Science and Art.

History of Reaping Machines.—No. 26.

On the 19th of September, 1854, a patent was granted to Jas. S. Burnham, of West Jefferson, Ohio, for improvements in corn harvesters, embracing three claims, relating to an oblique platform for cutting reels, for collecting the stalks, and devices for discharging the stalks, (see claims on page 22, Vol. 10, Sci. Am.) On the same date a patent was granted to Abner Whiteley, of Springfield, Ohio, for grain harvesters; first, for having a suspended rake attached to one of the reel blades, and so combined with guides to direct the grain to the cutters, and also to discharge it when cut in a superior manner; second, for a latch to make the rake take more or less grain, as desired; third, for a peculiar manner of placing the cutter and its bar between fingers, to obviate the use of slot guards, (see same page Sci. Am.)

On the 26th of September, 1854, a patent was granted to J. J. Weeks, of Oyster Bay, N. Y., embracing a spiral track clearer, and the teeth of the sickle made with thin cutting edges, so bevelled that one side cuts below by the stroke in one direction, and the other above by the return stroke, (see claim, page 30, Vol. 10, Sci. Am.)

On the 17th October, 1854, John H. Manny, of Rockford, Ill., obtained a patent (antedated June 15th) for an arrangement of the platform obliquely to the cutter, to allow of discharging the gavels at a sufficient distance from the standing grain; also for a wing combined with the platform to facilitate the gathering of the grain, and for making the outside dividing finger hollow, (see claims page 54, Vol. 10, Sci. Am.) On the 31st Oct., 1854, the patent of J. Adkins, dated originally Dec. 21st, 1852, for an automatic raker, was re-issued, (see claims page 70, Vol. 10, Sci. Am.) On Nov. 14th, same year, a patent was granted to Jacob Swartz, of Buffalo, embracing two claims, one for giving the cutter bar four strokes every revolution of the crank shaft, and the other for a method of hinging the cutter and guard stock bar in such a manner as to make the cutter rise and fall, to cut both grass and grain, (see claims page 86, Vol. 10, Sci. Am.) On the 21st November, same year, a patent was granted to Cyrenus Wheeler, Jr., embracing two claims for an improved method of hanging the cutter bar so as to render it more capable of action when operating on uneven ground, (see claim page 110, Vol. 10, Sci. Am.) On the 19th following, a patent was granted to J. S. Gage, of Dowagiac, Mich., for a clover harvester, which combed off the seed by a series of combs, that were thrown out and drawn in through the openings of a cylinder, into which the seed was drawn, (see claim on page 126, Vol. 10, Sci. Am.) On the same date, a patent was granted to W. F. Ketchum, of Buffalo, N. Y., for constructing the driving wheel so that it could be enlarged, and better adapted for changing the machine into a mower or reaper at pleasure, (see claim same page.)

On the 2nd of January, 1855, a patent was granted to John E. Brown, and S. S. Bartlett, of Woonsocket, R. I., for devices to make the cutter vibrate more correctly when operating on uneven ground, (see claim on page 142, Vol. 10, Sci. Am.) On same page is the claim for a patent granted to M. Burnet and C. Vander Woerd, of Boston, Mass., for making the driving axle of the cutter serve as the pivot, or center of the joint between the cutter and carriage. On the same page there are the claims of John H. Manny, of Rockford, Ill., for seven patents—all re-issues of former patents—the substance of which have already been presented.

In our history of Reaping Machines we desire to shed all the light we can, not only on the machines themselves, but the inventors also; we therefore publish the following verbatim letter from J. H. Manny, the well-known inventor of Reaping Machines, in which he tells his own story:

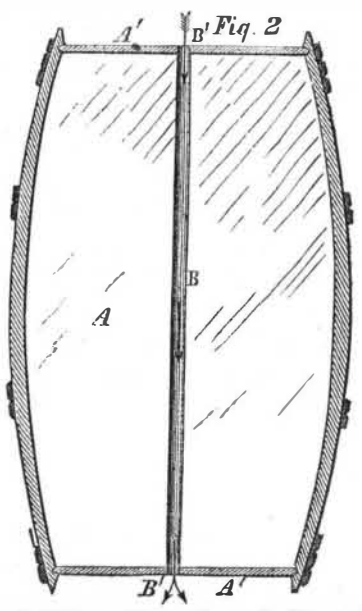
Rockford, Ill., March 15, 1855.

Messrs. Munn & Co.—*Dear Sirs:* I have not yet heard from you in reference to my proposition. As you have, it seems, not concluded to accept the same I withdraw it, and all other correspondence with you I wish cancelled. Also I hereby give you notice not to publish anything in reference to me or to my machine, or give any illustrations of the machine, or any of my patents, in any way or manner: I shall hold you responsible for any violation of this notice. I forbid you making any allusion to my machine in your History of Reapers. Yours truly,

John H. Manny.

[What we have done to so disturb the equanimity of Mr. Manny, to induce him to pen so tart an epistle is more than we know. So we insert the above, trusting some of our correspondents, who are acquainted with Mr. M., may enlighten us. The presumption is that he finds, from our columns, that other patents exist in mowing machines besides those granted to him, and perhaps he has taken umbrage, because we refused to insert in our columns some engravings of his machine, in which the horses predominated to so huge an extent that the mechanism of the machine was entirely hid. These reasons may seem small for such an onslaught, but we can think of no other transaction we have had with Mr. Manny, hence the inference that his temper has been disturbed from one of the above-named causes.

VENTILATING FLOUR BARREL.



The annexed engravings are views of an improvement in flour barrels, for which a patent was granted to Thomas Pearsall, of Smithboro', N. Y., on the 27th of last June.

Figure 1 represents a flour barrel, and figure 2 is a vertical section through the center showing the ventilating tube.

It is well known to practical men that all commodities containing in themselves the constituents necessary to produce fermentation, will, when closely packed in bulks of sufficient size to prevent the air from penetrating them, sooner or later generate heat at the center, which gradually diffuses itself through the mass; hence the enormous quantity of flour, meal, &c., spoiled in transportation and storing.

It is also well known that decomposition invariably commences at the center of the bulk, owing to the increased pressure there, and to its being further removed from the refrigerating influence of the atmosphere; it is a common occurrence on opening a barrel of flour to find it perfectly sweet and good at top, bottom, and around the outside of the bulk, while at the center it will be both hot and sour. While this is common in bulks of the size of a flour barrel, it is rare in a half barrel. On this theory the invention is based, and to remedy this evil there is inserted a tube or tubes longitudinally through the cask in which such commodity is to be packed, for the free circulation of air therethrough, so that the center of the cask is no longer the center of the mass; in proportion as you increase the diameter of the pipe you increase the number of centers in the bulk, thus mathematically dividing the mass into as many parts as required, which is equivalent to dividing the mass into as many smaller packages.

A represents a flour barrel with holes, B', in each end in the center of the heads, A', to receive the tube, B, figure 2. In filling the cask, the head, A', is taken out, and the tube, B, inserted in the hole in the lower head of the cask, the desired quantity of flour or meal is packed therein, and the upper head, A', is put into the cask again, the tube, B, protruding through the holes in each end of the cask, about half an inch, more or less, which is to be hammered down, forming a flange on the heads. Thus the air can circulate freely through the center of the bulk, and its liability to heat is entirely obviated, and at the same time the cask is materially strengthened. When larger casks are used, several tubes may be inserted in the same manner, if found necessary. These tubes may be made of iron, tin, wood, or any other suitable material—porous, perforated, or otherwise.

More information may be obtained by letter addressed to Mr. Pearsall, at Geneva, N. Y., to which place he removed about the 1st inst.

Preserving Flour and Grain—In addition to the above specification of this ventilating barrel, Mr. Pearsall furnishes the following useful information on the important subject of preserving flour and grain. His practical experience, (of 25 years' standing) in all that relates to milling, packing, and exporting flour, adds great weight to whatever he says on the subject.

"The preservation of grain and flour has engaged the attention of agriculturists since a very early period, but no mode has been discovered by which any of the cereal grains can be preserved for a series of years, in a sound and healthy state, unless the inherent moisture in the grain has been expelled by solar heat, and this cannot be thoroughly effected except in arid climates.

The kiln-drying process has, to some extent, been resorted to in this country, for Indian corn, with a view to its exportation, in the form of meal, in a dry state. But an artificial temperature, which deprives grain of its moisture, deprives it also of its saccharine matter; hence the insipid taste of all thoroughly kiln-dried corn meal. The editor of the London Marklane *Express*, of Oct. 1854, says: "Of some forty samples of corn meal on sale that day in the market, at least twenty were entirely unfit for human food, and the others were more or less musty." The editor further remarks, "If sweet meal could be procured it would feed the million, and soon find its way to the tables of the more opulent." This testimony seems to be pretty conclusive that on the 16th of Oct. last there was no sweet corn meal in the London market. When the use of the tubular barrel becomes general in this country, the difficulty of which the London editor complains will be removed.

The nature of my invention may be considered under three heads. 1st. The removal of the center of the mass. 2nd. The division of the same mathematically; and, 3rd. A passage is opened for the escape of the moisture in the mass. It is a well settled principle that heat is first generated at the center of all vegetable matter when in mass or bulk.

Wheat, rye, corn, &c., in bins or in bulk, invariably commence to heat at the center of the mass, never on the outside, as some have asserted. Hay in stacks, and in barns, is subject to the same unerring law. To counteract this evil, large dealers in grain employ a strong force, especially during the summer and fall months, to turn over their grain, air its center, and liberate the moisture. The tubular barrel has, strictly speaking, no center. A tube three inches in diameter, passing through the center of the barrel longitudinally, annihilates the center; instead of it being the point at which heat generates, producing sour flour and musty meal, it is is fact the coolest part of the barrel.

Prof. Beck, of Albany, states the quantity of water in the best Western flour to be from 11 to 13 per cent. Corn meal contains a greater quantity. To the outer surface of the tube this water is strongly attracted, and it passes off in the form of vapor at the ends of the barrel. I do not hesitate to say that flour and meal of sound grain put up in the tubular barrel, may be shipped to any quarter of the globe, without any change, save that which is effected by the escape of its inherent moisture. T. Pearsall.

LITERARY NOTICES.

Putnam's Monthly—The April number of this able periodical, as usual, contains eighteen original articles besides editorial notices. One article on "Curiosities of Puritan History—and Toleration," is worthy of being read with humility for human nature, and with thankfulness for the toleration of the present, in comparison with past ages. It also contains a review of Abbott's Napoleon, that might sharpen the teeth of a file. Dix & Edwards, No. 10 Park Place, this city, will be the future publishers of this magazine.

Household Words—Conducted by Charles Dickens.—This piquant and very instructive publication is published by Dix & Edwards, at No. 10 Park Place, New York. The April number has several very interesting articles: Faraday, Howitt, Leigh Hunt, and Barry Cornwall, are regular contributors. We wonder if any body expects anything but a good work from such prolific authors? Of course not.