

alkaline solution, it must be perfectly dried in the stove before the stiffening is applied; when stiffened and stoved, it must be steeped all night in water to which a small quantity of the sulphuric acid has been added; this sets the stiffening in the hat body, and finishes the process. A good workman will stiffen 15 or 16 hats a day. If the proof is required cheaper, more shellac and resin must be introduced.

#### Bleaching and Colouring Bonnets.

**BONNET BLEACHING RECIPE.**—*First.* Wash the bonnets in warm soap and water. *Second.* Take two tablespoonfuls of sal soda, and two quarts of soft warm water; dissolve the soda, then put in the bonnets and let them soak three to five minutes; then take them and put them into the bleach box—put in about a tablespoonful of brimstone, and bleach over night; then take them out; then take two quarts of warm water, and one good tablespoonful oxalic acid; dissolve the acid, soak the bonnets about five minutes in the same, then rinse them in clean warm water, and hang them out to sun. Sun them until about half dry, then put them in the bleach, if you have time; if not, dry and size them, and they are ready to press.

**COLOURING BROWN AND DRAB STRAW BONNETS.**—*First.* To twelve quarts of water add one tencupful of black tea; heat the water and tea until they boil; then add one teaspoonful of copperas; stir the same one minute or so; then take it off and let it stand about five or ten minutes; then put in the bonnets to be colored drab; such as Neapolitan, chip, rice, straw or fine Dunstable, that are clear and white, and they will color very quick. All other braids had better be colored brown, and let them remain in the dye some six hours, but look to them, and if they don't take good color, let them be until they do. You can color any shade of brown, by giving longer or shorter time in the dye.

**FOR COLORING BLACK.**—Take logwood, or the extract—which is better; half pound of chips or a small quantity of the extract to twelve quarts of water; heat it to boiling; then add one teaspoonful of copperas; put in the bonnets and boil until black. It generally takes six hours—and if the dye is not strong, it will take longer. Take them out, wash them dry, and brush them.

#### To Remove Stains.

Stains of *iodine* are removed by rectified spirit. *Iron* stains by oxalic acid or superoxalate of potash. *Iron moulds* by the same; but if obstinate, it has been recommended to moisten them with *ink*, then remove them in the usual way.

*Red spots* on black cloth, from acids, are removed by spirits of hartshorn, or other solutions of ammonia.

*Stains of Marking Ink, or Nitrate of Silver, to remove.*—1. Wet the stain with fresh solution of chloride of lime, and after 10 or 15 minutes, if the marks have become white, dip the part in solution of ammonia or of hyposulphite of soda. In a few minutes wash with clean water.

2. Stretch the stained linen over a basin of hot water, and wet the mark with tincture of iodine.

#### Browning or Bronzing Liquids, for Gun Barrels.

1. Aquafortis  $\frac{1}{2}$  oz., sweet spirit of nitre  $\frac{1}{2}$  oz., spirit of wine 1 oz., sulphate of copper 2 oz., water 30 oz., tincture of muriate of iron 1 oz. Mix.

2. Sulphate of copper 1 oz., sweet spirit of nitre 1 oz., water 1 pint. Mix. In a few days it will be fit for use.

3. Sweet spirit of nitre 3 oz., gum benzoin  $1\frac{1}{2}$  oz., tincture of muriate of iron  $\frac{1}{2}$  oz., sulphate of copper 2 dr., spirit of wine  $\frac{1}{2}$  oz. Mix, and add 2 lbs. of soft water.

4. Tincture of muriate of iron  $\frac{1}{2}$  oz., spirit of nitric ether  $\frac{1}{2}$  oz., sulphate of copper 2 scruples, rain water  $\frac{1}{2}$  pint. The above are applied with a sponge, after cleaning the barrel with lime and water. When dry, they are polished with a stiff brush, or iron scratch brush.

#### Bronzing Liquids for Tin Castings.

Wash them over, after being well cleaned and wiped, with a solution of 1 part sulphate of iron, and 1 of sulphate of copper, in 20 parts of water; afterwards with a solution of 4 parts verdigris in 11 of distilled vinegar; leave for an hour to dry, and then polish with a soft brush and colcothar.

#### Solvents for Gutta Serena.

Benzole readily dissolves it: so do chloroform and bisulphuret of carbon.

#### Processes for Staining Woods.

*Mahogany Color (Dark).*—Boil  $\frac{1}{2}$  lb. of madder and 2 oz. of logwood in a gallon of water; then brush the wood well over with the hot liquid. When dry, go over the whole with a solution of 2 drachms of pearlash in a quart of water.

*Mahogany Color (Light).*—Brush over the surface with diluted nitric acid, and when dry apply the following, with a soft brush: Dragon's blood, 4 oz.; common soda, 1 oz.; spirit of wine, 3 pints. Let it stand in a warm place, shake it frequently, and then strain. Repeat the application until the proper color is obtained.

*To Stain Maple a Mahogany Color.*—Dragon's blood,  $\frac{1}{2}$  oz.; alkanet,  $\frac{1}{2}$  oz., aloes, 1 dr.; spirit of wine, 16 oz. Apply it with a sponge or brush.

*Rosewood.*—Boil 8 oz. of logwood in 3 pints of water until reduced to half; apply it, boiling hot, two or three times, letting it dry between each. Afterwards put it in the streaks, with a camel's hair pencil, dipped in a solution of copperas and verdigris in a decoction of logwood.

*Ebony.*—Wash the wood repeatedly with a solution of sulphate of iron; let it dry, then apply a hot decoction of logwood and nutgalls for two or three times. When dry, wipe it with a wet sponge; and when dry again, polish with linseed oil.

*Red.*—1. Take a pound of Brazil wood and mix it with a gallon of stale urine. Pour over the wood while boiling hot. Before it dries it should be laid over with alum water. 2. A fine red may also be obtained by a solution of dragon's blood in spirits of wine.

*Yellow.*—Nitric acid, lightly diluted, will produce a fine yellow on wood. Sometimes, if the wood is not in proper condition, it will create a brown. Care must be taken that the acid used be