

FIRING A TORPEDO.

The accompanying illustration of a torpedo in its flight from the ship to the water must certainly be reckoned as one of the curiosities of photography. It was taken during the recent naval maneuvers in Great Britain, and it represents the position assumed by the torpedo just after it has left the firing or launching tube.

As our readers are doubtless aware, the Whitehead torpedo is nothing more nor less than an air-propelled cigar-shaped little ship, carrying its own air chambers amidships, its propelling engines in the stern and the deadly charge of guncotton in the bow. When a warship goes into action she carries several of these torpedoes ready charged with guncotton and compressed air. When she is within striking distance of the enemy, one of them is placed in the launching tube, a long cylinder of metal of approximately the same internal diameter as the external diameter of the torpedo, and when the object is within range a small charge of powder or compressed air serves to eject the torpedo in just the same way as a shell is fired from a gun. The discharge of the torpedo starts the propeller engines, which continue to drive the torpedo after it has entered the water.

Before it is fired provision is made for causing the torpedo to travel at a certain depth below the surface of the water. This is done by means of a beautiful piece of automatic and delicate machinery acting upon small vanes or rudders. This is so set that after it has made its preliminary dive the torpedo will rise, and, after a few oscillations, settle down upon the fixed horizontal course for which it is set. The full speed is about 30 knots an hour, though, if it is desired, the engines may be set to carry the torpedo a greater distance at a slower speed. Great as this speed is, it is not sufficient to insure their keeping ahead of the modern torpedo destroyers, and for this reason the bow launching tubes are no longer built into the fastest boats. In the illustration we are supposed to be standing on a higher deck than that from which the launching takes place, and we are looking forward in the direction in which the ship is steaming. The streaked and milky appearance of the water is caused by the wash from the vessel's bows. Our engraving is from Black and White.

The Sculptor's Profits.

One of the most puzzling problems is to ascertain the ratio between artists' fees and the cost of works at different periods. An attempt of the kind has been made in Berlin, apropos of the memorial of the Emperor William I. For that work the Reichstag voted a sum of 4,000,000 marks, and the expenses, it is believed, will not exceed that sum. Professor Reinhold Begas has received one-fourth of the amount, but as he has not furnished a debit and credit account—nor should he be expected to prepare one for the public gratification—it cannot be ascertained whether he has gained or lost by his great work. But it may well be doubted whether his commission was as profitable as Rauch's when he executed the fine memorial of Frederick the Great, which is so prominent an object in the Unter den Linden. The payment was arranged differently. During the twelve years he was engaged on the work he received 3,000 thalers annually, and he was therefore able to devote himself to his task without anxiety. On the completion of the memorial he received 20,000 thalers; so that in all he obtained 168,000 marks, which was a fourth of the total cost. But the money, amounting to over £8,000, was mainly for his own services, while Professor Begas has had heavy disbursements. Schlüter, the sculptor, was paid 2,000 thalers for his design for the memorial of Frederick I, or the "Reiterbild des Grossen Kurfürsten," which is so

prominent an object on the Lange Brücke, near the Schloss, in Berlin. About the same time he was intrusted with the superintendence of the inclosure to the royal palace. He received from 800 to 1,000 thalers yearly, but whether that was for sculpture alone is uncertain. It is calculated that he was rewarded with 11,000 thalers, or 33,000 marks, which would be about one-eighth of the cost of the most

of the post, and the unraveled ends of the rope are bound around his wrists and tied securely, and all knots are sealed with wax. A large nail is driven in the top of the post, to which are fastened cords that are passed out through the cabinet and held by members of the committee in order that they may know if the performer moves the post in any manner during the performance of any test, such as the ringing of bells, etc. Fig. 2 of our engraving shows the performer tied to the post and the committee holding the cords. The curtains of the cabinet are closed and the usual manifestations take place.

Before the performance a hole is bored in the center of the end of the stick or post, in which is placed a chisel-shaped piece of steel sharpened at the lower end and blunt at the upper end, as shown in Fig. 3. The opening in the end of the post is now carefully closed and all signs of such an opening are concealed by the aid of glue, sawdust, and a little dirt rubbed over it.

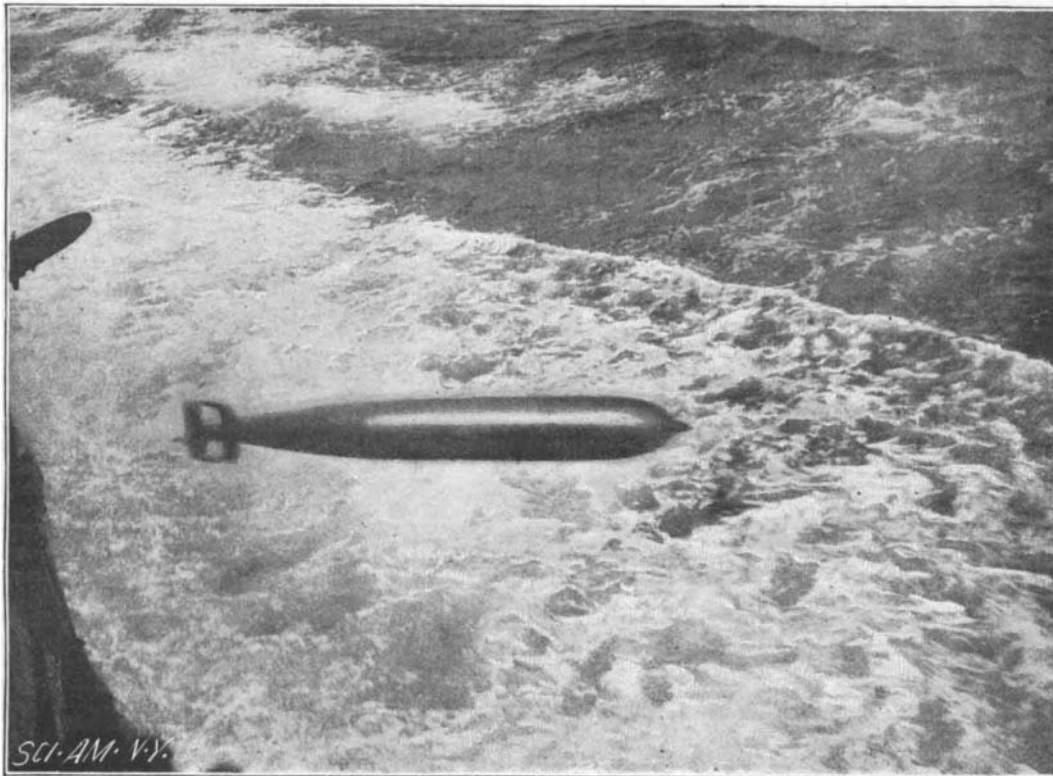
When the committee are invited to bore a hole in the post, the performer takes care to start the bit, in order that there will be no mistake about getting the hole directly beneath the chisel concealed in the post. When the rope is passed through the hole and knotted it is directly under the sharp edge of the chisel, with a thin layer of wood between. When the nail is

driven in the top of the post it strikes the chisel, forcing it through the thin shell of wood above the rope and through the rope, thus releasing the performer, who can withdraw his hands from the post and do any trick he chooses, and when finished, by merely replacing the ends of the rope in the holes from which he removed them, and holding the hands tight against the post, can allow a most rigid examination of the seals to show that it was not possible for him to have released his hands, and the persons holding the cords that are fastened to the nail testify that they did not feel any movement of the performer or the post.

Some Startling Figures.

The New York Sun in an editorial bunches some significant pension facts, so that the inference drawn is that a great proportion of pensioners are unworthy of government bounty and that the list should be cut down. Figures recently published show that at the present rate of expenditure the annual pension list has been consuming more than nine-tenths of the revenue taken in at all of the custom houses in the United States; or again, if the customs duties are considered as paying the general expenses of the government, the pensions have been using up not less than 96 per cent of the total receipts from internal revenue. Thirty-two years after the end of the civil war, the number of pensioners on account of that war exceeds by about a quarter of a million the number of soldiers actually engaged in service in all of the armies of the government at any time between the firing upon Sumter and the surrender of Lee at Appomattox. The number of pensioners after a third of a century is between 30 and 40 per cent larger than the fighting army at any time during the war. We have already paid in pensions since the war two billion dollars or two-thirds as much as it cost the government to carry on the war.

ACCORDING to some researches of Biernacki, in a German physical journal, alcohol containing water may be deprived of its water by dipping into it amalgamated aluminum. Aluminum may be amalgamated by connecting it to one pole of a battery and repeatedly dipping it into mercury which is connected to the other pole. The spark produced upon withdrawing it yields sufficient heat to bring about the amalgamation.—Elec. World.



PHOTOGRAPH OF A WHITEHEAD TORPEDO TAKEN JUST AFTER ITS DISCHARGE FROM THE BATTLESHIP.

excellent example of German sculpture in the beginning of the eighteenth century.—The Architect.

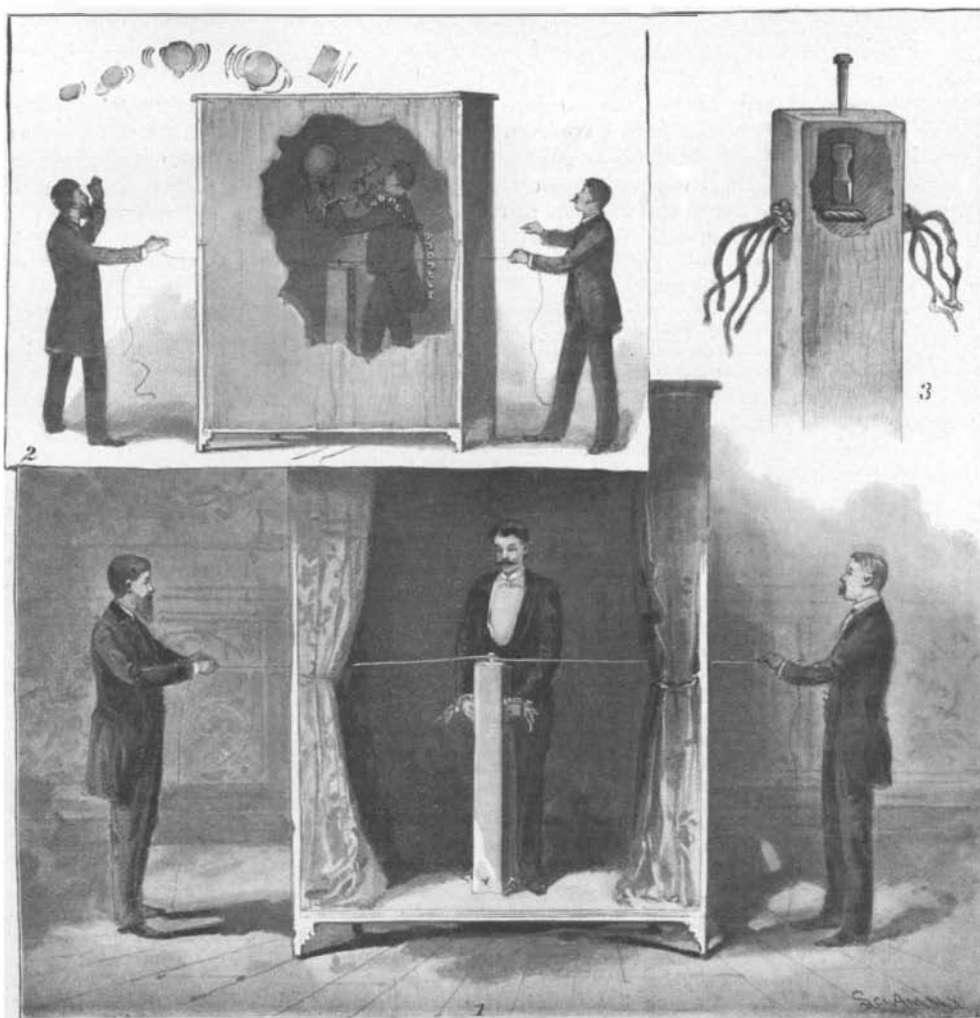
THE "SPIRITUALISTIC POST TEST."*

BY W. B. CAULK.

The "spiritualistic post test" is among the latest and most successful of mechanical fastenings. A piece of wood four inches square and three feet long is given to the committee, who bore a hole through it near one end, and then pass an ordinary rope through the hole, tying a knot in the rope on each side of the post, pressing the knots against the post so that the rope cannot be drawn through the post. The ends of the rope are now unraveled, and the post secured to the floor of the cabinet.

The performer, standing behind the post, places his wrists against the knots in the rope, one on each side

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THE SPIRITUALISTIC POST TEST.