

MACHINE FOR MAKING FENCE PICKETS.

The object of the machine illustrated in the annexed engravings is to dress and shape the heads of pickets or palings. The novel feature consists in the sliding or reciprocating table which, by suitable attachments, supports and clamps pickets of different lengths, for presenting the same to the action of the revolving cutters. In Fig. 1 is given a perspective view of the machine, and in Fig. 2 a plan of the improved table.

The carriage, A, upon which the pickets are placed, travels upon ways, B, which are vertically adjustable to alter the inclination. The pickets are arranged side by side, and are secured by the pressure of the spring, C, Fig. 2, said spring being adjusted by the lever, D, connected therewith by a pivoted bar. The lever is held at any adjustment by means of the ratchet bar, E.

The rear extremities of the pickets rest against the end piece, F, of the carriage, by which they are so gaged to the saw that they are all cut in uniform lengths. The piece, F, is rendered adjustable, in order to suit different sized work, by the slotted side pieces, G, which are provided with clamping bolts, as shown. The cutting mechanism consists in two revolving heads, the bearings of which are adjusted in the frame to vary the space between them for wide or narrow pickets, by an independent screw for each. They are driven by a single belt which passes over both pulleys and over a guide pulley on the bed of the machine. Each head carries two molding cutters, a pointing cutter, and a saw, which are formed in the outline of the edges to cut the pickets alike on both sides when the latter are presented obliquely through the inclination of the carriage. By this arrangement the cutters are enabled to shear or draw out the wood, and thus to work smoother and easier than when operating crosswise the grain. The saws serve to remove the feather edge left by the pointing cutters.

The device can easily be attended by a single man, and, it is claimed, can cut 5,000 pickets per day. From the adjustability of its various parts it is capable of executing a large variety of work, leaving the same in condition fit for immediate use. It is equally suitable for the purpose above described or for a tenoning machine, by simple adjustments of the cutter heads and carriage; and by suitable changes of the knives, picket heads of any desired patterns may be formed. The machine, we are informed, is the first which

water, and strain through a stocking or thin cloth, each in a separate vessel. The whitening may now be stirred well; if too thick, add more hot water, and strain through a flour sieve into a good-sized pot. Add some of the blue and red, alternately, till you get the desired shade, which may be ascertained by putting a little of the mixture on a piece of paper and drying by the fire. When your color is determined, pour in the glue; and after mixing well, apply the wash hot to the walls, brushing in any direction, as it mixes better

phenosin, $C_{34}H_{67}NO_8$, may be considered as the mono-amidated form of a fatty acid, whilst cerebrin, $C_{34}H_{68}N_2O_8$, is the di-amidated form; kersin, $C_{34}H_{69}NO_{11}$, the third on the list, is a colorless crystalline substance. All these compounds give a most magnificent purple color when treated with sulphuric acid and sugar, by Pettenkofer's reaction. Stearconote has the same composition as cerebrin, and can easily be converted into it by boiling with hydrochloric acid and benzene; cerebrin can also be reconverted into stearconote.

The amount of these principles is considerable, the phosphorized and nitrogenized compounds, with the cholestrin, constituting 5 per cent of the brain.

In answer to a question by Dr. Wright, Dr. Thudicum replied that the examination was conducted on the normal brains from human subjects, controlled by experiments on the brains of oxen. In softening of the brain, he had found free glycerophosphoric acid and fatty acids.

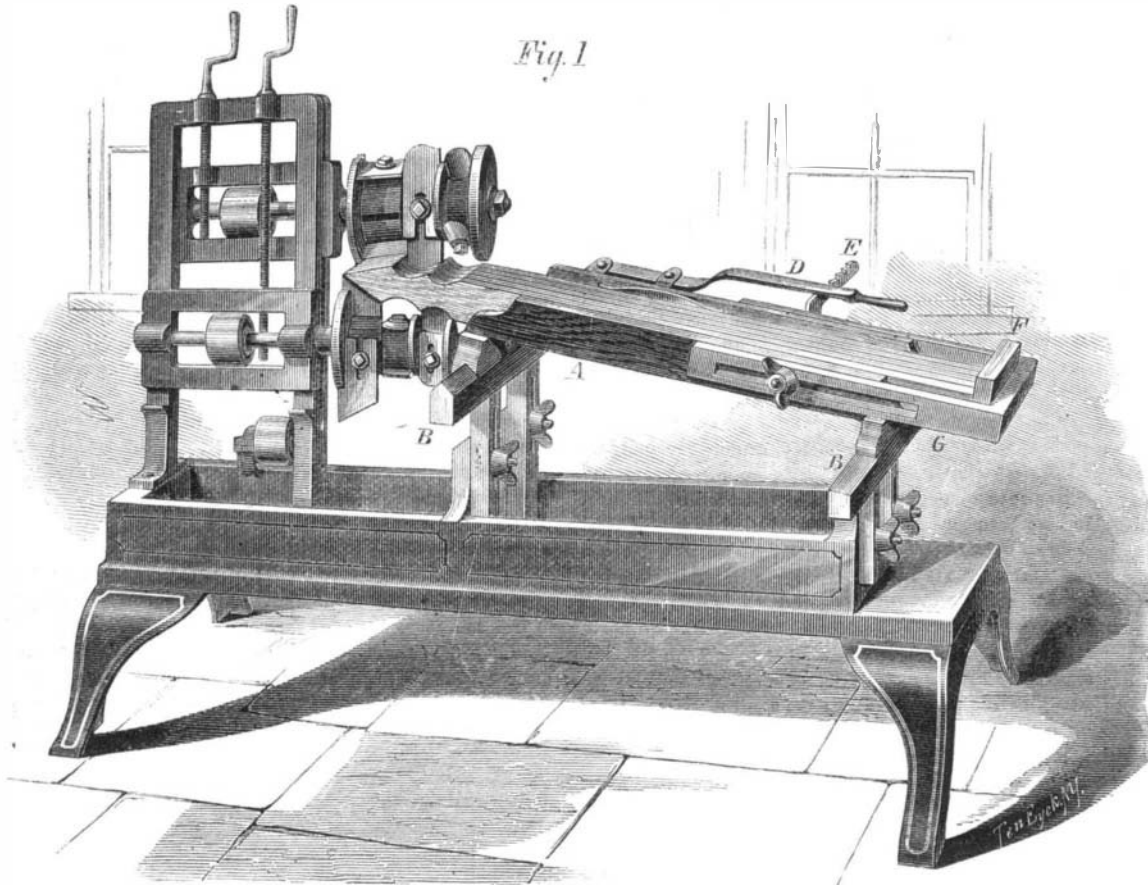
The Electric Light.

It has long been known that the carbon electric light is not due to a direct luminous effect of the electric current, but merely to the property which this current possesses of heating the conductors which it traverses, and that with the greater intensity the more resistance they oppose to its passage. The intensity of the ordinary electric light (with carbon points) arises from the circumference that the stratum of air, a bad conductor, which is found between the two charcoal points, is heated to an excessive degree by the passage of the electric current,

and thus produces indirectly the combustion of the coke or charcoal electrodes, heated to whiteness. It has also long been known that solid bodies may also be heated to whiteness without the presence of gaseous matter. Thus, slender platinum wires have often been heated by the current. The light from this source is more fixed and constant than that of the luminous arc between the carbon points; but it is too feeble and too costly. M. Ladeguain replaces the wire by slender rods of carbon (coke), hermetically sealed in a glass receiver, from which the oxygen has been removed.

IMPROVED HOISTING MACHINE.

The annexed engraving represents an improved form of



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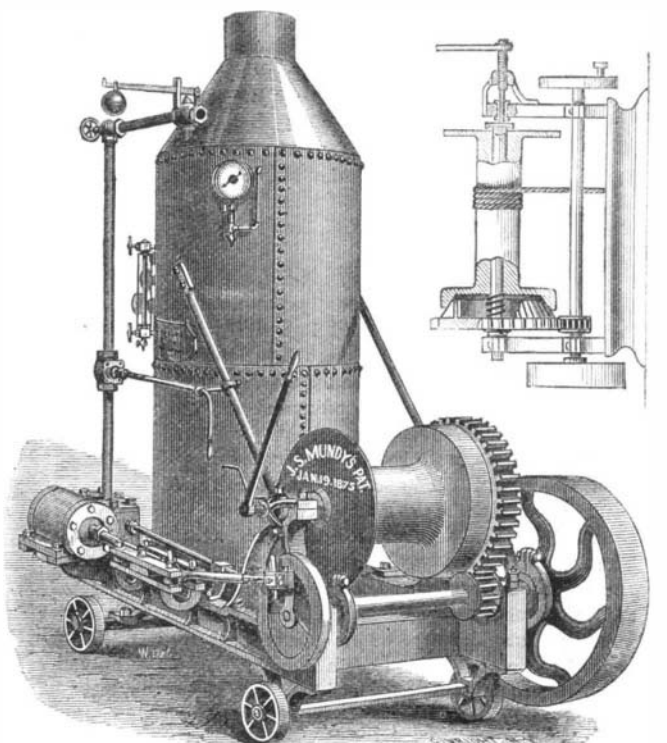
than if put on too carefully. On white walls two coats are necessary; but after the room is once done, one coat is sufficient. Should the ceiling have to be done, put on the whitening alone first, then reheat the wash and add the paints and ulue, the latter to be light colored, if the walls are to be white. Common glue will answer for a painted wall. A paper border finishes the room perfectly—makes any room neat and pretty. Should the second coat not be put on till next day, heat the mixture, as the glue will not mix with the other ingredients unless pretty warm.

Chemical Constitution of the Brain.

At a recent meeting of the Chemical Society, London, Dr. Thudicum delivered an interesting address on this subject. He said he thought the best way would be to explain the table of the constituents of the brain, which was hanging on the wall, comprising twenty-one compounds, besides fats and fatty acids. This subject, which was one of great difficulty, had occupied him many years, and he had found that it was quite useless to work on the small scale, in fact, before anything could be done, 1,000 brains had to be subjected to chemical examination. Of the constituents of the brain, nearly all the albumen present was in the insoluble form, and the sub-group of the phosphorized principles, to which he had principally directed his attention, consisting of the kephalins, myelins, and lecithins, all contained phosphorus. There were also present nitrogenized principles, oxygenized principles, inorganic matter, and about 80 per cent of water. The water is very difficult to remove from the brain matter, but it can be done by slicing it thin and soaking it in successive quantities of strong alcohol. The dried product is then finely divided, and rubbed through a sieve. Heated to 103° Fah., with alcohol, it leaves a white matter, consisting of the albumen, most of the phosphorized principles, all the nitrogenized, and much of the cholestrin. The alcoholic solution, when concentrated, deposits the lecithins, and, by further evaporation, the fatty ethers. The constituents of the white matter may be separated by treatment with ether, which extracts the kephalins; on concentrating the solution, and adding alcohol, these are precipitated. The myelins are only slightly soluble in ether, but may be dissolved by absolute alcohol, which leaves the cerebrin, phenosin, and kersin.

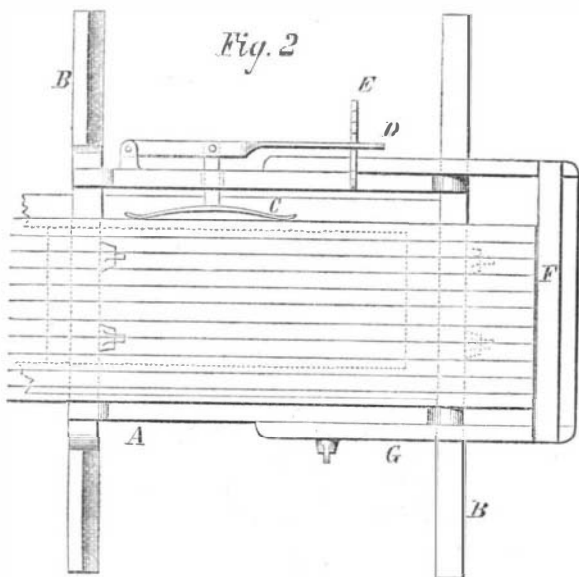
All the phosphorized principles are soluble in water, but the kephalins, as a class, are characterized by the property of oxidisability, turning brown in contact with ether; while the myelins, on the contrary, possess great stability, and are, therefore, readily obtained colorless and crystallized. Hydrochloric acid, or any salt, readily precipitates the phosphorized compounds; but when dialyzed these are removed, and the compounds again pass into solution, affording an excellent method of purifying them. The phosphorus is always present as glycerophosphoric acid.

The author then explained his theory of the constitutional structure of the various compounds; after which he shortly noticed the members of the nitrogenized group, of which



hoisting engine, the principal feature in which is a novel arrangement of friction attachment in connection with the drum. The device obviates the necessity of brakes and allows of the load being raised, lowered, or held suspended, with great ease. The diagram on the right of the engraving shows the drum loose upon the shaft while the driving gear is keyed firmly thereon. In the side of the large gear on the drum shaft, wood is dovetailed and turned off to receive the flange of the drum, which is forced thereon by means of a steel screw and pin, operated by the hand lever shown. A slight pressure of the hand on the lever causes sufficient friction between the flange of the drum and the gear to cause the lifting of from two to sixty tons, according to the size of the engine.

This machine has been in use by the Department of Docks



has been devised for producing the picket heads in complete state.

It was patented through the Scientific American Patent Agency, December 29, 1874, to Mr. Isaac Levy. For further particulars address the owner of the patent, Mr. A.M. Lewin, Room 1, 302 Broadway, corner Duane street, New York city.

Kalsomining.

This is the time of year for house cleaning, and, *apropos* to the season, comes the following, from a correspondent of the *Country Gentleman*:

To kalsomine a good-sized room with two coats, take ten pounds of whitening, dissolved in hot or boiling water; one fourth of a pound of glue (which should have been put to soak in a pint of water the night before) may now be melted slowly on the back of the stove, stirring frequently. To color a beautiful tint, get two ounces of ultramarine blue and one ounce of Venetian red; mix separately with cold, soft