

Improved Grain Dryer.

The chances of trade and the processes of nature, cause grain to sweat and ferment when stored in large quantities, unless it is properly dried. To effect this it is necessary to subject the staple to a gentle heat so as to drive off the moisture contained in it.

The engraving published herewith represents an improved grain-drying kiln which is constructed as follows:—The grain is placed upon the trays, A, which consist of separate leaves, swung by separate rods from the main rod, B. These trays are so swung that the weight of the grain will preponderate on the upper edge, C, and thus cause all the trays to close on each other automatically. When the grain is on these trays a current of heated air ascends from the furnace, D, through the flues, E, and the passages, F, to them. The flue, G, runs cross-ways of the kiln, and there is a valve, H, in each passage, by which the heat under any of the trays may be cut-off.

When the grain has been sufficiently dried on trays it is dumped from them, by moving the main rod, B, on the second series, L, and a fresh charge laid on the first ones just emptied. From the second pans the grain is again dumped at the proper time on to the platform, M, which is one continuous floor, where the drying is finally completed; thus three charges are drying at once; suitable deflectors, N, guide the grain in its passage from the trays to the lower platform. There are strips of metal, O, at the ends of the upper trays, which prevent the grain from sliding off there. All the flues communicate with the discharge flue, P.

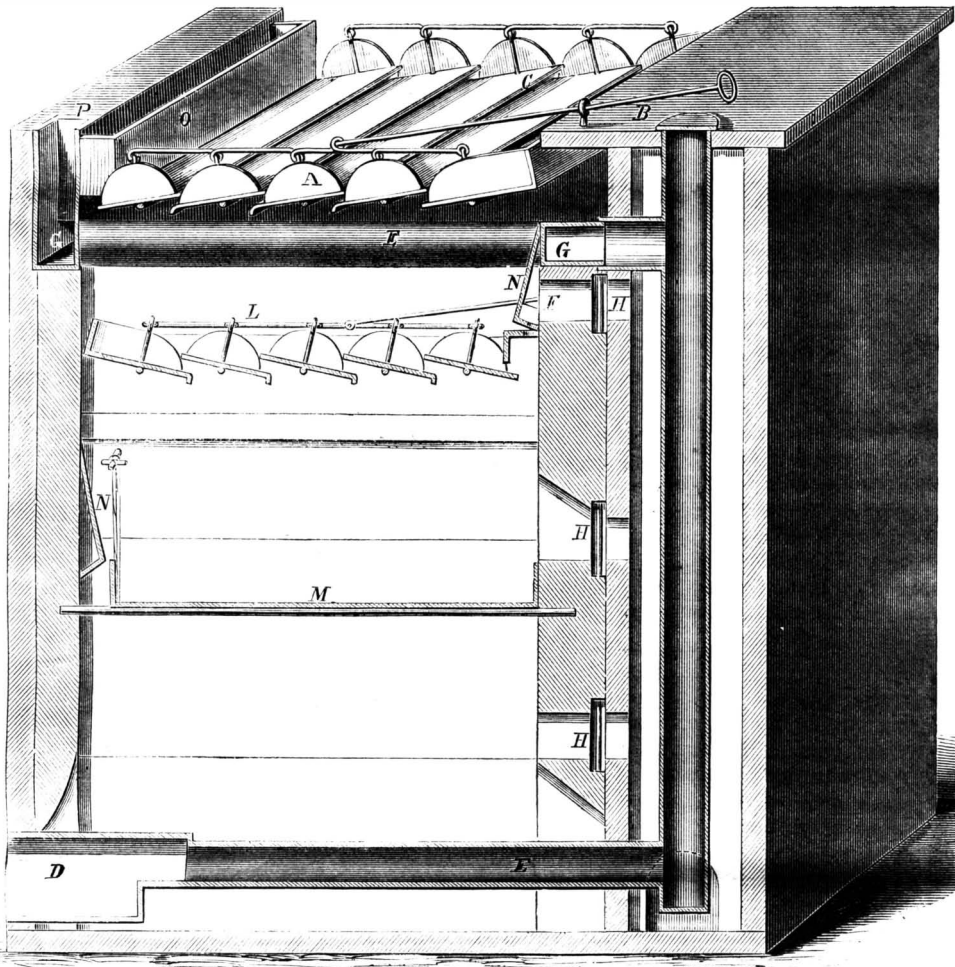
The bottoms of the trays may be perforated if desirable, so as to allow the heated air to pass through, and it is intended in practice to use superheated steam on the upper trays, leaving the floor to be acted on by hot air. The steam pipe will pass up the main flue and through the passage, F. The tops of the trays will then be covered steam-tight, with an escape-pipe and damper fixed in the cover instead of being left open, as shown. The inventor says that wet wheat dried in his machine weighed 50 pounds to the bushel against 45 pounds to the bushel dried in another kiln, both lots being from the same cargo, and having been wet the same length of time. The increase of weight he attributes to the action of the superheated steam, "for as the steam rises from the lower floors it is superheated in its passage, and ascends to the upper trays where it is absorbed, and, as a consequence, the grain retains more substance than where the steam passes directly out."

With this machine one man is capable of drying from 10 to 5,000 bushels per hour, according to the capacity of the dryer. The quantity of fuel is one cord of wood to one thousand bushels of grain, which may be reduced where a steam engine is used, as the heated air from the boiler can be turned to advantage. This is a convenient and well-arranged machine, and will doubtless give good results when properly managed. It was patented on the 13th of September, 1864, through the Scientific American Patent Agency, by John Babillion, of Detroit, Mich., from whom all further information can be had. The entire right is for sale.

The Berkshire Woolen Co., at Great Barrington, are manufacturing some cloth for A. T. Stewart, of New York, at the rate of \$11 a yard.

A NEW PHRENOLOGICAL BUST.

The attitude of the world of Science toward the parvenue, phrenology, still continues one of doubt. "We do not yet know whether the new comer is a rocket, shooting a few yards into the atmosphere, or a star, kindled and set forever in the depths of the firmament." There is, however, a growing disposition to recognise a correspondence between the general form of the head and the general cast of the character. It is admitted that no cases can be found of decidedly superior intellect accompanied by very



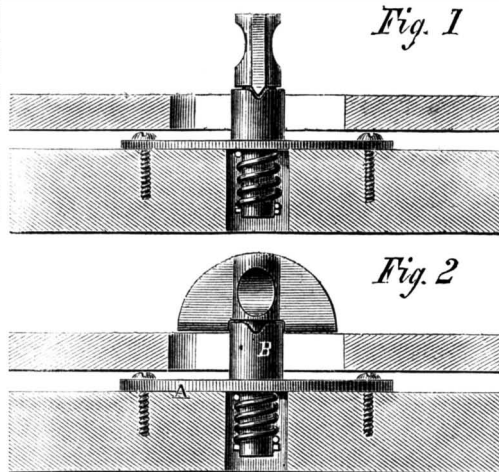
BABILLION'S GRAIN DRYER.

small frontal portion of the brain; or the manifestation of gross animal passions with a small development of basilar region of brain.

Messrs. Fowler & Wells, 389 Broadway have just put in market a phrenological bust well adapted to the position which phrenology occupies. One half of the head is marked off with the organs in the usual way, while the other half is marked only with the general divisions, moral sentiments, intellectual faculties, etc.

REED AND PACKARD'S SPRING-CATCH BUTTON

When a shower comes up an open carriage is an unpleasant vehicle to be caught in. There is hurry-



ing to and fro on the part of the occupants to get the top up and the side curtains down, and before this is done one is likely to get wet to the skin. The curtains can't be buttoned over the studs, and time and

temper are alike wasted. With this simple button the task may be accomplished with great ease. In Fig. 2 it is shown broadside to, or in, the position when the curtain slips over it. By simply turning it across, as in Fig. 1, the curtain is secured much better and quicker than with the old-fashioned arrangement. There is a small spring below the plate, A, which is let into the bow, or other part of the vehicle, and a notch in the tube, B; a projection fits into this notch and holds the button in position, open or closed as desired. This button was patented on Aug. 23, 1864, by T. K. Reed and H. F. Packard; for further information address the inventors, Reed & Packard, North Bridgewater, Mass.

Wrought-iron Rifled Guns.

The United States Government has sent several experienced officers of the army to test the Ames wrought-iron gun. The test requires one thousand shots to be fired from the gun. The test is taking place at Bridgeport, Conn., and thus far one hundred shots have been fired; it shows that, with twenty pounds of powder and fifteen degrees elevation the gun throws a shot four miles. It yet remains to try the full charge of 25 pounds, which, with a greater elevation, may be expected to realize the seven miles range attained in the private trial made a few weeks ago. These guns are molded solid throughout. The section around the bore is molded first, and by each subsequent heat the molds are extended outward. Each section is composed of three rings; the first has a diameter of ten inches,

with a hole in the center. This ring is accurately turned to fit inside of a second, which is also turned to fit the third and outside ring, each course being six inches thick. This furnishes not only purity in the metal, but the most perfect solidity throughout the entire mass. The hole at the center permits the impurities of the metal to be worked out from the inner rings, while being heated and hammered, while the scales which may accumulate on the outer rings are permitted to fall outward as the weld extends toward the circumference.

To Remove Silver Stains.

In the *Photographischer Archivier*, M. Obernetter recommends a concentrated solution of perchloride of iron as a detergent for silver stains on the hands or clothes. If gallic or pyrogallic acid has been used it will be necessary to wash the spot afterward with a few drops of a strong solution of oxalic acid. A weak solution of this salt is also useful for diminishing the intensity of negatives to be copied in the solar camera. Weak negatives may be transformed into strong ones by using first a solution of chloride of iron, and secondly with pyrogallic acid and nitrate of silver.

TWENTY-FIVE DOLLARS A BUSHEL.—Among the pears exhibited at the recent fair of the Horticultural Society of the American Institute was one bushel of Duchesse d'Angouleme, which was sold after the fair for \$25. There were 61 pears in the bushel; they, therefore, brought 41 cents apiece.

THERE are now building for the through broad-gauge routes from New York to S. Louis (1,200 miles) one hundred and fifty locomotives, five thousand freight cars, and elegant passenger cars in proportion.