

Agriculture.

Construction of Tile Drains—No. 3.

BY PROF. MANLY MILES, LANSING MICHIGAN.

Directions are usually given to begin at the outlet to dig the trench for the tile, so that the water may readily run off, and to begin laying the tiles at the upper end of the drain and work towards the outlet.

The reason for this arrangement of the work is that there is no danger of any silt being washed in to the drain in the process of construction. There are, however, several objections to this method of laying tiles that are, in my opinion, more than sufficient to counterbalance the single object aimed at. In the first place, in beginning at the upper end of the drain to lay the tile it is necessary to have the entire length of the drain finished, if the slope is slight, before laying the tiles. If there is no water in the soil at the time, and rains do not occur before the drain is completed, this can be done without any disadvantage.

The risk, however, of the banks of the ditch caving in where the soil is yielding and springy, and the softening of the bed in which the tiles are to be laid, from the running water, in many cases will render the finishing of any considerable length of trench some time before the tiles are laid, decidedly objectionable.

For many years I have been in the habit of beginning the work at the lower end of the drain, and finishing it as fast as it could be made ready for the tiles. The only objection to this method is that careless workmen are liable to let some of the soil wash or crumble into the tiles, and thus endanger their obstruction.

The answer to this is that careless workmen have no business to be laying tiles at all, and with careful hands the danger is more imaginary than real.

When the first three or four feet of tiles are laid at the lower end of the trench, the earth may be filled in and carefully packed over them to the depth of 10 or 12 inches, and the person finishing the trench and laying the tiles may make use of this as a platform to stand on while preparing the bed and laying the next two or three tiles, which are in turn covered in the same way and used as a basis for repeating the operation.

Even when there is considerable water running in the trench, a careful hand will not allow the earth to wash into the tiles already laid. The process of laying the tiles and filling the ditch thus follows closely on the process of excavation, and in hard soils the danger of caving in of the banks is very much diminished.

The tiles, too, are laid in the bed prepared for them before it becomes softened by the running water and converted into mud, and they rest upon a comparatively unyielding foundation. When the work is left over night, or for other reasons, a firm, compact sod should be carefully placed over the end of the tile last laid, the grass side towards it, to prevent any washing of silt into the drain. When beginning work again, any earth that has washed or fallen into the ditch should be carefully removed before taking up the sod that has served as a strainer. If a heavy rain should occur in the interval of suspended work, the sod will allow the water to soak into the drain, so that it will not accumulate in the unfinished trench above. When

there is much water in the soil the tiles already laid will be taking it constantly away, and thus improve the condition of affairs for the subsequent work.

The Plummer Fruit Dryer.

The Plummer Fruit Dryer, of which the above cut represents the factory dryer, has been patented for Canada by Wm. B. Kyle, of London, Ont.

These dryers are made in two sizes, called the factory dryer and the family dryer.

The factory dryer occupies about 7 feet square on the ground; contains sixty trays or frames, to-

Brickwork is necessary in setting—2,000 brick being required.

These dryers have been very successfully operated on onions and potatoes as well as on the different fruits, and have invariably given the fullest satisfaction. Those who have purchased and used these machines testify as to their merits and to the high character of the work produced by them.

These machines are peculiarly adapted to the preserving of green corn, beans, tomatoes, hops, and in fact all our vegetables and fruits can be treated by this process.

The family dryer is on a smaller scale and only occupies three and a half square feet, has fifteen frames or trays; can be operated by two boys or girls, and is guaranteed to dry from one and a half to two bushels of apples per hour.

Over one hundred machines are in operation in Oregon and the testimonials are extremely complimentary in every respect.

From an examination of the dryer every one must be satisfied of its great utility to farmers and fruit growers.

The dried fruit is beautiful, and no such samples have been before shown in this neighborhood.

The dryer received the Bronze Medal at the Centennial and the gold medals of Oregon, in 1876 and 1877 for excellence of flavor, color and condition of fruit.

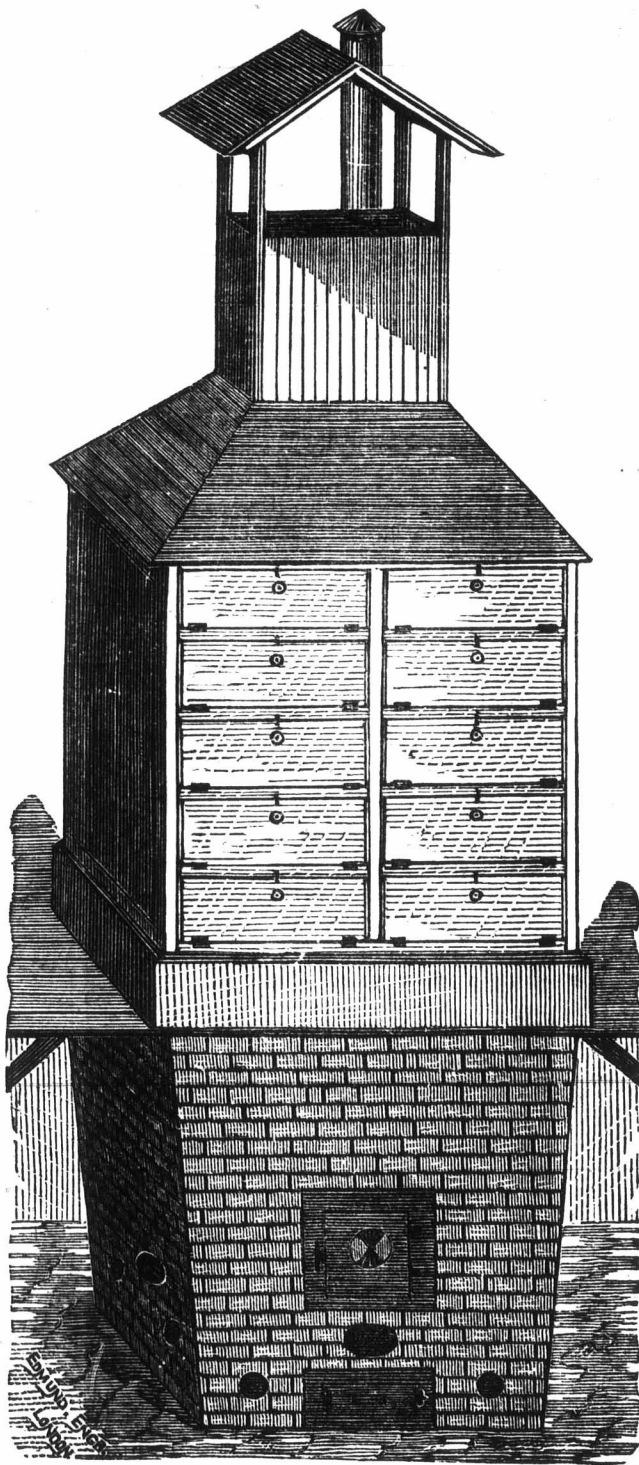
Large quantities of potatoes dried by this process have been shipped to England and used in the royal navy.

Broad Tires on Wheels.

The condition of the roads the past season has done more to common-tired wheels than all the arguments that have ever been uttered. The soft roads have been so cut up with the 1½-inch wagon tires, and these have sunk so deeply in the mud that, in some places, travel has been impossible for weeks at a time. Those who have been thus mud bound are now convinced that it might have been better for them had the tires of their wagons been three or four inches wide; but they are still in doubt about the ease of draft of these broadwheels. Now, it should be evident that a broadwheel, that will not sink into the ground, is of much easier draft than a narrow one that cuts in two or three inches. The difference in draft of a narrow and broad wheel upon the hardest, smoothest road is inappreciable, and it is a matter of doubt if it is in favor of the one or the other. Theoretically, there may be a difference, to a small extent, in favor of the narrow tire, but as our roads are far from being hard or smooth, the difference of draft will be decidedly in favor of the broad tire. A load of manure can be drawn across plowed ground in a broad-tired wagon by a team that could not move it one foot with narrow tires, and the softer the ground the more apparent will be the difference in favor of the broad wheels. It is to be hoped that the manufacturers of wagons will make the experiment of offering wheels with broader tires; we believe they would soon become very popular—*Agriculturist*.

The soil best adapted to the wheat plant is found on uplands, and is known by having a clear red clay subsoil. All soils will produce wheat; but all soils will not, nor can they be made to produce good grain or remunerative crops. Low lands, for instance, having too much alluvium and humidity, almost always fail in bringing wheat to maturity. A surplus of straw food moisture in the atmosphere builds the straw up, but fails to develop the grain. Rust invariably follows, and swivels the grain; and then both are lost.

The best time to secure Hungarian grass is when it is in blossom, and before the seeds have formed. The beards at this time have not reached that degree of stiffness which the writer thinks causes injury to the stomach of the horse, while the embryotic seeds are perfectly harmless. One large farmer in the State has, to our personal knowledge, been using it for feed for his horses, at one time keeping eight on it without injury; but then he always aims to cut at the right time.



PLUMMER'S FACTORY FRUIT DRYER

gether with 60 square yards of galvanized wire cloth, on which to spread the fruit; is also supplied with the inventor's improved heater, which is very durable, elaborate in detail, and burns either coal or wood.

The dryer is also constructed in sections and easily adjusted and set up ready for operation, and is guaranteed to dry six bushels of apples per hour. Five hands are required to operate this machine to its full capacity, and from ½ to ¾ cord of wood necessary in a run of 12 hours. A building—one story, 20x24 feet, elevated six feet from the ground—to give room for the heater which is placed under the dryer, is desirable in which to set up and operate this machine to advantage.