Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME VIII.] NEW-YORK, MAY 28, 1853. [NUMBER 37.

THE
Scientific American,
PUBLISHED WEEKLY
At 128 Fulton street, N. Y., (Sun Buildings),
BY MUNN & COMPANY.

Hotchkiss & Co., Boston.
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USEFUL RECEIPTS.

Alum Made in the Manufacture of Candles.

We learn by the "Comptes Rendus," that J. Cambaceres, has endeavored to get a useful product in the manufacture of fatty acids into candles. Tallow in the manufacture of stearic candles, is saponified with lime, then the lime is separated from the fatty matter by sulphuric acid, which combines with the lime, forming the sulphate of lime, and setting the fatty stearic acid free, thereby fitting it for bleaching, and being made into beautiful sperm-like candles. Instead of using lime to saponify the tallow, M. Cambasceres employs soda or potash ley, and adds clay. The soap containing an excess of the alkali acts upon the clay so as to dissolve the alumina in it which combines with the fatty matter forming an insoluble aluminous soap. By the addition of sulphuric acid to this, the fatty matters are set free, and the product is the sulphate of lime, and when clay can be found, free from iron, and near a candle-factory, this process is worth a trial by some of our spirited candle makers.

Rancid Butter.

The "Echo du Monde Savant" says:—A farmer in the vicinity of Brussels having succeeded in removing the bad smell and taste of some butter by mixing it with chloride of lime, he was encouraged by this experiment, and he has restored to butter the taste and odor of which were insupportable, all the sweetness of fresh butter. This operation is extremely simple and practicable by all. It consists simply in working the butter in a sufficient quantity of water, in which from 25 to 30 drops of chloride of lime have been added to every two pounds of butter. After having mixed it till all its parts are in contact with the water, it may be left in it for an hour or two, afterwards withdrawn and worked again in clear water. The chloride of lime having nothing injurious in it, can with [illegible] augmented; but after having varied the experiment, it was found that from twenty-five to thirty drops to every two pounds of butter were sufficient.

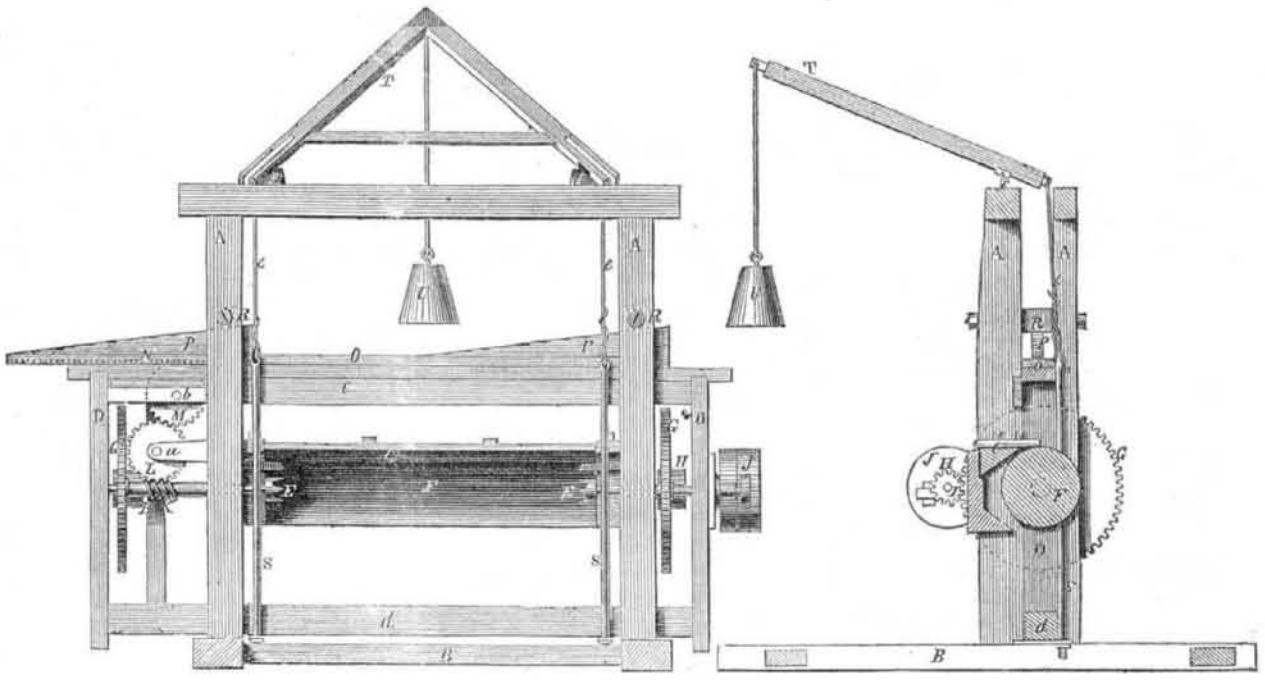
Another method of restoring sweetness and flavor to rancid butter, said to be very effectual by those who have tried it, is to put it into a churn with new milk and work it till all the old salt and rancidity is removed, after which it is to be taken from the churn, worked and salted afresh.

[The above should be tried on a small scale first.

To multiply any number less than 100 by 11—add the two figures composing the number together, place the sum between the same two figures, if this sum be less than 10; if 10 or more than 10, add 1 to the left hand figure, and place the unit between the two figures so taken. Example:—44×11=484: the two fours being added make 8, which is the second figure. Thus multiplying by 11 may be as readily performed in the mind, when the multiplicand is less than 100, as multiplying by 10.

MACHINE FOR CUTTING VENEERS.

Figure 1. Figure 2.



The annexed engravings are a front elevation (fig. 1), and a transverse vertical section (fig. 2) of an improved machine for cutting veneerings, invented by Peregrine White of Jackson, Waldo Co., Me., who has taken measures to secure a patent for it. The same letters refer to like parts on both figures.

The invention relates to the cutting of veneers, in the form of volutes, from solid logs of wood; the log is fed to the knife in a peculiar manner to accomplish the object.

A A are the four posts of the machine; B is the sill or base beam; C is a horizontal knife, permanently secured between the two back posts, A A. D is a number frame, the cross top beam, *c*, being between the front and back post, A. This frame sustains the revolving centres, E, E, which holds the log, F, between them. The spindles of these centres have toothed wheels, G G, which mesh into pinions, H H, on shaft I, as shown in fig. 2. J is the driving pulley at one end of shaft I. One spindle of the left centre, E, has a screw K, which meshes into a worm wheel, L, which has its axis in a suspended bearing, *a* attached to frame, D; this wheel, L, meshes into pinion M, which has its axis at *b*, in beam *c*. The pinion, M, works the rack, N, on the under side of slide O, which is placed between the posts, A A, and rests on beam *c*. P P are two inclined planes on the upper surface of slide, O. These inclines bear against blocks, R R, which are secured between the front and back posts, A.

S S are rods, the lower ends of which are secured to the bar, *b*. The upper ends of these rods are attached to the lower ends of the angular frame, T, by the connections, *e e*. This angular frame, T, rests upon points, *f f*, on the cross-piece, *g*, of posts, A. U is a weight suspended from the apex of T.

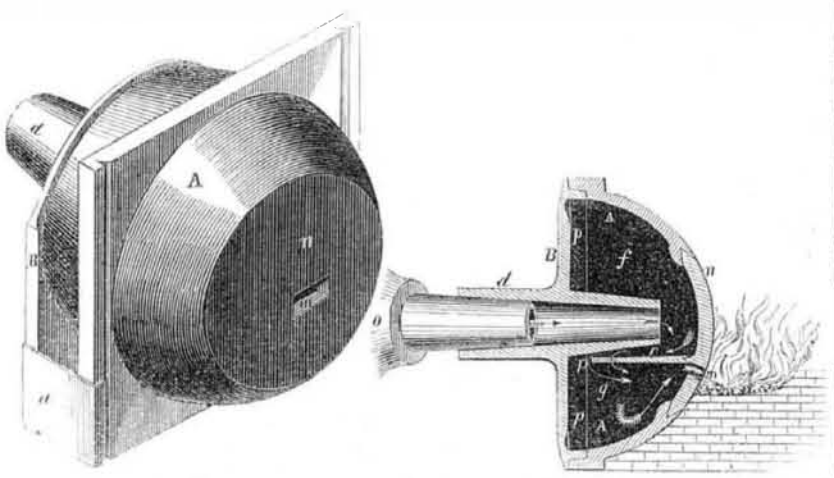
Operation—Motion being applied to the driving pulley, J, the pinions, H, communicate motion to the wheels, G G, and the revolving centres, E E, which rotate the log, F, secured between them. As the log rotates, it acts against the stationary knife, C, which cuts the veneers from the same. The screw, K, by turning the wheel, L, and its moving pinion, M, drives the rack, N, of the inclined slides, O, which are moved along from the highest part to the bottom of the inclines, pressing against the stops, R R, as the log is being cut from its greatest circumference into the veneerings. By this action, as the weight, U, on the triangular frame, exerts a great lifting power on frame, D, through the rods, S S, the said frame is gradually slid upwards as the log is being cut, thus bringing the centres, E E, upwards closer and closer to the knife, C, as the log is cut, the screw, K, graduating the approach of the centres to the knife. Thus it will be seen that the log will be cut in the form of a thin volute for veneering, the thickness of which will depend upon the thread of screw, K, and the fineness of the gearing connected with it to move the inclined slides faster or slower to allow the centres, E, to be elevated by the weight, U. This can be regulated as desired.

This machine for cutting veneers is very simple, and the manner of feeding the log to the knife is very ingenuous indeed.

More information may be obtained by letter addressed to the inventor.

GIDEON DAVIS'S NEW TUYERE.

Figure 1. Figure 2.



A new tuyere iron has been invented by Gideon Davis, of Loydsville, Ohio, which is represented in the annexed engraving. An important result is attained in the construction of this tuyere namely the supply of a constant blast of cool air upon the portion of the tuyere adjoining the fire, and at the same time a blast of hot air upon the coal; the manner in which this is accomplished will be readily understood by the accompanying description and engravings, in which fig. 1 is a perspective view, and figure 2 a vertical longitudinal section through the centre, showing its application to a smith's forge, and also its connection with a bellows. A is a hemispherical cast-iron chamber, with a movable front plate, B, secured to it by couplings, in the flanges, *p*, or in any other convenient manner, having the tapering pipe, *d*, cast within its centre, and extending within the chamber, nearly to the plate, *n*, and without the plate for the reception of the blast-pipe of the bellows, A, a division plate, C, extends longitudinally across the chamber immediately above the opening, *m* and fills the chamber nearly to the front plate, B. The cool atmospheric air from the bellows, in the first place, strikes with considerable force upon the hottest portion of the fire-plate, *n*, made of cast-iron, plumbago, or other suitable material, and after being forced upon this plate immediately fills the part of the chamber, *f*, and taking the direction of the arrows, passes to the lower chamber, *g*, from whence it is expelled through the opening or fire-pipe, *m*, upon the coal of the furnace. The opening, *m*, is inclined to a horizontal line, and the air meets the coal by being driven at an inclination downward, instead of striking it horizontally. The advantages of Mr. Davis's tuyere are, that the air from the bellows becomes heated by absorbing the caloric from the fire plate, *n*, thus a two-fold advantage is gained—first keeping the plate from being over-heated, and consequently destroyed, and at the same time furnishing a hot blast to be forced upon the coal. Measures are taken to secure a patent.