

NAVIGATION OF THE ATLANTIC.

About two years ago it was publicly stated that the Trinity Board had appointed a pilot cutter to cruise off the Scilly Islands, chiefly south-west of them, in order to intercept and telegraph arrivals of ships homeward bound, which had reached that longitude, the fee to be a uniform charge of £5 per vessel. But we do not remember to have heard of it since, nor seen mention of it in any publication, nor can we find any one who is able to say what measure of success has attended the experiment.

The event has come to memory again in connection with a much larger idea, which may be of considerable use to the timber trade as regards its shipping, and which is said to be under discussion in the United States of America, at the present time, as a feasible object. And what with the wonders of steam and electricity (and who knows what besides may yet be discovered?), it is rash to pronounce anything impossible that science and mechanical art are disposed to take under their charge with a view to bring it into practical use. The talk in question is as to the possibility of stationing a number of lightships in a certain longitudinal line between America and Europe in connection with an Atlantic cable in order to report all vessels that pass near, or that in thick weather want to know their latitude and longitude, or to obtain assistance; also to pick up the crews of wrecks happening far at sea. Doubtless great good might be effected by such an arrangement, if it could be shown that its accomplishment were within the bounds of human knowledge and ingenuity. The proposition is to station the vessels at a distance of about 200 miles from each other, so that no ship in difficulties or needing assistance, keeping to that latitude, need be more than 100 miles from help, refuge, or communication with the land, at one end or the other.

But when we talk of stations, the one apparently insuperable difficulty presents itself to the nautical mind. There is a soothing suggestion in the mention of an ocean cable, it is true, but it will not bear a moment's investigation in reference to that which is used for telegraphing. As we might expect to tether an Australian bullock with a piece of spun yarn; and no device for anchoring with safety in the open sea, in 100 fathoms of water and upwards, has yet been discovered. Nor is it conceivable that any known appliance will keep a ship in a given point of latitude and longitude in all weathers. Of course by powerful steam machinery a good deal might be accomplished, and if driven from her regular position by a storm she might soon be brought back again. But in thick weather how would she find it? Then, again, there is the liability of these vessels being themselves run down by the mighty steamers rushing headlong through the tempest in thick as well as fine weather and their commanders thinking of nothing so much as how to make the quickest passage on record. The maintaining these vessels at their destined places in the ocean would be a service full of danger, compared to which that of coasting lightships is trifling, and the cost of the institution would swallow up a princely revenue, though by sub-division among the maritime nations chiefly interested that need be no barrier. There would be only about ten or twelve ships required, as the first one this side might be 200 miles to the westward of Cape Clear, which would be 15 degrees of longitude out of the 75 to New York, and another vessel stationed 200 miles this side of Long Island would run of nearly five degrees more. The remaining 55 degrees, allowing them to average 40 miles to a degree, would leave but room for ten more ships, or 12 in all. On the banks of Newfoundland the task would be easier, as anchorage can there be had 100 miles or more from land, and in the right track; but the lightship would have to be able to slip from her moorings in the not unlikely case of being, in the spring, liable to be overwhelmed by an iceberg. The Great Bank extends some 200 miles seaward from Cape Race, and the experiment might be commenced by fixing a suitable ship thereabout, which if there were no other on the proposed line would be of immense use to navigators from all parts of the world, as Cape Race is too much out of the regular track to

Europe for vessels from the southward to make, without deviating considerably from their true course. But if a lightship were stationed even 50 miles south of it, on the system presupposed, no doubt every homeward bound pilot ship would endeavor to sight such a beacon in order to make sure of her reckoning, and to know exactly where she was, especially in weather which precluded all celestial observation either of the sun or stars, and many would be likely to want stores or gear, which the institution would be prepared to supply, without their needing to look for a port on that account.

Near the outer edge of the Great Bank of Newfoundland, which is just in the fair way of homeward bound vessels via the Atlantic, 26 to 30 fathoms of water may be found, where a large ship might hold to her anchors through any weather with suitable ground tackle, about latitude 43 deg., longitude 60 deg. (see Norie & Wilson's chart of the Atlantic, in which the soundings on the Banks are minutely laid down.)

In the article to which allusion has been made, on introducing this subject, it was suggested that a ship of the largest size made be advantageously moored, within anchoring distance of Cape Clear, with similar object, and the Great Eastern was mentioned as the very thing for it, as being the nearest fabric yet afloat to a small island, or floating town, under the lee of which (600 feet in length) business might be carried on in almost any weather; and if we are not mis-informed some steps were taken to get up a company to buy her with that object, but on inquiry it was found that she had recently changed hands, and was not then for sale. So the matter dropped and was heard of no more. She has recently been again in the market, and was sold for a very inconsiderable price in proportion to her vast capabilities and appointments.

For rendering assistance to crippled steamers and other ships, supplying stores, communicating orders, and telegraphing arrivals, &c., without the need of ships going into port, such an institution, conducted on fixed scale of moderate charges, might become of great value to the mercantile as well as the shipowning community, and even to the Navy, and especially to Lloyd's and the other marine insurance offices, as every kind of nautical trade, even to ropemaking, might be conducted on board of her without interfering with the discipline of the ship, and in direct promotion of the objects for which she was stationed there. But would it pay? That is the question *ad rem*, to which an eloquent promoter would have to devote his attention. The concern might have to wait a little, possibly, for any important returns to the shareholders, but a very short time after the great ship taking up her position, well prepared for all exigencies, her fame might be expected to spread to the four quarters of the globe. And all shipmasters bound to England, or to either of the three channels, would, as a matter of course, receive instructions respecting her, as it might happen to many of them to save many pounds—in some cases perhaps many hundreds of pounds—by putting themselves in communication with her.

This is a mere *sketch* of the possibilities which such an institution might include in its system of ocean utility, and to no interest would it be of more importance, perhaps, than to that of the timber trade, as every ship may might receive her orders by signal, in answer to her own signals, while passing by, before a good breeze, and often without occasion of laying-to for a moment, or even of backing a topsail.—*Timber Trades Journal*.

CARE OF BAND SAW BLADES.

The band saw blades are usually very much neglected; but they should be kept sharp and in good trim if nice work is expected from them.

For this purpose a straight file without any taper, slim and blunt, with round corners, will be found to answer admirably for the purpose, and will do tolerably straight and accurate work.

When filing a saw blade, the workman should try to file the teeth as uniformly as is possible;

each tooth should be filed to a sharp cutting point, and the throat thereof should be filed back, that the underside of the tooth is slightly diagonal from the cutting point, and terminating in a round corner at the base of each tooth; this makes the blade very much stronger and less liable to break, as a sharp corner at the bottom of the teeth is apt to and very often is the cause of starting a crack which ultimately causes the band saw blade to snap off and break. Another advantage obtained by filing the teeth in this way, is, that it gives them a slight lead and causes them to dig into, instead of crowding off from, the wood to be sawn.

When sawing with a band saw, do not crowd the saw, as it is injurious to the blade and shortens the life thereof.

Always select a blade suited to the work you want it to perform; if thick material is to be sawn, use a wide blade if possible; if thin scroll or bracket work is to be sawn, use a narrow blade, one that will readily allow small circles and the like to be worked with ease, and without too much binding on the blade.

Never work a saw blade after it is dull, but file at once, or substitute another blade until you have an opportunity to sharpen the same. It is a good plan to always keep several saw blades in such a condition that one can instantly be called into service without any tinkering whatever.

The side guides for the band saw blade should be set close to the saw, yet not too close, or it will cause much friction on the blade.

Above all things, avoid getting any oil whatever on the rubber bands of the saw wheels, as this causes them to decay very fast, and is highly injurious.

If the tension on your saw blade is controlled by a weight and lever, see that the fulcrum pin is kept free from dirt or gum and is well oiled, that the tension weight can act quick and easy. In setting the tension weight, use the common sense your Creator gave you; and remember that a narrow blade working on very thin material does not require as much tension as a wide blade which works on thick material; set your weight which governs this tension to suit the work, and the blade as above specified. Remember, that when you move the tension weight away from the fulcrum, toward the end of the lever, that you increase the tension on the blade, and by moving it toward the fulcrum, that you diminish the tension on the blade.

If the tension of your band saw blade is controlled by a spring, use your discretion likewise; so soon become accustomed to the proper setting of saw blades, and, when once acquired, will not easily be set aside.

Perhaps it is well to remark for the benefit of beginners, that the upper saw guides should not be set too far away from work; as close as convenient, is as good a rule as one can adhere to.—*Wood-Worker*.

BOILER ROOM HINTS.

Do not force a boiler. If you do you are liable to soar upwards some fine day, and brick bats, hot water, steam and pieces of the overburdened boiler will go with you.

Many a man who is forcing his boiler should inspect the combustion chamber back of his bridge wall. He will often find it completely filled with dirt and cinders. To get into it he must get at a little cramped-up door behind the boiler. Let him cut a door directly out through the wall of the building. Then he can clean out the chamber comfortably and put water into it, while he takes out the dust. This should always be observed. Wet down ashes or dust and they will not fly up to clog tubes and lodge in the smoke stack.

Do not trust to steam for blowing out the tubes, nor trust to gum scrapers. Buy a first-class tube cleaner, and bribe the fireman to use it. Every fireman should know the value of clean tubes, yet many do not, or do not realize the full extent of them.

Clean up all the dirt around the boiler, scrape tubes and clean out smoke passages, and you can decrease the presence of the blast. It will not then throw coal out of the chimney. You can save 20 per cent by better care arrangement of even an old-fashioned plant, although, many

times, 40 per cent, may be saved by putting in a new boiler and new engine, and a new chimney where the motive power is overworked.

We have seen smoke vent up in an 8x12 chimney when it really required a 12x16 chimney, but such work never pays. It is always costly and runs a man behind. No matter how carefully a man may figure on everything else, here is a leak that is sucking good blood all the time.—*Hobart in the Cabinet Maker*.

USING A SCROLL SAW.

The scroll saw has of late years become one of the most important tools used in the working of wood, and it is also one that few know how to manage properly. It is therefore possible that a few suggestions regarding its use may be of service to some of your readers. When we look at some of the wood as it comes from the scroll sawing machine, we find that the edges are quite rough and uneven, and the lines are very irregular and ill-shaped. If we compare the work with the original design we often find them very dissimilar. This is a serious fault and a man whose work shows it is also likely to be continually breaking blades, or getting the machine otherwise out of order. It takes considerable patience and practice to become a good scroll sawyer. It does not do for a man to become indifferent and careless when using this kind of machine. He must be alive to his work, and call all his artistic skill to his aid when sawing. If he is only cutting straight lines he must still be watching his work. He must hold the work solidly on the saw table, for much depends upon this. If the work is allowed to vibrate with the saw, it will not cut smooth and the blade is liable to break.

The work should be moved very steadily over the table, so that the feed will be as nearly uniform as possible. In sawing curved lines, the work should be held in such a position that the blade is not twisted, but is allowed to run free in the kerf. In sawing short curves and small circles we must not use too coarse a saw; in cutting a two-inch circle the blade should not exceed one-eighth of an inch width.

Sawyers often experience great trouble by the breakage of blades; this is due in a great measure to failing to give the blade the proper tension. If we stretch the blade too tightly a very slight movement of the work will cause it to snap, and if we leave it too slack it will bend back when it strikes the wood and will not cut fast. It will also bend sideways and catch in the work, when it is almost sure to break. Merely stretch the blade so that all side motion is taken up, and the danger of overstraining is avoided. If the work is held solidly on the table and in the right position, there is no necessity for putting a strain of half a ton on a three-sixteenth blade.

It is when doing inside work that the great trial comes. The hole for the saw to go through should be bored, if the case will permit, at least twice the size of the saw. This facilitates the putting of the saw through.

To save trouble and time, if the material is not heavy, we can put two or more pieces together when sawing, but we must be very careful to keep them from sliding over each other. It is best to lightly nail them on the outer edges and do the inside first.

In putting in the saw be careful to put the right end down. All saws are filed square on the lower edge of the tooth. The square edge should always be put down; this prevents the saw from raising the work in its upward motion. Be careful to keep the machine well oiled.—*J. W. F. in Saw Mill Gazette*.

On Nov. 18th Mr. Robert M. Ley's sawmill and bending factory at Watford, Ont., were totally destroyed by fire, started, it is supposed, by traps, as the mill had not been running for three weeks. Loss, \$7,500; insured for \$3,000.

It is reported that at Lake Megantic considerable lumber will be taken out this winter; G. B. Hall & Co. making three to four million feet, and Shaw & Sons, on the Dead River, about five millions.