UNDER THE SEA.

A DESCRIPTION OF THE WONDERFUL STEAMER MINIA.

One of the marine novelties of the world that on rare occasions comes into this port is now lying at a dock in Erie basin. The novelty is the steamship *Minia*, Captain Samuel Trott, a vessel built and used for making repairs to the Atlantic telegraph cables belonging to the combination under the control of the leading men in the Western Union Telegraph Company. To a spectator on the dock, the *Minia* would scarcely attract attention as a marine novelty. She is neither large nor small, her length being 382:5 feet, breadth, 35:3, and depth, 25:1. She is rigged as a topsail schooner, and she measures 1986 tons gross. The one feature likely to attract the eye from the deck is the appearance of three big grooved iron wheels, side by side, just where the bowsprit projects from ordinary ships. A look about the deck and down some of the hatches, however, shows a number of peculiarities.

The *Minia* came here about four weeks ago in order that she might repair certain injuries received about the rudder when engazed off the banks of Newfoundland in repairing a break in the Brest-St. Pierre line of the Anglo-American cable. The damage to the vessel was inconsiderable, for she was able to finish the repairs to the cable before coming here, but the details of the work of picking up the ends of a broken cable and splicing in a new piece, as related by one of the officers of the ship, are interesting. To one not familiar with the work the sending of a ship to pick up the end of an inch wire rope 13,000 feet beneath the surface of the sea seems very much like a wild-goose chase; but, once the plans are understood, it is simple enough, though somewhat tedious at times, not only to find the ends, but to pick them up and splice them to a new piece.

The break which the *Minia* was sent to repair occurred early last summer. The officers of the company first located the distance of the break from the stations on shore on each side of the ocean. The details of the instrument by which this is done are not easily described, though easily understood in principle. The machine consists of a series of coils of wire, which offer a known resistance to the electric current. Enough of the coils are connected to make a resistance equal to the resistance offered by the entire cable when it is in working order, and thus when the machine and the cable are connected a balance is effected. But if the cable should break, the balance is destroyed, because that portion of the cable between the shore station and the break, wherever it may be, will offer less resistance to the electric current than the entire cable would do Enough coils of wire are therefore disconnected from the machine to restore the balance. The resistance of the part of the cable that remains intact is thus accurately determined by the number of coils remaining connected with the machine. Having, when the cable was intact, learned the resistance which a mile of the cable offers, by dividing the entire resistance by the number of miles of cable; it is easy to find how many miles of cable are still in good order by dividing the entire resistance of the piece by the known resistance of one mile.

This explanation may be a little complicated to one not fond of mathematical demonstrations, but it is just as the *Minia's* officer made it, and it is remarkable for its lucidity when compared with the explanations which electricians generally make. It is noticeable also from the fact that the word "ohm," the name of a unit of electrical energy and the bugbear of every one who does not know anything about electricity, is omitted.

Having determined how many miles from the shore station the break is, orders are sent to the *Minia* to go to the place, pick up the ends and splice them to a new piece. Having received such an order and acted on it, Captain Trott found himself and his ship on July 25th last in latitude 42 deg. 30 min. north and longitude 46 deg. 30 min. west, or just to the eastward of the Grand Banks of Newfoundland, with one of the hardest jobs before him that he had had in some time, for sounding showed that the water was about 13,000 feet, or a good deal more than two miles deep. He knew he was somewhere near the break in the cable, but he did not know absolutely within about three or four miles; because, while he had been able to determine his own position by repeated observations of the sun and stars, he could not tell how accurate the observations of the officers of the ship laying the cable had been.

The first work done was to get a series of soundings over a patch of the sea aggregating twenty five or thirty square miles. The sounding apparatus consisted of an oblong shot of iron, weighing about thirty-two pounds, attached to a pianoforte wire in such a way that when lowered to the bottom the shot would jab a small steel tube into the mud down there, and would then release itself from the wire and allow the sailor to draw up the tube with the mud in it. The moment the weight was released the men on deck stopped paying out the wire, and thus, knowing how much wire had been run out, they were able to tell the depth. It is an interesting fact that it took twenty-four minutes and ten seconds for the weight of the sounding apparatus to reach bottom in 2097 fathoms of water.

Having learned the depth of water and the character of the bottom, a big, black pear-shaped buoy was put overboard and moored about where the end of the broken section ought to have been, according to the calculations. The buoy is made of boiler iron and is arranged to support two large white lanterns at night, for the work is carried on day and night, when the weather will permit. This buoy is kept from floating away with the tide by an anchor that looks like an open umbrella. Secured to the anchor which was put over was a 45-fathom section of chain; above that 510 fathoms of patent rope, invented by Captain Trott, and consisting of part steel wire and part hemp strands. It is designed for both strength and buoyancy. Then came 1101 fathoms of pure Manila rope, and above that enough mixed wire and fiber rope of different kinds to reach the surface and secure the buoy.

The ship was now ready to begin the search proper for the cable. She was run off at right angles to the line of the cable for a distance of five miles and a buoy got down to mark the limits of the territory to be grappled over in that direction. Buoys were afterward set elsewhere to mark the other limits of the territory. The grappling-iron was lowered over the bows, the rope attached to it passing over one of the three big grooved wheels that revolve where the bowsprit of an ordinary vessel stands.

The grappling iron used is the invention of Captain Trott. It looks something like a four-pronged anchor. It has a shaft four feet long, and four arms about a foot long that are set at right angles to each other at the bottom of the shaft. Right in each crotch formed by the arms is a little button that has a spring behind it that may be regulated in strength. The button projects a third of an inch into the crotch. The angle of the arms with the shaft is so small that a rock could not get down in so far as to reach the button; but when the cable is caught by the hooks it presses down against the button, and thus closes an electrical circuit through a copper wire running through the grapnels rope and the grapnel itself, and a bell is set ringing upon deck. But the experienced men in charge of the grappling are generally able to tell what the hook has hold of without the aid of the bell. They judge by the strain on the rope which is indicated by a dynamometer on deck. The ordinary strain on the dynamometer is from three to three and a quarter tons when the grapnel is dragging freely over a smooth bottom as the vessel forges slowly ahead. Sometimes a rock catches on the hooks. This frequently breaks off an arm, but sometimes it fetches clear, the strain indicated by the dynamometer informing the old sailorman in charge whether an accident has happened or not.

It took two hours and twenty minutes to get the grappling iron from the bow of the ship down to the bottom of the sea, 13,000 feet below. The cable used to drag it with is the patent wire and hemp invention of the Captain. The dragging began on July 25th, the day of arrival, but they swept backward and forward over the territory for ten days without finding the broken telegraph cable. A good part of the time they were steaming back and forth day and night, and the only time when they were not doing so was when the weather was too bad. On such occasions they went to the buoy at the supposed end of the broken cable and hove to till the gale was ended.

Finally, on August 5th, the bell rang, indicating that the grapnel had caught the cable. The grapnel drag-rope was thereupon fastened to a buoy and thrown overboard. Then a steamer went off two miles toward the end of the broken cable and got out a cutting grapnel. This is like the other one, except that there are knives in the crotches. When these crotches catch the cable and a strain comes on them they cut the cable off clean.

"Why did you cut off the cable there?" was asked.

"Because if we had tried to get up the bight of the cable where we first found it the cable might have broken under the strain. The cable was laid in 1883 and is getting pretty well along in years. It would have been as apt to break on the shore side as the other, but when we had only an end of two miles to deal with we were sure of being able to get it up without damage."

Having cut off the cable, the vessel returned to the buoy on the grappling rope, and getting the rope inboard again, led it to a drum six feet in diameter located on the upper deck, and operated by a small engine. Then they began to wind in the grapnel rope and hoist the old cable to the bows. They started the drum at 1:30 o'clock in the afternoon of August 5th, and at 7:31 o'clock had the bight of it at the bow of the ship. Then the two miles and odd of end that was hanging down from the bow was fished up and stretched in lengths along the deck until the end was reached. This was connected with a very complete cable telegraph office, located amidships, and a second later the operators, who had been on watch for days in the British station awaiting this event, saw the flashes on a mirror in their office that told them all about it.

Sometimes it happens that when an end of the cable is picked up in this way and an attempt is made to communicate with the shore, it is found that there is another break, and that they have only the end of an odd section lying loose Then they have to drop that over, after testing it to see how long it is, and go on toward the shore and begin over again. In this case, however, they found that they had hold of a sound wire to Great Britain. Without any delay, the end of a new cable was spliced to the old end brought from the bottom. Two experts, one who is trained in splicing cores and one who is trained in splicing the outside or sheathing, are employed in this work.

When the splice was completed and tested and found perfect, the cable was started, running out around drums and grooved wheels controlled by brakes and over the stern, the old end having been led fair through these sheaves before the splicing was done. Then the ship headed for shoal water and ran away at from three or four knots an hour until over a part of the banks where work could be done more easily than where the water was more than two miles deep. Of course this involved the abandonment of a good many miles of old cable, but the old cable wasn't of much importance anyhow.

Arriving in shoal water, the end of the new piece was attached to a buoy and put overboard. Then the old cable was grappled and cut as before, and a new piece spliced to it. Then the ends of the two pieces were spliced together, and the job was complete. It had taken nearly two months to do it, although in the meantime two easier jobs were attended to, and a trip to Halifax for provisions was made, not to mention the encountering of the storm that damaged the rudder.

The *Minia* has a crew of ninety, all told, including the captain, three deck officers, a navigator, three expert electricians, four engineers, a purser and a surgeon. A blacksmith and a boilermaker, with their tools, are carried. There are three big, round tanks to hold the 600 miles of cable carried, which includes sizes to fit all the old cables under the charge of this ship. There is a cell-room where the electricity for telegraphing is generated, and two dynamos, with their engines, one to furnish electricity for a system of arc lights used when at work at night, and the other for the incandescent system that lights the ship below decks. The main saloon is large, and is comfortably and handsomely fitted. The captain has a cabin under the turtle back aft, as fine as any captain could wish for, and the other officers have rooms below that are as well-fitted as those usually occupied by naval officers. The crew are all expert men, and get pay that averages a good deal better than the pay in the packet service between New York and Liverpool. The entire crew is kept under pay the year round, the ship making her headquarters at Halifax when not engaged in repairing cables. They are as comfortable a lot of sailormen as one could find anywhere.

A curious fact in connection with the immense amount of grappling done by this ship and the great number of samples of the bottom brought up by the sounding apparatus, the only products of human ingenuity ever raised by either grappling iron or sounding apparatus were two anchors of modern construction, and one sample of ashes, evidently from some steamship. It is said that enough sailors have been drowned between New York and Liverpool to pave the bottom of the sea from port to port, and that enough fishermen have gone down on the banks to cover them three deep; but no human remains have ever been brought up either by this ship or by any other dredger. Neither have any remains of the thousands of ships that have been wrecked in that region been encountered. What becomes of these wrecks and the bodies of the lost sailors is a mystery which the officers of the *Minia* have not been able to solve. Certainly, they say, if either remained intact on the surface of the sand at the bottom of the sea, either the grappling-iron or the sounding apparatus in passing and re-passing thousands of times over a part of the ocean where the wrecks are most numerous, must bring up proof of their presence there. —*New York Sun.*

A dispatch dated Nogales (A. T.), February 22, says:—Mexico troops under Captain Encisco had another hot fight with the Yaqui Indians at the village of Batachi, in the wilds of the mountains. The Indians were well fortified in a strong position, where they resisted the attack of the soldiers with commendable bravery. The battle lasted from 2 o'clock in the afternoon till dark. Next morning the military renewed the attack on the fortifications, but found the Indians had left during the night, carrying off their wounded and some dead. The leader's body and ten dead Indians were found in the pits. The military forces lost two killed and a large number of wounded. General Guerra commanded the forces fighting the Yaquis, and ordered the troops stationed at Potam to form a combination with Encisco with the object of re-enforcing the troops stationed at the other points in the field. During the heavy rainstorm the other day, the large building at Cruz de Pieria, Sonora, used as head quarters for the Twenty-fifth Battalion, fell in, killing four soldiers and wounding many others. The storm was one of the most severe experienced in that section. A large number of soldiers were taken ill from exposure in consequence of the destruction of their shelter.

The people living on Beaver island, Michigan, have not received any mail for over a month.

TRADING ON HIS FACE.

TWO MEN WITH VERY LONG NOSES.

There lived in Saco, Me., many years ago a man named Jerry Coldridge, who had an unearthly long nose. This extended proboscis troubled him so much that he made a vow that when he met a man who had a longer one he would present him with a silver half-dollar, with the proviso that the man who got the half dollar was to do likewise when he came across a man who was superior in this line to himself.

One day Jerry went to Portland, and when he returned he was greeted with: "Old Plowshare, what have you turned up to-day."

"Well," said Jerry, quivering with excitement and joy, "I have seen a man in Portland who had a longer nose than I have."

"Impossible," said his friends, "there isn't another such nose on the face of the earth."

"All right," said Jerry. "If you don't believe me I will exhibit the documents to prove it." At this he produced a receipt, which read:

"Received from Jeremiah Coldridge 50 cents, in consideration of having a longer nose than he has.

JAMES BALLARD."

"That half-dollar," said Jerry, "has gone to Smyrna on a merchantman, and I'll tell you how it happened: I went to a hotel to get my dinner, and as I sat down at the table I saw a man sitting opposite me who gazed at me with what I took to be an insolent stare. When I got a good look at him I forgot my deformity, and immediately reached my hand across the table and said:

"Shake neighbor. I believe I owe you 50 cents.'

" 'How's that?' says he.

" 'Well,' says I, 'I have made a vow that if I ever met a man who had a longer nose than I have I would give him a half a dollar. Providing he would do the same when he met a man whose nose discounted his.' At once the whole dining-room was in an uproar of laughter, and the stranger said: 'It's a bargain.' Pulling out his note-book, he wrote the receipt and I gave him a half-dollar. I afterward learned that he was captain of a packet ship outward bound for Smyrna, Syria."

After this Jerry had peace about his long nose, and the silver half-dollar was taken by Captain Ballard to Smyrna. There it was turned over to an English mate of an East Indiaman bound through the Suez canal to Madras. The Englishman carried it for several years, and finally landed in San Francisco, where he, having a hard streak of luck, enlisted in the United States regular army and went up among the Blackfeet Indians, near Fort Benton, where he was made a prisoner.

After this being tortured in every conceivable way by the Indians, they cut off his nose and set him at liberty. He finally drifted to Boston, and as he was walking one day on Washington street who should he meet but Jerry. Having heard from the Capt. Ballard how he came in possession of the silver piece, he recognized Jerry. "Hello!" said he, "is your name Jerry Coldridge?"

"That's my name" said Jerry.

I am happy to meet you," said the Englishman, "Allow me to return to you the half-dollar you loaned Capt. James Ballard five years ago. I carried it around the world with me, and never found a man with a nose as long as mine was, but I have, as you see, lost mine now, and I think the clinker belongs to you."

Jerry and the English mate became fast friends and went into business together, and when you go into a little store on Dock square in Boston you will see the funny spectacle of one of the partners with a nose as long as your hand and the other partner with no nose at all.—*New York Press.*

LAZY LIFE ON SEAL ISLANDS.

THE YEARS' WAGES EARNED IN SIX WEEKS.

The sealing work is done by the natives of the islands hired by the Alaska Commercial Company, which leases the seal grounds from the government. The natives are a lazy, happy-go-lucky set. For nine months they do little or nothing, generally the latter. They seem to think the sealing season is the only time in which they are called upon to work. Under this plan they have grown worse and worse. They will do nothing which they are not compelled to do. When the season's sealing ends and they each get their proportion of the community fund entered up to their credit in their pass-books they feel the year's work is ended. If called upon to work on a road over which they travel and wheel their water, meat, and fuel, or asked to launch a boat to board the vessel in the spring, they are paid by the hour; or when called out by the treasury agent in the spring to clean up around their houses they are paid for their labor. They earn their year's salary or pay in six weeks, and for the remainder of the year they feel they are free. If called on to do any work, even though it may be as much for the benefit of the natives as the lessees, they must be paid by the hour for it. This system is very unjust to their brothers who are brought from Oonalaska to help them. The average pay of the St. Paul native sealer this year is a little over $500, while the St. Paul man has, besides his $500 cash, all the fresh seal meat he can eat, and salt, fuel, fish, house medicines, physician, and schooling free.

Special Agent Tingle thinks the population of the islands is fast becoming of the same sort as that of the New England states in the overplus of women. Still he has analyzed it and finds the excess of women due partly to the Greek Church and partly to the treasury department. The religious regulation forbids the marrying of parties where the most distant relationship exists; it even extends to the relatives of the contracting parties' godmothers and godfathers. This absurd obstacle makes it almost out of the question for residents of the islands to marry. The priest controls all marriages. His permission is absolutely required before a marriage can take place. This rule of the church forces the men to go to Ounalaska or other islands for wives, and every year pilgrimages are made for that purpose. The priest first being applied to, tells the wife-seeker whom he may marry. While accessions of females are made to the population in this way, no adult males are allowed to come from other islands and become citizens of the fur-seal islands without special permission of the secretary of the treasury.

POINTS FOR POULTRYMEN.

SIX QUESTIONS ANSWERED BY A WELL-KNOWN AUTHORITY.

I provide lime for my poultry by feeding ground oyster shells.

I raise cabbage for them. Onions are excellent also.

Make a neat box 13x14 inches, outside measure, with water-tight, sloping roof. In addition I make a small run of cell-laths the height and width of the brooding box, and about two feet in length, for use two or three days after the hen has been put on the nest. I remove her at dusk to this box, close it in front, keep her confined until near sundown the next day, and then place the run in front of the box with a brace at the rear end to prevent its removal, in case she strives hard to get out. Put food and water so that she can get either, and leave her at once. As night approaches she will return to the nest; the next morning she will be ready to receive the eggs.

I do not get rid of vermin; I keep rid of them by having a stand under the perches, containing coal oil. When lice abound use whitewash and carbolic acid—carbonate of lime is excellent also to dust the perches and the inside of the hennery.

For packing eggs I prefer a neat wooden box. Wrap each egg in paper, stand them on end, and pack closely with saw dust; screw down the cover; never use a hammer and nails. A wire handle should be attached to the box for safety in handling and removal.

The sale of eggs by weight, I consider of no consequence. The purchasers have the privilege of examining before buying. If they think them too small let them get a larger number or buy elsewhere. If eggs are sold by weight many will be broken in handling. It is a striking fact noticed in selling eggs, that when they are scarce and dear no fault is ever found with a fair-sized egg; but when prices are low more fault is found with the size; because the price is low people want them for almost nothing. If eggs were sold by weight poultrymen would improve the size of them by breeding from the largest eggs. Eggs from any breed of fowls can be increased in size by that method.

The Cavalry Coming.

The fact that President Cleveland has ordered a troop of cavalry to Cheyenne for the purpose of cutting down the wire fences that have been so constructed as to fence in government land, has created quite a sensation in this city, especially when as now appears probable, it will be colored cavalry that will come. This matter, however, is not one that the masses of the people feel any great interest in, and the interest now being felt in the matter is mainly confined to those who have fences upon government land, and to such it is quite a serious matter. The question can now be considered by such whether it would not have been better, many months ago, to have complied with the requirements or the government and removed the fences, than to wait until now and have them cut down and virtually destroyed by force. The request for the sending of this cavalry came from the Department of the Interior, and it is surmised by some upon the primary request of some of the special agents of the government who have lately visited Wyoming, but who belong elsewhere and are not located here.—*Cheyenne Leader.*

ONCE TOO OFTEN—Burdette: "Your father is looking very badly" said the teacher; has he failed in business again?" "No, not quite," replied the smart bad boy, "the creditors got onto him this time and he had to pay 81 cents on the dollar. It broke him all up, and he says the world has grown to be so all-killin' mean there's no inducement for an honest man to go out of business."

Jeff Lowe is to be hanged in Escambia county, Florida, on Feb. 28th; and thus he will lose that extra day.