

COMPOSITION OF BRONZE FOR MACHINERY.

Much industry and research has of late been bestowed in determining what mixture of bronzes is best suited for the various portions of machinery, and to meet the requirements of each special case and purpose. We give the following as the composition of alloys approved of and used by prominent French mechanics:

FRENCH MARINE.		
	Copper.	Tin. Zinc.
Tough bronze for rods, valves, cocks, etc.	88	12 2
Very tough bronze for eccentric straps, etc.	90	10 2
Bronze for plunger blocks.	86	14 2
Hard bronze.	84	16 2
Very hard bronze for sheave brass cocks.	82	18 2
Bell bronze.	78	22 0
Anti-friction bronze (with eight parts autonomy).	4	96 0
FRENCH RAILROADS.		
Car pillows.	82	18 2
Locomotive and tender oil boxes.	84	16 2
alide valves.	82	18 2
Cocks.	88	12 2

The bronze composed of 86 copper, 14 tin and 2 zinc is least porous, and therefore is most suitable when pressure is to be resisted.

**THE IRON AND STEEL PRODUCT OF THE WORLD.**—A French statistician has furnished an estimate of the world's iron product, which shows that in 1876 the whole amount footed up at 15,785,730 tons of 2,000 pounds. The coal mined is about 20 times the weight of pig iron produced. The ratio of production in the leading iron-producing countries is nearly as follows: Great Britain, 46; United States, 17; Germany, 5; France, 10.1-5; Belgium, 3.2-5; Russia, 3; Austro-Hungary, 2.4-5; Sweden, 2. The iron product of the United States for 1876 was 2,690,556 tons, or about 125 pounds for every inhabitant. The estimate gives the total product of all countries of Bessemer steel for 1876 at 2,323,436 tons, of which one-fourth was made in the United States, a little over one-third in Great Britain, not quite one-fifth in Germany, and one-tenth in France. The total steel made in 1876 would lay 22,116 miles of railway track, allowing 20 pounds to the foot of rail. The present rate of production would put steel rails upon all the railways in the world in less than 10 years.

**A MAGIC CAR.**—Mr. Blackburn, of 14 Victoria Road, Kensington, has invented a remarkable vehicle, which requires no horse to draw it. The body is in the form of a dog-cart, and the arrangement of wheels like a tricycle. The motive power, concealed in the body of the vehicle, is obtained by the combustion of benzoline, a small jet of which is admitted into a burner about the size of an ordinary chimney-pot hat. The steam passes into the cylinders of a small torpedo engine, which rotates a horizontal shaft. There is no steam given off, for it is recondensed and passes back into the tubular boiler. The weight of the steam power is about 180 lbs. On lighting the benzoline the steam requires no attention from the driver during a ride of many hours. The driver, by applying his foot to a pedal, can regulate the speed and power of draft. It travels at the rate of about eight miles an hour, and is easily directed in its course.

**PRESERVATION OF TIMBER FOR MINING AND RAILROAD PURPOSES.**—It is remarkable that so little has been done in this country with the view of preserving timber, particularly for use in mines and for railroad purposes. The matter is certainly one of great importance, and has an important bearing upon the expenditure of enormous sums of money every year, both in railroad construction and repairing and in mines. A very elaborate series of experiments upon the effect of various preservatives has recently been made in France, the result of which we hope soon to give. These experiments have been made with particular reference to preserving timber to resist the heat and dampness of deep mines.

WHY ARE WE RIGHT-HANDED?

Investigations which were very recently carried through by a French physician, Dr. Fleury, of Bordeaux, have adduced facts showing that our natural impulse to use the members on the right side of the body is clearly traceable to physiological causes. Dr. Fleury, after examining an immense number of human brains, asserts that the left anterior lobe is a little larger than the right one. Again, he shows that, by examining a large number of people, there is an unequal supply of blood to the two sides of the body. The brachiocephalic trunk, which only exists on the right of the arch of the aorta, produces, by a difference in termination, an inequality in the waves of red blood which travel from right to left. Moreover, the diameters of the subclavian arteries on each side are different, that on the right being noticeably larger. The left lobe of the brain, therefore, being more richly hamated than the right, becomes stronger; and as, by the intersection of the nervous fiber, it commands the right side of the body, it is obvious that that side will be more readily controlled. This furnishes one reason for the natural preference for the right hand, and another is found in the increased supply of blood from the subclavian artery. The augmentation of blood we have already seen suggested; but the reason for it is here ascribed to the relative size of the artery, and not to any directness of path from the heart. Dr. Fleury has carried his investigations through the whole series of mammals; and he finds that the right-handed peculiarities exist in all that have arteries arranged similar to those of man. At the same time such animals, notably the chimpanzee, the seal, and the beavers, are the most adroit and intelligent.—*The Electric.*

**AN INSOLUBLE CEMENT.**—A very valuable cement has been discovered by Mr. A. C. Fox, of which details are published in *Dingler's Polytechnisches Journal*. It consists of a chromium preparation and isinglass, and forms a solid cement, which is not only insoluble in hot and cold water, but even in steam, while neither acids nor alkalies have any action upon it. The chromium preparation and the isinglass or gelatin do not come into contact until the moment the cement is desired, and when applied to adhesive envelopes, for which the author holds it to be especially adapted, the one material is put on the envelope covered by the flap (and therefore not touched by the tongue), while the isinglass, dissolved in acetic acid, is applied under the flap. The chromium preparation is made by dissolving crystallized chromic acid in water. You take: Crystallized chromic acid, 2.5 grammes; water, 15 grammes; ammonia, 15 grammes. To this solution about 10 drops of sulphuric acid are added, and finally 30 grammes of sulphate of ammonia and 4 grammes of fine white paper. In the case of envelopes, this is applied to that portion lying under the flap, while a solution prepared by dissolving isinglass in dilute acetic acid (one part acid to seven parts water) is applied to the flap of the envelope. The latter is moistened, and then is pressed down upon the chromic preparation, when the two unite, forming, as we have said, a firm and insoluble cement.

**TO TURN OAK BLACK.**—According to the *Revue Industrielle*, Paris, oak may be dyed black, and made to resemble ebony, by the following means: Immerse the wood for 48 hours in a hot saturated solution of alum, and then brush it over with a logwood decoction, as follows: Boil one part of the best logwood with 10 parts of water, filter through linen, and evaporate at a gentle heat until the volume is reduced one-half. To every quart of this add from 10 to 15 drops of a saturated solution of indigo. After applying this dye to the wood rub the latter with a saturated and filtered solution of verdigris in hot concentrated acetic acid, and repeat the operation until a black of the desired intensity is obtained. Oak stained in this manner is said to be as close as well as a splendid imitation of ebony.

MILK IN MEDICINE.

Milk and lime-water are now frequently prescribed by physicians in cases of dyspepsia and weakness of the stomach, and in some cases are said to prove beneficial. Many persons who think good bread and milk a great luxury frequently hesitate to eat it, for the reason that milk will not digest readily; sourness of the stomach will often follow. But experience proves that lime-water and milk are not only food and medicine at an early period of life, but also at a later, when, as in the case of infants, the functions of digestion and assimilation have been seriously impaired. A stomach taxed by gluttony, irritated by improper food, inflamed by alcohol, enfeebled by disease, or otherwise unfitted for its duties, will resume its work, and do it energetically, on an exclusive diet of bread and milk and lime-water. A goblet of cow's milk may have four tablespoonfuls of lime-water added to it with good effect. The way to make lime-water is simply to procure a few lumps of unslaked lime, put the lime in a stone jar, add water until the lime is slaked and of about the consistency of thin cream; the lime settles, leaving the pure and clear lime-water at the top. Great care should be taken not to get the lime-water too strong. Keep to the direction as to the consistency, and when the water rises pour it off without obtaining any of the lime.—*Herald of Health.*

**SUGAR.**—Is not sugar an objectionable article of food? **Ans.**—No. Sugar is a carbo-hydrate, and bears a close relationship to fat, only the latter contains about two and a half times as much force-giving quality. It is objected to sugar that it deranges digestion, obstructs the liver, spoils the teeth, and in many ways does harm—no doubt of it. Taken on an empty stomach, and in great quantities, sugar is injurious; but as a part of our food, and used in moderation, sugar is not only harmless but very beneficial. Children should be allowed a reasonable amount of sugar as a part of their meals, but candies, as generally sold, made partly of sugar or glucose, and many poisonous ingredients, should never find their way into the stomachs of our little ones. So, too, the syrups made by the action of sulphuric acid on corn-starch, or the refuse in corn-starch factories, making a beautiful golden-drip syrup, is a very dangerous article, spoiling both stomach and teeth. In using sugar or syrups, choose only the purest and best sorts, otherwise much harm will come from them. As you value teeth, stomach, and health, never use those articles of food manufactured in the chemist's shop; if you do, you must expect to suffer the consequences. Half the ills of life would be avoided by careful attention to the wise choice and adaptation of food to daily needs.—*Dr. Holbrook.*

**A LOCOMOTIVE IN A QUICKSAND.**—A locomotive went through a bridge on the Kiowa creek, 42 miles east of Denver, Col., last spring, and instantly disappeared in the quicksand bed of the creek, baffling all attempts to recover it. For the past six months the search for the missing locomotive has been kept up, resulting in success a few days ago, when it was found buried 40 feet deep in the quicksand. The sand had been removed for a great number of yards around the scene of the disappearance of the engine, a hydraulic ram being used, the locomotive being found at last after a search of six months. The instance is one of the most remarkable on record.

**PROFIT ON COINAGE.**—After buying the silver for coinage, paying for the transportation, and allowing for wastage in the process of coinage, since the commencement of coinage of the standard dollar the Government has profited, between the legal tender value and the real value of bullion which it contains, to the amount of about \$1,600,000.