

**The Atmosphere of the London Underground Railway.**

In the House of Commons, recently, Mr. Weir asked the president of the Board of Trade whether his attention had been drawn to certain articles and correspondence in the *Pall Mall Gazette* as to the state of the atmosphere in the underground railway and the means of purifying it; and whether he would take steps to deal with the matter effectually.

Mr. Bryce: I have myself had such frequent and painful experience of the state of the atmosphere in certain parts of the underground railway that no newspaper articles could make me feel more strongly than I do the inconvenience from which the public now suffers. But Parliament has not intrusted the Board of Trade with any powers which would enable them to deal effectually with the mischief of which my honorable friend complains.

**THE ACCIDENT TO THE STEAMER PLYMOUTH.**

Last June the splendid steamer Plymouth, of the Fall River line, plying on Long Island Sound, between New York and Fall River, went ashore on the rocks off Rose Island, R. I., in a dense fog. For six days she remained there, resisting all attempts to remove her, but was finally floated off and made the trip to New York under her own steam. Here she was placed in the dry dock for repairs. Our engraving is from a photograph specially taken for the *SCIENTIFIC AMERICAN* while the boat was on the dock. It shows the appearance of the hull after the damaged outer plates had been removed. It illustrates what a remarkable provision for safety the double hull used on the iron boats of this company is, and also the fine quality in the material used. The damage in brief amounted to this. For a considerable distance on each side of the keel about amidships the plates were bulged, cracked and broken, and thirteen of her twenty-two compartments in the double bottom were open, so that it was calculated that 450 tons of water entered. The inner hull was intact.

It was found that little water entered it, and that the leakage was confined to the outer hull. One very interesting point brought out in the illustration is the fact that the plates connecting the two hulls were only injured in their lower portions. In executing the repairs the lower portions were cut off and replaced by new pieces, but the upper portions of these connecting plates are as good as ever. The accident was a striking tribute to the excellence of the material and the great safety afforded by the double hull.

The Plymouth is a magnificent specimen of marine architecture. She is 351 feet 8 inches long and of 50 feet beam. Over the guards her width is 86 feet. She

is driven by triple expansion inclined engines, and throughout is replete with the latest improvements. Her engine is of 5,000 horse power. A more detailed description of the boat, with illustrations, will be found in our issue of October 4, 1890.

**A CHINESE GAME.**

What is called the "Game of the Devil" dates back in China, where it is called *Kouen-gen*, to a very remote antiquity, and has been much played in France at



**THE GAME OF THE DEVIL.**

different epochs of modern times, especially at the beginning of the present century. One of our readers, Mr. W. Taylor, sends us an interesting photograph relating to the operation of the apparatus used, and which we reproduce herewith.

It represents the "devil" thrown into the air by means of a string that the player keeps taut by means of two sticks and upon which he is to catch it. "I remember having often seen this game in the hands of one of my friends," says Mr. Taylor. "According to him, the game was in great favor in Belgium in his boyhood, about fifteen years ago, especially at colleges, where the young men often got up genuine matches between two and even three players. I send a photograph taken with a kodak and which represents a

player at the moment in which the 'devil' is returning to fall back upon the string. The form of the devil varies a little from that of the 'Kouen-gen.' It is made of two tin cones, connected by their apices and provided with apertures for the production of a humming sound when the devil revolves very fast. A good strong player can easily throw it to a height of more than forty feet."

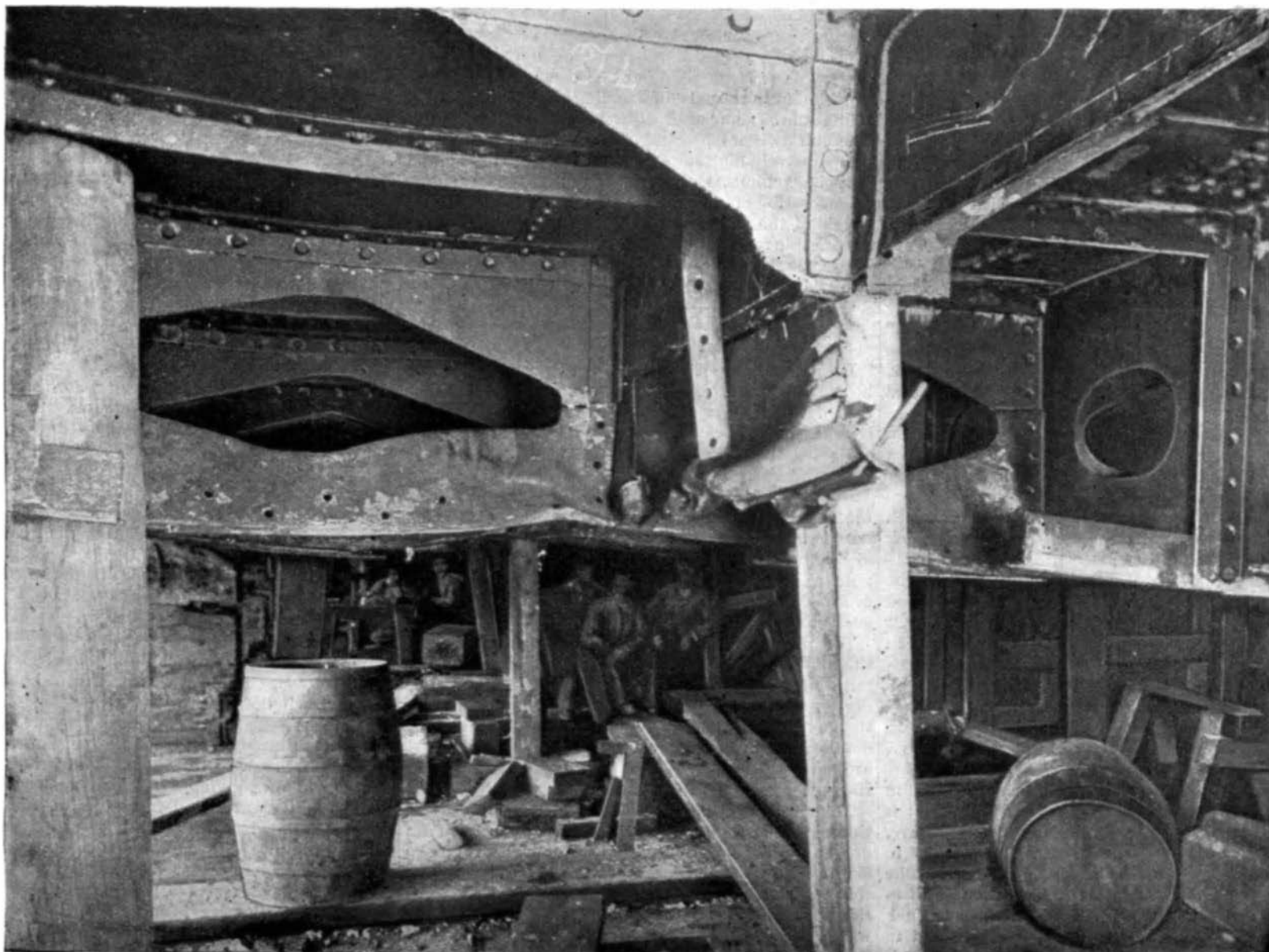
In our childhood (along about 1853), this game was much played at Paris. The devil was made of two hollow boxwood balls. This game, which is very amusing, and which tries one's skill, is now almost forgotten. It would be interesting to bring it into vogue again.—*La Nature*.

**A New Electric Locomotive.**

An electric locomotive of 1,000 horse power is (says the *Engineer and Iron Trades Advertiser*) under construction in London, from the plans of Sprague, Duncan & Hutchinson, to the order of the North American Company. It is intended for slow speed and heavy traction in switching service. The machine is carried upon four pairs of driving wheels, all coupled. The frame is of steel, with deep pedestals. The 56 inch wheels are close coupled; the first and last pairs only are flanged. There is a motor in each axle, the weight of the armature coming directly on the wheels, and that of the field magnets is on the journals through the pedestals; no spring supports are used. The four motors all form parts of a complete system on a rigid wheel base of 15 feet. The motors are of the alternating type, are wound for 860 volts, at 225 revolutions, which will be the equivalent of 35 miles an hour when in multiple.

**The Telescope of the Future.**

At the Royal Institution Sir Howard Grubb in a lecture recently discussed the great telescopes of the future. The main point of his new proposal is to mount a colossal instrument so that it practically floats on a liquid support. In this way even the greatest reflectors and refractors could be properly sustained. They would, it is believed, move with a smoothness and steadiness not attainable with supports ordinarily employed. By this method Sir H. Grubb proposes to render the large telescopes more suitably adapted for photographing the heavens. In the ordinary visual use of the telescope slight irregularities in the movement of the instrument are merely inconvenient, but for the accurate demands of photography absolute precision in movement is required. When this is wanting the result of the photograph is to represent each star as a streak instead of a round sharp dot, which the properly exposed plate should produce.



**DOUBLE HULL OF THE STEAMER PLYMOUTH.**