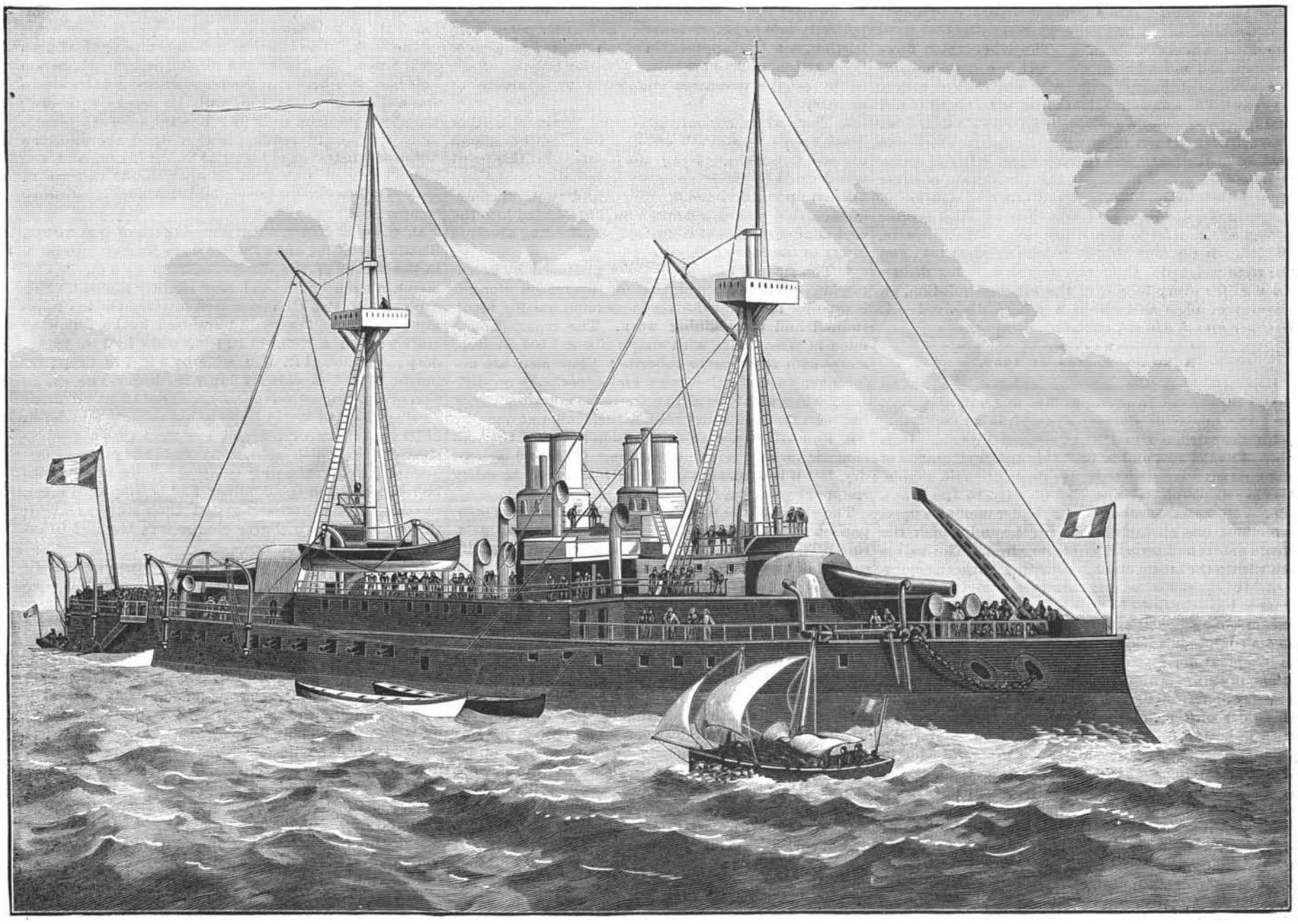
NEW FRENCH ARMORCLAD CRUISER LE TERRIBLE.

It appears that the fleet of armorclads, which not long since appeared to have grown senile in the presence of the more modern torpedo boat, is now more in favor than ever with the navymen. All the great nations are taking every step to increase the efficiency of their navies, both in constructing ships of enormous tonnage and in constructing new types of ships. Without leaving out of sight the necessity for a fleet of torpedo boats, France ought to follow this movement. The maneuvers of last year have not dethroned the ironclad. Those of this year, we are ready to affirm, will not lessen the prestige of those magnificent ships which are the honor of our navy. Let us rejoice at this most recent addition to the fleet of a new type of cruiser.

The Terrible, which was launched in 1881, satisfactorily finished its trial test during the latter part of the winter. It is now entirely finished. This ship is a mate of the Requin, which was constructed in the shipyards of the Loire, and which was launched in 1885.

The hull is of iron and steel, and measures 280 ft. in length, 59 ft. beam, with a draught of 23 ft. 9 in., 7,168 tons displacement, with armor plating 50 centimeters in thickness amidships, 37 centimeters forward, and 33 centimeters aft. It is provided with 12 boilers.

The armament, mounted on the forecastle, consists of two cannons of 47 centimeters, four cannons of 10 centimeters, and ten machine guns. There is a complement of 332 men.—*L'Illustration.*



THE NEW FRENCH ARMORED WAR SHIP TERRIBLE—7,200 TONS DISPLACEMENT.

Stability of Patents.

Although the patent system of the United States involves a search on the part of the government as to the novelty of the invention, yet it has been a frequent remark on the part of the general public that few patents can stand the tests of the courts. This ratio is sometimes stated to be as high as nine out of ten, or some equally conventional fraction. A member of the bar has recently tabulated the adjudication of patents by the United States courts, as recorded in Meyer's Federal Decisions from 1776 to 1835, and finds that 73 per cent of the patents upon which suit was brought were sustained. The total number of patents brought to an issue was 983, and of these 269 were annulled, and of the remaining 714 which were held valid, 480 were sustained in full, and 234 were held to be valid in part. When it is considered that the United States patent law requires that protection can be accorded only to the original inventor who has added to the state of the art, and to that portion of his invention which does not include any portion of public knowledge, or the work of other inventors, whether patented or not in any country, and that the time covered by this investigation covers the early period of their history before the system was thoroughly formulated and crystallized by legal decisions, this is a remarkable showing, testifying to the skill of the patent solicitors, and also the examiners in their patent department.

It is difficult to estimate the value of the patents still in force. Although such estimates have been made, they are necessarily vague and void of the precision essential to accurate statistics; yet the amout of capital invested in faith upon the validity of patent protection is very large, and generally remunerative to a satisfactory degree.—*Engineering.*

The Exhaustion of Petroleum.

A writer in *Home Knowledge* discusses the problem of the exhaustion of our oil fields in the following manner:

It can hardly be doubted, I fear, that the supply both of oil and gas has now been so largely drawn upon that within less than a score of years scarcely any will be left which can be brought at reasonable cost into the market. The boundaries and extent of the oil regions have been determined. All the sands in which oil will ever be found in such quantities as to be worth working are known, and have been drilled through in various places. It is scarcely possible that any new fields will be discovered which will be comparable, either in extent or productiveness, with those now known. So far back as January, 1883, Professor Lesley pointed out that no petroleum is now being produced in the Devonian rocks, either by the process akin to distillation or otherwise. What has been stored up in the past, a process which probably lasted for millions of years, may be got out. But when these reservoirs are exhausted, there will be an end of the petroleum supply. "The discovery of a few more pools of 2,000,000 or 3,000,000 each can make little difference." Mr. Carll, whose opinion on the geology of the oil-bearing districts may be regarded as decisive, has come to a similar conclusion. "There are not at present," he pointed out quite recently, "any reasonable grounds for expecting the discovery of new fields which will add to the declining products of the old, so as to enable the output to keep pace with the shipments or consumption."

The stored petroleum in this region has then been very nearly exhausted. In less than a generation a small part of the population of this continent alone has used up nearly all the valuable stores of energy which had been accumulated during millions of years of the geologic past.

More recent inquiries confirm the conclusions of Professor Lesley and Mr. Carll. The signs of exhaustion in the oil-producing regions can now be clearly recognized. During the last four years there has been a steady diminution in the output, accompanied by an increase in the price per barrel, which nevertheless does not even maintain the nominal annual value of the supply. Mr. Wrigley announced in 1882 that 154,000,000 barrels of oil had already been raised up to the beginning of that year, and expressed the opinion that not more than 96,000,000 barrels remained to be raised. In this last estimate he was undoubtedly mistaken. for up to the beginning of 1885 no fewer than 261,000,000 barrels had been raised, and in the year 1885 as many as 21,042,041 barrels (nearly 3,000,000 fewer than in 1884) were obtained. But although the estimate of 1885 of the quantity of oil still remaining fell far short of the truth, and though we may admit as possible that even now much more oil remains to be put out than the most experienced geologists suppose, the signs of approaching exhaustion are yearly becoming more unmistakable. The expense of bringing the oil to the surface grows greater year by year, and threatens soon to become so great that the profit of working the oil stores will be evanescent. So soon as that state of things is approached, we may be sure that the oilmen's occupation in Pennsylvania and western New York will be gone. It has been stated that the Japanese, unwilling to let the least fraction of the earth's interior stores be lost, have been known to excavate a vertical shaft to a depth of 600 feet in order to raise a few gallons of oil per day. But in America, when the oil mines are so near exhaustion as this, they will be abandoned; nay, they will be abandoned long before they approach such a condition. With the failure of the oil supply all the collateral branches of industry associated with it will fall, too.

THE green diarrhœa of infants is, according to Dr. Hayem, caused by a microbe which secretes the coloring matter characteristic of the complaint. The disease is epidemic and contagious. The best treatment, he said in his communication to the Academy of Medicine, is to give the child after each feeding a teaspoonful of 2 per cent lactic acid.