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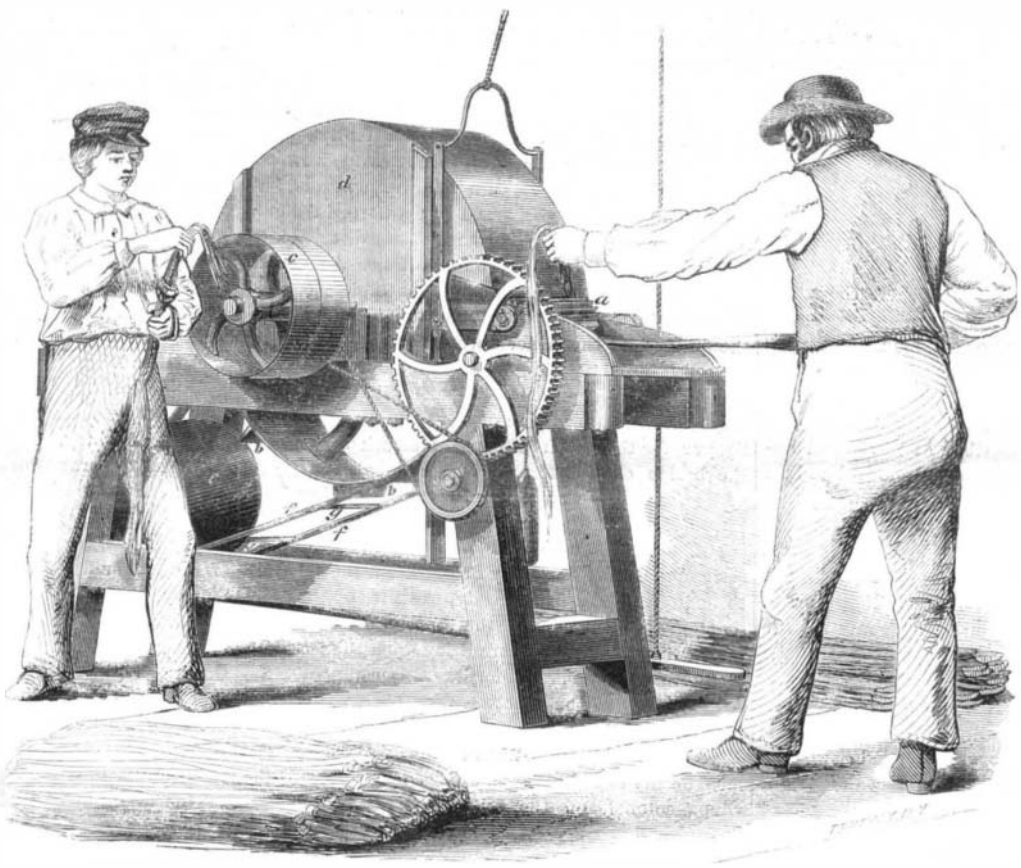
Machine for Making Sisal Hemp.

There is no field of invention which promises larger results than the adaptation of some vegetable fiber to manufacture into articles of clothing, cordage, paper, &c. We are anticipating as possible, and, indeed, as not altogether improbable, the advent at any time of an invention in this line, the stupendous effects of which will equal those of Whitney's cotton gin. Though flax has received a larger share of the attention directed to this subject than any other plant, there are many others which have not been entirely overlooked, and among these are the *Agave Americana* or *Planto de Queniquuen*. This is a tropical plant, growing spontaneously in Yucatan, Cuba, Florida and other places, in great abundance, and yielding two crops a year. The leaves of this plant are composed of fibers similar to those of hemp, but these fibers are covered by the fleshy part of the plant. When this fleshy portion is removed, the fibers form what is known in our markets as "sisal hemp," and attempts have been made to remove it by machinery, but it adheres so firmly to the fiber that all these attempts have been heretofore unsuccessful. After numerous experiments, Edward Juanes y Patrullo, of Merida, in the State of Yucatan, and Republic of Mexico, has succeeded in contriving a machine which accomplishes the work perfectly. This machine is illustrated in the accompanying engraving.



PATRULLO'S MACHINE FOR MAKING SISAL HEMP.

The leaves, divided into strips of suitable width, are fed in between two fluted rollers, *a*, when they are struck by the beaters, *b b*, upon the drum, *c*, and carried up over the drum between it and the cap, *d*, the cap serving to hold the leaves down so that they may be acted upon by the beaters. One-half of the beaters have serrated or comb-shaped edges, while the edges of the other half are plain, the two kinds being arranged alternately. The smooth edges break the fleshy coating of the leaves, and it is then scraped off by the beaters with the serrated edges. Each strip is fed in until half of it is dressed, when the upper fluted roller is raised by depressing the treadle, *e*, and the strip is reversed to complete the dressing.

As the beaters are liable to collect the matter which they scrape from the leaves, provision is made for keeping them clear. To this end, two narrow belts, *ff*, connected by metallic bars, *g*, are run beneath the drum, *c*, in such proximity that they will scrape the beaters and keep them clean.

This valuable invention has been secured by two patents, dated March 5, 1861, and April 23, 1861, through the Scientific American Patent Agency, and applications have also been made for patents in some of the foreign countries.

Further information in relation to the matter may be obtained by addressing the inventor at No. 20 Lispenard-street, New York.

On Filtration---A New Medium.

A paper on this important subject was lately read before the London Society of Arts by J. C. Dahlke. He stated that the Egyptians and Chinese used filters of unglazed earthenware and porous stone. In the beginning of the Eighteenth century, the French began to pay attention to this subject, and first employed wool, cotton and sponge for filtering media. About 70 years ago, filters were introduced into England containing three layers of media, namely, sand, gravel and charcoal. These were used by the water passing directly down through them. Charcoal alone has now become the most common filtering medium. Animal charcoal is the most efficient substance, as it filters water about three and a half times faster than sand or common charcoal. Its principal component parts are lime and charcoal, and these are so combined as to secure very minute and extended porosity. It is scarcely possible to keep water stored up in cisterns entirely free from contamination. A filter combining the quality of chemical purification, such as removing lead from the water, and mechanical separation of impurities, has not yet been made, and perhaps it is an impossibility. To remove lead that may have been taken up by the water in a well or cistern, Professor Faraday recommends the practice of mixing some animal charcoal with the water, stirring all up, and then allowing the whole to settle. The charcoal will, in this manner, separate the lead from the water. It has been found that water which contains much sulphate of lime and magnesia tends to derange the process of digestion. No filtering medium for such water is equal to animal charcoal—that made from bones burned in close retorts—but it is expensive for very general use. As a substitute for animal charcoal, Mr. Dahlke has found that the residue of Boghead coal, obtained after it is distilled for coal oil, answers a most excellent purpose. When well burned, it removes the color and offensive smell of impure water.

We have no doubt but, by mixing a small quantity of clay and lime with common cannel coal, and burning them in a retort, a very superior filtering medium would be obtained. All the water used in our cities should be passed through large filtering beds before it is distributed for consumption. In winter, this is scarcely necessary, but in summer, when so much organic matter finds access to river and pond water, it frequently becomes very impure. Sufficient attention has not yet been paid to the filtering of water upon a large scale for cities and villages.

AN EXPERIMENTAL SHIP.—The Gloucester (England) *Chronicle* thus describes a peculiar vessel which lately arrived in that town with a load of timber. It says:—"The ship *Louisa*, of London, Captain Williams, now unloading timber at Messrs. Nicks & Co.'s wharf, is deserving the inspection of those who take an interest in naval architecture. The lines of the ship are precisely alike, both fore-and-aft—that is, assuming the mainmast to be half way between the bow and the stern, the shape of the fore and the after body is the same. The rudimentary principles of the ship may be described as a segment of a circle, and this is presented in every part, the keel being the only straight line in the hull. The construction of the ship, as well as the principle of construction, is also novel; instead of a frame covered by a skin of planks outside, and another skin inside, the hull is formed by solid logs covered with felt, and is sheathed with diagonal planking and coppered. The *Louisa* is rigged something, though not exactly, like a three-masted schooner, but holds large square-sails on the mainmast, with studding sails when going free; and finally, she is steered by chains acting on the rudder, similarly to the yoke lines of a boat. The vessel is very deep waisted, the forecastle and quarter-deck rising up like those of a Dutch galliot. She is very fast; goes on a wind ten knots, and off the wind, even thirteen; and her bottom being an inclined plane, she rises and glides over the water, instead of through it, without making any wash beyond a small jet where the cutwater strikes. She is a capital seaboat, dry and easy, and steers well; indeed, if she did not, her steering apparatus, having very much less power than the ordinary wheel and rudder, would not control her. The ship's measurement is 244 tuns, but she takes 400, and is so buoyant that she can scarcely be overweighed. She is 153 feet long and 23 feet broad.