

THE NEW COAST DEFENSE WAR SHIP TERROR.

The Terror, now fast approaching completion at the navy yard, Brooklyn, is of the class of double turret coast defense monitors with sides armor-plated their entire length. The side plating, now being made, is 7 inches thick by 6 feet in depth from the deck.

The Terror is 250 feet in length, 53 feet beam, 14 feet draught, 3,815 tons displacement, mounting four 10-inch breech-loading rifles in two turrets fore and aft, as shown in Fig. 2. The turrets are plated with 11½-inch nickel steel, Harveyized, the port section being 12½ inches thick, each section weighing about 25 tons. The handling and setting of these plates is shown in Fig. 1, being swung by a chain attached to two eye screws in the upper edge of the plate, lifted and moved to its bearings by the large floating derrick, a part of which is shown at the right.

The method of fastening the turret armor is shown in Fig. 3, lower right hand corner. The fastenings are 18 bolts, 15 inches long, passing from the inside lining, two half inch plates, through a Georgia pine backing 10 inches thick and tapped 4 inches into the back of the armor plate.

Upon the inside, 3 inches from the heads of the bolts, there is to be another lining of ½ inch steel plates, not shown in the cut, for protecting the gunners from flying bolt heads by shots striking in line with the bolts.

The fitting of the plates and backing is a tedious and slow operation; templates having to be made for fitting the woodwork to the form of the plates, and other templates for laying out the bolt holes in the wood backing, which are then bored and trimmed radially, and so accurately that when the immense plate is brought to its bearing, the bolts freely enter from the inside.

The Salt Lake of Assal, Africa.

The French government has just sold to Mr. Chefnex the right to refine and export salt from Lake Assal, one of the most remarkable sheets of water in the world. The lake is in the district of Obock, East Africa, only a few miles from the head of the Bay of Tadjourah. The gentleman who has purchased the concession agrees to pay into the colonial office the sum of \$10,000 a year, and if, during the fifty years that he is to have the exclusive right to export salt from Lake Assal, the annual product exceeds 50,000 tons, he is to pay a tax of 20 cents for every ton in excess. The government will designate a part of the lake where the natives may procure all the salt they want without tax or hindrance.

All along the edge of this little lake, which comprises only sixteen square miles, is a bed of nearly pure salt about a foot in thickness. The water of the lake is so surcharged with salt that it is impossible to sink in it. The bottom is apparently a bed of solid salt. The heavy waters lave the bases of jagged and precipitous mountains which descend to the edge of the lake, making it almost impossible to travel around it. Mr. Chefnex will probably carry on his work by floating machinery on the lake and dredging in the salt bed at its bottom, though on the west side of the lake an enormous quantity of salt is in sight when the lake is at its lowest level.

Very little was known about Lake Assal until seven years ago. The few men who had visited the lake were unable to tell whence it derived its water supply. The lake evidently had no outlet, and nobody was able to find a single stream flowing into it. The question was dismissed with the answer that the lake doubtless had subterranean affluents, and it was left for Mr. Henry Audon, seven years ago, to solve the mystery and prove that Lake Assal was indeed a very exceptional sheet of water.

Mr. Audon spent several days examining the shores, clambering with the greatest difficulty along the rim of the lake. He was about to give up the fruitless search when he heard the murmur of a little waterfall, and in a few minutes he stood on the edge of a large brook running into the lake. Much to his surprise, he found that the water of the brook was as salt as the ocean, and a little while after it was proved beyond a doubt that the ocean itself is the source of Lake Assal's water supply.

The lake is about 400 feet below the level of the sea. It is now known that three brooks from the Gubbet el Karab, a little land-locked bay at the extreme western end of the Bay of Tadjourah, conduct the waters of the Indian Ocean inland about ten miles to this remarkable depression. The salt, which the natives have gathered, perhaps for ages, along the edge of the lake, is carried to markets hundreds of miles inland.—*N. Y. Sun.*

A BOSTON lady has had a breakfast service of cups, saucers, and plates prepared for her large family, on which are given from photographs the likenesses of the members; so that the waiter can properly place the china to be used. Some one suggests that at any memorable dinner party the same complimentary process might be arranged for each expected guest, in lieu of dinner cards.

Decisions Relating to Patents.

ACTION FOR INFRINGEMENT.

The United States Circuit Court decides that where the right to manufacture and sell a certain patented improvement was dependent on the performance of a condition contained in the agreement of transfer, the question of the breach of the condition must be first settled in favor of plaintiff before the federal courts can have jurisdiction of an action to recover damages for the unauthorized manufacture and sale of the articles. 1.

It is held by the Circuit Court of Appeals that when a patent has been assigned, together with all claims for past infringements, the fact that a person sued by the assignee has not sold any of the infringing articles since the assignment, and testifies that he intends to sell no more, is not sufficient to exclude equitable jurisdiction, when it appears that he still has them in stock, and has published a catalogue offering them for sale, and that in his answer he asserts a right to sell them. 2.

INJUNCTION.

The Circuit Court rules that a failure to prove actual infringement before the filing of the bill, as alleged, does not require the dismissal of the bill, or prevent a decree for an injunction and an accounting of profits and damages for infringements subsequent to the filing of the bill and before decree, if the bill also avers anticipated infringements, and prays for injunction and general relief; for the right to injunction rests entirely upon anticipated infringements, and the right to recover damages for infringement between the filing of the bill and the final injunction is incidental to the injunction, and necessary to make the remedy complete. 3.

The Circuit Court holds that the fact that a corporation owning letters patent upon a particular kind of machinery has entered into a combination with other manufacturers thereof to secure a monopoly in its manufacture and sale, and to that end has acquired all the rights of other manufacturers for the exclusive sale and manufacture of such machines under patents, will not entitle a stranger to the combination to enjoin the corporation from bringing any suits for infringement against him or his customers. 4.

In a suit for infringement it was stipulated that the patent was owned by complainant, "except the County of Knox, Ohio." The Circuit Court lays it down that even if this be taken to mean that there had been, not a license merely, but a complete assignment of the monopoly in Knox County, complainant still retained full title with that exception, and could sue for infringement elsewhere, without joining the assignee for Knox County as a party complainant. 5.

WHAT CONSTITUTES INFRINGEMENT.

Letters patent No. 336,385, issued February 16, 1886, to Charles Edward Chamberland, is for a filtering compound composed of pipe clay, or other suitable clay, diluted with water, and then mixed with porcelain earth or its equivalent, the latter being first baked and then reduced to a fine powder; the proportions being about 20 to 40 per cent of the clay to 60 to 80 of the earth. The Circuit Court decides, on motion for a preliminary injunction, that it was an infringement to use a compound of kaolin clay, or porcelain earth, and finely ground siliceous, in about the proportions of 30 to 45 per cent of the kaolin and the rest siliceous. 6.

A certain lever in defendant's watch movement could, when the works were out of the watch case, be adjusted to produce normal winding engagement, but in a stem-set watch, when the works are in the case, it is always held adjusted in such manner as to produce normal setting engagement. Held that such a construction, when used in stem-set watches, is to be regarded as operating on the principle of normal setting engagement, and as not different in that respect from the construction of the Church watch, letters patent No. 10,631, granted August 4, 1885, to Duane H. Church, for an improvement in stem-winding watches.

The court also rules that letters patent No. 10,631, granted August 4, 1885, to Duane H. Church, for an improvement in stem-winding watches, is infringed by watches made under the patent of January 3, 1888, to Thomas F. Sheridan, No. 376,015, and reissued August 5, 1890, No. 11,100; for, although there is a plain difference in the operation of the springs which produce the winding and hands-setting engagement in each watch, that difference is produced by a simple mechanical change, and the other differences arise from the use of mechanical equivalents. 7.

1. Routh v. Boyd, 51 Federal Reporter, 821.
2. Hanzel v. California Electrical Works, 51 Federal Reporter, 754.
3. Canton Steel Roof Co. v. Kanneberg, 51 Federal Reporter, 599.
4. Strait v. National Harrow Co., 51 Federal Reporter, 819.
5. Canton Steel Roof Co. v. Kanneberg, 51 Federal Reporter, 599.
6. Pasteur Chamberland Filter Co. v. Funk, 52 Federal Reporter, 146.
7. Illinois Watch Co. v. Robbins, 52 Federal Reporter, 215.

Correspondence.

Double Rear Wheels.

To the Editor of the Scientific American:

In the SCIENTIFIC AMERICAN for February 25, on page 122, "J." asks some questions about bicycles—"Why can't one be made with two rear wheels about 5 or 6 inches apart," etc. I would say to "J." that such a bicycle would be much more difficult to ride than the regular two-wheel safety, and any man too heavy or clumsy to ride an ordinary safety had better let such abortions as "J." wishes alone. I know of many men over sixty and heavy, up to 210 pounds, who find no difficulty in riding a safety. The writer is a heavy weight, not at all agile, and much on the shady side of 50, and having tried in past to ride narrow gauge three-wheelers speaks from sad experience. A. G.

Appleton, Wis., February 25, 1893.

A Flattering Note.

To the Editor of the Scientific American:

I wish to tell you there is no paper printed that equals the SCIENTIFIC AMERICAN, and by reading and looking at the clever cuts which it contains for the last fifteen years, I have been able to make and place on the door of my residence a brass plate, which contains the house number and my name, and a plate which covers the opening, which is a mail box, and by placing the mail against the plate which contains my name, an electric bell rings in the kitchen until the mail drops from the door on the inside of the house. It is impossible to get a small calling card through without ringing the bell in the kitchen. So you can imagine, if you have not seen it, a mail box, a number, a name plate, a letter box and a door bell all in one piece. I put it on the door January 25, and it has worked to perfection. I also made an electric alarm work to perfection. The common eight-day clock is downstairs and the bell is upstairs in my bedroom. By turning a small wheel on the face of the clock at any hour, or even minute, the bell will ring in the morning until I get up and shut the bell off. These two inventions I wish to thank the SCIENTIFIC AMERICAN for. Let a person take the SCIENTIFIC AMERICAN one year, and if he is not able to make some kind of an invention, he is very thickheaded. This year I am taking both papers, and I get the subscription price of a whole year every paper I read. I would like to see the SCIENTIFIC AMERICAN in every family.

Clinton, Iowa.

G. P. YULE.

Signaling Mars.

To the Editor of the Scientific American:

In all the projects for signaling Mars proposed by learned Thebans, I have seen no reference to what seems to the unlearned layman the most self-evident difficulty.

It is that the bright side of Mars is always toward us. If signals were sent at night from the dark side of our globe by artificial light, the flashes would have to be of such intensity that they could be seen through sunlight of that planet. To effect this they would have to be intensely bright. If they could be seen, would the observers know from whence the signals came? Unless their powers of vision are different from our own, they could not see our planet in their daylight. Then much less could they see flashes of artificial light sent from it.

Sunlight flashes from a combination of mirrors would have to be sent in the wrong direction. Mars is often in our range of vision in the daytime, but is lost in the brighter sunlight. At rare intervals the planet Venus can be seen by day. Flashes from mirrors might at such times be sent to it. Such flashes would fall on its dark side and would be seen, if at all, by its inhabitants in their night time.

Yet we hear of no proposition to telegraph that planet, which is as large as our own, and as likely to be inhabited by intelligent beings as our much smaller back-door neighbor. T. M. ANDERSON, Col. U.S.A. Vancouver Barracks, February 25, 1893.

Aeronautical Congress at the Columbian Exposition.

A congress devoted to the discussion of aerial navigation is to be held at the World's Fair at Chicago. The objects are stated to be the discussion of the problems involved in aerial navigation, the collation of the latest results and researches, and the interchange of ideas and effecting of a concert of action among the students of the subject. The work of Langley and of Maxim has given the subject a new impetus in the last two years, and the congress will, therefore, be held under peculiarly favorable auspices. The afternoons of Tuesday, Wednesday, and Thursday, August 1, 2, and 3, 1893, have been assigned the conference. The opening session will open at 2:30 P. M., August 1, in one of the halls of the World's Congress Art Palace. For cards of admission, list of topics, and other information the secretary of the organizing committee, Prof. A. F. Zahm, Notre Dame, Ind., should be addressed. The list of committee members shows a selection of well known representatives of science and professional life.