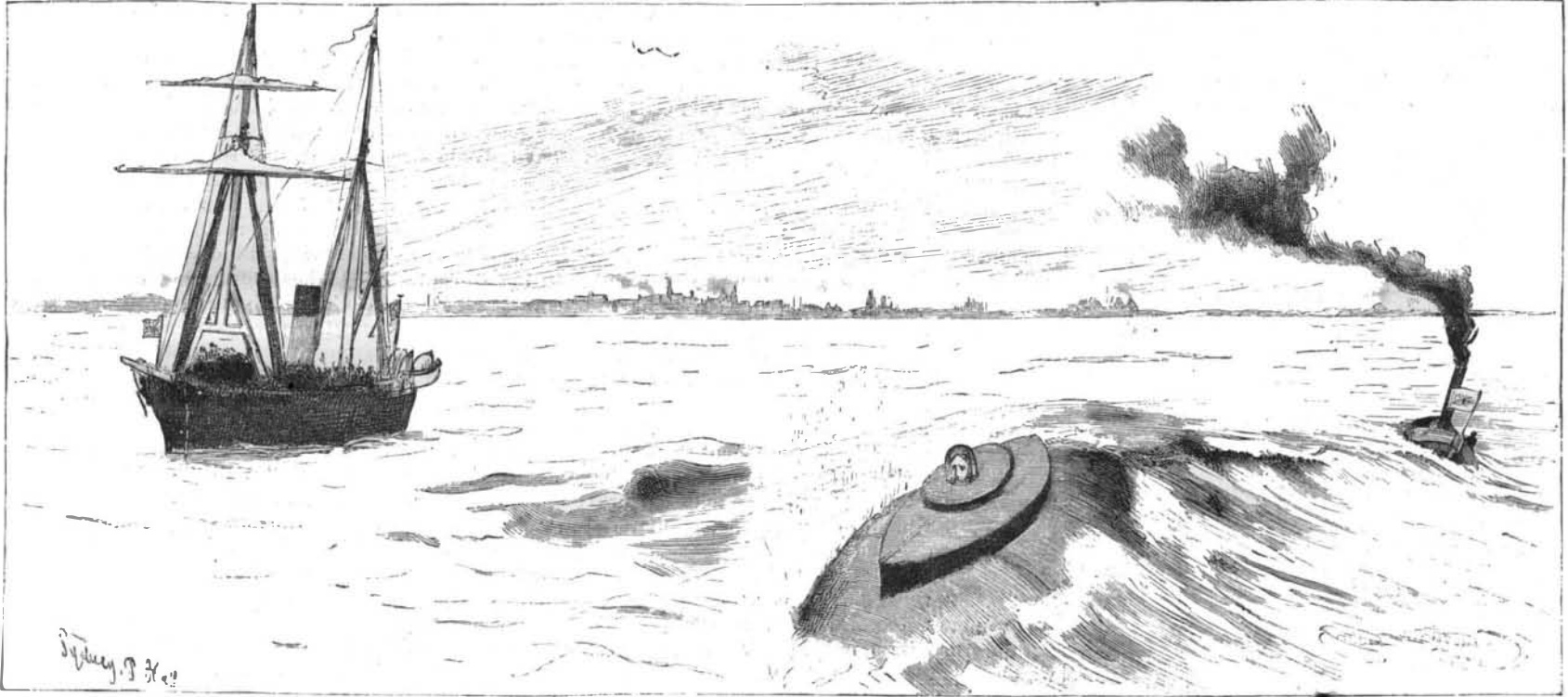


THE NORDENFELT SUBMARINE BOAT.

In September last, just before leaving Denmark for the south, the Prince of Wales, with the King and Queen of Denmark and the Czarina, witnessed off Landskrona, a town on the Swedish coast, an interesting and successful trial of the new submarine boat, which has been built at Stockholm upon the plans of Mr. Nordenfelt, the inventor of the machine gun so exten-

and two to work the propellers on either side, which, when set in motion, compel the boat to sink, and maintain her at a certain depth beneath the surface. When it is wished to sink the boat, enough sea water is taken in to reduce the buoyancy to 1 cwt., and this suffices to keep the tower just above the surface. The side propellers then being set in motion, the vessel can be sunk to a required depth, there being an automatic arrange-

used, which is kept at high pressure in two tanks. With this the boat has been driven for five hours at a speed of three miles an hour. Her speed on the surface is eight knots. The crew number three, and during their submarine existence have to subsist on the amount of air which they take with them in the hull, in which four men have subsisted for six hours without any especial inconvenience. The boat is 64 feet long,



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sively used in modern warfare. Ever since the American civil war, naval engineers have been striving to solve the problem of submarine navigation, but until now with very little success. Mr. Nordenfelt's invention, however, appears to fulfill the numerous requirements for overcoming the difficulties and dangers of maintaining, driving, and directing a boat beneath the water.

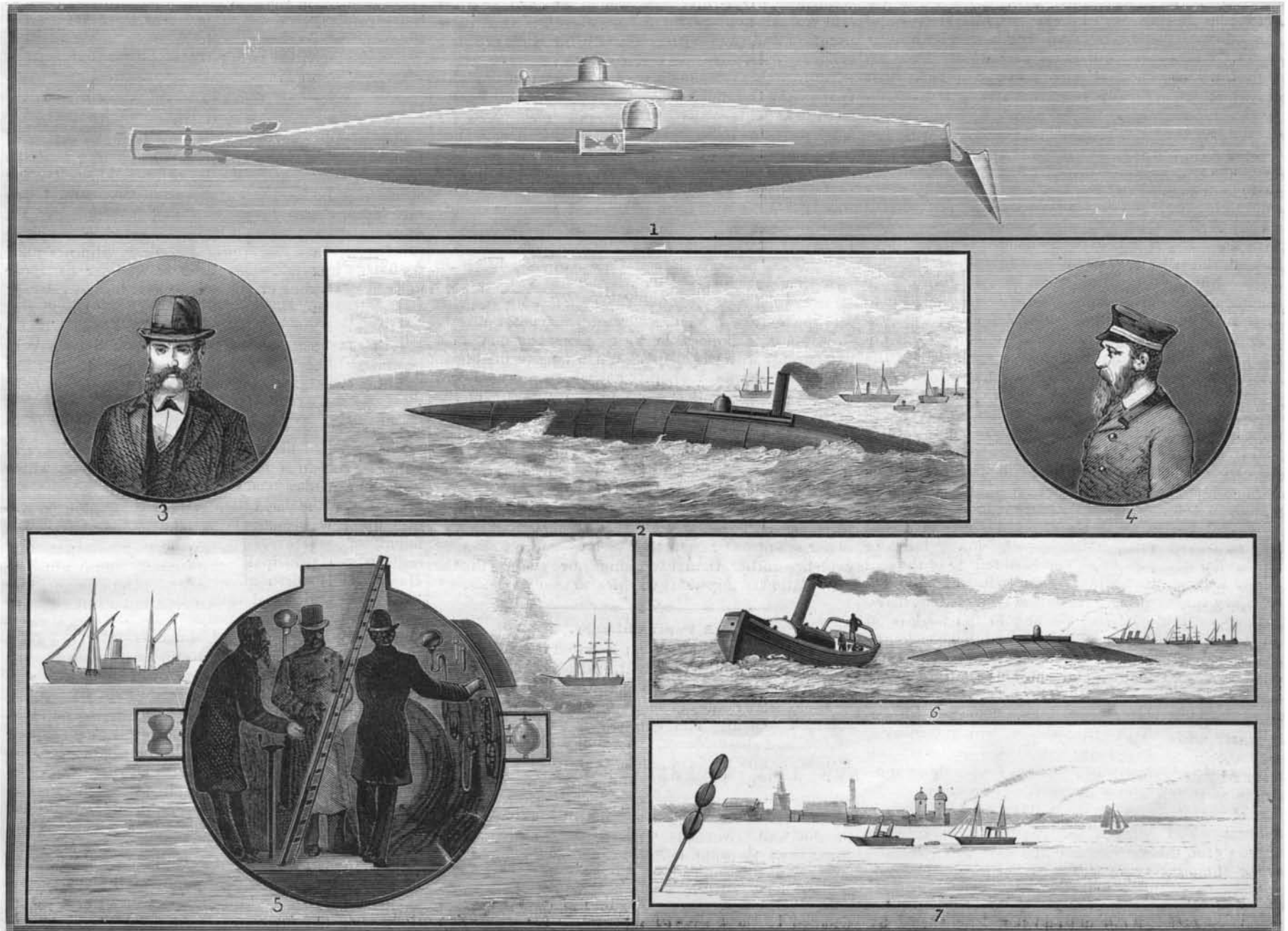
The boat is built of steel, and is cigar-shaped, with a glass conning tower in the center, from which the commander can keep a lookout. This dome is protected by a strong iron cover. There are three engines, one to work the screw in the stern, which propels the vessel,

ment by which the engines are stopped directly that depth is exceeded. An automatic horizontal steering gear also prevents the boat from going down or up head foremost, an even keel being preserved throughout all the maneuvers. Should a breakdown of the engine occur, the boat from its own buoyancy at once rises to the surface.

The motive power is steam, and as long as the vessel is above water the fires can be stoked, the smoke being driven through two channels, which pass partly round the hull and point aft. When, however, the boat sinks, the fires have to be sealed, and reserve steam is

and the central diameter is 9 feet. The enormous utility of such a vessel as this in naval warfare is at once apparent. Moving without the slightest apparent sign of existence, she can launch torpedoes against hostile vessels, enter a harbor unperceived, and render useless the most complicated system of submarine mines. The trial at Landskrona was witnessed by officers representing every European power. Admiral Arthur and Major-General Sir Andrew Clarke were among those representing the English services.

We are indebted to the *Illustrated London News* and *London Graphic* for our sketches.



1. The boat under water, the end removed for launching a torpedo. 2. On the trial trip from Landskrona to Helsingberg. 3. Mr. Nordenfelt, the inventor. 4. Captain Garret. 5. Interior of the boat: Mr. Nordenfelt explaining details to foreign delegates. 6. Towing the boat out of harbor. 7. View of Landskrona.

THE RECENT EXPERIMENTS WITH THE NORDENFELT SUBMARINE BOAT AT LANDSKRONA, DENMARK.