

**IMPROVED SULPHUROUS ACID APPARATUS FOR BLEACHING CANE JUICE.**

We illustrate herewith a new apparatus for bleaching cane juice through the action of sulphurous acid gas. It is claimed to introduce less acidity into the juice, and consequently to produce sugar more dry and of a superior grain to that ordinarily made by machines in use, to obviate the use of bone black in the clarification of refined sugar, to work uniformly in any kind of weather, to bleach efficiently, to admit of easy cleaning and repair, and to be adapted to any mills. A is an airtight chamber, in which is a vertical shaft which carries the wings, B, the latter extending spirally around the shaft in the spaces between the shelves, C. The juice is admitted to the chamber through the pipe, D, and falling upon the upper set of wings is thereby dispersed and collected by the shelf immediately beneath. Through apertures in the corners of the shelf it then falls, meeting the second set of wings, and being again dispersed by the centrifugal force. This continues until the lowest compartment is reached, when the fluid escapes by the pipe, E. In both pipes, E and D, are sealing chambers, which prevent entrance of air into the main chamber, A.

The sulphurous acid gas is generated by burning sulphur in the furnace shown, out of which it passes by pipe, F, which extends over the apparatus and finally enters the lower compartment. The gas is about two and a half times heavier than air; and in order to produce a draft sufficient to draw it up and through the chamber, A, the wings, B, are again utilized, so that they thus perform a double office. These wings, rotating at the rate of 300 revolutions per minute, necessarily produce a strong upward current, which therefore meets the descending liquid, which is already beaten into a fine spray. That the latter will thus be brought into intimate contact with the bleaching agent is obvious; and furthermore, it will be observed that the cane juice, just before it is drawn off, meets the freshest supply of entering gas. The juice thus bleached, if left to rest and defecate at least ten hours, will have, we are informed, a most beautiful appearance, and will make a very superior quality of liquor. The machine acts especially well in treating cane badly injured by frost, and has already been practically tested on a large scale.

Patented March 30, 1875. For further particulars address the manufacturers Messrs Lescale & Guedry, Paincourtville, Assumption Parish, La.

**HARDING'S CUSHION EMERY WHEEL.**

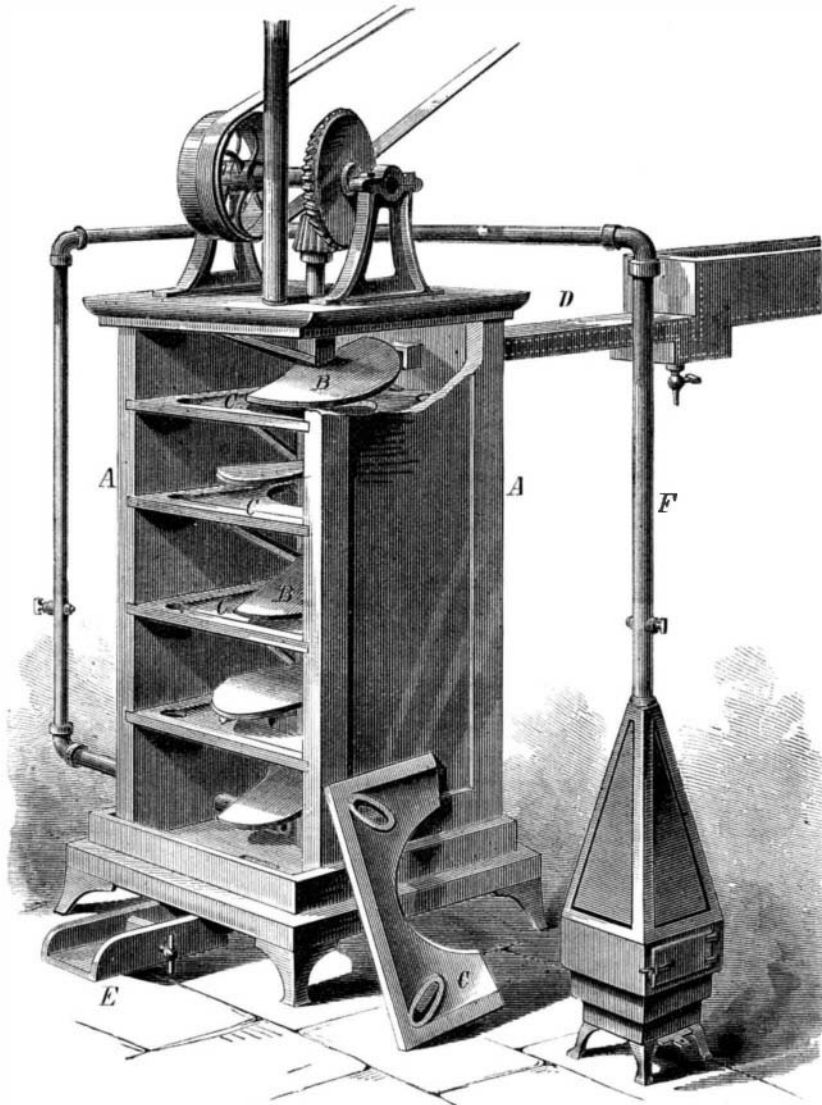
We illustrate herewith a new form of emery wheel, the principal feature in which is the flexible or cushion rim. This is so constructed as to be soft and yielding to pressure, thus especially adapting it to the polishing of articles, both heavy and light. The rim is also adjustable, and never needs truing, and is therefore durable and economical.



The device is composed of a strong cast iron wheel having a double periphery, through which several apertures are made. The outer rim consists of several layers of leather or other suitable material, firmly cemented together and varying in thickness from one half to three quarters of an inch, according to the purpose for which the wheel is needed. This leather rim is attached to T-headed bolts which rest on

springs, as shown, and are setup and adjusted by nuts within the inner periphery of the wheel. In operation the flexure of the rim will move around the wheel in wave form, as the object to be ground is pressed against its surface, the transfer of pressure from one point of support to another taking place in a perfectly uniform manner.

Patented January 17, 1871. For further particulars, relative to sale of rights for Eastern and Southern States, etc.,



**APPARATUS FOR BLEACHING CANE JUICE.**

address the inventor, Mr. Thomas Harding, No. 3 Second street, Lafayette, Ind.

**Journal of the American Electrical Society.**

We have received the first number of the Proceedings of the above society, which, in respect to beauty of typography and excellence of contents, is one of the most valuable documents we have seen for a long time. The Society comprises among its members all the principal practical discoverers and workers in electrical science, and perhaps it is therefore not surprising that the selections of its contributions to electrical knowledge should be unusually good.

The first article is by Elisha Gray, whose remarkable inventions in the transmission of musical sounds by telegraph have from time to time been noticed in the SCIENTIFIC AMERICAN. The present article gives a full and intelligible description of them, and the article is of so much interest that we reproduce it in full, with its excellent illustrations. It will be found complete in our SCIENTIFIC AMERICAN SUPPLEMENT, No. 6. We are indebted to the Society for a loan of the excellent engravings that accompany the paper. Mr. F. W. Jones contributes to the Society's journal an excellent paper on Quadruplex Telegraphy; Mr. C. H. Haskins, a paper on the Use of Condensers as Repeaters; Mr. I. N. Miller, a paper on Lightning and Lightning Rods; Mr. R. H. Jewett, an article on an Improved Line Galvanometer etc.

For the present year, General Anson Stager is the President of the Society. The publishing committee are W. H. Smith, F. W. Jones, M. G. Kellogg. The headquarters are at Chicago, Ill.

**A Wonderful Clock.**

One of our foreign exchanges gives an account of "a marvelous piece of mechanism, which just been exhibited in Paris. It is an eight day clock, which chimes the quarters, plays three tunes every twelve hours, or at any intervals required. The hands go round as follows: One once a minute; one once an hour; one once a week; one once a month; one once a year. It shows the moon's age, the rising and setting of the sun, the time of high and low water, half ebb, and half flood; and there is a curious contrivance to represent the water, which rises and falls, lifting some ships at high water tide as if they were in motion, and, as it recedes, leaving them dry on the sands. The clock shows the hour of the day, the day of the week, the day of the month, the month of the year; and in the day of the month provision is made for the long and the short months. It shows the signs of the zodiac; it strikes or not and chimes or not, as may be desired; and it has an equation table, showing the difference between the clock and the sun for every day in the year."

**Working Men's Lodgings at the Centennial.**

Our excellent contemporary the Philadelphia *Public Ledger* quotes approvingly our recent suggestions regarding the providing of cheap quarters for working men who may be enabled to visit the Centennial, through concerted action of trades' unions and other societies, but adds that good cheap accommodations are already in existence. The editor says: "As to the matter of lodgings at moderate rates, the SCIENTIFIC AMERICAN may assure its artisan readers that here, if anywhere in the world, working men can secure good, respectable, comfortable, and desirable lodgings and board at moderate rates, for all that may come—unless they come in armies more than a hundred thousand strong in one day." We are certainly glad to learn the above, and no doubt our readers will be likewise; but on the other hand, with a vivid recollection of the frightfully exorbitant prices demanded for the meanest accommodations at Paris in 1867, and especially at Vienna in 1873, we still adhere to our idea that cheap quarters cannot be too plentiful, and therefore that the work suggested by us for the societies would by no means be useless.

Although we are inclined to congratulate the Philadelphians on the golden harvest which they will thus reap, it behooves us, and indeed everybody, to see that the reaping is restricted to its legitimate field. Philadelphia has very much more to gain, by placing every facility in the path of working men desiring to benefit themselves by witnessing the Exposition, than she possibly can have by her citizens seeking to profit pecuniarily by their attendance.

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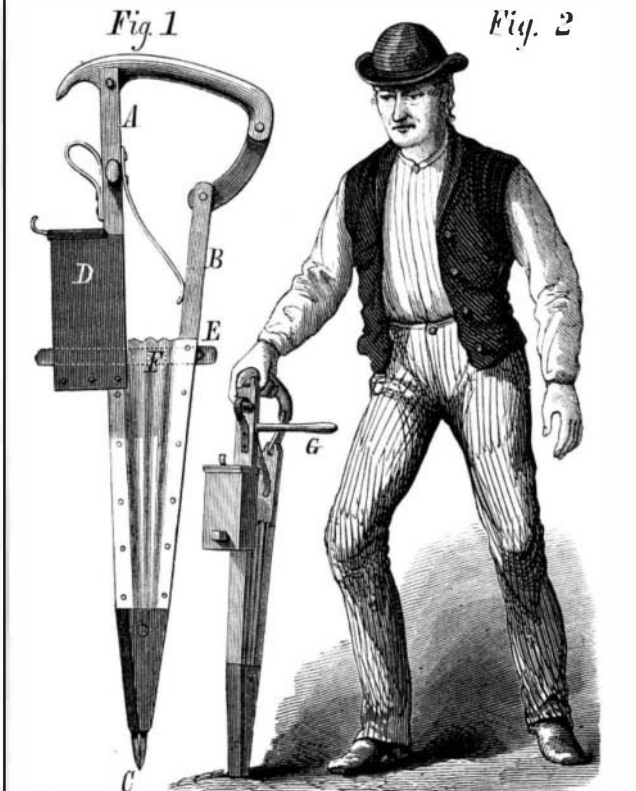
**NOEL'S IMPROVED CORN PLANTER.**

We illustrate herewith a new hand device for planting corn. According to the inventor, it may be manipulated so easily that the operator may traverse the field as rapidly as if the apparatus were but a walking stick carried in the hand. The invention is fully shown in Fig. 1, and in Fig. 2 it is represented in operation.

A and B are two bars connected together by pivots passing through overlapping plates near the lower ends. At the extremities are secured steel plates, C, which enter the ground and make an opening for the reception of the seed. Between the bars pieces of leather are attached, extending from the overlapping plates to the hopper, D. The seed contained in the latter is removed and dropped between the bars by the slide, E, which enters D through an aperture in the bar, A. The outer end of the slide is secured

to bar, B. The seed enters a hole in the slide, indicated by dotted lines at F; and the size of the hole is regulated, so as to take more or less seed, by a suitable sliding piece.

To the bar, A, is attached a convenient handle, the end of which is pivoted to a short connecting bar, which is also similarly attached to bar, B. This allows of the easy operation of the bars, which carry the slide into and out of the hopper, thus allowing seed to pass to the plates, C, and thence, on the latter opening the ground, into the hole made. The object of the loop on bar, A, is indicated in Fig. 2, it serving to afford a secure grasp for the device. The rigid handle, G, may be held by the operator with one hand while he grasps the handle above with the other, so that both



hands, when desired, may be conveniently applied. The spring shown between the upper parts of the bars holds the plates, C, together while the machine is being carried, and while said plates are being forced into the ground.

Patented through the Scientific American Patent Agency, January 4, 1876. For further information address the inventor, Mr. M. P. Noel, St. Cloud, Stearns county, Minn.