

would precipitate one into the jaws of a horrible death. In how many others of the busy workshops of the land is the same state of things tolerated? By far too many. The operatives should insist on having these pitfalls, and mantraps, properly guarded, before some unwary individual is snatched away forever. It also behooves every one to be extremely careful, when in the neighborhood of powerful machines, so that they may not be injured beyond recovery by momentary heedlessness.

PRESERVATION OF FRUITS.

We have recently received several letters from correspondents requesting information relating to the preservation of fruits. One correspondent says:—"The directions which accompany self-sealing jars are usually very ambiguous and laconic. For instance, one says, 'use syrup,' but does not state the amount of sugar. Others give the quantity of sugar but not the water. If the reasons for the several steps were given, it would aid me in performing them and prevent failures."

In the preservation of fruit the great objects to be secured are the exclusion of air and the prevention of fermentation. Sugar is the chief agent employed as a syrup to exclude the air from the fruit, and it is a powerful antiseptic.

Peaches, plums, and such like fruit, may be preserved as follows:—Sound fruit is first placed in a glass or glazed stoneware vessel, then boiling-hot syrup, composed of one pound of white sugar to one pint of water, poured in slowly until it covers the fruit. Air bubbles will rise for a few seconds afterwards; when these cease, the cover, which should be air-tight, is then put on, and the jar put away in a cool, airy situation. Any number of jars containing fruit may thus be operated upon at the same time. The covers of these may be rendered air-tight by the use of India-rubber under the flange, or pieces of cloth coated with wax. Of course the syrup should reach to the lip nearly, so as to avoid an air-space near the top.

As sugar is very high in price at present, the making of preserves, such as jellies, is very expensive. A more economical and superior method of preserving fruit, whereby its original flavor is secured, has been communicated to us by a friend, who has practiced it successfully for several years, and whose family has entirely ceased to make old-fashioned preserves:—First obtain a requisite number of common wide-necked bottles, then take the peaches or other fruit to be preserved, peel them, take out the stones or seed, and slice them as for eating at the tea-table. The bottles are now filled with this sliced fruit, and about an ounce of white sugar placed on the top in each. The bottles are then placed in a kettle containing water and held vertical with a frame of slats, then submitted to boiling for about twenty minutes. Each is then lifted, and a cork at once driven into its neck. After this the corks are covered with a composition of equal parts of hot rosin and sealing-wax, to render the bottles air-tight. Fruit thus put up will keep in a cool dry pantry for a year, and retains all its original flavor. Peaches, apples, pears, cherries, blackberries, plums, grapes, &c., have been preserved by this simple and economical system.

A common method of preserving green corn to make succotash during winter, is to boil it slightly in the ear, then remove the kernels from the cobs with a sharp knife, dry them slowly, and pack in air-tight cans. Green corn, Lima beans, peas, &c., may be preserved by drying them slowly, at a low heat, until all their moisture has evaporated, after which they are to be packed in stoneware or glass jars, and put away in a dry pantry. The best method of conducting the operations is to place the corn, or beans, in shallow plates, and arrange them around a stove, or in a moderately warm oven, until they are thoroughly dried. When required for use, they should be steeped in warm water for about an hour before they are cooked. Beans and corn are very difficult to preserve in a moist condition in air-tight jars.

By a singular error of the printers on one of the city papers, the gunboat *Hartford* is described as a steamer of 28 tuns and 1990 guns; and the *Tennessee* as one of 4 tuns and 1275 guns, and so on through a long list.

ALUMINUM BRONZE.

A very interesting article on this subject, in *Newton's London Journal of Arts*, contains information which we here condense, knowing that it will be useful to many of our readers:—Mixed with small quantities of the common metals, an alloy of aluminum is brittle as glass. But a few years since Dr. Percy made an alloy with aluminum and copper, which possesses great beauty and remarkable tenacity. It is composed of copper, with about 10 per cent of aluminum. It is an essential condition to its successful production, that copper of great purity be employed in its manufacture, and the best for this purpose is the kind which is deposited by galvanic action; the next best is obtained from Lake Superior. The melting of the alloy is a matter of much importance. By the first melting, when the two metals are fused together, the product appears to be an intimate mechanical, rather than a chemical combination of the metals, and it is very brittle. But by repeated melting a chemical compound appears to be produced, which is free from brittleness and about as hard as iron. This alloy is tenacious, malleable, rigid, light, and of a beautiful golden color.

It is well adapted for articles of ornament, on account of its capability to receive impressions from dies, and of being chased like gold; while it is insusceptible, in a great degree, to the action of sulphur and oxygen. It affords an artist the means of imitating the effect of gold, as in chased work; it presents a richness of effect similar to gold, and in polished work it is almost as brilliant.

With respect to its adaptability for mechanical application, in tenacity and rigidity it will compare favorably with many other alloys. In experiments made with it by Mr. Anderson, at the Royal Gun Factory, Woolwich, England, it exceeded the best gun metal in tensile strength in the ratio of 2 to 1. It sustained a strain of 73,183 pounds on the square inch; gun metal (copper and tin compound), 35,040 pounds, and the best steel, 72,000 pounds. In resisting compression it has a crushing force of 132,000 pounds; thus exceeding cast-iron, the resistance of which is about 120,000 pounds. In transverse strength or rigidity, it exceeded gun metal in the ratio of 3 to 1, and brass in the ratio of 44 to 1. It is easily melted, and flows freely; hence it is a good founding metal for castings, and it can be turned in a lathe, or filed, as easily as bronze. It can also be rolled into sheets; but it does not solder well, which is an objection to its use for many purposes. The weight of the bronze is about the same as wrought-iron, which it surpasses in strength. For philosophic apparatus, it is a valuable alloy, on account of its beauty, strength, and freedom from oxidation. At present the price is about \$1 45 per pound, which is too high for its employment except in ornamental work, fine instruments, and apparatus. We hope that improvements in the manufacture of aluminum may lead to a reduction in the cost, so that this alloy may soon be obtainable by mechanics for use in place of bronze and brass.

Mutilated Treasury Notes.

No little complaint has been made because of the refusal of the Post-office to receive the worn and mutilated treasury notes and postal currency. The Government should provide that the collectors and postmasters receive this paper, and exchange dirty and mutilated notes, upon the same principles and with the same liberality that well-conducted banks treat their mutilated notes. The mutilated notes so taken by collectors and postmasters, should be embraced in their returns to the Government, and then destroyed. At present the only mode of exchanging this currency is as follows:—

"Mutilated notes and fragments will be redeemed only at the treasury of the United States at Washington, whither they can be sent, addressed to the treasurer of the United States, by mail, free of postage. A draft on the assistant treasurer, at New York, for the amount allowed, will be returned, in the same way, to the address of the person remitting the same. Mutilated fractional notes presented for redemption must be in sums of not less than three dollars of the full face value.—*Legal and Insurance Reporter.*

RECENT AMERICAN PATENTS.

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:—

Revolving Fire-arm.—This invention consists in so combining two barrels with one rotating, many-chambered, revolving cylinder, in a fire-arm, as to provide for the discharging of two of the chambers of the cylinder, one through each barrel, without rotating the cylinder between the discharges. It also consists in so combining two hammers with each other and with the many-chambered cylinder of a fire-arm in which two barrels are combined with such cylinder as above-mentioned, that one of the hammers may be cocked separately for firing from one chamber or both may be cocked together for firing from two chambers, and that when one hammer only is cocked the cylinder may be caused to rotate only a distance corresponding with the distance between the center of one chamber and the center of the next one; but that when the two hammers are cocked together the cylinder may be caused by the cocking movement to rotate twice the aforesaid distance. And it further consists in certain means by which the combination of the two hammers with the trigger and with the device for effecting the rotary movement of the cylinder to operate, as above described, is effected. H. D. Ward, of Pittsfield, Mass., is the inventor of this improvement.

Fire-arms.—The principal object of this invention is to provide for loading the chambers of the cylinders of revolving fire-arms in front with metallic cartridges of the common form and construction, that is to say containing a fulminating priming in a hollow flange, projecting circumferentially from the rear portion of the shell; and to this end it consists in providing the chambers with lining, thimbles, or tubes, of a proper internal caliber to receive the cylindrical portions of the cartridges, and of an external circumference equal to that of the flanges of the cartridges; the chambers being bored sufficiently large for the reception of the said tubes, and being partially closed or provided with suitable stops in the rear to prevent the cartridges from slipping through. Another object of this invention is to provide for loading with loose powder and ball when the metallic cartridges have given out, or cannot be obtained, and to this end it consists in fitting the rear ends of the said thimbles on tubes with nipples which can be inserted and removed at pleasure. The invention is also applicable to breech-loading fire-arms, so called, which receive their charges in front of the chamber. The above improvement is due to John H. Vickers (assignor to himself and Lucius W. Pond) of Worcester, Mass.

Harbor Defense.—This invention consists in the employment as a harbor defense of one or more vessels provided with ports, through which they may be filled with water for sinking them across the mouth or channel of the harbor, and with pipes through which the water may be pumped out when it is desired to raise and remove them, and having erected upon them parapets or other superstructures which may project above the water when the vessels are sunk, and serve, in addition to the hulls or bodies of the vessels themselves, as obstructions to an enemy's vessels, and also serve for the mounting of guns or as places for sharpshooters. It also consists in the employment in combination with such vessels and superstructures of a series of floats arranged between, them and screwed thereto by chains or cables for the purpose of serving in part as obstructions to the enemy's vessels, and obviating the necessity for the use of as many sunken vessels as would otherwise be required; but being capable of easy removal, when no enemy is near, for the entrance and exit of those vessels, the arrival and departure of which it is desired to permit. R. H. Jewett, whose post-office address is Ripley, Brown Co., Ill., is the inventor of this harbor defense.

Hat.—This invention consists in a hat having the body and brim composed of linen, cotton, silk, woolen, or other cloth or woven material, without any stiffening or frame with the exception of one or more steel hoops or springs, which are inserted into hems or tucks formed in the brim for their reception by sewing or other means for the purpose of keeping th.