-pounders. This is no place to discuss the merits of different systems of armor plating, but speculation and theory applied to controvert the results of practice in actual and deadly combat, is so clearly absurd that we pursue the subject no further. The turrets of the monitors have never been penetrated, and we have examined the one on the *Passaic*, the vessel which came home as "seriously injured," and the deepest indentation in it was not over one inch and a half. The Whitworth shot, or facsimiles of them, struck the turret crossways, so to speak, and there was one large hole, in shape like an ellipse, in the top of the chimney, which showed plainly that these "destructive" missiles went end over end like boomerangs to their mark.

It is not our affair if the English choose to build frigates instead of monitors, and clothe them with slabs instead of armor of a proper kind. If shot smash and crack them so that they drop off, or the resistance to the live strength of the shot shatters the ship's frame so that she is useless after a severe engagement, these are results that must be learned by experience. We have put our trust in thin armor plates, skillfully applied, and have never been confounded. We are requested to consider the *Rolf Krake*, an English ship on the Coles's plan of turrets, and her doughty deeds. What has she done, pray? She went within long range of some tremendous Prussian 32-pound rifled guns, and not being actually sunk is pointed out as an example of an invulnerable iron-clad.

Our contemporary may deride our ships as much as he chooses, but when he brings to his aid the engraver, and designs something which he calls plans of our iron-clads, and gives them to the world as the fruit of American inventive skill, he must not blame us if we challenge their accuracy, and repudiate the forgery in the name of American engineers and American ingenuity.

## RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

*Black-washing Pipe Molds.*—This invention consists in the employment of a casing fitting nicely over the sprinkler and arranged in such a manner that when the casing covers the sprinkler the latter can be filled with black-wash and nothing is allowed to escape, and after the sprinkler has been adjusted in the proper position over the center of the mold, said casing can be readily removed; the application of the black-wash to the inside of the mold can thus be effected in a short time with little trouble and without danger of injuring the interior of the mold. The invention also consists in the combination with the sprinkler of a conical guide piece or head, in such a manner that the sprinkler is retained in the center of the mold and prevented from damaging its sides. The invention consists, finally, in a fender placed under the mold into a suitable tank and used in combination with the sprinkler, in such a manner that the sprinkler, after having passed through the mold is still kept in the center and prevented from floating off to any other part of the tank whence it would be difficult to recover. George Ross, of Newport, Ky., is the inventor of this improvement.

*Gas-burner Socket.*—This invention relates to the sockets by which portable pendants or the flexible tubing, portable table-stand lights are attached to the burner of gasoliers or gas brackets. These sockets are made of two pieces, between which the india-rubber or other elastic packing ring or rings are commonly secured by burring the edge of one piece over a shoulder provided on the other; but this mode of securing the packing does not provide for the adjustment or contraction of the packing which, by the frequent removal of the socket from the burner and its replacement thereon, soon wears so as to fit the burner too loosely to prevent the escape of gas around it. The object of the invention is to provide for the adjustment and contraction of the packing to make it fit the burner tightly; and to this end it consists in uniting the two parts of the socket by means of a male screw-thread on one and a corresponding female screw on the other, by which means the packing is enabled to be compressed in the direction of the length of the burner, thereby causing the contraction of its opening and making it fit tightly to the burner. Joseph Todd, Madison, Ind., is the inventor of this improvement.

*Combined Abdominal Supporter and Corset.*—This invention consists in constructing stays or corsets in such a manner that they will, when applied to the wearer, be made to answer, besides their legitimate purpose, that of an abdominal supporter and a truss, and be capable of being applied so that they may be worn with great ease and comfort, and by females even when in a state of pregnancy, and also be capable of being adjusted and applied so that a requisite pressure may, in all cases, be exerted upon or against the abdomen of the wearer. Mrs. S. A. Moody, of New York city, is the inventor of this improvement.

*Sheep Shears.*—This invention consists in the employment or use of a guard attached to the shears in such a manner as to effectually prevent the latter from cutting the skin of the sheep during the process of shearing the latter, and also to prevent the wool from distending or forcing apart the blades of the shears during the cutting operation, a contingency which frequently occurs, especially when the shears loose their keen edge in consequence of the wool slipping in parallelly between the two blades. J. A. Hadley, of West Waterford, N. Y., is the inventor of this improvement.

*Lock for Fire-arms.*—This invention consists in giving additional support to an outside hammer applied to a fire-arm by making a hub boss on the inner face, and counter-sinking the outside of the frame of the arm concentric with the bearing of the main spindle or arbor of the lock, to form a bearing for the boss within the frame. It also consists in a certain novel mode of applying a safety stop in combination with the hammer for the purpose of stopping it a little way from the nipple or from the place where it strikes to fire the charge. Both features are applicable to either muzzle-loading or breech-loading fire-arms. Eben T. Starr, of New York city, is the inventor of this improvement.

*Fire-arm.*—The object of the first part of this invention is to enable the charges in several fixed barrels to be fired, one at a time, in succession, by means of a single hammer without giving the hammer any other movements than those necessary for cocking and striking, and to this end it consists in the employment of a revolving and sliding plunger interposed between the hammer and the barrels to transmit the impact of the blow of the hammer to the percussion priming employed for firing the charges. It also consists in so combining the revolving plunger with the hammer of the fire-arm that the necessary revolution of the plunger may be effected by the act of cocking the hammer. Eben T. Starr, of New York city, is the inventor of this improvemant.