

SHARPENING EDGE TOOLS.

Very few general amateurs have sufficient practice to acquire, or to retain when acquired, the knack of producing perfectly flat facets on their plane-irons, chisels, &c.

By the aid of the following simple contrivance, put together very easily, the end may be attained with despatch and certainty, the shavings leaving the plane with the real professional "whistle."

A simple saddle of wood, with a thumb screw and clamp, or dog, for fixing the tool firmly to the cross bar. The oil-stone is placed between the cheeks and the tool, so adjusted that the saddle bears with its heels or hinder angles, A and B, on the bench, the tool, of course, bearing on the oil-stone. The saddle, and with it of course the tool, is then worked backwards over the stone.—H.B.

A GLUE WHICH RESISTS THE ACTION OF WATER.

POTASSIUM bichromate unites with gum, glycerine, glue, etc., forming, when exposed to light, a substance insoluble in water. By adding a small quantity of a solution of potassium bichromate, which has been prepared in the dark to glue, a compound is obtained possessing the cohesive properties of glue, but totally insoluble both in hot and in cold water.

Sausages containing peas were used in immense quantity by the soldiers in the Franco-German war, but a difficulty was experienced in obtaining gut as an envelope for the sausages; parchment-paper, was accordingly employed. It was found that ordinary gum would not answer the purpose of joining together the seam, as it could not resist the influence of water. The glue, above described, has been employed with advantage by Dr. Julius Strude in Hamburg. Three per cent of bichrome is added to the ordinary glue or gelatine solution. The strips of paper joined by the glue are dried quickly and exposed to light till the glue changes to a brownish color; they are then boiled with water containing 2-3 per cent of alum till all potassium bichromate is extracted, and then washed in cold water and dried.

MATERIAL FOR BUILDING.

A material suitable for blocks and bricks is, according to the invention of Messrs. Smith and Patterson, of Glasgow, made from two mixtures. The first contains coal tar, mixed with small broken stones or shingle, a portion of which should be pulverised or mixed with sand, so that the interstices between the stones of larger size may be properly filled up. The second mixture is composed of clay and pitch; sand or chalk may be substituted for the clay. The first mixture is mixed in a mixing apparatus at a heat which is gradually increased until the product is adhesive to the touch. The second mixture is formed by grinding the power thus obtained, and is added to the first mixture while its particles are adhesive to the touch. The mixture of the two compounds is confined in a close vessel and heated so as to diffuse the vapours uniformly throughout the ingredients. In manufacturing a building block, the material having been tested, is removed while hot to moulds, and pressed and shaped as required.—*The Builder.*

TRACING-PAPER.

A CONVENIENT method for rendering ordinary drawing-paper transparent for the purpose of making tracings, and of removing its transparency so as to restore its former appearance when the drawing is completed, has been invented by C. Füscher. It consists in dissolving a given quantity of castor-oil, in one, two, or three volumes of absolute alcohol, according to the thickness of the paper, and applying it by means of a sponge. The alcohol evaporates in a few minutes, and the tracing-paper is dry and ready for immediate use. The drawing or tracing can be made either with lead-pencil or india-ink, and the oil removed from the paper by immersing it in absolute alcohol, thus restoring its original opacity. The alcohol employed in removing the oil is, of course, preserved for diluting the oil used in preparing the next sheet.

MARBLE.

To remove ink stains from white marble, make a paste with a little chloride of lime and water, and rub it into the stains; afterwards sponge with soap and water.

QUERIES.

1001. PRIMING FOR CANVAS FOR OIL PAINTING. Could any of your correspondents give the best method for the above? I cannot conveniently obtain the prepared canvasses of the artist and colourmen, and would like to be informed of the best method of preparing it.—AMATEUR.

1002. LETTERING SHEET BRASS.—I wish to be informed what is the best way of lettering brass, perhaps some of your correspondents would kindly inform me through your columns.—G.H.M.

1003. There are several kinds of wood fillings in use, but most of them stain light colored wood, which I wish to keep of its original colour, favor me a suitable receipt.

1004. HEADACHE.—I suffer severely from headache which generally last from 24 to 30 hours. As I take plenty of exercise and am of very temperate habits, and of a healthy constitution, I know not whether to attribute it to Neuragia, or some slight derangement of the stomach. I have generally remarked that it more frequent comes on after taking unusual exercise. Medical men treat as of no consequence, but as it confines me often to bed, while it lasts, I lose many hours work (which to me is money) during a year, some other sufferer may be able to prescribe a simple and effectual remedy.—MECHANIC.

1005. AQUARIUM.—Would any reader kindly inform me how I can keep the water of my aquarium from getting green? I have tried shading and reducing the quantity of plants. The aquarium is outside in a southern aspect.

1006. LACQUER.—What is the composition of lacquer for the brass bands for window curtains; and for the dark bronze for a gaselier or in what book can I find the information?

BLACK VARNISH FOR ZINC.

PROFESSOR BOTTGER prepares a black coating for zinc by dissolving 2 parts nitrate of copper and 3 parts crystallized chloride of copper in 64 parts of water, and adding 8 parts of nitric acid of specific gravity. This, however, is quite expensive; and in some places, the copper salts are difficult to obtain. On this account, Füscher prepares black paint or varnish with the following simple ingredients: Equal parts of chlorate of potash and blue vitriol are dissolved in 36 times as much warm water, and the solution left to cool. If the sulphate of copper used contains iron, it is precipitated as a hydrated oxide and can be removed by decantation or filtration. The zinc castings are then immersed for a few seconds in the solution until quite black, rinsed off with water, and dried. Even before it is dry, the black coating adheres to the object so that it may be wiped dry with a cloth. A more economical method, since a much smaller quantity of the salt solution is required, is to apply it repeatedly with a sponge. If copper-colored spots appear during the operation, the solution is applied to them a second time, and after a while they turn black. As soon as the object becomes equally black all over, it is washed with water and dried. On rubbing, the coating acquires a glittering appearance like indigo, which disappears on applying a few drops of linseed-oil varnish or "wax milk," and the zinc then has a deep black color and gloss. The wax milk just mentioned is prepared by boiling 1 part of yellow soap and 2 parts Japanese wax in 21 parts of water, until the soap dissolves. When cold, it has the consistency of salve, and will keep in closed vessels as long as desired. It can be used for polishing carved wood-work and for waxing ballroom floors, as it is cheaper than the solution of wax in turpentine, and does not stick or smell so disagreeable as the latter. A permanent black ink for zinc labels is prepared by dissolving equal parts of chlorate of potash and sulphate of copper in 18 parts of water, and adding some gum-arabic solution. The black polish above described is recommended as permanent and capable of resisting quite a high temperature.

PAINT FOR LETTERING BLINDS (CALICO OR CANVAS). Will any kind reader please say what the paint for the above is composed of,—how it is made so as not to grease, stain, or run?

SILICATE MAKING.—I am very much interested in the article on silicate wall colouring, and shall be glad to know if I can manufacture the silicate; can I fuse the sand and soda in an ordinary crucible? or what apparatus shall I require, and what is quartzose sand? I suppose it is quartzose rock ground to powder. Can it be obtained in Canada and where? I do not wish to attempt to manufacture for sale, but for use.