

WHITE HOUSE WHITEWASH.

The *American Manufacturer* publishes the recipe for the white-wash used on the east end of the Presidential mansion—the White House: Take one-half bushel of nice unslacked lime, slack it with boiling water; cover it during the process to keep in the steam. Strain the liquor through a fine sieve or strainer, and add to it a peck of salt, previously well dissolved in warm water; three pounds of ground rice, boiled to a thin paste; one-half pound of powdered Spanish whiting, and one pound of clean glue, which has been previously dissolved by soaking it well, and then hang it over a slow fire in a small kettle within a larger one filled with water. Add five gallons of hot water to the mixture, stir it well, and let it stand a few days covered from dust. It should be put on hot, and for this purpose it can be kept in a kettle on a portable furnace. It is said that about a pint of this mixture will cover a square yard upon the outside of a house, if properly applied. Fine or coarse brushes may be used, according to the neatness of the job required. It answers as well as oil paint for wood, brick, or stone, and is cheaper. It retains its brilliancy for many years. There is nothing of the kind that will compare with it, either for inside or outside walls. Buildings covered with it will take a much longer time to burn than if they were painted with oil paint. Coloring matter may be put in and made of any shade desired. Spanish brown will make reddish pink when stirred in, more or less deep according to quantity. A delicate tinge of this is very pretty for inside walls. Finely pulverized common clay, well mixed with Spanish brown, makes a reddish stone-color; yellow ochre stirred in makes yellow wash, but chrome goes further, and makes a color generally esteemed prettier. It is difficult to make rules, because tastes are different; it would be best to try experiments on a shingle and let it dry. Green must not be mixed with lime; it destroys the color, and the color has an effect on the white-wash which makes it crack and peel.

THE COMMON SALT GLAZE.—To the purest accident are many of the utilizations of common substances due. One of the producing causes of prosperity of the Staffordshire pottery manufacture was the discovery of a cheap, durable glaze. The discovery was due purely to accident. At Stanley Farm, a few miles from Burslem, a maid servant was one day heating a strong solution of common salt, to be used in curing pork. During her absence from the kitchen, the liquid boiled over. Being in an unglazed earthen vessel, the solution, spreading over the outside, produced a chemical action which she little understood, and which did not compensate her for the scolding she received. Some of the elements of the liquid combined with those of the highly heated brown clay surface to produce a vitreous coating, or enamel, which did not peel off when the vessel was cold. The humble brownware vessel acquired historical celebrity. A Burslem potter, learning what had taken place, saw that glazed-ware might possibly hit the taste of the public, he introduced the system of glazing by means of common salt, a system at once cheap, easy and durable; and England has made many a million pounds sterling by the accidental discovery.

ASBESTOS PAPER.—*La France Nouvelle* gives the following account of the manufacture of an incombustible paper from asbestos. The new paper costs four francs per kilogramme. The paper mills are in the city of Tivoli, where Victoria made his successful attempt to manufacture this paper, which is specially adapted for valuable documents, etc. It has recently undergone most conclusive tests by the Marquis de Bariere, at an exhibition of objects made of this substance, now being held in the Corso at Rome. Two card-board boxes containing papers, one made of ordinary material and the other of asbestos, were thrown into the fire. The former was entirely consumed, while the latter remained intact, together with the papers it contained. The most useful employment that has been made of this substance up to the present has been the manufacturing of it into theatrical hangings. This is an excellent use of it, and it is evident that if what is said of it be true, its sphere of usefulness is likely to be greatly extended.

ATTACHING EMERY TO WOOD.—The best plan is to cover the wooden wheel with thick leather, and then to make a paste with very thin glue and emery, and lay it on with a knife. The glue must be about as thin as milk. These wheels, if made right, will cut a great deal better than any solid emery-wheel I have seen, and will not glaze. They cut best when mounted on a long thin spindle.

ALL SAINTS' CHURCH, CHELTENHAM.

(See page 132.)

The reredos of this church has lately been completed from the designs of Mr. J. Middleton, architect of Cheltenham, and the work has been executed by Mr. Boulton, carver, of the same place. The reredos runs round the east of the chancel, and is divided into five compartments, each compartment consisting of three arches. The divisions are marked by angels, 2 ft. 6 in. high, standing under canopies, above which rise marble pillars which are carried up to support the groining of the chancel. Of these angels some are holding symbols of the "Passion" while others have their hands joined in an attitude of prayer. Smaller angels playing on musical instruments occupy the spandrels. The plinth and pillars are of English, Irish, and Italian marble, the larger angels of Caen stone, and the rest of the work is of alabaster. The three centre compartments, forming the reredos proper, contain representations in relief of our "Lord bearing His Cross," the "Crucifixion," and the "Entombment," the other arches being filled in with incised work of black cement on an alabaster ground.

The pulpit is constructed of materials similar to those used in the reredos. The figures at the angles represent Noah, Joseph, Elijah, St. John Baptist, St. Chrysostom, and St. Augustine, the heads in the medallions being those of our Lord and the evangelists.

The dimensions of the chancel are 45 ft. by 25 ft.; those of the nave and aisles being 93 ft. by 56 ft. 2 in.; internal measurement.

METALLIC FIRE-PROOF CURTAIN.—For theatres a fireproof curtain is made in corrugated plate by Voss, Mitter and Co., of Berlin. It is being fitted to the theatre in Dresden, now rebuilding after destruction by fire. Exposed to heat a brisk circulation of air is set up in the sections of tubes formed by the corrugations, the heated particles ascending, and colder particles flowing in to supply their place. The latter keep down the temperature so considerably that a sweating breaks out in the plate of which the curtain, or shutter, as it is, strictly speaking, is composed. The shutter made for the Dresden theatre is 46 feet wide. The method of riveting the plates of which it is composed, and of raising and lowering it, are the subjects of patents taken out by Mitters.

AN IMPORTANT INDUSTRY THREATENED.—According to a New castle paper, the craft of railway spring-makers is threatened with a very serious competition. A new circular spring has been invented; it is made entirely by machinery, and is said to be free from many defects of the present hand-made springs. The new springs are made of solid round bars of steel, highly polished, cut and bent into elliptical forms, and bound together in sets, to form springs. Four or five bars form the top and bottom of each spring; and it is intended as a further improvement to have a spiral spring, also machine-made, to be placed at the centre between the top and bottom set of springs. This would act as a duplicate: in case of accident it would support the entire weight of the carriage.

MACHINE-MADE HORSE-SHOES IN FRANCE.—M. Lockert read, on January 19th, a paper before the Paris Civil Engineers' Association, on the Thuillard and Dumont system of mechanical horse-shoe making. In ten hours, with one set of apparatus, eight workmen turn out 3000 complete horse-shoes; at the Esperance forges (Louvroil, near Maubeuge, dep. Nord), there are four sets of apparatus, and the total make therefore is 24,000 per diem equal to the work of 800 farriers working by hand. It is estimated that France possesses 3,500,000 horses, mares, mules, &c., each animal consuming on an average forty-eight shoes per annum, the total annual consumption being thus 160,000,000 shoes, which, at an average weight of 1½ lb., gives a consumption of over 126,000 tons of iron a year. At Joinville-le-Pont is another shoe-making forge; and in the discussion which followed the reading of the paper, it was stated that studies were on foot in France with the object of bringing out an apparatus superior in efficiency and simplicity to that described by M. Lockert.

The Japanese are celebrated for the numerous applications to which they have put paper and *papier-maché*, but an Englishman has recently made what may be one of the most useful of all the newer uses to which paper has been applied. Captain Warren has found that common brown paper withstands for a long time the action of sea-water, and prevents the attachment of barnacles.