

## RECENT FOREIGN INVENTIONS.

*Composition for Preserving Wood.*—The wooden posts of fences, the sleepers of railways, and all timber laid in the ground for any purpose, are very liable to rapid decay. Various compositions have been used to render them less liable to rot, and some of these, such as the chloride of zinc, corrosive sublimate and the sulphate of copper, have proven very beneficial. A composition consisting of coal tar, quick lime and ground charcoal, for treating railway timber, has lately been patented by J. Cullen, of the North London Railway Works. The tar is placed in an iron kettle and brought to a state of ebullition, then the lime and charcoal are added and stirred, when the wood is dipped into the hot mass, lifted out and laid past until it becomes dry. About a quart each of the lime and ground charcoal are added to every three gallons of tar. The timber so treated is filthy to handle, but it will last twice as long as clean timber used for railway sleepers in the common way.

*New Stone Ware.*—A patent has been taken out by A. C. Ponton, of Clifton, England, for manufacturing what has been called a new kind of stone ware. It is composed of ground sand and powdered flint mixed with melted sulphur, then molded like clay. This composition is colored with any of the pigments used for paints. It is not burned in a kiln like common stone ware, and is not adapted for exposure to hot water and high heat, but is suitable for molding into garden vases, and such like ornaments, and may be used for vessels containing cold water.

*Cement for Leather.*—A patent has been taken out by J. McKay, of Birmingham, England, for a cement made of purified gutta percha dissolved in the bisulphide of carbon, which the inventor employs to coat the surfaces of leather, for the purpose of rendering it water proof; it also forms an adhesive cement for uniting separate pieces of leather.

*Treating Teazles for Napping Cloth.*—The teazles which are employed on machines for carding the surface of woolen cloth prior to pressing it, are brittle and easily broken. For the purpose of rendering them stronger and more durable, they have been treated successfully with a solution of the sulphate of copper (blue vitriol), and afterward dried. A patent has been obtained by R. A. Brooman, London, for the improvement.

*Preparing Tanning Liquors.*—The substance in oak, hemlock and other barks, which combines with the gelatine of skins and forms "leather," is tannin. It is soluble in water, and is usually employed in vats for tanning purposes. If much exposed to the atmosphere, it is liable to decomposition by absorbing oxygen and becoming gallic acid, which does not possess tanning properties. A very great loss of tannin is experienced in all our tanneries by the liquors absorbing oxygen and changing into gallic acid. To prevent this loss, L. F. Duval and L. A. Beaudel, of France, prepare their tanning liquors in close vessels out of contact with the atmosphere, and charge the liquor with a neutral gas, such as hydrogen or nitrogen, by which chemical change in the character of the tannin liquors is prevented.

*Nickel Iron.*—A patent has been taken out by William Longmaid, of Inver, Galway, Ireland, for alloying iron with nickel in the puddling furnace. An oxide of nickel is first mixed with granular iron, and fused in a crucible containing some charcoal dust. About four ounces of nickel to the tun of iron is considered to be a proper mixture. The ingot of iron and nickel produced in the crucible is added to a charge of iron in the puddling furnace, and the whole is stirred and thoroughly mixed when fused. Iron thus alloyed with nickel will stand exposure to the weather without rusting. Copper and silver may also be alloyed with iron in the same manner, and any one of them will prevent the iron from rapid oxydization. It would be a great improvement to alloy the steel and iron employed for the barrels of rifles, with a small quantity of nickel.

*Ladies' Leglet.*—C. E. Wilson, London, has taken out a patent for an article which he terms a "leglet," to be worn by ladies around the ankles, during wet weather. It is made of water-proof cloth, and is either held in place with buttons or with elastic webbing. It protects the ankle where the dress comes in contact with it while walking.

*Starch Compound.*—In manufacturing starch from

rice, T. Redwood, London, adds to the starch liquor an acid solution of the chloride of zinc, after which it is dried, reduced to powder, and is then fit for use. It is said to be useful for the purpose of rendering clothes starched with it almost unflammable, and it enables linen to take a superior polished surface by ironing.

*India-Rubber Compound.*—In distilling palm and other vegetable oils, for the purpose of rectifying them prior to obtaining their stearic acid for making candles, a black, bituminous residuum is left behind in the retort. J. F. Williams, London, has taken out a patent for employing this substance, combined with gutta percha, to produce cheap, elastic, vulcanized articles. The bitumen and gutta percha, in about equal quantities, are first masticated together, then about five per cent of sulphur and chalk are added, and the whole thoroughly mixed. In this plastic condition it is molded into the form of the articles required, then submitted to heat in an oven and vulcanized.

*Purifying Oils.*—A superior oil for lubricating machinery, is made from crude whale or vegetable oil, by H. W. Spencer, of London, as follows:—The oil is first brought gradually to a state of ebullition, then an extract of nutgalls, at the rate of 4 lbs. to the 20 gallons of oil, is added and the whole boiled for six hours, then allowed to cool. The impurities are precipitated and settle to the bottom; the clear is the purified oil.

## RECENT AMERICAN INVENTIONS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list.

*Armament of Vessels.*—The object of this invention is to effect the penetration of an enemy's vessel at its bottom or below the surface of the water and below where the armor is commonly applied to armor-clad vessels, either by means of projectiles discharged from mortars or other pieces of ordnance, or by torpedoes or other explosive contrivances; and to this end it consists principally in lowering the mortar or other piece of ordnance or explosive contrivance for this purpose, into the water through a well in the vessel from which it is to be fired, and running it out below the surface of the water, thereby obviating the exposure of the said piece or device, or the mechanism by which it is to be run out, above the water. The inventor of this war implement is Oliver C. Smith, of Salem, Mass.

*Machine for Inserting and Securing Eyelets.*—This machine is composed of a stationary hopper in which the eyelets are placed, and from which they are swept by an oscillating brush into holes provided for their reception in an intermittently rotating cylinder, by which they are delivered to a laterally oscillating inclined chute, which deposits them one by one on an upright pin working through an upright reciprocating bolster, by which, after the perforations provided in the cloth or other material for their reception have been placed over them, they are brought into contact with a stationary punch, and riveted; the several parts being operated by a lever, treadle or other suitable mechanical means by which they are severally put in motion. The inventors of this machine are T. K. Reed, of East Bridgewater, Mass., and H. F. Packard, of North Bridgewater, Mass.

*Shingle Machine.*—This invention relates to an improved shingle machine of that class in which saws are employed for cutting the shingles from the bolt. The object of the invention is to obtain a machine of the class specified which will admit of the bolts being fed to the saw by a continuous movement, and render the same capable of performing its work very expeditiously. The invention also has for its object facilitating the handling of the bolt in applying it to the machine so as to cut the shingles, butt and point alternately, from each end of the bolt. The invention has further for its object the applying of a dressing or roughing-off saw to the machine in such a manner that the bolts may be dressed or sawed in proper form for the machine, and be operated from the driving shaft thereof, and also rendered inoperative when desired by a simple treadle and gear mechanism. The inventor is Smith Head, of Millersburgh, Pa.

*Door Knobs.*—This invention consists in the arrangement of a sleeve with a square socket in combination with a screw thread into one of the knobs, and screw-

ing on the end of the rod connecting the two knobs, and with a square projection on the inner end of the shank of said knob, corresponding to the square socket in the sleeve, in such a manner that by means of the screw thread in the knob and on the end of the connecting rod, the distance of the two knobs can be exactly adjusted to the thickness of various doors and at the same time, by the action of the square socket in the sleeve and of the corresponding projection on the shank of the knob, a spontaneous turning of said knob is prevented. G. N. Cummings, of Meriden, Conn., is the inventor.

*Foot Warmer.*—This invention is an improvement on a patent granted to the same inventor February 25, 1862, and it consists in the arrangement of a partition of sheet metal, or any other suitable material, in combination with the radiator and the body of the lamp, through the action of which the heat is conveyed to the feet of the person using this foot-warmer in such a manner that a separate combustion chamber is formed, and thereby the equal distribution of the heat throughout the foot chamber is facilitated, and that the body of the lamp is protected against the heat reflected by the radiator. It consists also in the arrangement of a channel at the upper end of the radiator, and of air holes in the sides of the foot chamber in combination with the combustion chamber with a quarter-cylindrical reflector and with a series of inclined bars, forming the support for the feet, in such a manner that the requisite amount of oxygen for feeding the flame is obtained, and at the same time an equal distribution of the heat in the foot chamber is effected, and that the feet, in being placed on the inclined slatted platform, are kept in a natural position. The inventor is Solomon Hunt, of Danville, Indiana.

*Gold and Silver Amalgamator.*—The object of this invention is to obtain an amalgamating device which will insure the contact of the particles of gold or silver which the ore contains with the quicksilver and without grinding the quicksilver, the device at the same time reducing the ore to a fine state in order that all the gold or silver may be liberated. The invention is designed more especially for operating in gold-bearing quartz, but is capable of being successfully used in the working of silver ore. The invention consists in the employment or use of a stationary plate provided with radial grooves or recesses and stationary plates of copper or thin metal which will amalgamate with quicksilver, said stationary plates being used in connection with a rotating plate provided with oblique or tangential grooves and a feed and discharge opening at its center, and a cap, all arranged to effect the desired end. The inventor is Thomas Varney, of San Francisco, Cal., and the patent bears date July 15, 1862.

## Ornamental Uses of Transparent Mica.

In Paris mica has lately been applied for preserving, silvering and gilding decorations in churches and public buildings. The mica is first cut to the desired thickness with a knife, and is then coated with a thin layer of isinglass diluted in water, and the gold or other substance is applied, after which it is allowed to dry. A pattern of copper, with a design cut out on it, is then placed on the reverse side of the mica and the superfluous parts are removed. The colors are then applied in one or several coats, and the whole afterward coated with a solution of isinglass and diluted alcohol, by which the mica is rendered pliable. When this is effected the mica is applied to the object, which is coated with glue or other adhesive material, and allowed to become comparatively dry, after which the surface is made smooth by rubbing it gently with an agate burnishing tool. The value of mica depends on the size of the sheets and their transparency; the clear ruby tinged being the finest, and the cloudy grey the least valuable.

We recently took out a patent upon an improvement in powers to drive churns, for A. A. Drake, of Flanders, N. J. We are gratified to be able to say that our client has lately sold the right for the State of New York for the sum of six thousand dollars.

Business relating to patents is beginning to revive considerably. Just in proportion as the laboring population is drawn off by the war do the people experience the need of labor-saving machines.