

## New Inventions.

## New Heddle Machine.

During the past week, Messrs. W. R. & G. W. Harris, of Middlebury, Vt., have been exhibiting a machine for making knotted weavers harness, at the Commercial Exchange, Courtland street, this city. The machine is the joint invention of Mr. W. R. Harris, & Simeon Houghton Jr., of Middlebury, Vt., and was secured to them by patent a few months ago. The machine, by cams on the main shaft, gives a double motion to two shuttles, which move back and forth on the machine, forming square knots and good eyes without any twist. The cord is supplied by two spool frames, one at each end, and with the cord moved by the shuttle, the knots and eyes are formed. There are shippers and arms which move the cord from the spools, so as to form the cross and allow the shuttle to pass through to form the knot, and besides this, there is a motion to draw up the knot. There is also a stop motion for the shuttle, so as to throw the machine out of gear when the shuttle is caught. It is allowed to make better harness than by hand, owing to the absence of all twist in the same. One girl can attend three machines, and each one can make, it is stated, six times the amount a girl can do by hand in the same time. It is not possible to give a good description of its motions, without drawings, but it will be exhibited by Mr. G. W. Harris for a few weeks at the place mentioned above, where it may be seen. It is a strong machine, and may be constructed, we believe, to work accurately and well.

## Improved Side Light for Ships.

Mr. L. Goodrich, of this city, has invented and taken measures to secure a patent for a very valuable improvement in side windows for ships, which must soon come into general use, and supplant those at present employed for that purpose. The common ship windows are made of round thick glass lights, fastened in iron frames, which are secured by strong hinges to fit into openings, and are clasped or keyed inside, to fit them for sea, but in port they are thrown open, outwards, on their hinges. The improvement consists in fitting the light to screw into the ship's sides, into a screw socket, and yet attached by hinges to allow the window to be thrown open, like those in common use. The window couples like a butt of hose, but the joints are slotted so as to allow the light to be screwed into, and unscrewed from, its socket. This window can be closed and unclosed far easier than the kind now used, and there is no possibility of its getting loose at sea—it is entirely safe in that respect. We will soon publish an engraving of this invention.

## Improvement in Bleaching Ivory.

Mr. Ulysses Pratt, of Deep River, Conn., has invented and taken measures to secure a patent for an improved frame for bleaching ivory for pianoforte keys, &c., which will greatly facilitate the process, and produce better work. The bleaching of ivory is done by solar influence, viz., wetting the ivory and exposing it to the influence of the sun, under a sky-light; the pieces of ivory are laid upon a frame, or frames; and so bleach them right, the frame should be so made that each piece can be set and exposed to the light at any angle, to present the edge end, or portion of the surface only. No good frame has ever been used to accomplish these purposes. Mr. Pratt's frame is adapted to accomplish them all, and also to raise and lower the frame at any angle, near to, or at a greater distance from, the sky-light.

## Red-Hot Roller.

It is said that Hartwig Von Blucher, a German naturalist, has introduced a heated roller into Silesia, which being passed over the land, burns the wood, and furnishes, in the ashes, an excellent manure.—[Exchange.]

[How can it burn them without being red hot and how is it to be kept red hot? The cheapest way is to cut the weeds, when dry, set fire to them, and let them burn themselves. Hartwig Von Blucher may be a very good naturalist, but a very expensive farmer.]

## LOPER'S PATENT METHOD OF CONSTRUCTING SHIPS OF METAL AND WOOD.

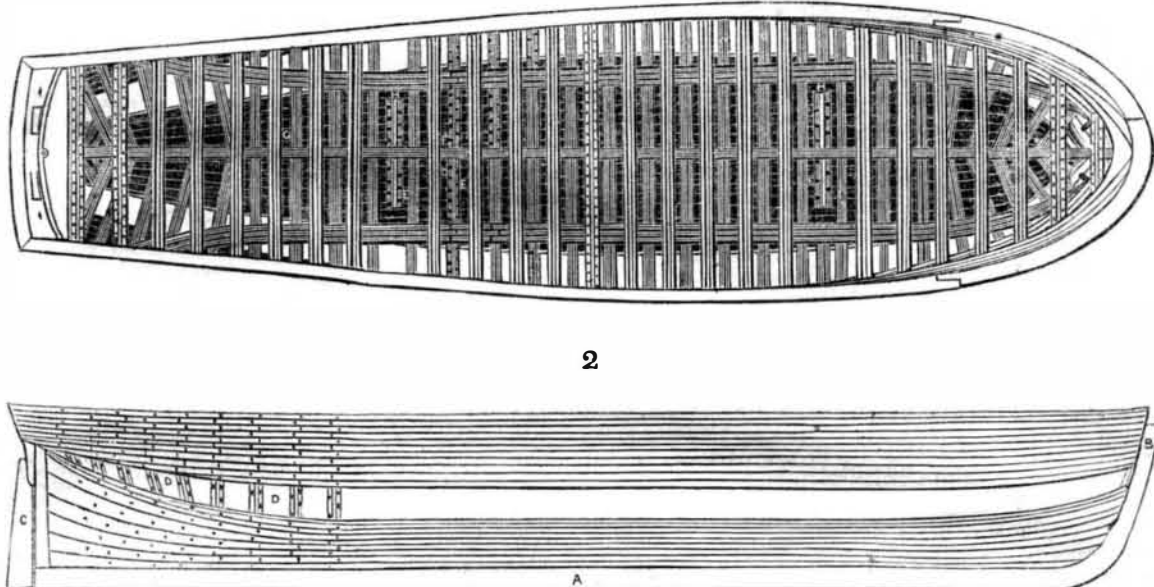
In No. 7, this Volume, Scientific American, we copied an article from a Liverpool paper, in which it was stated that a Mr. Jordan, of that place, had made an important improvement in the construction of ships, by substituting iron for wooden framing. We stated at the time that the invention was not new, that it rightly belonged to America, and that Capt. Loper, of Philadelphia, had applied it to vessels some years ago. We will now prove the verity of what we then asserted.

The accompanying engravings are various views of Capt. Loper's invention, patented by him in November, 1847. Fig. 1 is a plan view; fig. 2 is a side elevation; fig. 3 is a cross vertical section. The other figures will be referred to in the description. The same letters refer to like parts. The nature of the invention consists in constructing the framing of ships, and other vessels, of bars of plate metal, connected together by bolting to them the wooden ceiling, the keel, and stern and

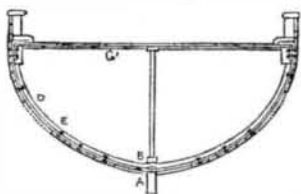
stern-posts, to make a vessel of greater strength, with a given weight, than can be attained by means of wood alone, and prevent the corrosion which takes place when the outside of a vessel is made of iron.

A is the keel; B is the stem, or bow; C is the stern-post, made in the usual way. To the inner surface of these, there is bolted a plate of metal, seen running all the length, like a brace, in the middle of fig. 1, from stem to stern. This plate is rolled with a bead in the

Figure 1.



middle of its width. The ribs, D, are made of bars of plate metal, rolled with a raised bead or arch on one side, and a recess on the other, and extending the whole length. This is represented on a large scale in figures 4 and 5, E being the bead. These ribs are bent in the form of the cross section of the vessel, and provided with a row of holes on each side of the bead, through which the bolts, F, pass, to secure them to the keel. The beads of the bolts, which are outside, are let into the wood a sufficient distance to admit of driving in a wooden plug, I, along with cement, to prevent the access of water to the bolt-heads, as represented in fig. 5. The ceiling is secured to these metal ribs by means of screw bolts, in



the same way as the keel; the bolt-heads being in like manner protected from the water.

When the frame is thus secured and bound by the ceiling, the outside planks can be laid on in the usual way. The attachment of the wood to the iron ribs, by screw bolts, will make

## A New remedy for Short-Sightedness.

A few months ago, says Dr. Turnbull, I observed that persons who are short-sighted, when looking at objects at a distance, partially close their eyelids, for the purpose of overcoming the difficulty they find in discerning them. This action is instinctive; it is a natural effort to adjust the eye to an increased sphere of vision. It is known that short-sightedness depends not only on convexity of the cornea, but also on convexity of the lens; and having no hope of being able to effect any alteration in the structure of the lens, my attention was directed to the iris, which I found to be, in such persons, generally much dilated. It then occurred to me that contraction of the iris has the effect of apparently lengthening the convexity of the cornea, which approaches a circumscribed plane, that permits the rays of light to enter only in a straight line. The effect of this is obvious. The length of vision hereby necessarily becomes increased, and distant objects are brought within its range. It therefore struck me, that if we could discover any substance which could be so applied as to contract the iris, one cause of the effect of short-sightedness

liquid proof joints, and the channels formed by the bead and the wood attached thereto, can be filled with oil to protect the metal from corrosion. Paint may also be used as a further protection to the joint. To secure the deck beam, G, the rib bars are bent to the proper angle, and the beams whether of wood or metal, are bolted to them. The bead rolled in the ribs may be of any desired form, but the semi-circular one in the cross section is preferred. The ribs may be made to extend, in a single piece, from gunwale to gunwale, or in two parts, with a lap-joint secured to the keel and the keelson. To give greater strength to the frame, intermediate short ribs, H, may be secured to the keel and keelson, and placed between the main ribs, extending up high enough to give the requisite strength to the

FIG. 4.

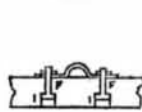
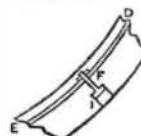


FIG. 5.



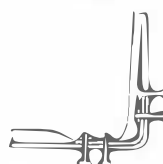
bottom of the vessel. Instead of deck timbers secured to the bent ends of the ribs, as stated above, Mr. Loper proposes to substitute bars, prepared like the ribs, and connected with lap-joints, as represented in figure 6,—the deck boards are to be secured to these bars in

the same manner as the ceiling is to the ribs.

The claim of this invention is for "the constructing of ships and other vessels, with hollow iron ribs, and bound together by wooden planking and ceiling, as described, whereby a great saving in weight and cost of metal is effected, and the hollow ribs allow oil or lubricating substances to be introduced, and which, by the motion of the vessel is made to circulate and penetrate to the bolts and fastenings, thus preserving the wood, and preventing the metal from oxidation.

The above is from the specification, nearly in the same language, and the drawings are reduced to two-thirds of the original views. The importance of this invention cannot be over-estimated. The inventor is Capt. Richard

FIG. 6.



F. Loper, of Philadelphia, the well-known inventor of the Propeller which bears his name, and the designer of the greatest number of American ocean steam propellers now afloat. This invention will, we trust, as it should, receive general attention.

would be remedied. The result, I am happy to say, has been most satisfactory. In the first instance, I applied the extract of ginger, which was rubbed for five or ten times over the whole forehead, with the view of acting upon the fifth pair of nerves. Afterwards I substituted a concentrated tincture, of the strength of one part of ginger to two parts of spirits of wine, decolorised by animal charcoal. The success of this application was remarkable. In many cases it had the effect of doubling the vision. In some persons I found the iris was not much dilated, but very torpid. In these cases I applied the concentrated tincture of pepper, made of the same strength and in the same manner, as the tincture of ginger. This I used until I observed that the iris had obtained a greater power of contraction and dilation, after which I had again recourse to the tincture of ginger. This plan of treatment has been attended with the most signal success, and persons who were extremely short-sighted have very soon been enabled to lay permanently aside their concave glasses. The best method, I may observe, of testing the improvement of the sight during this treatment is not by taking a printed book, and

holding it near, and then at a greater distance from the eyes; the range of vision is much too limited. It is better to fix the attention of the patient upon a distant object, such as the brass key-hole of a door; and by stepping some paces backwards, so as to place himself at a greater distance from it, he will soon discover the progress he is making. So important a discovery as this will, I hope, be fairly tested by the members of our profession, who may rely on the success of the treatment I have recommended, if it be only judiciously and carefully carried out. It is impossible that the advantage derived from the tincture, as above described, may be ascribed to the alkaloid principle of pepperin which is held in solution in the tincture of pepper.

[Our doctors should give this alleged discovery their attention.]

An excellent "round splint match machine" is in operation in Commercial street, Boston; Messrs. Byam, Bruce & Fessenden, of Union street, Boston, have a very perfect one.

Mr. Wilder's Lee Way Indicator was illustrated and described, in No. 9, this Vol., Sci. Am.