

**A SPECIAL BRAZER FOR BICYCLE WORK.**

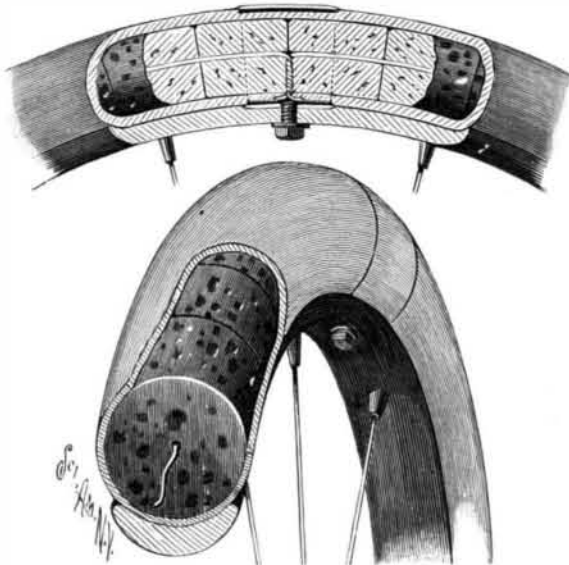
In bicycle manufacturing and repairing an efficient portable brazer is a necessity, and we herewith illustrate such a brazer, adapted to generate a very high degree of heat, and so easily managed as to make of the work of brazing only a light, clean task, which one

**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  $2\frac{1}{4}$  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.

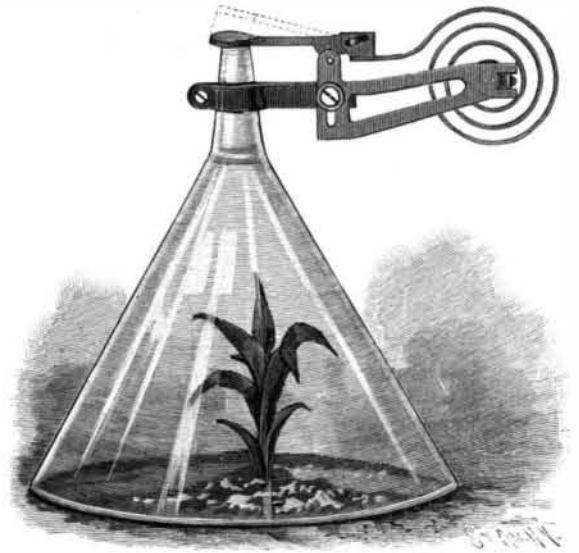
**TRACY'S BULLET LUBRICATOR.**

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

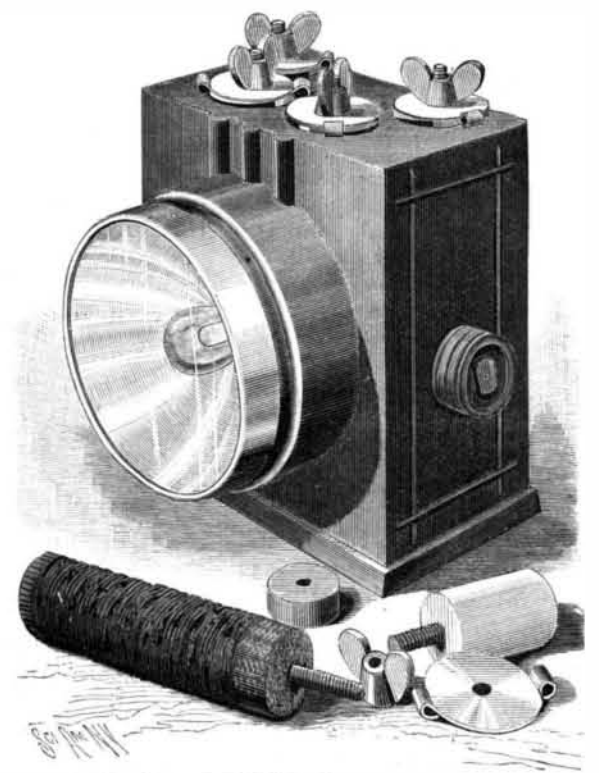
heat at which the valve is desired to close the upper end of the funnel, the valve controlling both the ingress and egress of air to and from the hood. In a modified form of the device the valve is held directly on the free end of the spring, whose other end is attached to the arm clamped on the funnel. 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.