water for not less than half an hour to free from any trace of hypo. solution. Swab the surface with wad of wet cotton, rinse and place in rack to dry spontaneously.

(6650) J. B. W. says: Can you tell me how to make plaster casts hard? A. To a thin milk of lime or lime water add 10 or 15 drops of liquid silicate of soda for every pint of fluid used; this is then thickened with plaster to a thick cream. Plaster thus prepared will set in five minutes or thereabout, according to the thickness of the cream. If too much silicate is used, the soda will effervesce on the surface and spoil the sharpness of the impression.

(6651) B. A. E. asks how to weld together small pieces of tortoise shell. A. Small pieces of good tortoise shell may be joined so as to form one large apparently seamless piece in the following manner: Slope the margins of the shells for a distance of about ¼ of an inch from the edge. Then place them so that the margins overlap one another, and thus arranged put them in an iron press and immerse in boiling water for some time. The pieces by this means become so perfectly united that the joint cannot be seen. The filings and very small scraps may be softened in hot water and consolidated by hydraulic pressure in metal moulds. Protracted heating of tortoise shell darkens it, and greatly lessens its beauty.

(6652) R. J. W. says, can you tell me how to make javelle water? A. Javelle water, used for turning white the dirtiest linen and removing stains, is composed of bicarbonate of soda, 4 lb.; chloride of lime, 1 lb. Put the soda into a kettle over the fire, add 1 gall. of boiling water, let it boil from ten to fifteen minutes, then stir in the chloride of lime, avoiding lumps. Use when cool. This is good for removing fruit stains from white underwear.

(6653) H. W. C. asks how to fix paper on drawing boards. A. Take a sheet of drawing paper and damp it on the back side with a wet sponge and clean water. While the paper is expanding, take a spoonful of wheat flour, mix with a little cold water, and make it a moderately thick paste; spread the paste round the edge of the drawing paper 1 inch wide with a feather, then turn the drawing paper over and press the edges down on the board. After this take four straight pieces of deal wood, ¾ inch by 2¼ inch wide; place them on the edge of the drawing paper, and put a large book or heavy weight on each corner to make the paper adhere firmly to the board. In about an hour's time the paper will be straight and even, and quite ready for executing a drawing. When the drawing is finished, take a sharp knife and raise one corner of the paper, then take a scale, run it round the edges, and the paper will come off easily. Turn it over and take the dry paste off with a knife, and all will be perfectly clean, and no paper will be wasted.

(6654) A. D. asks for an improved formula for printer's rollers. A. This composition, by Hawkins and Stacey, London, has an affinity for printer's ink, and is free from glycerine, which is a principal ingredient in roller compositions as usually made, but which repels the ink. A composition prepared according to the following formula has been found to answer well in practice: Glue or gelatine, 1 lb; water, 12 oz.; linseed or other suitable oil, 1 lb. 8 oz.; molasses or sugar, from 1 lb. to 1 lb. 8 oz.; calcium chloride or potash, ¾ oz.; powdered resin (if required), 2 oz. The glue is first soaked in the water and then melted, and the linseed oil (warmed to a temperature of about 150° F.) is then very gradually added and thoroughly mixed with the melted glue. The sugar or molasses is then added to the mass kept at a suitable temperature, and the calcium chloride then incorporated. If a very tough composition be required, the resin (dissolved by heat in a little linseed oil) is to be added. The composition may be made non-absorbent of water by dispensing with the calcium chloride and substituting a similar amount of bismuth carbonate.

TO INVENTORS.

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