

**WASHING SUGAR WITH ALCOHOL.**

The advantages derived from the washing of sugar by alcohol, under the processes heretofore practiced, have been attended with the serious drawback that this method was very expensive, owing to the quantity of alcohol used. In the apparatus shown in the accompanying illustration, which has been patented by Mr. Ramon F. Cordero, of Rubio, Venezuela, the alcohol used for washing a charge of sugar is retained and made to circulate within the apparatus to wash succeeding charges, with but little or no waste of the alcohol, the operations of washing the sugar and distilling or condensing the alcohol being kept up in succession, the washing of a charge of sugar going on simultaneously with the separation of the alcohol from the molasses washed out of a preceding charge.

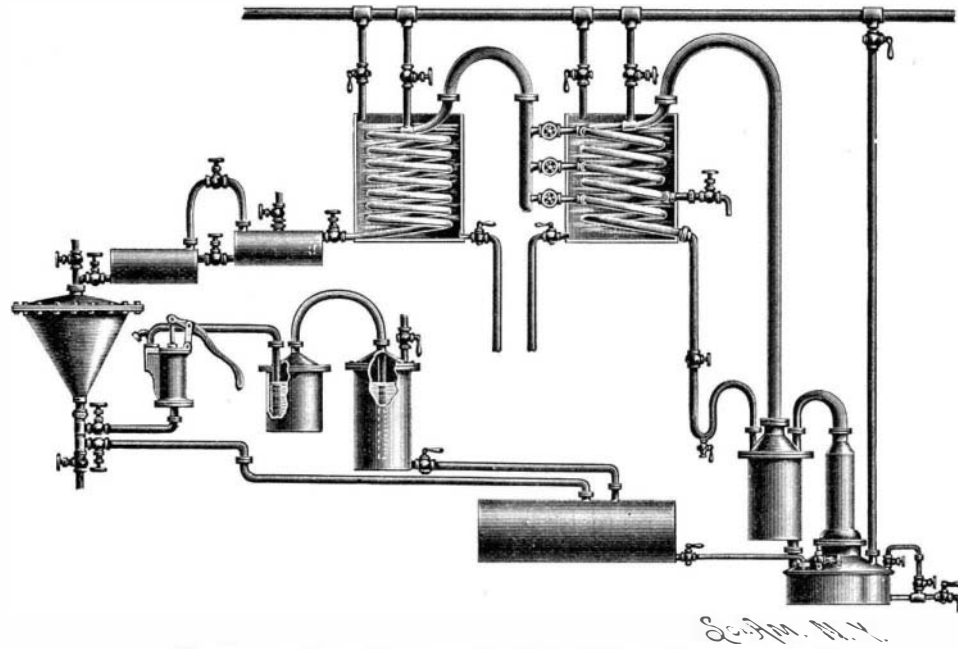
The sugar to be washed, in commencing work with the apparatus, is placed in the cone-shaped vessel shown at the left in the picture, being pressed down and covered with canvas, over which is placed a piece of wire cloth to uniformly distribute the alcohol, after which the cover is screwed on. The alcohol, preferably of about 38°, is then supplied through a cock in the top of the second of two horizontally arranged vessels just above, the connections being opened for its discharge over the sugar, to percolate through it. Just below the sugar cone is a glass section in the discharge tube, through which the progress made in washing out the molasses may be observed, and as it commences a cock is gradually opened in a pipe leading to the lower large horizontal tank, the opening of this cock and of the one supplying the alcohol being so regulated that the molasses will be washed out of the sugar with the alcohol and delivered into the large tank without making the sugar run. When it is seen through the glass section of the discharge tube that the alcohol passing contains no more molasses, the two cocks are closed, and a cock admitting air into the top of the sugar cone is opened, as is also another cock in a pipe leading to a pump, whereby either hot or cold air may be drawn through the washed sugar until no smell of alcohol can be detected, there being in the discharge pipe of the pump a small orifice or odor detector at which any smell will be readily perceptible.

The air thus charged with alcohol extracted by the pump is passed through two washers, where the alcohol is left in the water, the air escaping from a cock at the top of the second washer, while the alcohol and water are discharged into the tank into which the molasses had been previously washed from the sugar. The sugar may now be taken from the cone and a fresh charge put in, and meanwhile the molasses diluted by alcohol and water in the large tank is passed to a boiler where heat may be applied, the boiler being surmounted by a chest connected with a trapping chamber, an uptake from which leads to the top of the first of a pair of stills. The boiler has a cock for the discharge of molasses and all impurities, and one for the escape of air as the boiler is charged, together with a gauge for ascertaining the condition of the charge at any time. The stills are supplied with cold water outside the coils through suitable pipe connections, through which also the boiler is supplied, and water may be admitted to the coils themselves when required. The coil of the first still is connected at its lower end by a trapped pipe with the trapping chamber, for sending back alcohol of low grade, and this still is also connected by cocks at different points in its height with a pipe leading to the upper end of the worm of the second still, to allow alcohol of a high grade to pass over. From the latter still the alcohol passes to the receiver, the air escape pipe at the top of which affording the channel through which the apparatus is first charged with alcohol in commencing operations. A valved pipe leads from the bottom of the receiver to another receptacle having a valved connection with the sugar-washing cone, while a curved air pipe, having a cock at its highest point, provides for the passage of air between the two receptacles. Steam or other heat may be used in working the apparatus, which is designed to effect a great saving of labor as well as produce larger returns, because of the insolubility of the sugar in the alcohol and the

better quality of the sugar obtained. Further particulars relative to this invention may be obtained by addressing Mr. Diego Parra, P. O. box 3339, New York City.

**Electric Roads for Farmers.**

This use of electric roads for farms is destined, says the *Electrical Engineer*, to be enormous. At the present time the state of the vast majority of our rural highways is such as to render transportation a frightful tax upon production. But nothing is easier

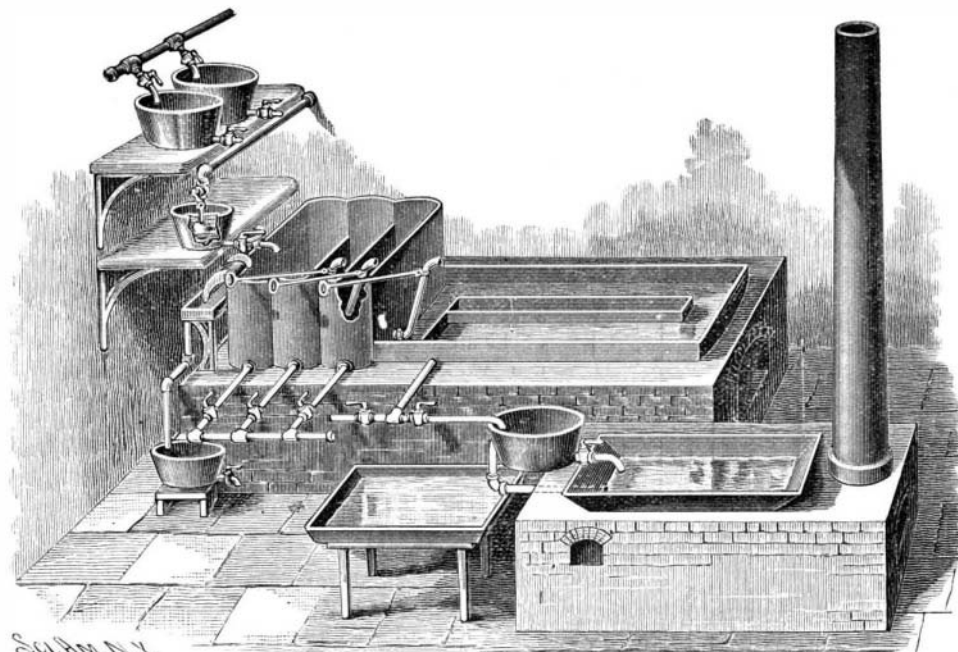


CORDERO'S APPARATUS FOR WASHING SUGAR WITH ALCOHOL.

than to track and wire these roads, furnish them with motor trucks upon which the farm wagons can be run fully loaded, and then turn on the current at stated intervals from the power house in the nearest town or at the nearest water power. These electric roads will continue running through winter and spring months when the ordinary dirt roads are utterly impassable and when the multitudes of draught horses kept by the farmers are simply eating their heads off in idleness. In 1880 there were 2,000,000 such horses on American farms. The bare possibility of getting promptly to market will stimulate the farmer to cultivate crops that now he dare not dream of. Moreover, the speed made will effect a most tremendous economy in the farmer's time.

**AN IMPROVED SUGAR MAKING APPARATUS.**

The apparatus shown in the illustration has an extensive heating surface, providing for the necessary concentration of the juice by using only cane refuse or bagasse for fuel, and is designed to be operated with



CORDERO'S SUGAR DEFECCATING AND EVAPORATING APPARATUS.

but little labor to afford an improved quality of product, from the successive cleaning of the juices in the several pans, and the removal of the scum, before the juices are passed to the evaporating pan. The improvement has been patented by Mr. Ramon F. Cordero, of Rubio, Venezuela.

The saccharine juices, as they come from the mill, are conducted to the receptacles shown at the top of the picture to the left, from which, in order to keep up a continuous action, they are alternately passed into a lower receptacle, the flow into which is regulated by an automatically operating cock controlled by a float. From the latter receptacle the juices are passed in properly regulated quantities into the first of a series of scumming or cleaning pans, the adjacent di-

viding walls of which are of different heights, the wall separating the first and second pans being lower than that dividing the second from the third. The pans are connected to discharge one into the other in succession by rising and falling or adjustable tubes, operated by handles, the third pan of the series discharging, when its tube is adjusted for the purpose, into the evaporating pan, which has interior walls forming a return passage to cause a circulation of the juices along one side and then back along the other side until the outlet pipe is reached, by turning a cock in which the concentrated juices are run into another receptacle. From thence they may be discharged through a cock into a teache or pan heated by a furnace, there being a revoluble tube having a nozzle at its outer end communicating with the interior of the pan, so that by turning the nozzle end downward the contents will be run into the crystallizing pan of the apparatus. The outlet pipe of the evaporating pan has an extension through which water may be passed when required, and a tube leads from the bottom of each of the scumming pans for the discharge of impurities and the water with which the pans are cleaned into a receptacle provided therefor, while at one side of the first of the scumming pans is a chute or plane over which the dregs scooped from the pan are passed to a receiver from which a pipe leads to the same receptacle. The furnace upon which the scumming pans and the evaporating pan rest has an interior flue

beneath and corresponding to the return passage of the evaporating pan, the products of combustion being conducted through this flue to the chimney, whereby the heat may be fully utilized.

In commencing operations, the evaporating pan is supplied with sufficient water to keep it from burning until the juices are delivered to it, the juices being allowed to flow into the scumming pans until their level reaches that of the outlet end of the last of the adjustable tubes, which is set to the height of the division between the first and second scumming pans, when the admission of more juice is shut off, and fire is started in the furnace under the pans, into which had been previously placed the materials used for defecation. The scum rising to the surface is then removed by means of a colander or large ladle, and more juice is admitted, the graduating cock over the first pan allowing only so much of the juice as the evaporating pan is capable of concentrating at a time to flow into the first pan, and from thence in succession to the two other pans and to the evaporating pan. By the time the juice arrives at the outlet end of the passages of the evaporating pan it will have been converted into molasses, in which state it is delivered to the next pan or teache, and is passed from thence to the crystallizing pan, where it is stirred, to cause it to lose the greater portion of its heat until it reaches the proper consistency to be put in moulds. The apparatus may be run night and day, the feed being regulated to furnish a continuous stream, affording known or given quantities of molasses to the final concentrating pan. When the mills are not at work, the whole apparatus can readily be thoroughly cleaned, water being passed through for the purpose.

For further particulars in reference to this invention, address Mr. Diego Parra, P. O. box 3339, New York City.

**Corset Burning at a Revival.**

In our paper for September 19 last we quoted a report from the *New York World* of the alleged proceedings at a meeting of the Free Methodists at Sydenham, Canada, when, under the exhortation of the preacher, women were said to have burned their corsets on the spot. Our confidence in the *World*, it appears, was sadly misplaced. An esteemed correspondent, Mr. J. E. Bristol, writes us that the *World* report was a fabrication from beginning to end. No such meeting or proceedings ever took place.

To remove a wart, cover the skin around the wart with lard, apply over the surface of the growth one or two drops of strong hydrochloric or nitric acid; then keep the part covered up until the scab separates.