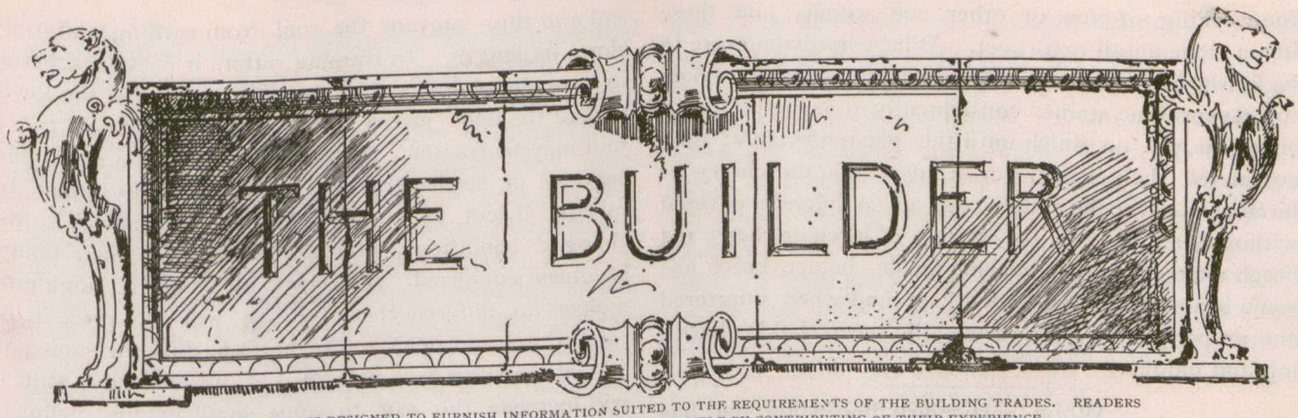

[THIS DEPARTMENT IS DESIGNED TO FURNISH INFORMATION SUITED TO THE REQUIREMENTS OF THE BUILDING TRADES. READERS ARE INVITED TO ASSIST IN MAKING IT AS HELPFUL AS POSSIBLE BY CONTRIBUTING OF THEIR EXPERIENCE, AND BY ASKING FOR PARTICULAR INFORMATION WHICH THEY MAY AT ANY TIME REQUIRE.]

Tin Roofs.

TIN roofs do not prove as satisfactory as they might do, owing in a great measure to the fact that they are not as honestly put on as they should be. A roof properly covered with the best quality of tin should make a first-class one for such buildings as have flat, or nearly flat roofs. Two styles of tin roofs are used, one is known as the "flat lock seam" and the other as the "standing double lock seam." The first is generally employed on roofs that are nearly flat. This is done by locking the sheets together on all four sides alike and soldering, thus making one sheet of the whole roof. In no case, however, should tin be put down in one unbroken flat; there should be cleats or buttons running lengthways under every seam that runs down the incline of the roof; this will provide for contraction and expansion. Where a flat roof has a fall of three-fourths of an inch to the foot or more, the standing double lock seam will make much the better roof. This style of seam may be made in several ways, but the better way is to lock the cross seams together in the workshop and properly solder them before rolling the sections up in rolls to convey to the roof. Use cleats about $1\frac{1}{2}'' \times 1\frac{1}{2}''$ and place same along every longitudinal joint, and lap the joint over in the centre of the cleat; nail with tinned nails and solder the joint its entire length. To make the roof more lasting it is good practice to paint the underside of it before laying down, with two coats of good oxide or graphite paint. The upper side of a tin roof should never be painted until the second year it has been in use. The tinsmiths, when laying on the tin, should wear rubber soled shoes, or shoes with some sort of soft soles, as leather soles having nails or pegs in them are sure to cause injury to the tin, either by crushing holes through, or making indentations that will hold wet or snow, and cause corrosion to take place at a much earlier period than would otherwise occur.

Air Space in Stables.

IT is stated on good authority that a horse or cow has six times the breathing capacity of a man, and it is known that the latter averages twenty inspirations a minute, each inspiration being of a volume equal to forty cubic inches, so that he requires 800 cubic inches of fresh air per minute to supply him with the necessary health-giving pabulum for his lungs. Each expiration unfits for breathing twice the bulk of fresh air; that is, the 800 cubic inches expired per minute contaminates 1,600 inches of fresh air, or nearly one cubic foot. In round figures then, a man requires one cubic foot of fresh air for every minute of his existence, or 60 cubic feet per hour. A cow or a horse will require 360 cubic feet of air per hour, or 3,600 cubic feet of space in the stable in order to keep the air in a healthy condition. A stable then, with stalls 6′ 6″ wide and 9′ long, ten feet between floors, and a passage behind the animal of six feet, will provide ample air space for each horse or cow. There are many methods of ventilating stables, but the one that seems the most reasonable and effective is the ridge louvre or ventilator extending the whole length of the roof. This method of ventilation is adopted by military men in the construction of stables for artillery and cavalry horses. It is a good plan to leave vent holes near the eaves of the building, about 4 x 4 inches, sloping outwards with the line of the roof in order to keep the rush of air from going downwards. A small hole, about 2 x 2 inches, just above the stable floor, will allow enough air to satisfy each stall and aid in ventilating the stable. There should also be a small window to each stall—on the swing principle, and the glass should be of such a kind as will not let in the bright sun rays, as such would tend to injure the animal's eyesight. These conditions, properly followed, will produce a healthful stable for cow or horse.

Hardwood Finish.

COUNTRY builders who have always been accustomed to finishing their houses with pine or other soft woods, experience some difficulty in getting a proper estimate of the extra labor required to finish in hardwoods. It is safe to say that the cost of labor in finishing off a room in cherry, black birch or white ash, is about double what it would be if finished in white pine. Black ash or elm finish takes about 50 per cent more time to put in proper shape than pine, and oak, red or white, costs a trifle more to finish than cherry or black birch. Lumber cut from the butt logs of the black birch is one of our handsomest woods, and is strong and durable and will take a polish as high as the best cherry or mahogany. For newels, hand-rails and balusters, it is superior to walnut, and much stronger, works better in the lathe and is less apt to chip or sliver under the carver's tools. If not quartered when sawn, it has the fault of warping, and will be affected more or less by atmospheric changes, but on fixed work this may easily be prevented by proper fastenings, and in free work, such as doors, sashes, venetian blinds, etc., quartered stuff should be used, or the doors and sashes should be "built up" with the grain reversed, which will prevent warping and twisting. This latter method is expensive, but insures lasting and satisfactory work, but when economy is the rule, quartered stuff worked solid answers very well. The working of hardwood of any kind requires more skill, a better class of tools and more exact workmanship than