

Hulling Cotton Seed.

An excellent machine for hulling cotton seed was patented a few weeks since by Wm. R. Fee, of Cincinnati, O. It is said to overcome the great difficulty heretofore experienced in hulling this seed, and is represented to cut the covering of the seed without bruising, mashing, or expressing the oil therefrom. The seeds, after being cut, are subjected to a screening operation, which effectually knocks the kernels out of the divided hulls. The inventor has been extensively engaged in the manufacture of cotton seed oil in Cincinnati, and has, we learn, successfully introduced his improved machine in several of the large cotton seed oil factories in different States.

Rapid Photography.

Experiments were made in Bombay in November, 1855, for the purpose of estimating the limit of the photogenic action of the direct solar rays, and also, if possible, to measure the diameter of the sun within a small fraction of a second of angular measurement, by combining the photographic and the electric telegraphic processes, employing photography to estimate the element of time. The general result of the first experiment is, that it requires an exposure to the direct light of the sun for only one twenty-thousandth part of a second in order to obtain on a plate coated with collodion an impression, which may be completely developed by the ordinary processes.

The Great Eastern.

It is now said, we do not recollect on what authority, that the *Great Eastern* has been engaged to make three trips to this country instead of one, and that not only are excursion tickets to be issued to allow passengers from Great Britain to come to this country and stay some six weeks and return at very reduced rates, but tickets for the European tour are to be sold in the same manner on this side. If this plan is carried out we may expect a renewed impulse to be given next year to the already very fashionable and instructive practice of traveling to Europe. By the way, we may here express an opinion that nothing is better for a gentleman of forty who has closely applied himself to business till life has become dull and monotonous, than a tour of from three to ten months in the great centers of attraction in Great Britain and Europe, while nothing is worse for a young man just forming his character than the same method of spending that amount of time.

According to the August number of the *Artisan*, the work on this great steamship is now progressing quite successfully. The whole of the hull is completed externally, including riveting and caulking. The arrangement for supporting the rudder has been reconsidered, the present arrangement being that the heel of the rudder is stepped into a suitable bearing projecting from the rudderpost, whilst at the upper end, within board, it has a circular cast iron flange, fitted with friction rollers, which works upon a table supporting the entire weight of the rudder, the flange, with its rollers, being similar to a small turn table; thus the power required for working the rudder to steer the ship will be but small, and the wear upon the step will be trifling.

The paddle wheels are now completely framed together, and fitted permanently upon the paddle shafts ready to receive their floats.

The scuttles for the ship's sides are being put in. There are 300 large galvanized cast iron frames, fitted with brass lights 14 inches diameter clear opening, glazed with inch glass; they are strong and well fitted together; the annular groove in the brass frame is fitted with cork, for rendering the joint water-tight. There are also 200 smaller lights similarly constructed; the frames are glazed with three-quarter glass, 8 inches diameter clear of frame.

Before the beginning of 1858 the whole of the joiner work will be complete and ready for the decorators, upholsterers, &c.

Air Engines Again.

Since the air engines of the steamship *Ericsson* have been changed to steam engines and the furnaces, regenerators, compressing pumps, &c., of the "caloric" apparatus re-

moved to make way for the more practically approved boilers, condensers, air pumps, and other paraphernalia connected with the now common-place steam engineering, little has been heard of Captain Ericsson or his plans, but he has not been idle. Profiting, or endeavoring to profit, by the experience obtained in each succeeding effort, he has continued to build and modify his favorite style of engine, having completed we think seven dis-

ting machines, mostly double cylinder engines of comparatively small size, since his last trial on the ship. He has now floating in the Hudson a small steamer, or *air-er*, about seventy feet long, which he has succeeded in driving at a good rate by the combustion of an almost incredibly small quantity of pine kindling wood. There are two engines, horizontal, single acting, and apparently about thirty inches diameter by

thirty-six inches stroke. The vessel is an open boat, or mammoth yawl, and the paddle wheels are about ten or twelve feet in diameter. We believe air alone is the fluid employed as a medium to generate the power but cannot say whether the regenerator or other of the features principally relied on in the former efforts are still employed. We shall endeavor to keep our readers posted, if anything of importance is developed.

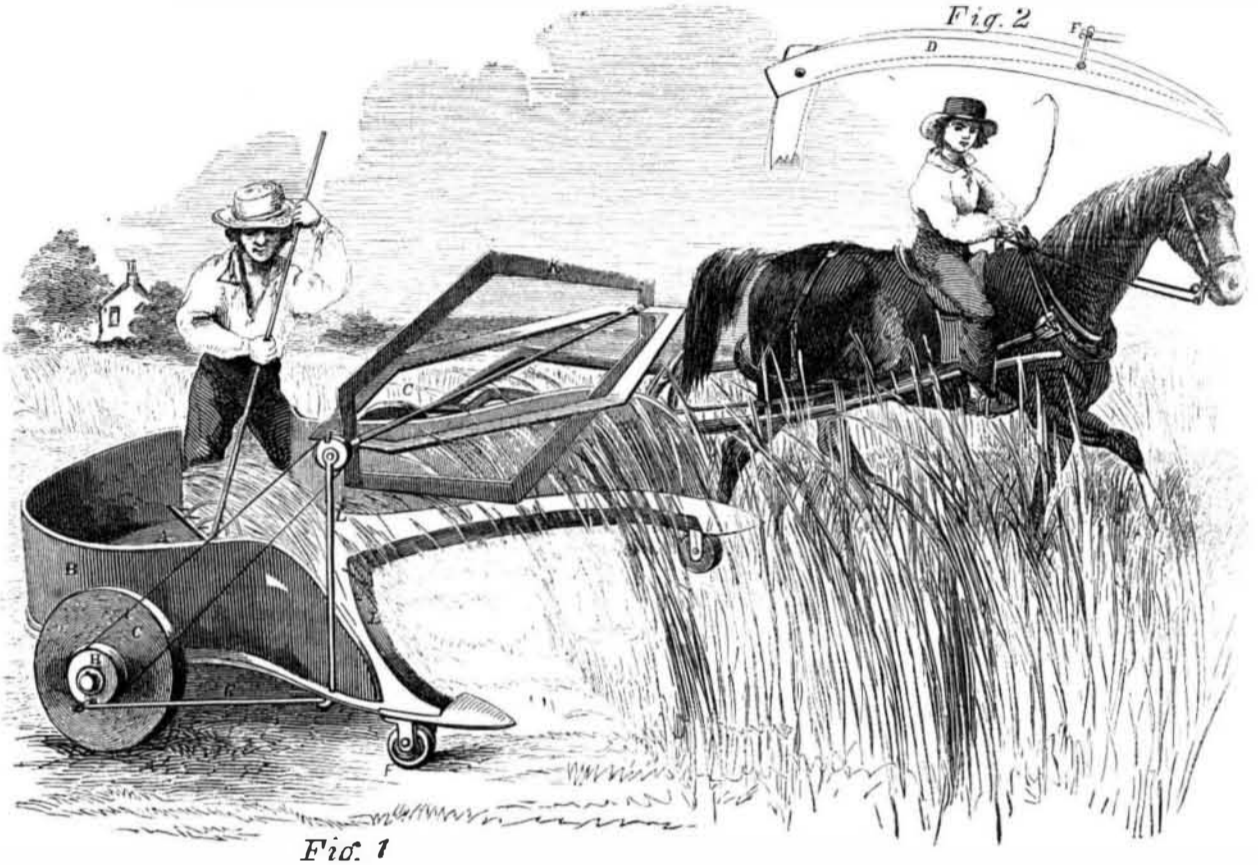
GUMAER'S HARVESTER.

Fig. 1

Fig. 1 is a perspective view of a harvester invented by S. Gumaer, of Chicago, Ill., and secured by patent dated August 4, 1857. The peculiarity is chiefly in the cutters and in the means of presenting the grain thereto. Fig. 2 represents the cutters separate from the machine.

A is the floor or platform, and B B are the elevated sides. C C are the ordinary large bearing wheels, D D are cutters somewhat resembling large knife blades or scythes, E E are leading wheels, which support the weight of the front edge of the platform, and F F are bell-cranked shaking levers, by means of which, through the intervention of the connecting shaking rod, G, a shearing motion is imparted to both the cutters. H is a pulley on one of the wheels, and I a belt which communicates motion therefrom to J, a small

pulley on the shaft of the reel, K. The reel, K, is of greater diameter in the middle than at the ends, a form adopted in many other descriptions of reapers, and is mounted on standards, L, at the proper elevation to gently strike the grain and incline it over toward the knives at the best angle for cutting. As the machine is moved forward by the horses, the connecting rod, G, generates a peculiar and reciprocating motion in the cutters, C C, and the straws are severed along the edges of the knives by an ordinary cutting action, like that of a scythe, and at the junction of the cutters by an additional shearing action analogous to that of scissors or shears.

The machine may be driven at any speed, as there are no parts which reciprocate with such velocity as to endanger the safety of the machine, or to absorb power by such motion

in any serious degree in fact, the cutting is performed more efficiently and perfectly with the machine driven at a tolerable speed than when driven very slowly.

Mr. G. estimates that the weight of this harvester will not exceed 400 lbs., and it can be afforded to the farmer at retail, ready for use, at \$65. This latter is a very important consideration, and the former is little less so, as the side draught depends much on the weight of the machine.

The claim of the inventor comprises the combination of the blades, D D, with the peculiarly constructed platform, A, and the center well reel, K, when said parts are arranged to operate in relation to each other, as and for the purpose set forth.

For further information, the inventor may be addressed as above.

Ventilation of Buildings.

The mode of ventilating the two new halls of Congress is to be as follows:—A column of air, previously passed through hot water pipes in the winter, and through jets of ice water in summer, is to be forced, by means of a large fan worked by steam, up a hollow shaft to the space between the roof and ceiling, through the latter of which, being thoroughly perforated, it will gain admission into the room, and displace the vitiated air through apertures in the base of the walls. This theory of ventilation is original with Capt. Meigs, and is yet untested, and doubts have been expressed by scientific men of its practicability. However, if it should be found impracticable to introduce the fresh air from the top of the room, the ventilating apparatus will be so arranged as to introduce it from the bottom, without any material alteration or additional expense.—*Washington Union*.

[We can see no difficulty in this except the power and attention required by the fan, and predict that the ventilation will be very perfect. It will be necessary to provide pretty carefully against allowing any sound from the fan to reach the interior of the halls.

Saleratus vs. the Teeth.

The bony portion of our frames are covered with flesh, and preserved from all direct external influences, except the thirty-two bones which we (some of us!) use in masticating our food. These are generally a great source of trouble, and it is perplexing to find authorities differing very much with regard to the effect of various agents on them. At the Dental convention lately in session at Boston, some of the dentists asserted that the main cause of defective teeth was the use of saleratus and cream of tartar in the manufacture of bread, and Dr. Baker gave the results of some experiments which he had made by soaking sound teeth in a solution of saleratus. The teeth were destroyed in fourteen days. Mr. Spaulding, of St. Louis, did not believe that alkali in general injured the teeth, but acknowledged that saleratus did.

Manufacture of Combs.

It is said that the greatest comb manufactory in the world is in Aberdeen, Scotland. There are some two thousand varieties of combs made. There are thirty-six furnaces for preparing horns and tortoise shell for the

combs, and no less than one hundred and twenty iron screw presses are continually employed in stamping them. Coarse combs are stamped or cut out—two being cut in one piece at a time. The fineness combs and all small tooth combs are cut by fine circular saws, some so fine as to cut forty teeth in the space of one inch, and revolving five thousand times in one minute. The annual consumption of hoofs amounts to 4,000,000.

The Twist in the Transatlantic Cable.

From a card published by Messrs. Newall & Co., who commenced last and finished first the construction of half the great cable, it appears that both the cable-manufacturing companies twisted their portion according to samples sent them, that N & Co.'s sample had been received a long while before, and the Directors, Engineer, &c., of the Telegraph Company had been changed in the interval. The fact that the lay of the two halves was different was discovered during the experiments for testing the strength, soon after both establishments had commenced the rapid manufacture of the cable, but neither was willing to change the twist.