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Improvement in Hulling and Cleansing Hominy.

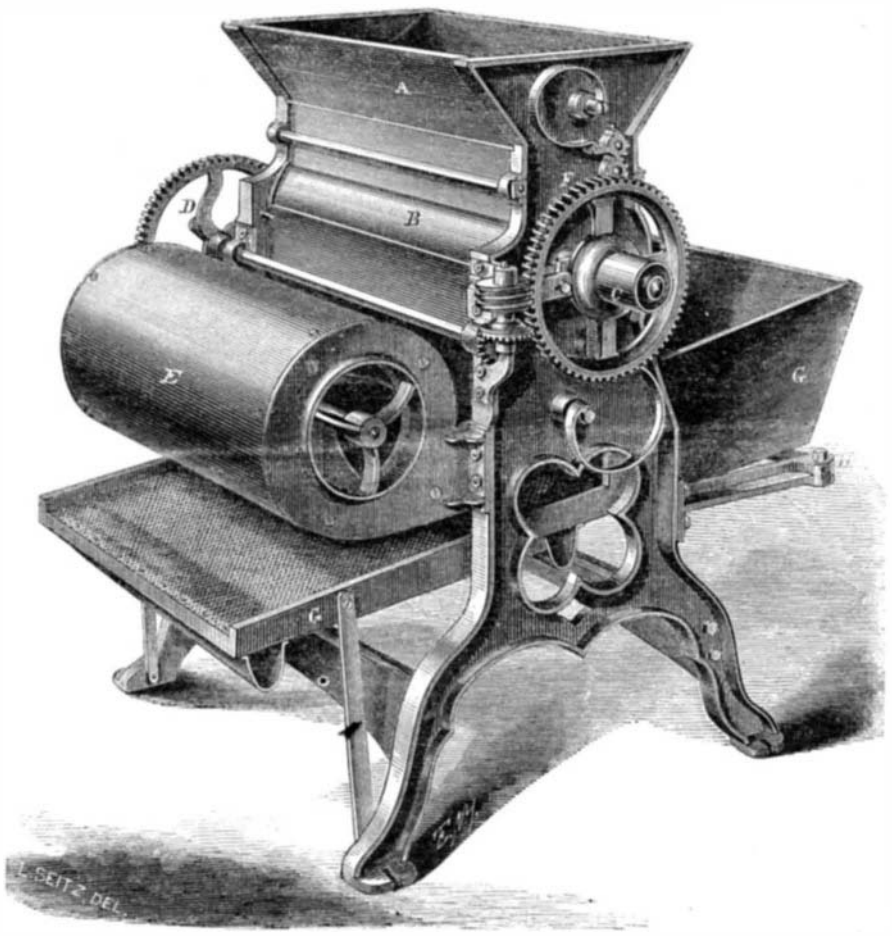
Many of our readers well remember when "hulled corn" was a standing winter dish. This was corn or maize the kernels of which were denuded of their "hulls" by the chemical action of alkalies, which, however, impaired the sweetness of the food. Hominy is corn deprived of the hulls by mechanical means leaving the corn with all its original flavor unimpaired. Hominy is a favorite dish throughout the country, but is not always entirely free from particles of the outer skin of the kernels. The mill shown in perspective in the engraving is intended to obviate this objection.

The corn is placed in the hopper, A, from which it is fed to the hulling cylinder contained in the case, B. The hulling machinery is driven by a belt on the pulley, C, the other end of the shaft of which carries a pinion which gives motion to the gear wheel, D. This, by means of a pinion on the shaft of the blower, E, drives the fans of the blower. On the other, or front end of the shaft which carries the gear, D, is a bevel gear by which another bevel gear and worm is turned. The worm rotates the worm gear, F, in two opposite arms of which are slots that carry pins projecting inwards, which may be moved toward or away from the center. This gear wheel turns free on the shaft that carries the pulley, C, and is intended for opening, by means of the pins in the arms and levers, a cover in the bottom of the hopper and a valve in the bottom of the hulling cylinder. Coiled or bent springs return these levers or valves to place when the pin which moves them has passed.

A wrist-pin on the gear, D, forms a crank which is connected to a bar at the rear end of the sieves, G, pivoted to an arm at H, by which the sieves have a shaking or reciprocating motion as the machine operates. The blower drives out the hulls and the motion of the sieves with their inclined position insure access of the air to every portion of the hominy.

It will be noticed that the connection of all the parts is absolute. The motion of the sieves, the speed of the blower, and the action of the inlet hopper valve and the delivery hulling valve are always exactly proportioned to the speed of the hulling cylinder, whether fast or slow. The upper or feed valve opens upward and has a downward projecting lip that shuts into a recess in its seat which insures security against leakage from the hopper to the hulling cylinder during the intervals of its being raised; a great advantage in hominy making, as no grain ought to get into the batch until that in the cylinder is done.

Patented Oct. 15, 1867, by John Donaldson, who may be addressed for further information at Rockford, Ill.



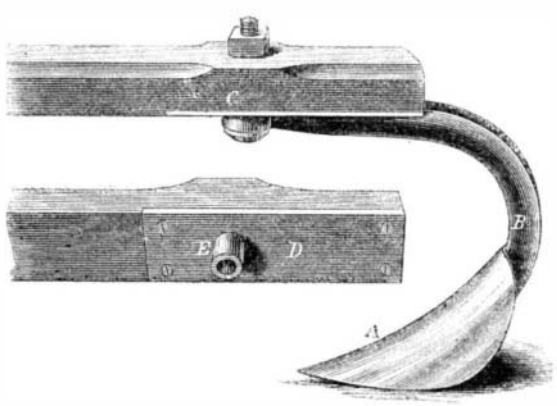
DONALDSON'S PATENT HOMINY MILL.

Nitro-Glycerin.

Professor Doremus of this city was called as a witness at at the inquest upon the bodies of the unfortunate persons killed by the recent explosion at Bergen, N. J. The Professor having previously analyzed some of the explosive mixture, testified as follows:—"I have subjected it to chemical analysis, and find it to correspond to the formula C_6, H_3, O_3, and $N O_5$; it is well made nitro-glycerin; the substance freezes at about 46; it is made to decompose in a very peculiar way; on moistening paper with it it burns with rapidity; it does not explode when red-hot copper is placed in it; we tried it with the most intense heat we can produce with a galvanic battery with two hundred cells holding a gallon and a half each; some nitro-glycerin was placed in a cup and connected with one of the poles of the battery; through a pencil of gas carbon the other poles of the battery were connected with the glycerin, no explosion ensued; but when the point touched the britannia vessel the nitro-glycerin took fire, a portion burning and the rest scattering about; this is as severe a test as we can submit it to in the way of heat under the pressure of the air; we therefore would conclude that nitro glycerin carried about exposed cannot explode, even if you drop a coal of fire into it; if the liquid is confined, or is under pressure, then an explosion will ensue; if paper be moistened with it and put on an anvil and a smart blow given with a hammer, a sharp detonation ensues; if gunpowder or the fulminates of mercury, silver or gun-cotton be ignited in a vacuum by a galvanic battery, none of them will explode; if any gas be introduced so as to produce a gentle pressure during the decomposition, then a rapid evolution of gases will result; the results of decomposition in a vacuum differ from those under atmospheric pressure or when they are burnt in a pistol, musket, a cannon, or in a mine; where we have little or no pressure it is difficult to get these substances to burn rapidly; nitro-glycerin is more difficult to explode than powder; in many respects it resembles gun-cotton which is made in a similar way; if gun-cotton be immersed in the proto-chloride of iron it turns into common cotton; the same experiment was tried with nitro-glycerin by mixing it with proto-chloride of iron, and it reverted into common glycerin; there are four well known varieties of gun-cotton made by employing acids of different strengths; they differ in chemical composition and properties, as well as in their explosive qualities; the late Minister of War, in Austria in 1862 stated to me that he had ordered four hundred cannon for gun-cotton, and six months after he stated that he had ordered all the cannon to be changed and adapted to powder, in consequence of spontaneous combustions; much less is known of nitro-glycerin than of gun-cotton, and probably several varieties of this article may be formed as of gun cotton; this would explain cases of spontaneous explosion; if the nitro-glycerin is not carefully washed to get rid of the acid, a gradual decomposition will ensue, producing gases, which, if the vessel be closed, will explode; my opinion is that nitro-glycerin should be used in the most careful hands; do not think I would put it in the hands of a common laborer for blasting purposes; it is less dangerous in a frozen than a liquid state; I think concussion would explode frozen nitro-glycerin.

HISERT'S ADJUSTABLE CULTIVATOR TOOTH.

The object of the device exhibited in the engraving is to allow the teeth of a cultivator to turn slightly and avoid obstructions, while they will follow at all times the line of draft, so that in turning the cultivator there is no risk of breaking the teeth or their shanks, or of overturning the implement. The cultivator blade, A, may be of any desired form, and it is secured to the curved shank, B, which is pivoted by a bolt to the beam, C. On the under or lower side of the beam is an iron plate, D, having a projecting socket, E, which is the stud or pin on which the eye of the shank turns. A bolt passing through the socket and beam holds the shank in place. Farmers will readily perceive the advantages of this device. It may be applied to any or all of the different cultivators now in use. Patented Sept. 3, 1867, by B. F. Hisert, who may be addressed for rights to make or sell at Norton Hill, Green Co., N. Y., or address G. W. King, Scoharie, N. Y.



Remedy for Cold Feet in City Cars.

"Riding down town these cold mornings in the horse cars, the unpleasant sensation of chilled feet reminds us of the plan adopted in France and other parts of Europe to keep the feet of car passengers warm. This is accomplished by inserting a flattened iron tube along the bottom of the car lengthwise in the center, between the rows of seats. This tube is raised a little above the floor level of the car to afford a rest for the feet, yet, not enough to make a stumbling block. When the car leaves the depot this tube is filled with hot water from a boiler kept heated for the purpose, and this water retains its heat and gives a pleasant warmth to the feet of the passengers and the car generally, for about two hours, after which the tube is refilled at a convenient station on the road. In the case of our city cars this might easily be done, and be a cheap and exceedingly comfortable improvement."—*Evening Post.*

It should be understood that the French cars are arranged with small compartments like stage coaches, and the passengers sit face to face, with the warming tube above described under their feet. One tube for every six persons. We would be glad, indeed, to see this plan introduced here. But it is not to be expected that our city railroad companies will do anything for the comfort of their passsengers, while without such trouble they continue to reap rich harvests. Very likely the idea of loading a lot of hot water upon their cars, for passengers to stand upon, would strike them as a good joke. Their poor, broken down, spavined horses, could not stand any additional load.

Getting Your Money Back.

The French are a curious people and one of the novelties of Parisian enterprises is a large warehouse, in which are sold, at retail, all manner of goods, from a diamond necklace to a shoe brush. The purchaser, having paid the price, receives not only the goods, but a bond for the whole amount of his purchase money, payable, after thirty years, and guaranteed by the Credit Foncier and other moneyed corporations. The prices charged are said to be no greater than in any other retail shops. This is really eating your cake in order to keep it; the more you spend the richer you will be; indeed it sets at defiance the whole of Franklin's code of proverbs, and proves "Poor Richard" a silly fellow. Imagine Jones lecturing his wife on her economy, and reproaching her for a spirit of saving, "My dear, if you had bought this camel's hair shawl thirty years ago, it would now be a source of income to us; if you had not been so close we should now be wealthy." Smith acquires an independence by giving his children an expensive education, and sees in every new dress or costly jewel which his growing daughters wear, a new mine of wealth for himself. If he can only persuade them to spend money enough he is sure of a support in his old age.

A GIGANTIC BRIDGE.—A suspension bridge is to be erected by M. Oudry, engineer, over the Straits of Messina, Sicily, from Point Pezzo, on the Calabrian Coast. It is to consist of four spans of 3,281 feet each, elevated about 150 feet above high-water level, so that the largest ships may pass under. The proposed Roebling bridge over the East River, between New York and Brooklyn, is to have a single span of 1,600 feet.

THE through mails to the West now go in iron-bound boxes instead of leathern bags. Each box, tightly packed, contains about eight hundred letters.

THE first steam vessel used in Great Britain was called the *Comet*, and built by Henry Bell in 1812. It was thirty tuns burden.