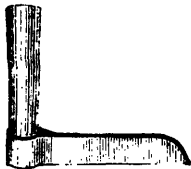
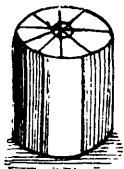
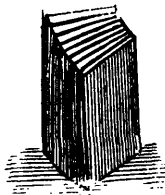
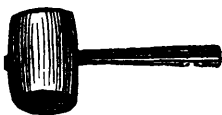


### MAKING SPLIT AND SHAVED SHINGLES.

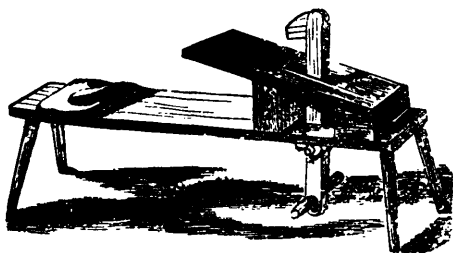
It is difficult to point out a roofing material better, on the whole, than well made shingles. If well made, well laid, and properly prepared for use, they may last a lifetime, which is as much as can reasonably be expected of any roofing. Shingles may be made of any timber that splits well and will not curl up after repeated wetting and drying. Pine, cypress, and cedar, are the best materials for shingles; chestnut, oak, ash, hemlock, and other woods, may be used when the former can not be procured. The first step in making shingles is, to saw the timber into blocks of the proper length—14, 16, 18, or 24 inches, as the case may be.



The block is then split into segments, as shown in fig. 1, by means of a tool known as a frow (fig. 2), and a mallet (fig. 3). The blocks are freed from the sap wood and the heart, and are then split down the sides in the manner marked at fig. 4, into shakes (fig. 5). The shakes are then held in a shaving-horse (fig. 6), and by means of a drawing-knife (figure 7), shaved down



to a sharp edge at one end, and smoothed at the sides, when they are finished shingles (fig. 8). It is important to have the original blocks sawed true and square at each end, else the shingles will be imperfect, and the butts, which are exposed on the roof, lie irregularly. When finished, the shingles are put up in bunches of 250, or 400, each—that is, of so many nominal, not actual, shingles; a shingle being held to be only 4 inches wide. So that one 8 inches wide counts as two, and one 6 inches wide counts as one and a half. Thus, a bunch of 25 courses (on each side)



with a 20-inch band, will have 1,000 running inches of shingle, equal to 250 shingles; or a 32-inch band with 25 courses will contain 400 shingles. The manner of packing shingles is too well known to require further description. There are several kinds of shingle-machines which saw them out of the blocks, and by using these, the shingles may be made of timber which will not split, even cross-grained timber, or that with

knots, if these are tight, may be used. A sawed shingle roof lies closer than one of split shingles, but as there is a fuzzy surface left by the saw, they soak more water, dry more slowly, and are less durable than the other.—*American Agriculturist*.

### Miscellaneous Items.

**DISTINGUISHING IRON AND STEEL TOOLS.**—We find it stated in a contemporary that it is a difficult matter—that they have the same polish, the same workmanship, and that use alone can show the difference. It is recommended that in order to make the distinction quickly to place the tool upon a stone, and drop on it some dilute nitric acid, (four parts of water to one of acid). If the tool remains clean, it is of iron; while if of steel it will show a black spot where touched by the acid. These spots can easily be rubbed off. We must here remark that we never had much difficulty in making the detection; the polish of steel is most always more perfect than the polish of iron, because the harder a metal is the finer the polish it can be given, while the hardness is easily tested by a file, which we far prefer to a drop of acid. Usually, when we have no file at hand, we take our steel pocket-knife, and if the tool is good steel the point of the knife will not make any impression; if the tool is iron, or of a grade of steel softer than the steel the knife is made of, it will make a scratch; if the knife does not make a scratch, a file often will, as files are, as a rule, harder than cutting tools.

**TO PREVENT CORROSION.**—Boil a large excess of so-called zinc dust for some time with a concentrated solution of caustic soda or potash, and place therein the articles to be coated. After a few minutes a mirror-like film of zinc will form upon them by the decomposition of the alkaline solution, in consequence of their electro-negative character in combination with the zinc. It is suggested that the process may also be used for forming a layer of tombac by heating a copper article thus coated carefully up to 248° to 284° Fah., (best under olive oil), when the zinc will unite with the copper supposed to form a gold-tinted tombac, and the articles need only be quickly cooled in water, or some other suitable liquid, as soon as the desired color is apparent.

**BLACKBOARD PAINT.**—The following is a good recipe: One quart of shellac dissolved in alcohol, 3 ounces of pulverized pumice stone, 2 ounces of pulverized rottenstone, and 4 ounces of lampblack; mix the last three ingredients together, moisten a portion at a time with a little of the shellac and alcohol, grind as thoroughly as possible with a knife or spatula, after which pour in the remainder of the alcohol, stirring often to prevent settling. One quart will furnish two coats for 80 square feet of blackboard not previously painted. The preparation dries immediately, and the board may be used within an hour if necessary.

**MAKING INSCRIPTIONS ON STEEL TOOLS.**—On the place you wish to make the inscription put melted wax or paraffin, and when cold cut with an instrument the letters or designs in the wax, cutting it through, so as to reach the metal. The neater you do this the neater the inscription will be, as every part of the metal exposed will become marked. Then make a little wax border around the name so as to prevent the liquid poured on from running off. This liquid may be nitric acid or aqua regia, which is a mixture of 1 part of nitric acid and 2 of hydrochloric acid. After a few minutes pour off the liquid and wash with water, then warm the tool to melt off the wax or paraffin.

**MAKING HOLES IN HARD STEEL.**—Nitric acid will do it. To apply it cover the steel plate, at the place where you wish the hole, with a thick layer of melted wax; when cold, make a hole in the wax of the size you want the hole in the plate, then put on one or more drops of strong nitric acid, leave it on for some time, wash off with water, and if not eaten through, apply other drops of the same liquid, and continue this until the plate is perforated.

**FIRST AMERICAN PATENTS.**—The first patent was granted in 1790. If we are not mistaken, it was granted to Jacob Perkins for a nail forging machine—at least this invention was made in that same year. The number of inventions patented the first ten years was comparatively very small—no more than at present are granted every week, namely, 306 patents are recorded from 1790 to 1800.

**GLUE.**—Melt your glue in small quantities. Newly made glue holds much stronger than that which has been remelted. Apply the glue as hot as the nature of the work will admit, heating the pieces to be joined, if this can be done without injury. The sooner good glue is used after it is fitly prepared for use, the better will be the result.