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Fills: Around Cellar Walls.

A correspondent (N. V. Welton, of Waterbury, Conn.) in a note at the end of a letter to us, says, "this cold winter brings to mind a matter connected with the building of houses which I do not remember ever to have seen in print, and which, if generally known, is seldom practiced. It is this, in any cold climate cellar walls of houses should never be filled in around with loam or clay, or earth that retains much moisture, because the frost expands it, and it exerts a great pressure against the walls, tending to thrust them out of position. The effects of this are seen in many cracked walls, the breaking of window and door sills and lintels; unjointed verandas; and windows and doors rendered incapable of opening and closing, &c. In our New England States, this costs us many thousands of dollars yearly, all of which may be saved by filling in a few inches of sand or clean gravel next the walls."

We hope those who build houses this summer will not forget to follow the above advice. It is sound, and given in good season for practicing upon during the whole in-coming season for building.

New Gold Varnish.

A very beautiful and permanent gold varnish may be prepared in the following manner:—2 ozs., of the best garancine are digested in a glass vessel with a 6 ozs. of alcohol, of spec. grav. 0.833, for twelve hours, pressed and filtered. A solution of clear orange-colored shellac in similar alcohol, is also prepared, filtered, and evaporated until the lac has the consistence of a clear syrup; it is then colored with the tincture of garancine. Objects coated with this have a color which only differs from that of gold by a slight brown tinge. The color may be more closely assimilated to that of gold by the addition of a little tincture of saffron.

Another Alleged Cure for Hydrophobia.

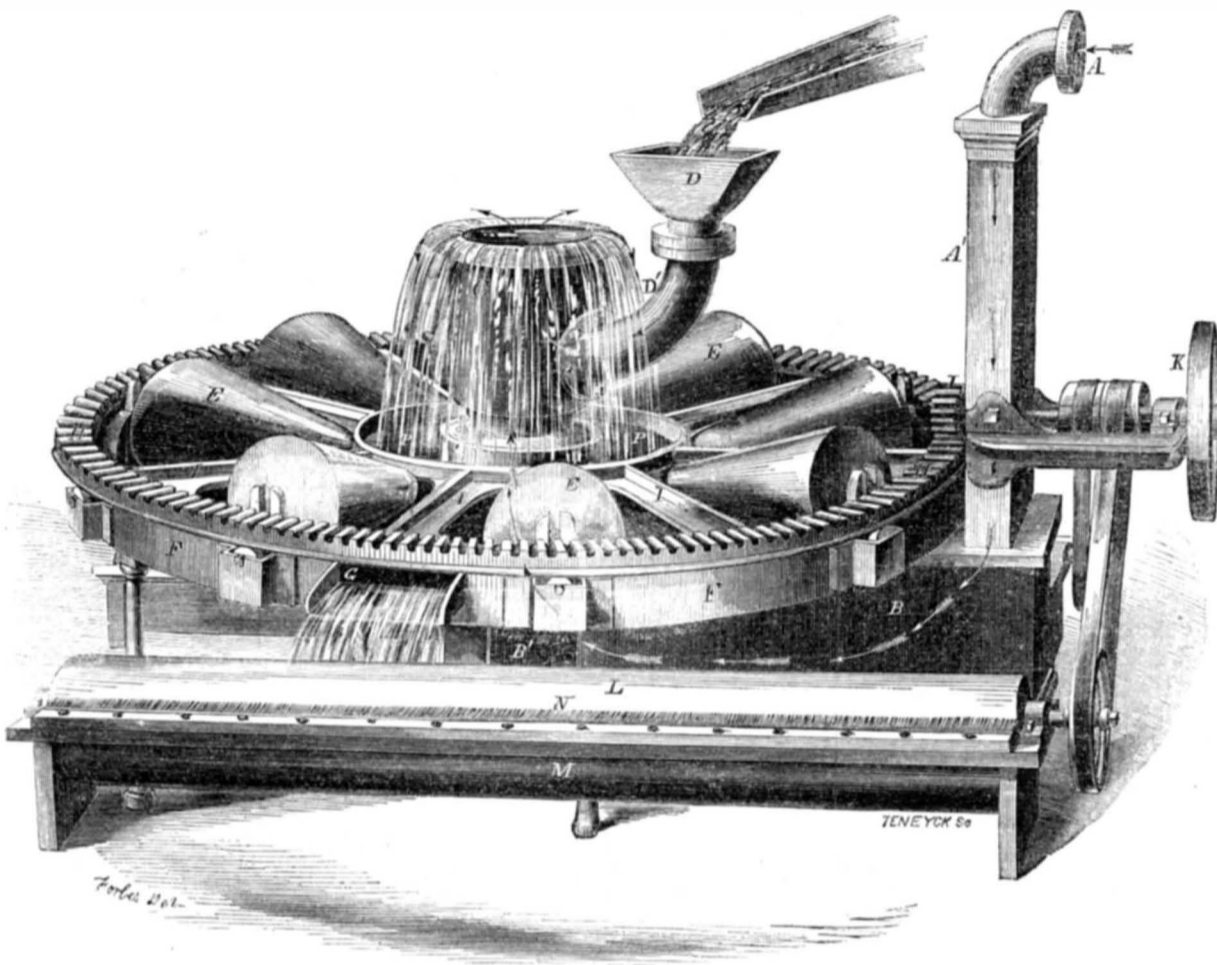
M. Guerin Meneville lately brought before the French Academy of Sciences a means of curing hydrophobia, which, he stated, is practiced in Russia with success. A little insect, the golden cetonides, found in considerable quantities on rose trees, is proved, when pounded to a powder, and administered internally, to produce a profound sleep, which sometimes lasts for thirty-six hours, and which has the effect, in many cases, of completely nullifying the hydrophobic affection. A distinguished entomologist of Russia, M. Motschouski, has tried several experiments with this insect, and in most cases with success.

The Trade in Pearl Shells.

During the year 1855 there have been four vessels loaded with pearl shells at the islands in the Bay of Panama, amounting to 650 tons

By the latest accounts from Australia very rich deposits of tin had been discovered, and large shipments of the ore had been made to England. It is supposed by some persons that these tin discoveries will yet prove more valuable than those of Australian gold.

MACHINE FOR WASHING AND SEPARATING GOLD.



Addison's Improved Gold Separator.

Our engraving illustrates an invention for separating gold from sand, crushed quartz, &c. The separation is effected in part by water, and in part by quicksilver, the two processes being ingeniously combined. Since the great discoveries of gold in California and other parts of the world, many contrivances have been invented for the extraction of the precious ore. A leading endeavor has been to dispense with the use of quicksilver, the procurement, application, and cost of that metal having always formed a serious difficulty. But all such efforts have been fruitless; those who had abandoned the mercurial process, found, after abundant experiment, that they were cheating themselves.

The affinity between quicksilver and gold is so great that no sooner do their particles come in contact than they unite, and hold fast to each other in a loving embrace, which fire alone can fully separate. The larger particles of gold may be easily separated from the quartz by means of water, but quicksilver is the only substance known that will effectually arrest the fine dust. In quartz crushing and sand washing a large percentage of the gold is always present in the form of an impalpable powder, to collect which mercury is indispensable.

The apparatus here presented operates in the following manner:—A stream of pure water is introduced at the supply pipe, A, and flows down through the post, A', into the tank, B, passing onward towards the end of the tank, B', in the direction indicated by the arrows. The tank is divided by a partition at the end, and in the compartment thus formed there is a small water wheel with spiral buckets—not here shown. The partition is furnished with suitable valves, for regulating the flow of water into the wheel. The water wheel is put in motion by the pressure of the in-coming water; the wheel serves to agitate the water and give it a circling upward mo-

tion. The receiver, C, is placed immediately above the water wheel, and the water, after passing through the wheel, rises, bubbling and gurgling, into the receiver. Here it meets the sand or quartz dust, which is fed into the receiver, C, mixed with water, from the trough box, D, and pipe, D'; continuing its upward course, the water rises over the top of the receiver, and falls down, as from a fountain, into the basin, P. The heavier pieces of gold fall down through the receiver and wheel to the bottom of the tank, B', into some quicksilver there deposited. The finer particles of gold and dirt are carried with the water, and fall over the edge of the receiver into the basin just mentioned. From this basin the mixture spreads and flows evenly over a circular platform or bed plate, F, upon which the conical rollers, E, travel. Quicksilver is spread out on the platform and the rollers serve to mix the gold and dirt with the mercury. The latter will, of course, absorb and retain the gold, leaving the dirt and water to flow away through spout G. The rollers are carried in a circular ring or wheel, of which the rack, H, forms the upper edge, and I the spokes. The rack, and with it the rollers, are put in motion by means of the pinion, J, power being applied at K. Less than half a horse power is required to operate the machine.

L is a long wooden roller, covered with cloth, and revolving in a trough, M, the bottom of which contains quicksilver. The water and dirt from the spout, G, fall into the trough, and if any minute particles of gold are present they are absorbed by the mercury. N is a long brush, for preventing the quicksilver from being carried over on the roller, L. The roller, L, serves to agitate and mix the substances in the trough with the mercury. The muddy water finally escapes from a spout at one end of trough M.

The large machine from which our engraving was taken is six feet in diameter. Price, \$2000. It was built by Messrs. Dunkin and

Vansiclen for the Wykoff Gold Mining Co., whose mines are located in Farquhar Co., Va., near Fredericksburgh.

It strikes us that machines like the above may be very easily worked, and that they must be very effective and thorough in their operations. We do not remember to have seen any invention for the purpose that appeared to be more perfect, either theoretically or practically. The arrangement is such that ores containing sulphurets may pass through the machine without the least danger of clogging up. The sulphurets being generally heavier, sink below the surface of the water; the peculiar construction of the machine facilitates their escape.

This improvement is the invention of Mr. John S. Addison, deceased, and was patented Jan. 16, 1855. The owner of the patent is Mr. P. W. Engs, No. 6 Old Slip, of whom further information may be obtained.

Steam Thawing Machine.

J. B. Latta, of Cincinnati, O., has invented a portable steam generating apparatus for thawing out frozen water pipes, which appears to be a really useful invention, and might be used with beneficial effects in various parts of our city, at present. The apparatus is used by the fire department of Cincinnati, to thaw the plugs, hydrants, cisterns, pumps, or any such water arrangement that may be frozen. It is mounted on a sleigh, and looks like a stove, with a pipe rising from it, from which the smoke issues. The steam is conveyed through hose into the fire plugs, etc., and produces the desired thaw. The boiler consumes about three gallons of water in four hours.

Sharks were frozen to death in Tampa Bay, Florida, during the severe cold in January last. So it is said.

The rings of the planet Saturn will be visible all this year, with the aid of a telescope.