

A SELF-REGISTERING MEASURE FOR LUMBER.

An improved device for calculating the surface or board measure of lumber of any given length, and registering the several measures taken, is illustrated herewith, and has been patented by Mr. John U. S. Sands, of Meservey, Cerro Gordo County, Iowa. Fig. 1 is a perspective and Fig. 2 a sectional plan view, Fig. 3 showing a front elevation with part of the front plate broken away. The front plate of the casing is removable, and has an opening in its middle through which appear the numerals representing the number of feet measured. From the rear of the casing extends a box, which serves as a handle when using the measurer, and in the casing is journaled a shaft carrying a wheel with sharp-pointed teeth which extend through a slot in the bottom of the casing, the teeth being adapted to engage the board to be measured as the casing is moved across the width of the board. On this shaft is also secured, within the box forming the handle, a pinion which meshes into one of a series of different sized gear wheels secured on a shaft journaled in inclined position, these gear wheels meshing into a pinion mounted to slide on and turn a shaft parallel with their outer edges, the pinion being moved forward or backward to engage either of the gear wheels. This pinion is moved sidewise on its shaft by means of a forked arm on a threaded rod in the handle casing, operated by a knob in the outer end, by which also a pointer is moved on the top plate of the handle box to register with numerals indicating the length of the lumber to be measured.

The shaft on which this pinion is moved, to mesh with the larger or smaller gear wheels, carries on its outer end, in the larger casing, a unit disk, with the numerals 0 to 9, and subdivisions of $\frac{1}{2}$, a lug on this disk engaging at each revolution one tooth on the central or tens disk, and a pin or lug on the latter disk engaging at each revolution a tooth in the hundreds disk, which has numerals from 0 to 19. When it is desired to measure the surface of lumber of different widths, but of a certain length, the knob at the outer end of the handle casing is turned till the pointer registers on the top plate with figures indicating the length, the several disks having been set to indicate zero at the opening in the front plate. The measurer is then run across the width of the lumber, so that the teeth of the wheel extending through the slot in the bottom of the casing, by their hold on the wood, turn its shaft and operate the gear wheels, whereby a corresponding motion is communicated to the disks carrying numerals, and the measure is indicated at the opening in front of the casing, each successive measure made revolving the gear wheels and disks proportionately to the width of the lumber which the measure is passed over. The disks are readily turned to the zero point by knobs projecting through the front plate.

Hypnotism.

The doings of Professor Charcot's school are certainly curious, but the late communication of M. J. Luys to the *Academie de Medecine*, on the experimental solicitation of emotional phenomena in patients while in the hypnotic state, is so very extraordinary that I cannot pass it by. M. Luys is well known as having studied localization in the brain, and for his works on nervous diseases. He says that his present experiments were undertaken to confirm those made by M. Bureau and M. Bourn, and presented by them to the scientific congress held at Grenoble in 1885. In a few words, the experiments relate to the action of certain substances purely physical in character, and yet having a decided effect on the emotions of these subjects while in the hypnotic state. This seems to vary according to the susceptibility of the person or the different substances employed. They appear to be simply placed in a tube, and this is held against certain parts of the body. Exact details of the mode of operating will be given hereafter, as the Academy has named a commission of five members to examine into the matter and report upon it. The following are some of the statements made by M. Luys:

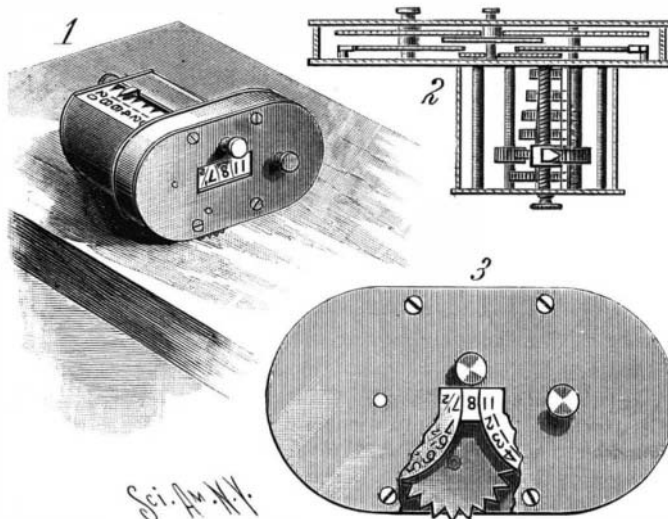
The physical action of certain substances, such as strychnine, thyme, sparteine, morphine, atropine, and spirits, such as cognac, rum, etc., at a distance is certain. Many different patients were experimented upon, and, as they were entirely ignorant of what sort of substance was being applied to them, there could be no deception on their part. Moreover, nothing is said to the patients, as the substance is silently applied to the part. Instantaneous photographs of the effects produced were taken, copies of which were passed around to show the different emotional phases that the subjects passed through while under the influence of the physical action of the drugs mentioned. It would appear, for instance, that under sparteine the inspiratory muscles go into a convulsion and the whole region of the neck gets hard, while the patient becomes incapable of speaking. Morphine acts differently according to the tube holding it is placed on the right or left side. For instance, placed on the left side of the back part of the neck, it brings about at once an ex-

pression of terror, which changes to violent anger if the action is prolonged. If, however, the same tube is placed just back of the right ear, the whole scene changes and the subject passes at once into a languid state and drops into the chair with the soft expression seen on the faces of patients who have taken an internal dose of morphine.

Atropine seems to have an action that causes an extreme state of weakness. The patient remains seated with his face long drawn out and his eyes vague and fixed. If its action is prolonged, the whole body gets stiff and the subject falls into a true opisthotonos. Cognac, rum, and champagne used in the same physical form are said to produce the same stages of intoxication as when taken in the usual way. Drunkenness comes on in eight or ten minutes, passing rapidly from the first slight excitation into complete resolution and inability to stand upright. The dose used in these last cases was 20 grammes [5 drachms] of cognac in the tube, and the process of getting sober again passed through the same phases that are usually observed, and took only the same eight or ten minutes. Some eighty-six substances were experimented with in all.—*Paris Correspondence, N. Y. Med. Jour.*

The Difference Misfortune Makes.

The writer in one of our contemporaries who penned the following has evidently had an experience on the unfortunate side of the subject on which he writes which enables him to picture so well the contrast in the modes of greeting by one's friends when prosperity reigns or adversity overcomes the business man: It is



SANDS' LUMBER MEASURE AND REGISTER.

surprising what a wonderful effect the insolvency of a merchant has upon his former creditors! Men who before were only too glad to take him by the arm and laugh and chat with him by the hour now shrug their shoulders and pass him on the street with a frigid "How d' do?" Every trifling item of a bill is hunted up and presented that under other circumstances would not have seen the light of day for months to come. If the bill is paid, well and good; but if the obligation is not immediately canceled, the scowl of the sheriff, perhaps, meets him at the nearest corner. A business man who has never failed can know but little of human nature, for in prosperity he sails along gently, his barque wafted over placid seas by favoring smiles and kind words from everybody. He prides himself on his name and spotless character, and makes it his boast that he has not an enemy in the world; but when adversity and misfortune knock at his door, he is forced to look at the world in a less roseate light. He reads suspicion on every brow, and he hardly knows how to move, or whether to do this thing or the other. He beholds spies about him on every hand, and knows that a multitude of suits and attachments are ready for his back. In order to realize what kind of stuff the world is made of, a man must encounter misfortune, and stop paying his liabilities; and then, if he has real and true friends, they will come promptly forward and prove their devotion. A business failure is a kind of moral sieve, which brings out the wheat and winnows the chaff; and passing through a financial ordeal teaches a man that fair words and affected good will are not the constituent components of a true and reliable friendship.

Florida Oranges.

October brings to bear on the Florida grower a temptation which he has hitherto seldom shown himself able to resist. The orange is his one crop of the year. He has long store bills running up, and interest payments, perhaps, to meet. He allows himself to begin cutting his crop before it is ripe, before it is even colored, sometimes! Generally it will color tolerably well in transit, but if it does not a judicious heating and sulphuring in the rooms of the commission houses of New York will complete the process.

What is the result? Northern people become prejudiced against Florida oranges. They do not know the circumstances, and indeed a majority of them still

believe the old tale that oranges ripen at all times of the year. They find that at least some Florida oranges are sour, whereas the truth is that no orange grown in this State, when allowed to ripen thoroughly on the tree, and not belonging to the sour variety (there are three varieties, the sweet, the sour, and the bitter sweet), can ever properly be termed sour. The fruit growing on the inside of a dense tree, not touched by the sunshine, and therefore of a pale lemon color, or that growing on very rich, rank land, or with strongly nitrogenous manure, is not so sweet as that which receives plenty of sunlight and is of a deep, rich color.

It was stated last year in the newspapers of the State that over 150,000 boxes (bushels) of oranges left Florida before Nov. 1. The first few hundred boxes brought \$4 or \$5 a box, but the price quickly dropped so low that growers realized very little for their crop, often not enough to pay for the labor and material, to say nothing of the fruit. The remedy for this is cold storage and sales in the spring.

This may pass as an error, perhaps, but to sell frosted oranges is a clear fraud. Freezing may occur on the trees, but it more often happens while the fruit is in transit, at the northern end of the route, for which, of course, the grower is not to blame. It is a long time before a frosted orange gives any indication from its exterior appearance that it has been touched by frost; for two or three months afterward it may easily be sold to the inexperienced without detection. The surest test is that of weight. If it is heavy in the hand, that is proof that it has not been frosted, no matter how dry and hard the skin may feel. To get a ripe Florida orange, never buy one before Christmas, and let it be of a dark reddish yellow, medium sized, round, not longish, and with a skin not too rough. To get a sound one, choose one which weighs heavy in the hand.

There is another fraud which is beginning to be practiced at the North only. This consists in the artificial coloring of them to imitate the bronze or rusty tint peculiar to the oranges of this State. This marking is caused by a minute parasite called the "rust mite," whose stings produce this dark tinge not only on the fruit, but also on the leaves and tender twigs. Some years it is more prevalent than others. This year, for instance, there will be a very large percentage of russets. This tint is a guarantee of quality in three ways: First, it shows that the orange grew in Florida; second, that it grew on the outside of the tree, and therefore received abundant sunlight; third, the numerous punctures of the mites make the rind dry and shrink a little, slightly stunt the growth of the fruit, and so make it sweeter and a longer keeper on account of its hermetical sealing up, as it were.

The fraud consists in giving the fruit a light scorching to produce a russet tinge. This shows that this class of oranges, rejected by superficial judges, are gradually gaining in favor in the North.—*Stephen Powers, Country Gentleman.*

The Electro Deposition of Iron.

Prof. W. C. Roberts-Austen, F.R.S., chemist to the mint, has been making some experiments on the electro deposition of iron, a process which in Russia is used on a large scale for printing paper money. According to the *Ironmonger*, the bath used is a solution of ferrous sulphate and magnesium sulphate in equivalent proportion, of specific gravity 1.155. The solution must be so far neutralized by the addition of magnesium carbonate that blue litmus paper scarcely shows any acid reaction. A wrought iron anode, about the same size as the object to receive the deposit, must be employed, and the best interval between the poles is found to be four centimeters. Mr. Roberts-Austen finds that the current best suited for an iron medallion had a strength of only 0.089 ampere. It was provided with two Smee cells, coupled up for intensity. The adherence of the iron to the copper on which it was deposited was reduced by coating the latter with a film of metal; but Mr. Roberts-Austen is trying a thin layer of silver iodide on the copper moulds. The deposited metal is very pure, and its magnetic capacity does not appear to be high. The dies for the Jubilee coins were made by this process of electro deposition. The designs, modeled in plaster, were reproduced in "intaglio" by the electrolytic deposit of copper, and on the copper moulds so prepared iron was deposited. It is of hard and excellent quality, and dies of all sorts for coins have been produced by the reducing machine from such deposits.

At a recent meeting of the Edinburgh Royal Society, Professor Tait communicated some results on the compressibility of water, of mercury, and of glass. The average compressibility of a 20 per cent aqueous solution of common salt per atmosphere for the first 100 atmospheres is 0.0000316. It diminishes rapidly with the percentage of salt in solution. The compressibility of common lead glass is 0.000027 at a temperature of 19 degrees C.