

**A NEW FRUIT DRIER.**

A compact and portable fruit drier, adapted to the wants of farmers and others desiring to produce a good article of dried fruit, is shown in the annexed engraving. The inventor informs us that the device dries apples in a few hours, delivering the fruit white and clean, with all the flavor retained, so that it resembles in all respects the article sold as evaporated fruit.

The case, A, has a number of openings in its front side, for a series of movable drawers for containing the fruit to be dried. The case has a furnace chamber, B, in which is placed a movable sheet iron furnace having a cast iron bottom provided with a handle, j. The upper part of the furnace sets loosely on the bottom, and is easily removed to facilitate the discharge of ashes. Charcoal or coke makes the best fuel, but coal from the kitchen fire may be used if the bituminous matter is permitted to burn out first.

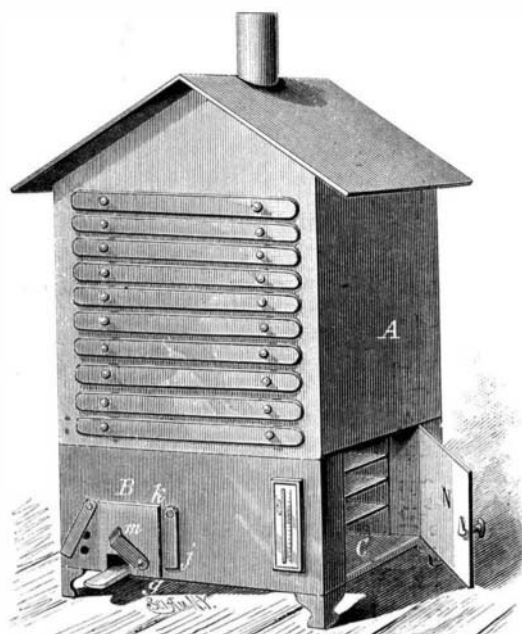
The draught of the furnace is regulated by the damper, m, and the admission of air to the furnace chamber is controlled by dampers, j.

A purifying chamber, C, separated from the furnace chamber by a perforated partition, has shelves or trays containing absorbents by which impurities are removed from the gas and hot air that proceed from the furnace chamber. From the purifying chamber the hot air and gases are drawn upward over and under the several fruit-containing drawers in alternation, and are finally discharged through the flue at the top, carrying with them the moisture from the fruit.

The temperature of the air in the purifying chamber is indicated by the thermometer seen at the right, and the draught may be regulated to give any required temperature.

The drier shown in the engraving is thirty-six by twenty inches, and the drawers, ten in number, are about three fourths of an inch deep. Such a drier will contain about two bushels of fruit.

The device may be made small and portable, or it may be adapted to a fixed building.



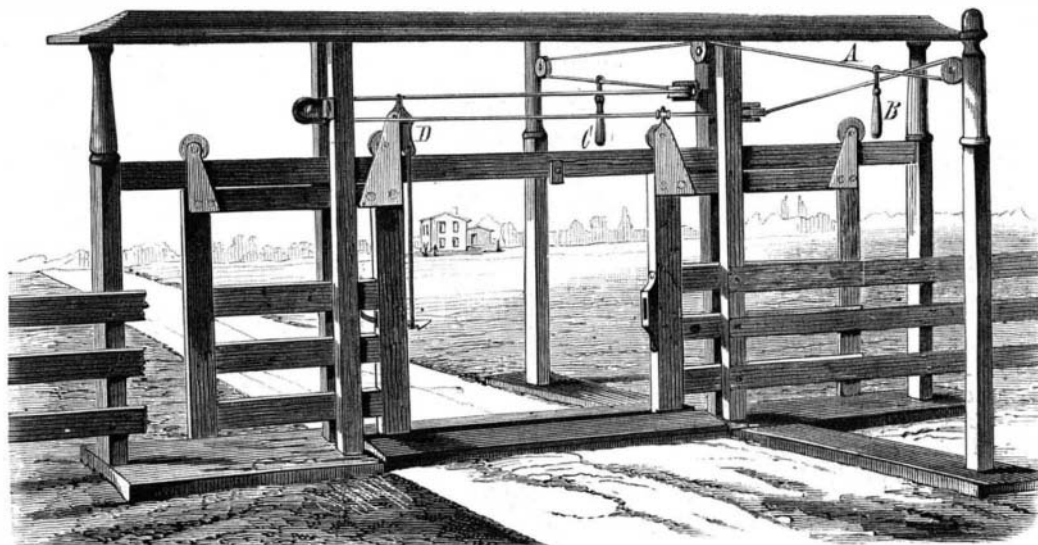
**MUMBRUE'S FRUIT DRIER.**

This fruit drier is the invention of Mr. William B. Mumbroe, of Montour, Iowa.

**IMPROVED ROLLER GATE.**

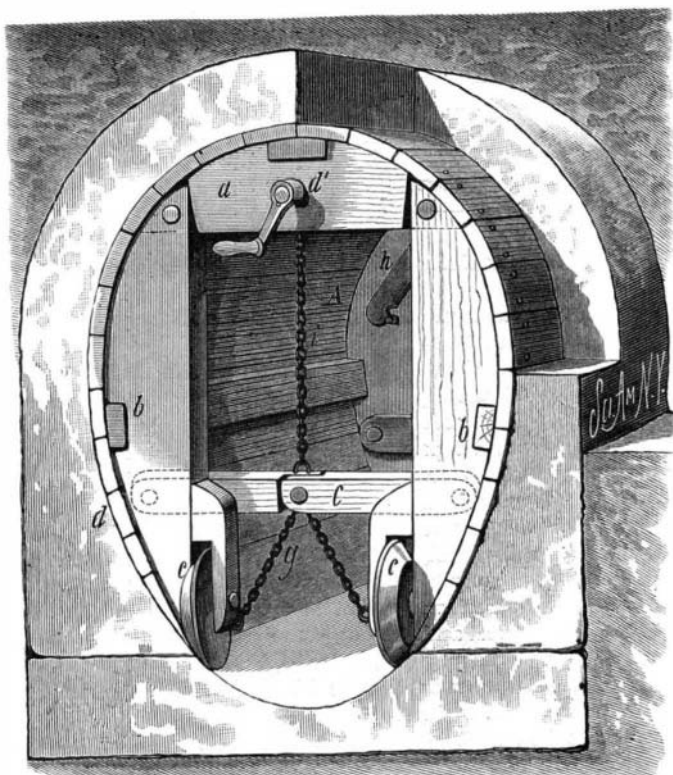
The annexed engraving represents an improved apparatus for operating roller gates, recently patented by Mr. Henry Allen, of Silverton, Oregon. The invention consists in the application of an endless chain or rope to a double or single roller gate, the rope being provided with handles and conveniently arranged so that the gate may be opened by pulling the rope in one direction, and closed by pulling it in the other direction.

The engraving shows the application of this device to a double rolling gate, but it may be applied with equal advantage to a single one. The gates run on a horizontal bar supported by posts which also support a protective covering. Two posts, set up on opposite sides of the gate, and equally distant from it, support pulleys around which passes the endless rope, A, which also passes around two pulleys on one of the gate posts and one pulley on the opposite post, bringing two strands of the rope above the gates in a horizontal position. The lower strand has a strong loop



**ALLEN'S IMPROVED GATE.**

through which passes an arm projecting upward from one part of the gate. This loop is of sufficient length to admit of moving the rope a short distance without moving the gate. The upper strand of rope is connected with the other part of the gate by a three-armed lever, D, which is pivoted



**BURNS' MOULD FOR SEWER BUILDING.**

to an arm projecting upward from the gate. The lever, D, is connected with the gate latch, and the first operation on pulling the rope is to unfasten the gates; a further movement of the rope opens the gate. A person in a carriage or upon horseback may readily open the gate by grasping the handle, B, and drawing it along as he proceeds. After passing through the gate the handle, C, is grasped and the gate is closed. The operation of the gate is the same whether approached from one direction or the other.

**IMPROVED MOULD FOR SEWER BUILDING.**

The annexed engraving represents an improved mould or centering, used in sewer building, and is adapted to any of the sewer building materials in common use, such as concrete, artificial stone, or brick, and is made of convenient length and of the proper form for a sewer, and is mounted on wheels and made collapsible, so that after a section of sewer is built it may be contracted and moved into a convenient position for building another section.

The frame of the mould consists of a top cross rib, a, at each end, to which are pivoted vertical side ribs, b b, having their lower ends connected by toggle bars, c, which retain and brace the ribs, b, when the mould is expanded. The ribs, a b, are covered by a sheathing, d, of wooden slats or sheet metal, except at the bottom, which is left open. Extending lengthwise through the mould, and sustained by ribs, a, there is a shaft, d', from which chains or ropes, i, extend to the jointed bars, c. The shaft, d', project beyond the ends of the mould, and is provided with crank handles, by which it can be turned to wind the chain, and thereby draw the sides of the mould inward.

The mould is supported on wheels, e, fitted in supports at the lower ends of the side ribs. These wheels facilitate the labor of shifting the mould as the work progresses.

In building sewers with this mould, a bottom or base, of stone or concrete, is first laid in the trench at the required grade, and when this is set the mould is placed thereon and the sides and crown of the sewer formed around it. A head

is attached to the end of the mould by screws or other fastenings, and projects as a flange, serving as a gauge for the thickness of the wall. When the section is completed the head may be removed and the shaft, d', turned to draw the sides of the mould inward. This action allows the mould to drop down, so that the sides and crown are relieved, and the mould may be then drawn out to the position required for the next section, and expanded by relieving the chain.

Springs, g, attached to the bars, c, and ribs, b, tend to draw bars, c, downward and expand the mould. There are also braces, h, hung on the ribs, a, which, when the mould is collapsed, catch on pins in side ribs, b, giving rigidity to the mould while it is being withdrawn.

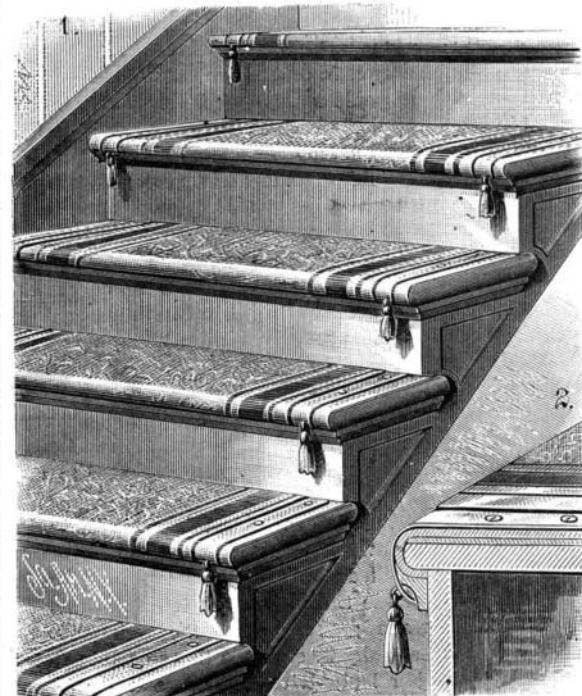
To prevent the sides of the mould from being forced inward when the sides of the sewer are rammed, the joint of the bars, c, are fitted to drop slightly below the center line when the sides are expanded, and the springs, g, aid in accomplishing the same object. By the use of this mould a sewer may be built rapidly to any grade, with top and sides of uniform thickness, without joints, and with a smooth interior surface. The trench may be filled as the work progresses up to the crown of the sewer, and the side walls thus strengthened while the material is setting.

This invention was recently patented by Mr. James Burns, of San Antonio, Texas.

**POODLE MOTORS.**—At the recent Applied Science Exhibition, Paris, M. Richard, a clothier, exhibited a motor which was turned by a poodle dog, confined in a revolving cage. The dog was able to drive four sewing machines. Women who have heretofore been accustomed to support their poodle dogs in idleness may now make them useful.

**NOVEL METHOD OF CARPETING STAIRS.**

We give herewith an engraving of a new method of carpeting stairs recently patented by Mr. T. F. Walter, S. E. corner 20th and Brown streets, Philadelphia, Pa. Instead



**WALTER'S METHOD OF CARPETING STAIRS.**

of a continuous carpet extending from the top to the bottom of the stairs in the usual way, each step is provided with its own carpet, which may be put on or taken off independently of the other steps. These sections of carpet are secured to the steps at the rear by tacks, and at the front by the moulding under the nosing. A band of brass or other metal, either plain, ornamented, nicked, gilded, or enameled,

extends across the ends of the carpet, and curving over the nosing is furnished with a metallic pendant.

Stairs carpeted in this way present an elegant appearance, and accord with the modern style of house furnishing. The carpeting is adapted to stairs of all widths, and little more than half the usual quantity of carpeting is required. The rods, while costing less than the ordinary styles, are much more ornamental and secure. There are several other advantages in this style of carpeting which will be apparent to those interested in this subject, not the least of which are the doing away with the use of covering to hide worn places that would otherwise appear when the carpet is moved up or down, and the facility with which any or all of the small pieces may be removed from the stairs and cleaned.

We call attention to Mr. Walter's advertisement in another column.