

perature for drying is therefore the highest which can be employed without danger of injury in either of these ways, since the drying will thus be made most rapid. What this highest possible temperature may be is determined in the case of any particular fruit or vegetable by its physical structure, chemical composition, and water content. As the different fruits and vegetables show very wide variations in these respects, there is no single best temperature for general use with the various products; heat treatment which would be perfectly safe with potatoes or carrots would be utterly ruinous if applied to such fruits as raspberries and peaches. For this reason it has been necessary to determine experimentally for each of the different materials the range of temperatures which may be employed without injury. These are given on subsequent pages. The operator of a drier should be provided with a dependable, accurate thermometer which should be placed in the drier and kept under frequent observation, as any attempt to trust to inexperienced judgment—as to temperatures in the drier is likely to result in damage to the material.

In drying any food material it is absolutely indispensable that provision be made for the prompt removal of moisture from the apparatus by a constant inflow of air. The reason is obvious; if the material be placed in a closed box and heated the confined air will very quickly become saturated and no more water can escape from the material. If the heating is continued, the material will literally be cooked in its own juices, since the water content of the products which we dry ranges from seven-tenths to more than nine-tenths of their total weight. Therefore, a drier can be efficient only in the degree that its construction provides for constant removal of the moisture given off by its contents.

Success in drying, therefore, depends upon the stopping by suitable means of the series of changes which begin as soon as the material is cut into pieces and exposed to the air, the employment of a temperature sufficiently high to prevent the growth of organisms—yet not so high as to produce the bursting of cells and loss of juices in fresh material or the scorching of that which has lost most of its water—and the provision of an adequate circulation of air for the prompt removal of the water vapor given off. Simple as these principles are, they have been discussed at length for the reason that most failures or poor results are due to the neglect of one or more of them. (Contd. next month)

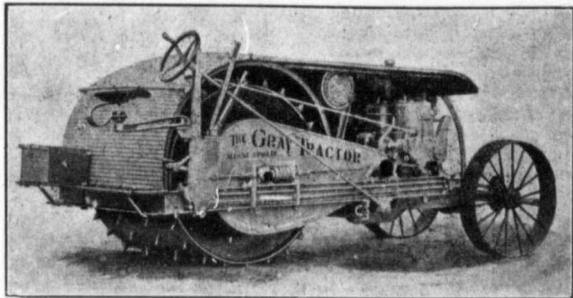
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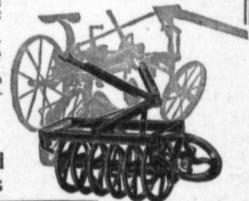
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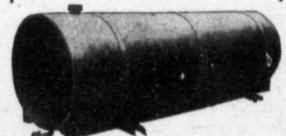
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