

Wheels designed for ox-carts and horse-carts are often made twice, and thrice, as heavy as necessary through ignorance of the strength of materials and the relative proportion which one part should bear to the other—*Manufacturer and Builder*.

GREASING WAGGONS.

The following extract from the *Scientific Press* refers to a matter of so much importance and so much neglected, that we have no hesitation in bringing it before the attention of farmers:—

"Greasing buggies and waggons is of more importance than some people imagine. Many a wheel is ruined by oiling too plentifully. A well made wheel will endure constant wear for ten to twenty years, if care is taken to use the right kind and proper amount of oil; but if this matter is not attended to, the wheel will be used up in five or six years, or may be sooner. Lard should never be used on a waggon, for it will penetrate the hub and work its way out around the tenons of the spokes and spoil the wheel. Castor oil is a good material for use on an iron axle; just oil enough should be applied to a spindle to give it a light coating; this is better than more, for the surplus put on will work out at the ends and be forced by the shoulders and nut into the hub around outside the bolts. To oil an axletree, first wipe the spindles clean with a cloth wet with turpentine, if it won't wipe without it. On a buggy or carriage, wipe and clean off the back and front ends of the hubs, and then apply a very small quantity of castor oil, or some especially prepared lubricator near the shoulders and point."

BUILDING BRICK WALLS.

In olden times hard burnt bricks only were used in building houses. The bricks were first saturated with water before being laid in the wall, and when such walls were torn down, the bricks and mortar had to be separated with a sledge or crowbar. But brick walls built in these days are chiefly made, not of hard bricks, but of stretchers and salmon, or imperfectly burnt bricks, and most come only brought dry and warm from the kiln, and laid in the wall in that state, with mortar made adhesive by the admixture of loam.

When the bricks are laid in the mortar, as quick as a flash they will absorb the moisture and prevent cohesion, inasmuch that often the bricks can be separated from the mortar as clean as if they had not been laid in it. Bricks of inferior quality will make a tolerably good wall if dampened and laid in good sharp sand mortar, and whoever wishes to put up a good substantial building, should be careful not to let warm and dusty bricks be built in the walls unless first dampened with water.

HOW TO LOAD A WAGGON.

Some three or four weeks ago the question was asked whether a waggon should be loaded heavier on the hind than on the front wheels. Your reply, though not asserted to be conclusive, implied that the load should be equally distributed. I propose

a scientific elucidation of the subject, which will prove that the load should be heavier on the hind wheels, in the proportion of their diameter to the diameter of the front wheels.

A wheel is a lever, whose long arm, theoretically, is the distance from the ground to the centre of the axle; the short arm is a pivot; but, practically, it is impossible to construct a lever, of such proportions. Hence, in calculating the advantage of the lever, a wheel or a lever, allowance must be made for the size of the axle, and for friction dependent on size, other things being equal. Without going into the too elaborate a discussion, it will be sufficient to say in general terms that the power gained by a waggon wheel is in proportion to its semi-diameter, and hence, that the load on a waggon should be placed proportionally to the diameters of the front and hind wheels.

Suppose the front wheels are four feet, and the hind wheels five feet in diameter then five ninths of the load should rest on the hind wheels and four ninths on the front wheels.—*Cor. Rural New Yorker*.

SUITABLE FLOORS FOR BASEMENTS

One of the greatest faults of the house-building is to be found in want of foresight and care in the preparation for and laying of the floor. Invariably the ground under such floor is so dug out as to leave what is termed an "air space" between it and the joists; and for the circulation of the air, it is likewise necessary to leave holes in the foundation walls for the purpose. Now all this arising of the underside of the floor is procured at the expense of the comfort of the upper surface, and consequently of that of the house itself; for the inch flooring is but slight defence against the cold which must necessarily find its way beneath.

A far better mode of flooring basements, cottages, dairies, etc., is to spread on the ground a bed of air-slacked lime, on which the joists should rest and be sunk, say an inch or two deep, so as to leave no chance for air to enter, and at the same time effectually keep out all vermin, as they will not attempt to burrow in lime. At first sight, this seems to be an expensive mode of securing comfort, but it is quite the contrary. Ten bushels of lime is ample for a square of ten feet (one hundred square feet) and there are very few localities in which lime is not cheap and plenty. Such an under-lying of lime will prove a most desirable preservation of basements of floors, and render a dwelling sanitary warm and sound.—*Technologist*.

FAMILY GLUE.—I make my glue in the following way:—Crack the glue and put it in a bottle; add to it common whiskey; shake up, cork tight, and in three or four days it can be used. It requires no heating; will keep for almost any length of time, and is at all times ready to use except in the coldest weather when it will require warming. It must be kept tight so that the whiskey will not evaporate. The usual corks or stoppers should not be used. It will become clogged. A tin stopper, covering the bottle, but fitting as closely as possible, must be used.—*Ge. muntown Telegraph*.