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## An Inch of Rain on the Atlantic.

We have been struck with that passage of Lieut. Maury's "Physical Geography of the Sea" in which he computes the effect of a single inch of rain falling upon the Atlantic Ocean. The Atlantic includes an area of 25 millions of square miles. Suppose an inch of rain to fall upon only one-fifth of this vast expanse. "It would weigh," says our author, "three hundred and sixty thousand millions of tons; and the salt which, as water, it held in solution in the sea, and which, when that water was taken up as vapor, was left behind to disturb equilibrium, weighed sixteen millions more tons, or nearly twice as much as all the ships in the world could carry at a cargo each. It might fall in a day; but occupy what time it might in falling, this rain is calculated to exert so much force—which is inconceivably great—in disturbing the equilibrium of the ocean. If all the water discharged by the Mississippi River during the year were taken up in one mighty measure, and cast into the ocean at one effort, it would not make a greater disturbance in the equilibrium of the sea than would the fall of rain supposed. And yet, so gentle are the operations of nature, that movements so vast are unperceived."

## Marble Sawing Machine.

The annexed engraving illustrates a machine for the simultaneous sawing of two sides of a block of marble, the cuts being made straight, or on a taper, as may be desired. Much attention has been given to this particular subject of invention, during the past few months, in consequence of the offer of a prize of \$10,000 for the best practical machine for the purpose.—In the last number of our paper we published a communication from the offerer of the prize, in which he makes some very interesting statements respecting the marble resources of this country, the extent and growth of the trade, the uses and value of this special class of machinery, &c. The engraving herewith presented is the first of the kind that has ever appeared in our columns. The invention originated with Messrs. Noette and Schmidt, 227 Front st., Brooklyn, N. Y., and was patented Nov. 29, 1855.

A is the frame, on the upper part of which guides, B, are secured in which a horizontal saw frame, C G', works. This saw frame is operated by a pitman, D, operated by a crank, E, on shaft F. In the end pieces, G', of the frame there are rods, indicated by the worm wheels, G G, upon them; said rods have right and left screw threads cut upon them, the thread at one end of the rods being cut reverse to those on the opposite ends. The rods are operated by their worm wheels G G, into which screws, e e, gear, said screws being upon a shaft, I, which works in suitable bearings, f, attached to the saw frame. One end of the shaft, I, has a ratchet, J, into which pawl, g, catches, said pawl being attached to a lever, K. The upper end of the lever, K, is attached to rod L, and the rod, L, is attached to a lever, M. The lever, M, has a horizontal projection, g', at its lower end, the outer end of which projection is rounded or beveled, as shown.

A pin, h, is placed on the framing, A, against which pin the projection, g', strikes. N is a spiral spring, one end of which is attached to the lever, M, and the opposite end to the saw frame, G'. O O are saws. The ends of these saws are attached to nuts, j j', which work on the screw threads cut on the rods, G', before mentioned, there being a nut on each screw thread. The saws are not attached directly to the nuts, but to plates, k, which are secured to the ends of the nuts. By adjusting these plates to the nut in the desired position, the cutting edges of the saws, O O, may be inclined either outwards or inwards to suit the taper direction or form in which the block of marble is to be sawed. To one end of the shaft, F, there is attached an eccentric, P, around which a strap, Q, is fitted, said strap being attached to a rod, R, the lower end of which is connected to a lever, S, which works loosely on a shaft, T.—This shaft, T, has a ratchet, U, at its end, and a pawl, l, attached to the lever, S, catches into the ratchet, U. The shaft, T, also has a screw, m, upon it, which screw gears into a worm wheel, n, which is fitted upon a screw rod, W. V is a bed, which has a frame, X, attached to it, said frame, X, being allowed to slide up and down, by means of guides, o, on uprights, a' a', attached to the frame, A. To the upper surface of the worm wheel, n, a toothed wheel, y, is attached, and a toothed wheel, r, indistinctly shown, gears into the wheel, y, and a pinion, s, gears into the wheel, r. The axis of the pinion, s, has a crank, t, attached to it.—The bearings of the shaft, T, are allowed to slide in the frame, A, and levers, Y, are attached to said bearings, by operating which the screw, m, on the shaft, T, may be thrown in and out of gear with the worm wheel, n.—

On the bed, V, is a ratchet wheel, Z, which is operated by means of the hand lever pawl, Z'.

The block of marble, \*, to be sawed is placed upright on the wheel, Z, and secured in proper position by means of the screw rod at the top. The lower or cutting edges of the saws, O O, are then set outwards to correspond to the taper designed to be given the sides of the block. Motion is then given the driving shaft, F, by the belt, and a reciprocating motion is thus communicated to the saw frame by the pitman and crank. As the saws vibrate they cut the block of marble from its top end downwards, while at each stroke of the saw frame the screw rod worm wheels, G, are turned in consequence of the projection, g', at the lower end of the lever, M, striking the pin, h; and the nuts, j, on the screw rods, will be thrown or moved further apart at every stroke of the saw frame, so that the block will be sawed in taper form, the diameter of the block increasing gradually from its upper to its lower end. The block is fed upward to the saws as the saws cut, by means of the worm wheel, n, which, as it turns, moves the screw rod, W, upward, which raises the block of marble. The worm wheel, n, is turned by the screw, m, on the shaft, T, the shaft being turned the requisite distance at each stroke of the saw frame, C, by means of the ratchet, U, pawl, l, rod, R, and eccentric, P, as described. When two sides of the block are sawed, the block is run down again below the saws by turning the crank, t; the ratchet wheel, Z, on which the block rests, is now turned by means of the lever pawl, Z', and the block may be set to have two new sides cut. In this manner a square, hexagonal, or any many-sided form may be given the block. The degree of

quickness of taper may be regulated by simply changing the fulcrum of the lever, M.

It is alleged that this machine will work rapidly and well, and that a block of any polygonal or many-sided form may be sawed without removing the block from the machine from the time it is commenced until it is finished. For further information respecting the invention address the patentees.

## Curing Jaundice.

M. Bernard, a French chemist, has, it is said, demonstrated, by several experiments, that the white of eggs can only be assimilated or converted into food for the human body through the intervention of the liver. Guided by this fact, Dr. Giesler, of Goettingen, has suggested its employment in the treatment of jaundice. If the digestion of the albumen of eggs tend to rouse the action of the liver, it will necessarily restore the secretion of bile and cure jaundice.

## Cowdee Gum and Varnish.

In New Zealand, a resin of a peculiar character oozes from the trunk of the *Pinus Kauri*, a noble tree, which oftentimes attains to a diameter of twelve feet. The resin is commonly called "Cowdee gum," and is found in pieces, from the size of a walnut to chunks weighing two hundred pounds. Some specimens are clear and white, and others are of a nut brown color. It is fragrant, like elimi, and as inflammable as camphor. It readily dissolves in alcohol, and makes a harder varnish than gum mastic. It also dissolves in alcohol mixed with turpentine, and mixed with lac, makes a good sealing wax. It is now extensively used for varnish in England, but is not yet much known in our country.



