Science and Art.

Electricity for Discovering the Seat of Disease.

Dr. Holland, of the New Grafenburg Water Cure Establishment, Oneida county, N. Y., informs us that he has made use of electricity as a remedical agent during the last ten years, and has reduced it to such scientific principles that he readily describes every form of disease, without interrogating the patient. He makes the patient take hold of one pole of the battery, and himself the other, then he passes his hand over his body, forming the circle, and thus by the peculiar sensations produced, discovers the seat of disease.

Fall of a Suspension Bridge.

The iron suspension bridge which spans the Genesee River at Rochester, fell on the 21st ult. from the weight of snow on it. The bridge was only finished last summer, and cost over $28,000. It was constructed between iron towers standing on the banks. They were built of cast iron cylinders, bolted together, and standing on high banks, 235 feet above the water. The road-way was 200 feet above the water, and proceeded in almost a straight line from the top of the high bank on one side, to the other. The cables were 780 feet long, and the entire length of the bridge was over 700 feet. It was calculated to sustain a weight of 2,000 tuns. It spanned the Genesee river below the Falls. The metal, it is stated, appears to be defective. The load that was on it when it fell did not amount to 100 tuns.

The Frigate Niagara.

This, the largest and believed to be the best of the new steam frigates, made her trial trip last week. With all sails set, and the screw making 36 revolutions per minute, she made eleven knots per hour. It is reported that with steam only, she ran at the rate of 10 1-2 knots per hour, with 42 revolutions of the propeller; with 32 revolutions, her speed was seven knots per hour. The *Niagara* has sailed to England, and will assist in laying down the Transatlantic Telegraph Cable. Thus far she has not done any very extraordinary feat in sailing or steaming; her machinery is new, but it is hoped she will yet give a better account of herself.

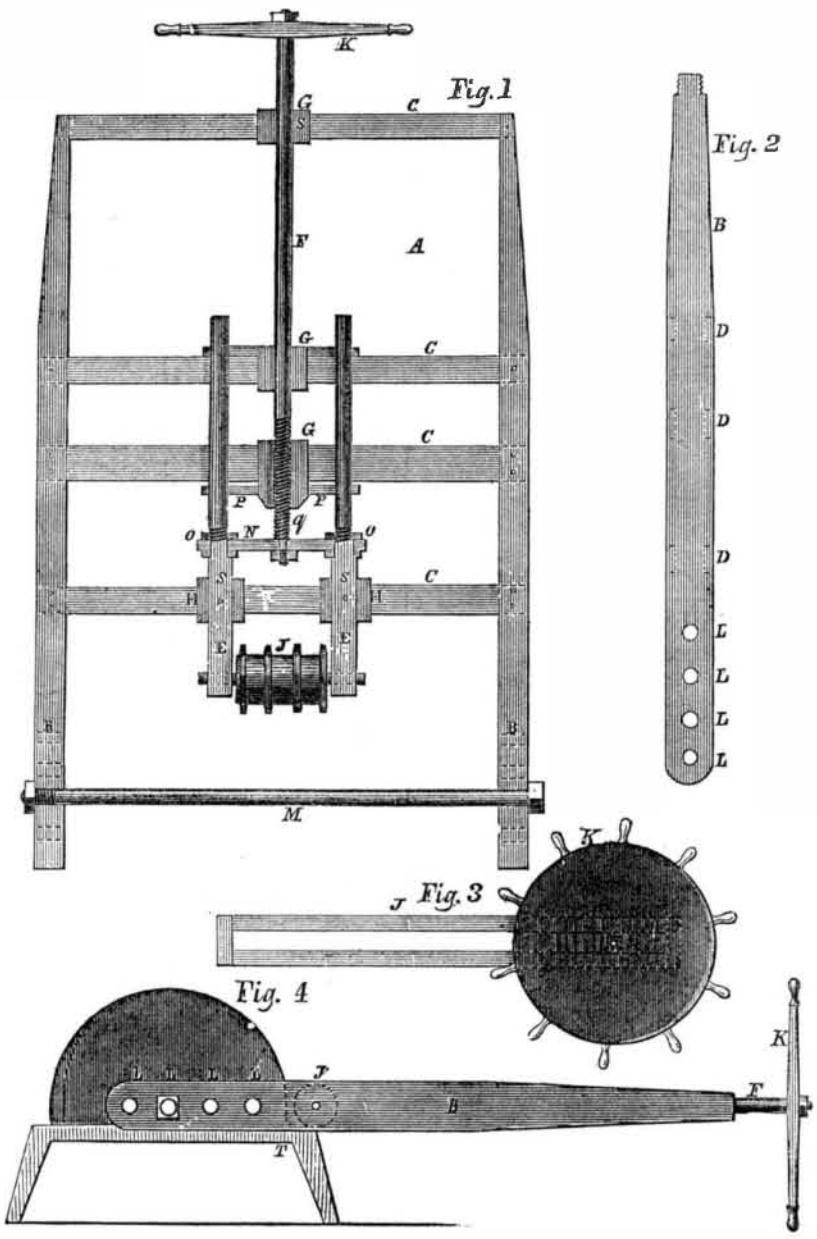
Sarven's Patent Wood Bending Machine.

The bending of wood and causing it to retain its bent condition as tenaciously as if it had grown in that form, is a feat every day performed in the ordinary course of many varieties of business, but means for producing exactly the desired curve in sticks so constrained are far less common, if indeed they have before existed in any convenient and really practicable form. In the most common of such devices the sticks are simply subjected to a sufficiently strong transverse strain, and so held, and by this means the wood, if uniform in strength and rigidity, will bend into a tolerable approach to the arc of a circle, or more strictly into the figure termed in mathematics "the elastic curve," the bend being greatest in the middle and diminishing toward each end. Other forms may be approximated to by applying the forces at different points, but the device here illustrated is a systematic, rapid and convenient means of compelling sticks to assume precisely any curve desired, whether regular or irregular, and to retain such flexure until cold. For this as in every other bending device, it is necessary first to boil or steam the wood, a process which destroys its "life" somewhat, and injuriously affects its durability, but both these effects are comparatively slight, and the heat and moisture appears indispensable to the bending, as also to the retaining of the shape after the bent form is attained. This machine is not intended for very large stuff, and therefore has no such provision for end pressure as are found in some of the machines for bending heavy sticks, which we have beore noticed.

A patent for this machine was granted to the inventor, Mr. James D. Sarven, of Columbia, Tenn., on the 20th of January last. It is adapted to bending fellies for wheels, bows for carriage tops, shafts at heel, poles, seat pieces, sleigh runners, sleigh fenders, goose necks and body pieces for sleighs, plow handles, and in short curves of any ordinary description that lie in a plane.

Figure 1 represents the bending fram consisting substantially of side lever bars, B B, and plated cross bars, C C. Figure 2 is a side view of lever bars; D D are recesses to receive the cross bars; one cross bar directly opposite the other, allowing space between for the roller guides, E E, and regulating rod, F, to move from one side of the bending frame to the other, carrying with them the roller, J, by means of the slides, G G and H H. Figure 3 is a top view of bending frame, showing the hand wheel, K, at one side; L L are openings in side lever bars, on either of which points the frame is made to revolve, according to the size of the mold, or the curve it is desired to egive the timber; J is a bending roller, of which there is a series, made smooth or with any desired number of flanges, according to the number and size of pieces to be bent at one operation, by which means every piece is bent perfectly true, being free from windings to one side or the other. E E, figure 1, are roller guides which can be detached when it is necessary to remove one roller for the purpose

SARVEN'S PATENT WOOD BENDING MACHINE.



of inserting another by nuts, O O, figure 1. F, figure 1, is a regulating rod passing through a threaded slide nut, G, a corresponding thread being cut on the rod, by which means the bending roller is raised or lowered by turning the hand wheel, K. S S, figure 1, represent thumb set screws, which prevent all lateral play of the slides and bending roller while the timber is being bent.

Operation.—Figure 4 shows the mold upon which the timber is to be bent; B is the bending frame pivoted at the point represented by the square in working position; the thumb screws, S S, figure 1, being tightened, the ends of the prepared material is inserted at T; the hand wheel, K, is now turned till the roller, J, presses firmly against the timber, the frame is then made to revolve around the mold until the timber is bent to their ends, which being fastened, the hand wheel is turned to loosen the roller, J, from pressure, the frame is turned back to its former position, the thumb screws loosened, and by pressing with one hand gently against the roller guide, and the other against the regulating rod, the roller is moved off the bent timber, the thumb screws are again tightened, and another set of timbers inserted and bent. These operations are repeated until the mold is filled with bent timber, the machine is then removed and can be applied to any number of molds required, but when the curve is not regular, as represented by the dotted lines, it will be necessary, while the machine is revolving, to turn the lever wheel, K, in order always to keep the timber firmly pressed against the mold, by which means any irregularities in the mold may be overcome. If used in combination with a revolving mold, or a mold operated in any other manner, it performs equally well, and it may of course be placed either in a vertical or horizontal position.

From the peculiar construction of these machines, which admits of their being made of a size equally adapted to large or small establishments, their ready adaptation to all kind of wood, and the rapid manner in which they execute, it gives them advantages never before attained, to say nothing of their comparatively small price. A machine for the very highest class of work costing only $50, from this upwards, according to size and capacity and number of rollers. A $50 machine can be carried under the arm of a man having a tolerable good stretch in that direction. These machines are now in practical operation, and each machine guaranteed to perform as represented. For extra heavy work any desired power may be employed. All correspondents inquiring about machines, will please state the precise kind and quantity of timber they wish to bend.

Any other information desired may be obtained by addressing the patentee, as above.

Telegraph Cable Across the Hudson.

We know of no "suspension bridge" for any other purpose so light and long as the one which carries the electric fluid across the Hudson river at Fort Lee, in the upper part of this city. The proprietors of the various telegraph lines connecting New York with Philadelphia and the South have expended $50,000, to $75,000 in erecting very tall masts on each side of the river at these points, stayed very firmly by wires extending in all directions landwards, and from their tops their wires are stretched at such hights as to clear the masts of vessels and the funnels of steamers on the river between. The clear span or stretch between the masts is about one mile. The wires so strained are of course liable to break with every severe gale, and there has lately been laid, in addition to one large cable, several years in use, two stout cables crossing at a point considerably below, judged to be better suited for the purpose. This indicates an increasing preference for this method of crossing rivers with important telegraph lines.

To Make Yellow Ink.

This ink, sometimes useful in making pen and ink sketches, is prepared thus:—Take French berries, (a yellow berry sold by druggists), one ounce; alum half an ounce; rain or distilled water, half a pint; gum arabic, quarter of an ounce. Boil the whole together for about eight or ten minutes, then strain through fine muslin; when cold, it is fit for use. The berries may be obtained from drysalters.

Metholated spirit is a mixture of nine parts of alcohol and one part of wood naphtha.