

**PRACTICE AT TARGET MADE OF HOGS-HAIR.**

REPORT MADE TO BUREAU OF ORDNANCE (NAVY DEPARTMENT) ON SEPTEMBER 1ST, 1863, BY LIEUT. COMMANDER WILLIAM MITCHELL, ON AN EXPERIMENTAL TRIAL OF THE RESISTING QUALITIES OF A HOGS-HAIR TARGET, THE INVENTION OF MR. — BRADY.

Practice at Target No. 44, made of Hogs-hair, on the Plan of Mr. Brady, Pencote Battery, Sept. 1, 1863.

This Target was made of 5 bales of hogs-hair, faced and backed with pine plank 4 inches thick, and fastened with 28 wrought-iron bolts.

Two of the bales had been subjected to one and the same amount of compression, and two others were compressed alike but differing in degree from the former, and the remaining bale, as stated by the inventor, was but slightly compressed. The bales were bound with iron hoops.

The target was backed with 4 feet of solid clay.

Dimensions of Target.—Eleven feet three inches long; four feet wide; three feet three and a half inches thick.

Gun Practice at Experimental Battery, Sept. 1, 1863.

Gun, Rifle, 50-pdr., No. 30, mounted on wooden carriage on Pencote Battery. Charges, 3½ lbs. Schaghticoke cannon powder. Projectile, J. A. D. Shell. Primers, friction. Officer in charge, Lieut.-Comdr. Wm. Mitchell. Record by Bangs. Aimed at Target.

No. from Gun.	No. to-day.	Charge.	Weight of Projectile.	Insert'n.	Recoil.	Time when fired.	REMARKS.
		lbs.	lbs.	in.	ft.	a. m. h. m. s.	
1	3½	38.	70	"	2.9	10.25	
2	3½	36.25	"	"	2.7	10.37	
3	"	"	"	"	3.	10.49	
4	"	37.	"	"	3.	10.58	

1st Shot struck the right hand bale in the center, passing entirely through bale and 4 feet of clay, entering the bank at a distance of 18 feet 3 inches back of target, and imbedding itself.

2d Shot struck the 2d bale from right edge of target in the center, passing entirely through bale and 4 feet of clay, entering the bank at a distance of 10 feet back of target, and imbedding itself.

3d Shot struck 3d bale from right edge of target in the center, passing entirely through bale and 4 feet of clay, entering the bank at a distance of 12 feet back of target, and imbedding itself.

4th Shot struck 2d bale from left edge in the center, passing entirely through bale and 4 feet of clay, entering the bank at a distance of 11 feet back of target, imbedding itself.

The 5th bale was not fired at, at the request of the inventor. It will be perceived that all the bales were pierced, and the projectiles not having been found, it was not possible to ascertain which offered the greatest resistance.

Respectfully submitted,

W. MITCHELL,

Lieut.-Comdr. U. S. N. and Executive Officer.

**The Atlantic and Great Western Railway.**

This is a line of the broad gage, which taps the New York and Erie at Salamanca, and is intended to run to Alton, Illinois; forming a continuous broad-gage line from the Hudson to the Mississippi River. On the unfinished portion of the main line west of Akron, Ohio, upwards of five thousand laborers are constantly at work, and of the 30,000 tons of rails required for its completion more than 20,000 tons have already arrived. Between Salamanca and Akron, and along the tributary branches from the oil regions at Titusville and Franklin, the line is in fine working order. Upwards of one hundred additional engines are in course of construction at the best engineering establishments in the country, with a corresponding number of cars, to be ready for the through traffic which will follow its connection with the Ohio and Mississippi Railroad in November next. The central depot is at Meadville, in Pennsylvania, where the company's workshops and the houses of the employees are situated, covering an area of sixty acres.

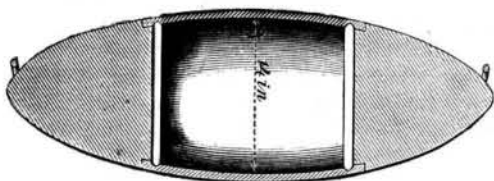
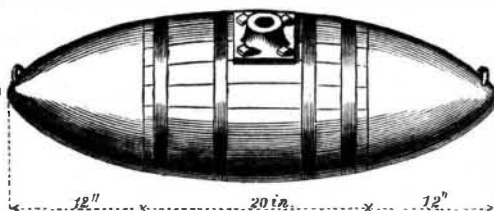
The Boston people intend to construct a line to connect with the New York and Erie, at Newburg, N. Y., and thus form a continuous line from Boston to the Mississippi. The Boston line is to run to Fishkill, opposite Newburgh.

**EXAMINATION OF TORPEDO SENT FROM THE NAVY DEPARTMENT.**

NAVY ORDNANCE YARD, Washington City, Sept. 5, 1863.

Lieutenant Commander Wm. Mitchell, Executive Officer:

SIR:—I have the honor to report that I have examined the Torpedo sent to this Yard from the Navy Department, of which the following is a description:



It is three feet eight inches (3 feet 8 inches) in length, by one foot two inches (1 foot 2 inches) in width, elliptical in shape, and resembles very closely in its general appearance an ordinary Nun Buoy. It seems to have been constructed of a small keg, the staves of which are oak with two solid cones of pine driven on to the heads and secured by hoops, the heads being well pitched. On its sides secured by screw bolts, are two metal tubes which probably contained the fuse and apparatus for igniting it, but these had been removed before its arrival here. The cavity is of sufficient capacity to hold about sixty-five pounds of powder. Annexed is a sketch of the Torpedo.

Very respectfully,

Your obedient servant,

M. P. JONES,

Lieutenant Commander U. S. N.

Respectfully forwarded.

W. MITCHELL,

Executive Officer Ordnance Yard.

**BIRNEY'S INCENDIARY SHELL.**

EXTRACT FROM REPORT TO BUREAU OF NAVY ORDNANCE IN REFERENCE TO BIRNEY'S INCENDIARY SHELLS, DATED

FLAG-STEAMER PHILADELPHIA, Off Morris Island, Sept. 19, 1863.

"Yesterday, in a conversation with Major-General Gillmore, he stated that the incendiary shells used by him burst, without exception, before reaching the distance of one mile; and that, in trying the composition on his tent floor, the burning of it was quite harmless."

**ENGLISH AND AMERICAN IRON-CLAD SHIPS OF WAR.**

If our people are in any doubt as to the utility of the monitor batteries and their value as impregnable vessels of war, our ostensible friend, the English Government, seems to be fully aware of their value; they are quite astonished at the qualities recently developed by the craft in question. The united leading press of England concur in attributing great impregnability and offensive power to these ships, and express some doubts (in view of the destruction of the rebel pirate *Atlanta*, in Warsaw Sound by the monitor *Weehawken*) whether their own vessels, built on similar principles, are fit to be pitted against ours. The English *Royal Sovereign* is a turret ship; differing materially from our vessels of that class, as will be seen by referring to the subjoined description cut from the London

*Times*, and comparing the same with the essential features (now so well known), of the Ericsson batteries.

"To return to our own *Royal Sovereign*. It is necessary to repeat here that she is being fitted with four turrets, the one forward being the largest of the four, and intended to carry two three-hundred-pounder smooth-bore guns, while the three others will be of less diameter, and will carry only one gun each of the same calibre. From the inner skin of the turret, formed of half-inch boiler plate, will project outward iron ribs T-shaped, ten inches in length and twenty inches apart, the spaces between these ribs being filled in solid with teak. Round the outer circumference of this combination of teak and iron ribs is a crossed trelliswork of three-quarters of an inch of iron, and on this trellis work, and through all and outside all is bolted eight inches of solid teak. Here is a structure at once far better calculated to resist the impact of shot than the turrets of the *Keokuk* could have been, although the turret of the *Royal Sovereign* which has been so far described is as yet without its armor; for round the outer surface of the turret on the eight-inch teak cushioning, are to be laid the solid five and a half inch rolled armor plates, which are now being manufactured, and bent immediately on leaving the rolls to the required segments of a circle, at the Parkgate Works, Yorkshire. In the immediate front of the turret or vicinity of the two ports, however, the resisting power of the five and a half inch armor plate is further supplemented by a four and a half inch rolled plate: so that in the section of the turret's entire circumference which will be exposed to the shot of an enemy, the defensive powers of the turret will consist of, from outwards, ten and a half inches of iron, three and a half inches of teak, five inches of three-quarter inch iron trellis work, ten-inch iron T-shaped ribs filled in with teak, and the inner iron skin. The outer circle of armor plates is to be bolted, or 'married,' as we believe it is technically expressed, round the turret's upper rim, to a massive iron ring nineteen feet in diameter, of fourteen-inch by two-inch iron, and weighing two tons nine hundred weight. This part of the turret's defense will extend to just beneath the upper deck, but is strengthened and protected by a massive iron rim, wrought in sections and riveted together in the strongest possible manner; the armor-covered portion of the turret projecting above the upper deck, and with the rim, being together in shape exactly like a broad-trimmed coachman's hat of the olden times. The turret itself of course rests with the guns and their carriages upon a massive circular platform or turntable, the outer rim of which is fitted with a ring road of stout iron teeth, by applying to which a cogged wheel, worked by a winch by eight or less men at the handles, as may be required, the turret is made to revolve upon the machinery below. During the recent visit of the Admiralty to Portsmouth, the foremost turret, complete in all respects except its armor plating, which, however, was represented in its weight by its equivalent in pigs of iron ballast, revolved in a complete circle in four minutes and forty seconds with eight men at the winch handles; and in the presence of Mr. Reed, Chief Constructor of the Navy, a quarter circle was turned and back again the same distance in one minute. Subsequently, however, with eight men at the winch handles it has turned a quarter circle in twenty-three seconds, or a complete circle in one minute and thirty-two seconds, thus enabling the two guns in the turret to be brought to bear from one broadside to the other in forty-six seconds.

"The *Royal Sovereign's* turret 'machinery,' with the bed upon which it rests, we will now endeavor to describe, premising that the diameter of the turret is less than that of the turntable or the machinery upon which the turntable revolves. Level with the ship's lower deck, or, as it must now be, her main and lower deck both, upon upright timbers from the ship's keelson, are laid logs of teak about twenty inches square, and extending over a space of nearly eighty feet in circumference. On these square timbers has been constructed the bed proper which supports the turret, turntable, and machinery. It is in appearance a gigantic cart-wheel, twenty-six feet in diameter; the nave and periphery being constructed of English and American oak, the periphery entirely