A SPECIAL BRAZER FOR BICYCLE WORK.

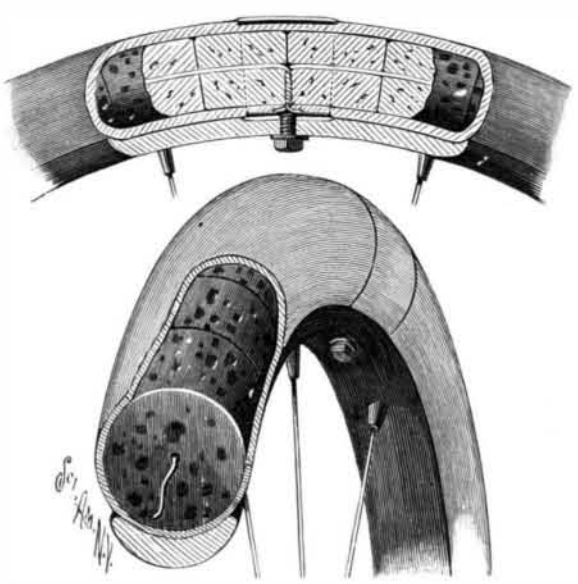
In bicycle manufacturing and repairing an efficient portable brazer is a necessity, and we herewith illustrate such a brazer, adapted to generate a very high degree of heat, and so, easily managed as to make of the work of brazing only a light, clean task, which one

THE STRAIGHT-TURNER GASOLINE BRAZER.

may carry on without soiling the clothes. It is manufactured by the Turner Brass Works, No. 122 Kinzie Street, Chicago. The head is equipped with firebrick, which increases and retains the heat, and the burners may be turned low, like a lamp, when not in use, a single turn of the valves bringing on the full blast. The tank is made of boiler steel, galvanized, and tested to 150 pounds. It should be filled not more than three-quarters full of 74° stove gasoline, the air pump connected, and a pressure of 25 to 50 pounds obtained, when commencing work. The flame is readily adjustable to the desired size by means of the valves at the sides, the flames being preferably balanced so that they will meet squarely over the tee in the center of the head. This brazer is used by many of the prominent bicycle manufacturers, and, in addition to its high efficiency, is said to be very economical in its consumption of gasoline. The burners may be easily cleaned, should they become clogged by impurities in the gasoline.

A PUNCTURE PROOF BICYCLE TIRE.

The accompanying illustration represents a tire which, while practically solid, is designed to have all the resiliency of an ordinary pneumatic tire, being at the same time puncture proof. It has been patented by Franz A. Hamp, of 210 East Pearl Street, Cincinnati, Ohio. One of the figures shows the tire partly in section, while the other represents it with the exterior tube, which is preferably made of rubber, partly removed. As will be seen, the body of the tire is formed of sections of cork fitted together to form a perfect ring around the rim, the sections being held connected by a



HAMP'S BICYCLE TIRE.

central wire whose ends are twisted together and carried in opposite directions. The ends of the casing tube are preferably brought together at the point where the tie is secured, and here, as shown in both views, a metal sleeve, also rubber covered, is tightly fitted around the tire, there being preferably two of these sleeves embracing the tire at opposite points in its circumference. The outer section or casing of the tire need not necessarily have two ends, but the casing may be filled by means of an opening on the inner side. The tire is cemented upon the rim, through which and through each sleeve is passed a set screw, one of the screws engaging the extremities of the twisted wire. The inventor has constructed machinery for preparing the cork, which it is designed to subject to hydraulic pressure and impregnate with a fluid to enable it to maintain its elasticity.

An Old Nail in Old Wood.

English papers report that, while a workman was recently sawing a beam taken from the roof of Winchester Cathedral, a nail 2¼ inches long was discovered in the middle of the piece about 9 inches from the surface. The conclusion drawn from a nail in that position is that it was driven into the young oak and that, before the tree was cut down, the wood had grown around the nail, that process likely occupying a couple of centuries. It is assumed that the beam was introduced in the course of the reparation of Winchester Cathedral, which was undertaken by Bishop Walkelyn and carried out between 1079 and 1093, but it should be remembered that some of his successors had works executed up to the end of the fourteenth century, when William of Wykeham commenced his restoration. It is thought that in any event the nail must have remained concealed for nearly 1,000 years.

AN IMPROVED BULLET LUBRICATOR.

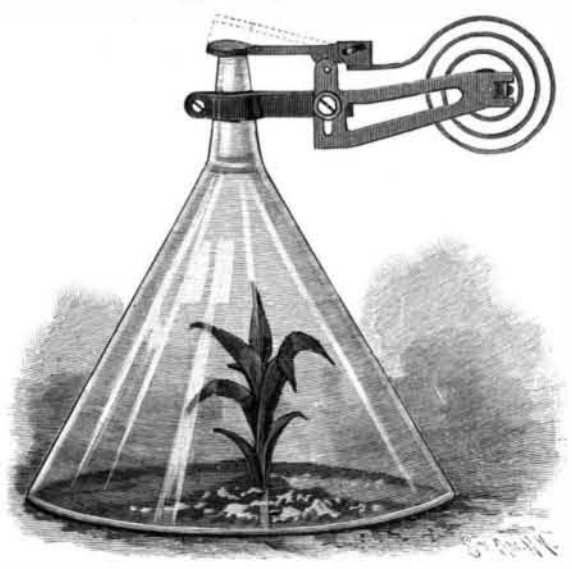
To properly lubricate bullets before they are placed in cartridges, the device shown in the illustration has been patented by William W. Tracy, of Pittsfield, Mass. The bullets are formed with the usual annular recesses adapted to receive grease in a plastic state, and are placed, as shown in the principal figure, in bores arranged in a circle in a disklike head whose interior has a series of radially arranged channels communicating with an annular chamber into which all the bores open, as represented in the sectional view. The head is centrally connected with the barrel of a pump, the plunger of which is actuated by a handle to press the lubricant down and outward through the channels into the annular chamber, and thence to the bores and into the depressed recesses or channels around the bullets. The entire number of bullets in the bores is thus simultaneously lubricated. The bores are designed to fit the bullets closely above and below the sections in which the annular recesses are formed, so that no lubricant can escape by way of the bore.

TRACY'S BULLET LUBRICATOR.

THE American Druggist suggests the following remedy for the annoying mosquito: Take some powdered pyrethrum (Dalmatian flowers), moisten and mix into a paste, mould the stuff into conical lumps as big as chocolate drops, and bake in an oven. "When fired at the point," says the journal just referred to, "such a cone will smoulder slowly and send up a thin column of pungent smoke, not hurtful to man, but stupefying to mosquitoes. In actual experience two or three such cones burned during the course of an evening have given much relief from mosquitoes in sitting rooms."

A NOVEL PLANT PROTECTOR.

An improved device for insuring the rapid outdoor growth of plants early in the season, without the use of hothouses or hotbeds, is represented in the accompanying illustration and has been patented by Samuel Taylor, of Winters, Cal., and Joseph Gardam. It consists principally of a glass hood, with a funnel opening at the top adapted to be opened and closed by a valve controlled by a thermostatic spring actuated by the heat of the surrounding atmosphere. The valve has a stem fulcrumed on a bracket, to the outer end of which one end of the spring is attached, and near the free end of the spring is a lug in which is a slot adapted to engage a pin on an extension of the valve stem. The contraction and expansion of the spring with the variations of temperature cause the lug to act on the pin to impart to the valve an up and down swinging motion, as indicated by the dotted lines. The bracket is itself adjustable up and down on an arm clamped to the funnel, whereby the device may be set to the degree of heat at which the valve is desired to close the upper end of the funnel, the valve controlling both the ingress and egress of air to and from the hood. In a modified form of the device the valve is held directly on the free end of the spring, whose other end is attached to the arm clamped on the funnel. By employing this

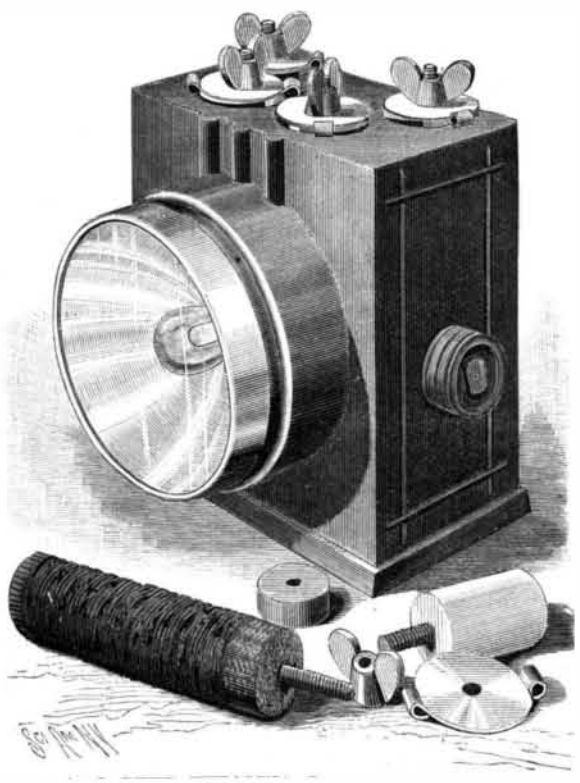


TAYLOR'S PLANT PROTECTOR.

device, transplanting and its incidental retarding of the growth of plants may be generally avoided.

AN EFFICIENT ELECTRIC BICYCLE LAMP.

The illustration represents a convenient, highly serviceable electric lamp for bicycles, adapted to burn for six or eight hours, which is being introduced by W. Pollack, of No. 565 Boulevard, New York City. It has two made up positive elements and two negative zinc elements, connected in series, the elements being inserted in sockets in the top of the lamp, and each held in place by a cap and screw nut, a rubber washer being placed on top of each. These appliances are also shown in the illustration. The liquid charge is preferably made of water and sulphuric acid, of which a measured quantity is supplied through the sockets provided for the positive elements. The zinc element is only about half the length of the positive element, and is thus held out of contact with the liquid when the lamp is in the position shown, the light being then extinguished, but the circuit is completed and the light established when the lamp is turned the other side up. The positive elements are furnished ready for use, wrapped up so as to take hardly the space of a small pocket knife each, and in riding it is generally best for one to carry an extra bulb and a pair of these elements. The new bulb is readily screwed in place in case one burns out or is damaged, and a new positive element is as readily inserted. It is said the cost of using these lamps constantly is only eleven cents a week. The rider need not carry any acid with him, other than that in the lamp, the renewal of a light, should it go out, being



effected simply by inserting another new element. There is absolutely no local action and the lamp may be used any time within a year after charging. The lamp is readily fastened in place by a swivel clamp at the back, not shown. In addition to its use on bicycles the lamp is adapted for carriages, mining purposes, country residences and stables, night watchmen and policemen, etc.

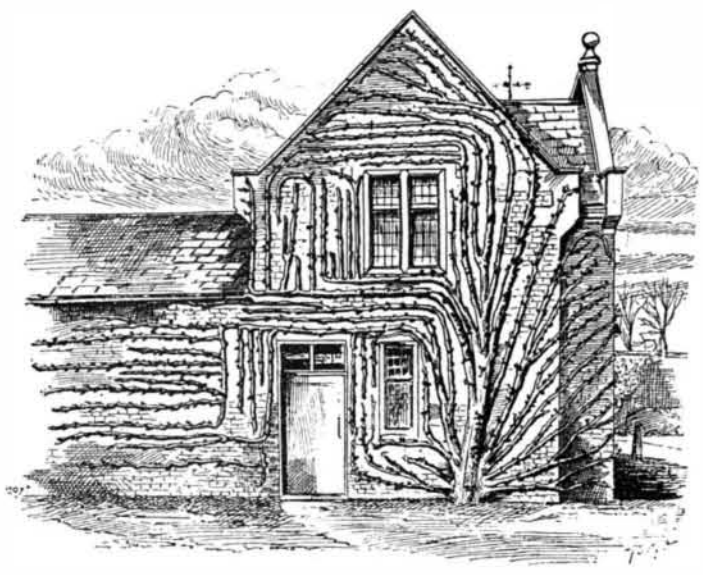
The Origin of Medicines.

The fact that certain herbs and plants produce certain effects upon the human system, and alleviate or cure certain ills, has been known from time immemorial. Perhaps the most ancient of medicines—properly authenticated, that is—is hops, which was used in the dual capacity of an intoxicating beverage and as a medicine in 2000 B. C. This is attested by pictures of the plant on Egyptian monuments of that date. Creosote was discovered in 1830 by Reichenbach, who extracted it from the tar of wood. Potassium was discovered in 1807 by Sir Humphry Davy, but alcohol was first distinguished as an elementary substance by Albucasis in the twelfth century.

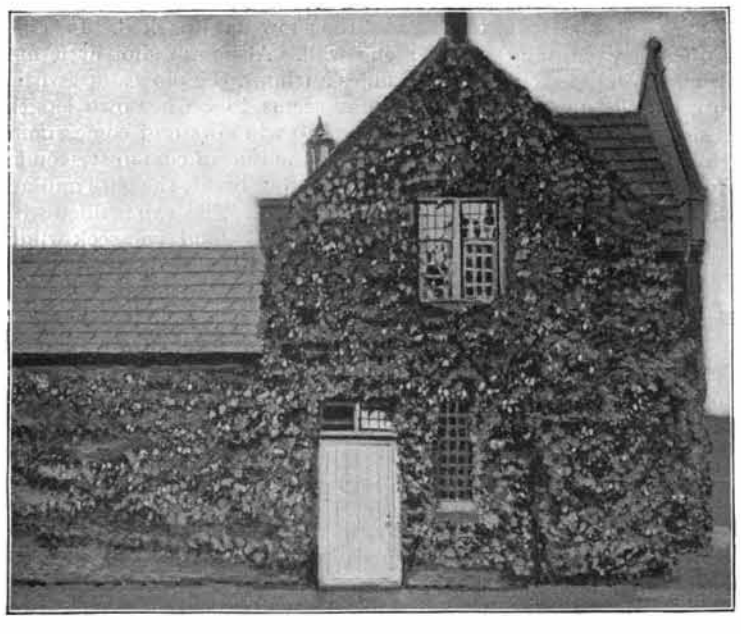
Scheele discovered glycerine in 1789. Nux vomica, which is nearly as old, is the seed of a tree indigenous to India and Ceylon. Peppermint is native to Europe, and its use as a medicine dates back to the middle ages. Myrrh, which comes from Arabia and Persia, was used as medicine in the time of Solomon. Hemlock, the extract of which killed Socrates, is a native of Italy and Greece. Iodine was discovered in 1812 by Courtois, and was first employed in a hospital in London in 1825. Ipecac comes from South America, and its qualities are first mentioned in 1648 by a Spanish writer, who refers to it as a Brazilian medicine. Ergot is the product of the diseased seeds of common rye, and is one of Hahnemann's discoveries. Aconite grows in Siberia and Central Asia, and was first used as medicine by Storck in 1762. Hasheesh, or Indian hemp, is a resinous substance produced from the tops of the plant in India. It has been used, as has opium, since Indian history began. Caffeine, the active principle of coffee, was found by Runge in 1820. Ordinary coffee contains about 1 per cent, Java coffee 4⅔ per cent, and Martinique 6⅔ per cent. Arnica hails from Europe and Asia, but the medicine is made from artificial plants grown for that purpose in Germany and France.—Pall Mall Gazette.

A REMARKABLE PEAR TREE.

One of the most remarkable of old trained pear trees that we are acquainted with is the splendid specimen



UVEDALE'S ST. GERMAIN PEAR TREE AT WESTON HOUSE—WINTER VIEW.



UVEDALE'S ST. GERMAIN PEAR TREE AT WESTON HOUSE—AUTUMN VIEW.

of Uvedale's St. Germain at Weston House, Shipston-on-Stour, the residence of the Countess of Camperdown. The accompanying illustrations are reproduced from photographs taken by Mr. S. Freeman, of Moreton-in-Marsh, and published in the Gardeners' Magazine. Mr. Masterson, the gardener at Weston House, writes that "the tree is admired at all times of the year, but more especially when covered with large handsome clusters of flowers. In autumn, when laden with quantities of big fruits, it also presents an attractive appearance, and there are many who also admire the tree when the stems are bare, and certainly at this season it is interesting, as the training is very remarkable. The tree seldom fails to ripen a heavy crop of fruits, cropping right down to the ground. It has never been fed or root pruned, and its roots are in the bed of the carriage drive, gravel also encircling the stem at the base, where it measures six feet in circumference. It is, however, very probable that the roots have penetrated a considerable distance and come into contact with the stable drains, thus deriving the nourishment required by so large a tree. The fruits are seldom thinned, as the tree is so vigorous as to be capable of carrying very large crops, and yet the fruits weigh from half a pound to one and a half pounds each. The total weight of the crop last year was two hundredweight. Many first prizes have been won from this tree, including firsts at the Crystal Palace in 1894 and 1895."

A CARTHAGINIAN MASK.

In 1893, the Rev. A. L. Delattre, having had his attention called by an Arab to several small objects that he had discovered while making some excavations at Douimes, decided to make some researches in the vicinity. Toward the latter part of the summer of that year, having engaged some laborers and set them to work, he was soon rewarded, after excavating through six feet of soil intermixed with rubbish, by the discovery of the primitive argillaceous earth in which the Carthaginians found a last resting place for their dead.

In November, 1893, there had been discovered sixty tombs, almost all of which were placed at right angles with the seashore. The majority were simple trenches covered with slabs of tufa, the only kind of stone employed in the primitive structures of Carthage. Infiltrations had filled each trench with a fine yellow sand, the color of which was often confounded with that of the natural earth.

The funereal furnishings usually consisted of two medium sized urns with a handle on each side, of two small jugs with a single handle, of a flat bicornous lamp and its patera (a sort of saucer), and sometimes of a bronze hatchet, a hand bell, cymbals and a mirror or other objects of ornament, such as collars, rings, bracelets, earrings, painted vases, figurines, amulets, shells, etc.

One of the most interesting finds was a curious terra cotta mask, which was brought to light in the month of September, and which is illustrated herewith.

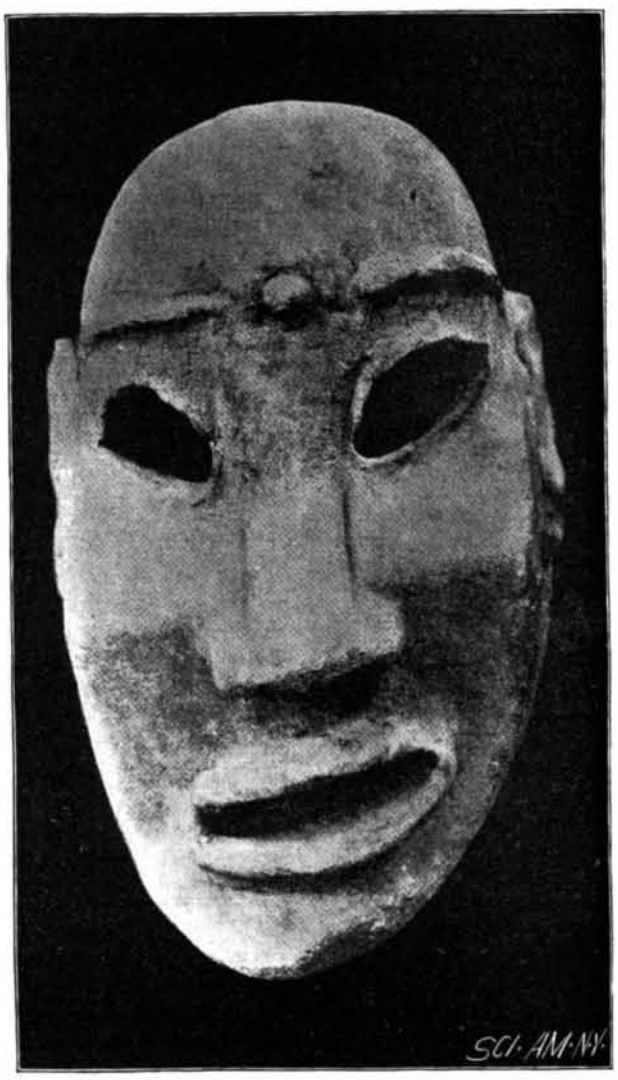
It was discovered at a new point of the Punic necropolises of Carthage, very near the site of Serapeum, in a very small space where had just been found more than twenty Carthaginian tombs, always containing funereal furnishings of the same character, save that the pottery was more highly ornamented and of finer quality.

The mask is 8 inches in height and 5 in width, and the hollow part 3½ inches in depth. This grotesque face, with low and narrow forehead, projecting eyebrows, wide and flat nose, and angular cheeks and crooked mouth, preserves a few traces of black paint. The mouth and eyes are cut out through the thickness of the clay and the ears are ornamented with rings.

Around the mask are distributed five holes—one at the top, and one beneath and one above each ear. These holes certainly served for fixing the mask in place. There is nothing Egyptian nor Greek about the style of the work, and the specimen seems to be an authentic one of local art. In fact, at the base of the forehead and at the origin of the nose, it bears the mark of its Punic origin in the crescent surmounting the disk, which it embraces with its depressed horns—an emblem that is very frequent upon the votive stelæ of Carthage, and which we often find engraved upon the bezel of rings or arranged so as to be strung and worn as an amulet.

One peculiarity that this mask exhibits is that it changes physiognomy according as it is viewed in profile, at an angle, or full face.

This mask constitutes a true caricature. Contrary to the opinion held up to recent years, the Carthaginians must have practiced the art of portrait taking. Prof. Duhn, in an article recently published at Berlin, observes that several Punic masks in the Saint Louis Museum remind us of Japanese rather than of Mediterranean art, on account of the extraordinary naturalism exhibited therein, and that makes true portraits thereof. Such is the first impression, but a profounder study of these interesting pieces permits us to recognize an entirely archaic art in them. The mask under consideration is less than natural size and consequently could not have been applied to the face of a corpse; neither was it suspended in the tomb. Notwithstanding the holes with which they are provided, these sorts of masks, as well as the clay statuettes that are found



A CARTHAGINIAN MASK.

in the necropolis, were simply placed alongside of the dead. The object of the relatives or friends who inclosed these objects in the tomb was merely to know that the body of the defunct was accompanied with an object to which they attributed a magic virtue capable of protecting the mortal remains in their final dwelling.

Such masks have been discovered in the most ancient necropolises of Sardinia. The Cagliari Museum possesses several of them.

For our engraving and the above particulars, we are indebted to Cosmos.

Caution to Middle-aged Bicyclists.

Any form of exercise or sport which makes serious demands on the attention, on quickness of eye and hand, and on endurance, ought not be taken up by people who have reached middle life and are engaged in sedentary occupations, only with great circumspection. The lesson has been learned by Alpine climbers though many bitter experiences. It is pretty generally held by them that most of the fatal accidents in mountain climbing occur through the failure at the critical moment of some man who has taken to mountaineering too late in life, and who is, perhaps, also out of condition. An old dog cannot be taught tricks, according to the proverb; and though it is disagreeable to have to realize that we have passed the age when we can excel in a new pastime requiring special skill to avoid accidents, and youthful adaptability and elasticity to avoid overstrain, it is the part of wisdom to accept the inevitable. There is no reason why middle-aged men, and even those who have passed middle age, should not take to cycling; but it should be with a frank recognition of the limitations which age imposes. Great speed, long distances, and hill climbing put a strain upon the constitution, and will find out the weak places, the parts of the system which are aging faster, perhaps, than the rest—the heart, it may be, or the vessels of the brain. So, also, in regard to riding a bicycle in crowded thoroughfares, the strain on the attention is considerable and the risk not small, if a man has lost the quickness of youth.—British Medical Journal.

IT is said that F. W. Christian has returned to Sydney after two years spent in exploration in the South Sea Islands. The details are very meager as yet. It is stated that he discovered ancient records, weapons, etc., which prove that the Asiatic races traded in the islands.