HOUSEHOLD HINTS.

REMOVING CORKS FROM BOTTLES.—Sometimes a cork is pushed down into the bottle or vial which it is desirable to remove. A very effectual way to do it is to insert a strong twine in a loop and engage the cork in any direction most convenient. It can then be withdrawn by a "strong pull," the cork generally yielding sufficiently to pass through the neck.

LOOSENING GROUND GLASS STOPPLES.—Sometimes the ground glass stopples of bottles become, from one cause or another, fixed in the neck and cannot be removed by pulling or torsion. An effectual method is to wrap a rag wet with hot water around the neck and let it remain a few seconds. The heat will expand the neck of the bottle, when the stopple can be removed before the heat penetrates the stopple itself. Or, wind a string once or twice around the neck, and, holding the bottle between the knees, pull alternately on one and the other end, thus creating friction and consequently heat. Or a little camphene oil dropped between the neck and stopple of the bottle will often relieve the stopple.

SHARPENING LEAD PENCILS.—A narrow blade—a pen blade—should be used for this purpose, as the back of a wide blade is almost certain to break the lead point just before the point is finished. A little thought will readily show the reason of this.

REMOVING A TIGHT FINGER RING.—It is seldom necessary to file off a ring which is too tight to readily pass the joint of the finger. If the finger is swollen apply cold water to reduce the inflammation, then wrap a small rag wet in hot water around the ring to expand the metal, and soap the finger. A needle threaded with strong silk can then be passed between the ring and finger, and a person holding the two ends and pulling the silk while slowly sliding it around the periphery of the ring may readily remove the ring. If the ring is a plain hoop this process is easy; if it has a setting or protuberance more care will be required. Another method is to pass a piece of sewing silk under the ring and wind the thread, in pretty close spirals and snugly, around the finger to the end. Then take the lower end—that below the ring—and begin unwinding. The ring is certain to be removed unless the silk is very weak. The winding compresses the finger and renders the operation less difficult.

CRACKING GLASS BY SUDDEN HEATING.—Probably more articles of glass in daily use are broken by being suddenly heated than by blows or other acts of carelessness. Glass is a very poor conductor of heat, and when hot water is poured suddenly into a tumbler or goblet, it is almost certain to break unless the glass itself is quite warm. Tepid water should be first used, or a little cold water be poured into the glass on which the hot water may be drawn. Lamp chimneys frequently crack when placed upon the lighted lamp, especially if taken from a cold room. The proper remedy is to turn up the flame slowly or by degrees.

INJURY TO MARBLE AND VARNISHED ARTICLES.—Marble being a carbonate of lime and the two substances not having a very great affinity, care should be taken in the use of marble furniture and ornaments, as tables, mantels, statuary, etc. Acids of any kind will more or less affect marble, and they should not be allowed to touch it. The slabs on which acids are allowed to stand soon lose their polish and are liable to a degree of disintegration which impairs their beauty. Fruits, sauces, vinegar, etc., should not be allowed to come in contact with a marble-topped table or shelf. All varnishes used on woods are to a certain extent soluble in alcohol; therefore all liquids containing alcohol, as wines or spirit, should be kept from varnished furniture.

OIL STAINS IN MARBLE.—Stains in marble caused by oil can be removed by applying common clay saturated with benzine. If the grease has remained long enough it will have become acidulated and may injure the polish, but the stain will be removed.

Number of Useful Plants.

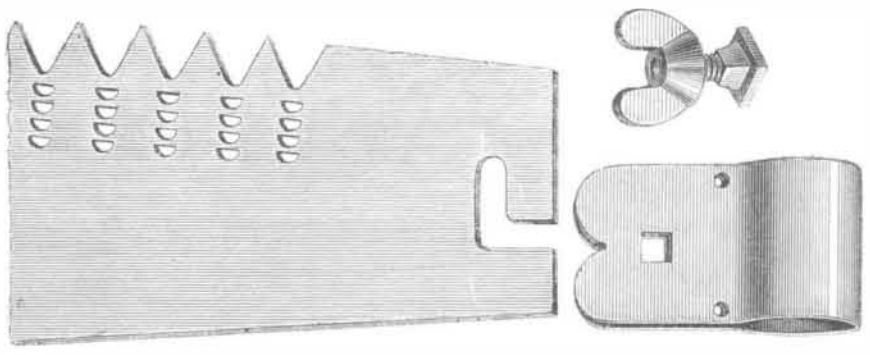
A German author states that the number of useful plants has risen to about 12,000, but that others will no doubt be discovered, as the researches yet made have been completed in only portions of the earth. Of these plants there are 1,350 varieties of edible fruits, berries, and seeds; 108 cereals, 37 onions; 460 vegetables and salads; 40 species of palms; 32 varieties of arrowroot, and 31 different kinds of sugars. Various drinks are obtained from 200 plants, and aromatics from 266. There are 50 substitutes for coffee, and 129 for tea. Tannin is present in 140 plants, caoutchouc in 96, gutta-percha in 7, rosin and balsamic gums in 387, wax in 10, and grease and essential oils in 330; 88 plants contain potash, soda, and iodine; 650 contain dyes, 47 soap, 260 weaving fibers; 44 fibers used in paper making; 48 give roofing materials, and 100 are employed for hurdles and copses. In building 740 plants are used, and there are 615 known poisonous plants. One of the most gratifying developments is, that out of 278 known natural families of plants, there are but 18 species for which no use has yet been discovered.

Cask-Boring Beetles.

Beer drinkers in India complain that the quality of the pale ale now sent out to them is inferior to that supplied a few years ago; and the importers are crying out loudly about the ravages of a beetle which eats holes in the casks and sets them leaking. Through and through, and up and down, and in all directions, this mischievous little borer makes its way into the staves until they become a mere honeycomb, held together by the hoops. In one of the casks, which was taken to pieces and examined, it was calculated that there were 134,000 perforations communicating with the outer surface, and long processions of beetles were found in the holes. No wonder that assistant commissary generals report a waste of beer by leakage of from twenty-five to fifty per cent. No one seems to know when the pest first appeared in India, but it had been complained of in Burmah before 1855. Since then it has been observed in other places, is equally destructive in all, and was last heard of at Secunderabad. Some people think the germ of the insect is in the wood before it leaves England; others, that it is a variety of the bamboo beetle, which effects a lodging in the casks during conveyance to depots. It can be killed and dislodged only by boiling water. Can none of our naturalists suggest a way of preserving the casks from attack.—*Athenæum.*

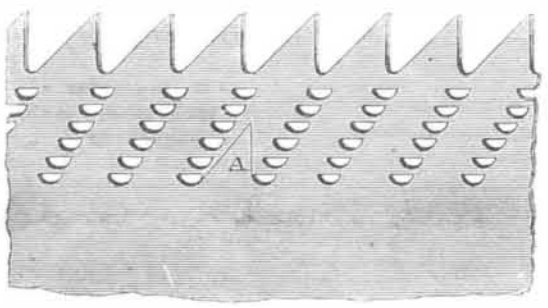
Improvement in Circular Saws.

The engravings present views of an improvement in saws which was patented through the Scientific American Patent

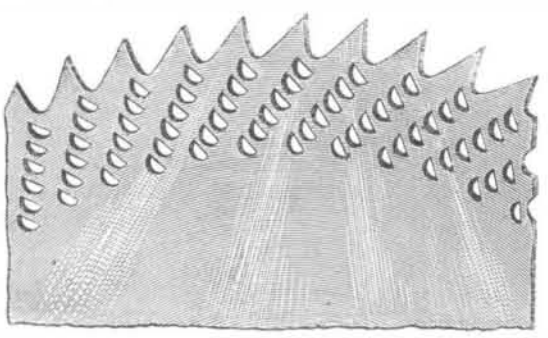


EMERSON'S PATENT PERFORATED SAW PLATES.

Agency in this country and Europe by J. E. Emerson, July 16, 1867. Its advantages will be apparent to practical sawyers from the following description: The engravings represent sections of long and circular saws showing the application of the improvement. The semi-circular perforations are intended to obviate the necessity of frequent gumming, as it is well known that three times gumming costs nearly the original price of the saw. In filing, the bottom or space between the teeth is frequently left in an angular form, tending to the rupture of the saw; but in these saws the bottom

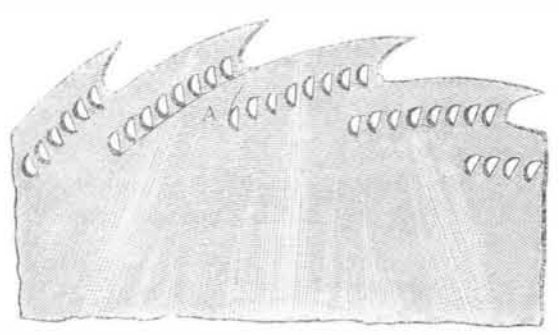


will be always of a semi-circular form, which serves the same purpose as a round hole drilled at the end of a crack, so often used to prevent the extension of the break. The aperture serves as an excellent guide in filing, and enables the workman to keep the teeth of an uniform size and shape and at a



relative distance apart. It will save files, as all practical sawyers know that the first part of a saw file that wears is the corner, which sometimes is entirely worn out before the face is one fourth worn.

In these saw plates the material left between the apertures is softer than the teeth, so it can be easily filed. In hardening—which is done by immersing the plate in a tank of oil—



the plates are cleaned off with sawdust, which is wiped from the surface with a piece of leather. The mixed oil, and sawdust lodges in the holes and when the plate is subjected to the drawing or tempering process this takes fire and by its combustion softens the edges of the holes while the teeth retain their proper temper. The number and position of the holes vary with the size and variety of the saws. By filing the underside of the tooth only, 1½ inch of wear may be obtained in a splitting circular saw 16 inches in diameter, while the saw has been reduced only three fourths of an inch in diameter, cutting only three eighths of an inch less than when new. The lines, A A, show the shape of the teeth when filed to the last row of holes. These perforations tend greatly to prevent the saws from heating and aid in their cooling if by friction they become warm.

The larger engraving shows a method of attaching the handle socket for a cross-cut saw. It adds nothing to the cost and is exceedingly handy. Its operation is sufficiently plain without particular reference to the parts of the engraving. All communications should be addressed to the American Saw Company, No. 2 Jacob street, New York city.

Discovery of Roman Remains.

About the commencement of November a mere accident—the plowing up of the upper stone of a Roman mill—induced examination of a field situated on the glebe farm in the township of Amotherby and parish of Appleton-le-Street, with surprising results. The Rev. James Robertson, of Appleton, is the explorer, and this gentleman has up to the present time laid bare a series of large paved floors, varying from 6 inches to 2 feet 6 inches below the surface of the land. Beyond the fact that an occasional piece of Roman pottery was picked up in the soil, there was no indication of any remains in the field, and the present discoveries have, therefore, come upon the antiquarians in the neighborhood most unexpectedly. The place is very near the supposed junction of two great lines of Roman road—one from Derventio to Isurium, the other from Eboracum to Prætorium; of the former, the affix "in the street" marks the route, and the latter is defined by a line of small camps and the name "Roman-road." The field in question has been tried in various places, and the pavements have been found over a wide area. So far no trace of walls or foundations has been found; they are simply pavements. These are irregular in outline and varying in size, one being 150 feet across. Some are detached, while others have paved pathways as connections. The floors are paved with blocks of oolite limestone and sandstone (the latter mostly burnt quite dark in color) and sea pebbles, in some parts flat slabs of limestone being paved edgewise. The floors are not level, but fall off to the sides. Under the crown there is generally a deposit of ashes, charcoal, and burnt animal bones. Below this is a second pavement. All round the edges the burnt matter extends—a sort of breccia, which yields quantities of broken Roman pottery of various kinds—wheel-made and otherwise. Some bits of Samian ware have been found. The hand-made pottery is very rude. Singularly, nearly the whole of it—nine pieces in every ten, certainly—consists of the rims of various vessels. A few necks and handles of amphoræ have turned out. The major part of the pottery is found round the edges of the floors, and somewhat below their level. The teeth present are those of the ox, deer, hog, dog, and bones of birds. Nearly a complete skull of the wild boar was found. Two upper stones of mills (querns) have been found, several fragments of the nether millstones, but not a perfect one. Between the paving stones much Roman pottery has turned out. Of implements, none have been found of metal, but a remarkably fine red flint "scraper," a flint "drill," and some other flints have been picked up, with a "spindle whorl" of Samian pottery and another similarly formed (unpierced) of stone. Some scraps of iron—one half of a very small horseshoe, not grooved—have also been found. One illegible silver coin, and two small brass Roman coins of Constantine have been picked up. Several peculiarly rubbed sea pebbles and other stones, some grooved, have been found. The full examination of the field will occupy a length of time. The floors found are left bare for inspection. The excavations were suddenly stopped on Saturday by heavy rains, and the places cut out in the clay, in which the floors are, are now full of water, on which there is a thick cover of ice. The nature of the ground is such that the water will be retained for a long time, and it is thought no further digging can now take place till next summer.—*London Times.*

The American Mountain Railway.

Essentially the system of Dr. Fontaine's mountain railway was illustrated and described on page 197, Vol. XVI. We are now in receipt of a large diagram and descriptive pamphlet showing the embodiment of some improvements on the original plan. As now constructed an ordinary balloon is to furnish the ascensive and motive power; a platform midway between the passenger car and balloon is provided with wheels which run on an elevated inclined railroad provided with sets of double rails. The ascensive tendency of the balloon, being in part restrained by the rails, is resolved into two forces, one of which is perpendicular to the inclined plane, the other acting parallel to that plane; the former causes the wheels to adhere to the upper rails, the latter drawing the elevator upward obliquely. When the summit is reached, water is pumped into a compartment of the car and the extra weight causes the balloon to gradually descend. The action of the wind upon the balloon is counterbalanced by the weight of the cars which by their traction act as counterpoises, and conjointly with the buoyancy of the balloons, prevent the bending of the elevators on their axes. The advantages claimed by the inventor over the Fell or other mountain railways, are safety, a high rate of speed, cheapness of construction, and the superiority of an elevated over surface roads during the winter months.