IMPROVED DRAUGHTSMAN'S TABLE.

We can commend to the notice of draughtsmen, artists, architects, and all who do drawing of any description the patent adjustable stand represented in the annexed illustration. We have had several tables of this kind in our office for some time, in constant use by our draughtsmen and artists, and find them to be very convenient and useful. The base is sufficiently solid and made with all the accuracy necessary to insure a firm support. The table portion may be adjusted and clamped to any angle, or turned and fastened in any horizontal direction without moving the lower portion, or raised to any desired height and there secured. The ledge at the rear portion is arranged so as always to

stand horizontal, and forms a convenient place for water cup, etc., while the drawer shown beneath may be used as a receptacle for implements. The table may be turned up vertically to form an easel, so that the entire stand may be stood against a wall or otherwise placed out of the way. Its weight complete is 55 pounds, and the drawing board of black walnut is 44 inches square. In the lowest position the table is 30 inches high, and it may be elevated to 44 inches. Its appearance is tasteful and ornamental, rendering it a piece of furniture suitable for the office, library, or sitting room. Manufactured at the Washburne Machine Shop, connected with the Free Institute of Industrial Science of Worcester, Mass., to the superintendent of which, Mr. M. P. Higgins, inquiries for further information may be addressed.

IMPROVED METHOD FOR DRYING LUMBER.

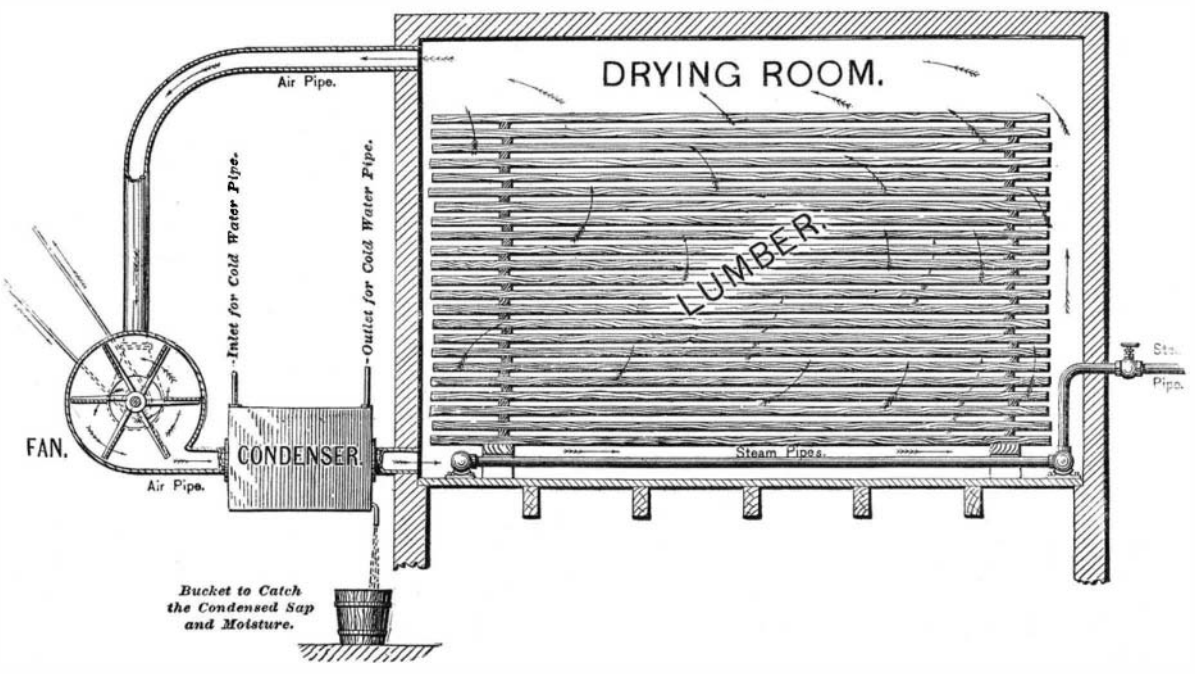
It is a well known fact, laid down in all text books, that drying of air must be done by condensation. The drying of many articles may be done by evaporation and a change of the air, as by a wind, or, if in a building, by ventilation. Wells, in his theory on dew, says that there is a greater deposit on nights when there is a gentle movement of the air, sufficient to bring in contact with the articles fresh air laden with moisture. These facts in the process of drying have been utilized in part by different individuals, but no one has put them together and embodied all of the natural laws until recently, and it is claimed by the inventor of the apparatus herewith represented and described that it has been his special object to construct it on fixed laws and principles with the most simple and efficient mechanical contrivances, and in this we think he has succeeded in an admirable manner.

By reference to the cut it will be seen at a glance that the apparatus is not complicated and can be easily applied, understood, and managed. In a spacious apartment of rectangular form, that can be tightly closed and thoroughly heated, provision is made for piling a number of boards to be dried in such a manner that a space is left between each one. This is effected by laying the boards in parallel rows, one above the other on sticks at right angles with the boards, in a similar way to that seen in all lumber yards, and which is shown in the annexed representation. From the top of one of the ends of this drying room a pipe issues for the purpose of conducting air and vapor from the drying room to a fan attached to a condenser, when condensation takes place and the condensed sap and moisture fall into a receiver, but the air re-enters the drying room. At the bottom of the drying room there are steam pipes, steam being regulated by a globe valve outside. The principal requisites are, therefore, an apartment for the material to be dried that can be tightly closed and thoroughly heated; a fan or blower to draw hot air from the drying room, force it through a condenser, and send it back again; a condenser to extract the moisture from the heated air and discharge it through a waste pipe. The operation is extremely simple, but the results are very important, as will be seen by the appended table compiled quite recently from actual practice. The material to be dried is placed in the drying room, and the door tightly closed. The temperature is then raised to 120° or more, as the case may be, and the blower set in motion. The air is sucked from the room into a condenser, which is kept cool by a stream of cold water. Here its moisture is instantly condensed and discharged through a waste pipe, and it is sent back again, wrung out, as it were, to the drying room. Its relative humidity is changed so gradually, and at the same time so quickly and effectually, that even green lumber can be dried in a few days without warping or checking—an accomplishment that has heretofore been considered wellnigh impossible.

Material.	Weight when put into dry house.	1st day	2d day	3d day	4th day	5th day	Remarks.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	
1 inch spruce, dry.	35			28	28		Fairly dried in open air
1 " " green.	40½			32	32		
1 " pine, "	61			38	37½		Very green.
2 " " "	164			129⅛	126⅝		Just cut from the log.
1 " " dry.	29	28¾	28½	28	28		Well dried in open air.
2 " maple, "	35	34		33¼	33¼	33¼	Well dried.
1⅝ " " "	8	7½		7¼	7¼	7¼	Well dried.
1 " " "	29	28		27¼	27¼	27¼	Well dried.
5 " pine, green.	12		6				This was round pine
¾ " walnut, dry.	23	22	21½	21	21	21	limbs, 5 in. dia., put in
1 " " "	39	38	37	36½	36	36	directly after cutting.

Leather sides, heavy, have been dried in two hours; vegetable ivory nuts in two days, and other material with equal facility.

The apparatus is patented by Levi K. Fuller, of Brattleboro', Vt., where there is one in operation at the most extensive parlor organ manufactory in this country.



FULLER'S APPARATUS FOR DRYING LUMBER.

Engraving on Glass by Electricity.

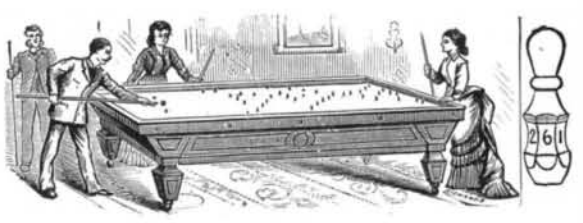
M. Planté, the inventor of secondary batteries by means of which a large quantity of electricity may be accumulated, has just discovered an excellent means of engraving on glass. Having remarked that a glass tube traversed by a platinum wire serving as electrode to a powerful voltaic current was instantaneously spread out in the form of a cone or funnel in the midst of an alkaline solution contained in a voltameter, he made a series of experiments to determine what alkaline solution required the least electric force for devitrification. He therefore thought out the following process, which has given some remarkable results:

The surface of a plate of glass is covered with a concentrated solution of nitrate of potash, by simply pouring the liquid over the plate laid horizontally in a shallow saucer. Then into the liquid which covers the plate of glass is introduced a horizontal platinum wire connected at one end with the edge of the glass plate and at the other with the poles of a secondary battery of 50 or 60 elements. Now taking in the hand the other electrode (formed of a platinum wire surrounded everywhere except at its extremity with an insulating sheath), the surface of the immersed glass is touched with it at the points where it is wished to engrave. Wherever the electrode touches, a luminous furrow is produced; and, whatever be the rapidity with which the writing or drawing is done, the traces made are found clearly engraved on the glass. If the writing or drawing be done slowly, the traces are deeply engraved; as to their width, that depends on the diameter of the wire serving as electrode; if it be sharply pointed the traces may be made of exceeding fineness. Either electrode may be engraved with, but the negative requires a weaker current.

MR. W. SAVILLE KENT is making endeavors to organize a company in London for the purpose of establishing a museum and laboratory at the Island of Jersey, off the coast of France, for the study of marine zoölogy.

THE BON TON GAME.

Our engraving illustrates a new game, adapted for private or public use, called by its inventor the "Bon Ton," and played with a cue, ball, and pins on a table or board suitably made for the purpose; full size 3x10 feet, with rubber cushions. The pins are disposed in various positions, and the game is to strike them with the ball. The difficulty in doing this depends upon the location of the pins. Thus some pins may be so arranged that the ball must pass between pins before the overthrowing of a pin that counts on the game can be effected. Or it may be required that the ball strike one or more cushions before striking a pin in order to count. The inventor sends us diagrams of eighteen ways of placing the pins, by means of which, he states, over sixty different games can be played by using generally from 1 to 10 pins. The number of pins thrown down is counted on the game, or the actual figures on top inscribed on the pins upset are



noted. One of the pins, which is polygonal and has numbered sides, is separately shown in our illustration. Tables are made of different sizes to adapt them to almost any price.

Patented November 13, 1877. For further particulars relative to sale of county and State rights, address the patentee, Mr. John Brown, 105 North Main street, Providence, R. I.

Numeration of Blood Corpuscles.

The numeration of blood corpuscles, a test of the richness or poverty of the blood, has been simplified by a microscopic apparatus constructed by Professor W. R. Gowers. In it tenth of a millimeter squares are ruled on the glass slide at the bottom of the cell. When the corpuscles have subsided to the bottom they are seen lying in the divisions and the number in each can be counted, as in the method of Vierordt. In the French instrument a little fluid had to be placed in the cell to secure the covering glass. To obviate this source of error, in Professor Gowers' apparatus the slide is placed on a metal slip to which two springs are attached; these rest on the edges of the covering glass and keep it in position with a uniform pressure. The dilution employed is 1 in 200. Professor Gowers also adds the hint that it is not well to attempt to observe the character of the corpuscles during the numeration, and that the processes should be kept distinct.

The Swiss Method of Testing Watches.

Mr. Charles H. Upton, United States Consul at Geneva, Switzerland, communicates to the State Department a report on a trial of chronometers which lasted 52 days, from which we take the following data. The chronometers were kept at an observatory, being placed successively, for seven days, in different horizontal and vertical positions, and tested with heat and cold. The trials were classed under three heads, namely:

1. The mean variation of the watch from day to day, which must not exceed ·6 of a second.

2. The mean departure in each of the positions. This must not exceed 2 seconds; and,

3. The error of compensation produced by the change of temperature; the maximum not allowed to exceed ·2 of a second by degree of thermometer. 84 chronometers were entered, 29 of which fulfilled all the conditions. The prize of honor was taken by a Locle manufacturer. The average variation of the winning time piece was ·26 of a second per day; the mean departure in one of the seven positions was ·43 of a second; the error of compensation, ·01 of a second, and the variation of the running after and before the tests of heat and cold ·33 of a second. Such accuracy can only be attained by long trained and consummate skill of eye and hand.

Mulberry Juice a Substitute for Lime Juice.

Dr. Wright and Mr. Patterson, in a paper on "Citric Acid as a constituent of imperfectly ripe Mulberry Juice," which was found to contain 26·83 grains of citric acid and 3·26 grains of potash salts per liter, suggest that the juice may be valuable as a substitute for lime juice, and as an antiscorbutic.

THE production of iron in Russia is placed at 320,000 tons annually.