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Clarifying Sugar by Soap.

M. Basset lately introduced to the notice of the Academy of Sciences at Paris, the process of clarifying sugar invented by Mr. Garcia, formerly a sugar refiner of Louisiana. It is founded on the well-known property of lime to combine with fatty substances, and produce alkaline soap. When the saccharate of lime is brought into contact with a solution of soda soap, the sugar is set at liberty, the lime combines with the fat of the soap, and the soda remains in solution in the liquid. When the clarification has been effected with an excess of lime, and the liquid has been skimmed a first time, it must be allowed to cool to below 104° Fah., and the solution of soap is then poured in while the liquid is being stirred. When the whole has been incorporated, it is again brought to the boiling point, after which the temperature is suddenly lowered again, by the suppression of the steam current, and the new scum is removed. The latter consists of a calcareous soap, which on rising to the surface has carried with it all the impurities and extraneous substances contained in the liquid. The process requires no new apparatus, and is stated to produce better sugar.

Milk Sickness—Its Cause and Cure.

As this disease is oftentimes fatal and wide spread in some sections of our country, any effectual remedy for it must be a great boon to suffering humanity. A correspondent of the *Prairie Farmer* asserts that its cause is the presence of cobalt in the soil of the pastures on which the cattle feed whose milk is said to produce the sickness. The remedy which he states has been successfully employed for it, is sulphuric acid, but he gives no directions as to its uses. We believe he is mistaken regarding cobalt in the soil, but he may be correct as to the remedy.

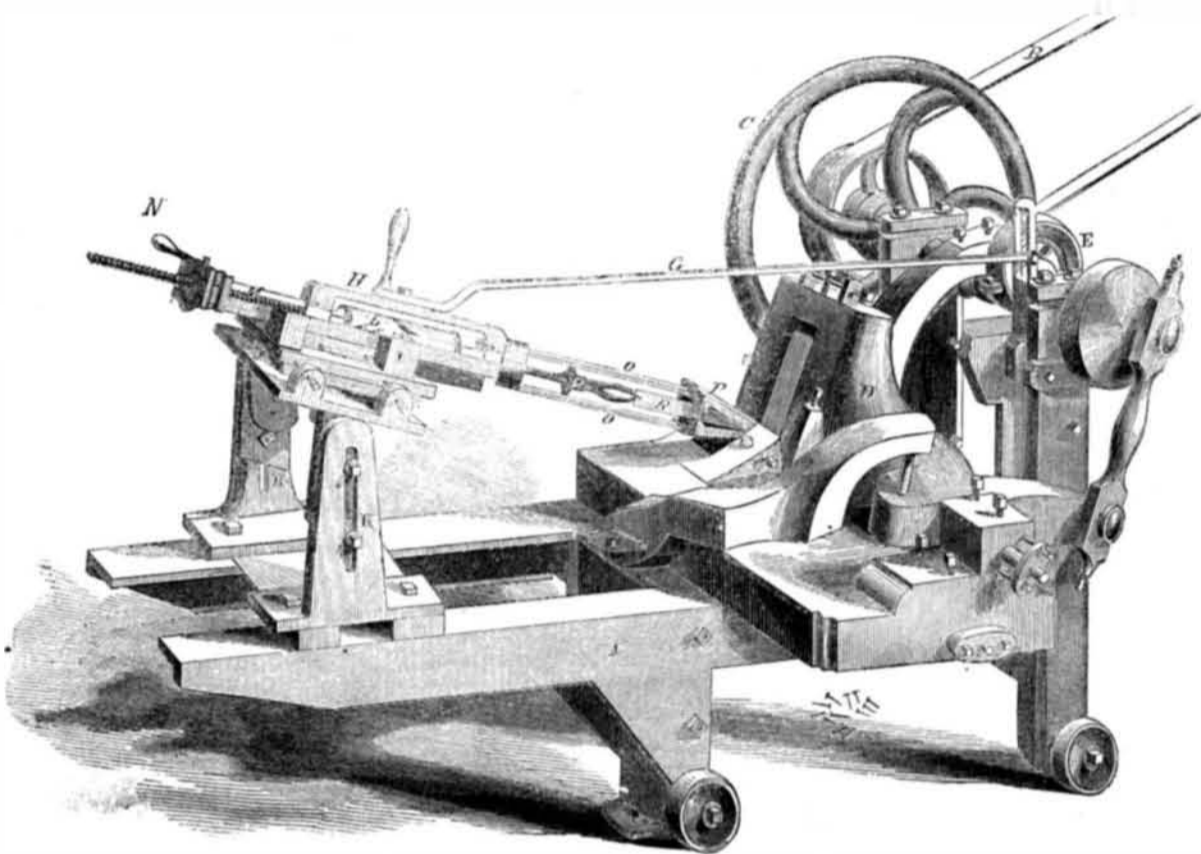
About five drops of sulphuric acid in a pint of water sweetened with a little white sugar, makes a pleasant and tart drink, which has been found very effective in curing dysentery, and it may be equally good for milk sickness. Very dilute sulphuric acid is no more dangerous than lemon juice in a beverage, therefore it may be safely tried for the above disease.

If there is cobalt in the soil of the meadows where the above sickness prevails, it can be easily detected by stirring some of the soil in clear soft hot water, allowing the sediment to settle, pouring off the clear solution and using a re-agent, such as ammonia, which will form a blue precipitate (if not used in excess) with the cobalt.

Philadelphia Iron Manufactures.

The Philadelphia *North American* states that in that city and neighborhood there are over ten thousand persons engaged in iron manufactures, whose products of industry amount to \$12,857,000 annually.

SHERWOOD'S SELF-ACTING FEEDER FOR NAIL MACHINES.



The manufacture of cut nails has become an important item of national industry, and the machinery which makes the dies and operates them has attained in consequence great perfection, but the feeder or the portion which present the plate of metal to the dies, is usually that perfect but uncertain piece of mechanism called—a boy. The feeder which is represented in our engraving, and which can be attached to any nail machine, is the invention of John P. Sherwood, of Fort Edwards, N. Y., and was patented by him March 18, 1856. The following description will render the machine intelligible:—

A is the frame, which is of great strength, and mounted on four rollers, so that it can be moved from place to place, or to different positions in the workshop; B is the driving belt, communicating power from the main shaft to the band and fly-wheel, C; D is an ordinary nail machine, having on its shaft an eccentric, grooved, which receives a pin or roller projecting at right angles from a bar, G, and by the motion of this pin in the eccentric, it

causes the bar to move up and down while the pin slides in the guides, F. The bar, G, is connected by a screw with the piece, H, which is free to move in guides on the plate, I, that can be adjusted to any position on the table, J, screwed or otherwise attached at any suitable angle to the standards, K, which rise from the frame of the nail machine, A, at suitable distance from the dies. To H, two bars, O, are attached, bearing or holding at their extremity a hollow guard, P, through which the iron to be cut projects. This piece of plate iron is seen at R, held by the pincers or teeth, Q, which are attached to a rod that is rigidly connected with the cam, L, in H, and also connected with the screw, M.

The operation and working of the machine is as follows:—When the dies are put in motion by means of the belt, B, the eccentric, E, is also rotated, and so moves the bar, G, and frame, H. The motion of this up and down, causes the cam, L, to revolve, by means of a fixed pin, and its own inclined slot, half a turn, so as to present the opposite face of

the metal, R, to the dies, so that all that can shall be cut into nails, and no metal lost. When the handle, N, is up, this is all the motion that takes place, but when it is down upon the feed screw, M, this up and down motion also gives the screw a turn which feeds the plate, R, just the length of one nail under the dies. The operation which this feeder performs are, first, the turning of the plate accurately during the raising of the die, so that no time is lost, and it also feeds the plate at the same time to the dies exactly the proper amount, this, of course, being regulated by the pitch of the screw, and the eccentric is so placed on the shaft that the plate and feeder are quite rigid during the process of cutting. It is a most valuable improvement in nail machinery, and will save much time and labor.

One of these machines is on exhibition at the Crystal Palace, New York, and any further information can be obtained by addressing D. W. Seeley, New York, who acts as agent for the patentee.

The Rectification of Spirits and a Cure for Drunkenness.

A correspondent asks us in the same letter for "a cure for drunkenness, and the best modern work on the rectification of spirits and the rectifying still." We have two theories in regard to the motives which prompted the above questions, so apparently antagonistic in their character. One is, that our correspondent is a manufacturer of spirits and is anxious to adopt the best means to cheapen and improve their qualities, and only asks for the first information to gratify an idle curiosity; and the other, that he is a whole-souled philanthropist whose first endeavor is to cure his unfortunate fellow creatures of a most abominable vice, and in the event of failing in this to devote his efforts toward the removal

of some of the many poisons contained in liquors, and thus in a great measure qualify their evil effects. We know of no modern work published in this country, exclusively devoted to the rectification of spirits and the rectifying still. Many works on chemistry treat of these subjects, but the latest and best information can probably be obtained from the last issue of *Ure's Dictionary*, under the respective heads of *Distillation, Fermentation and Spirits*.

The best cure for drunkenness that we can recommend is total abstinence from all intoxicating drinks. Where the unfortunate victim does not possess the necessary firmness to resist the temptation of the intoxicating draught, we would recommend those interested in his fate to first employ those delicate means

which are dictated by the spirit of Christianity, to bring him to a proper sense of his condition before resorting to the forcible ones too often attempted. Instead of trampling upon him, strive to nurse into life the still glimmering embers of a nearly exhausted virtue. Think of him as a being whose frame is still capable of being agitated by feelings the most refined, delicate and intellectual, and endeavor to inspire in him a desire for those virtuous joys which he experienced before he became a victim to this terrible habit.

Six barks are now preparing at Chicago to make voyages to Liverpool. Last year one—and the first—made this voyage, and seemingly with success, or others would not be induced to follow the example this year.