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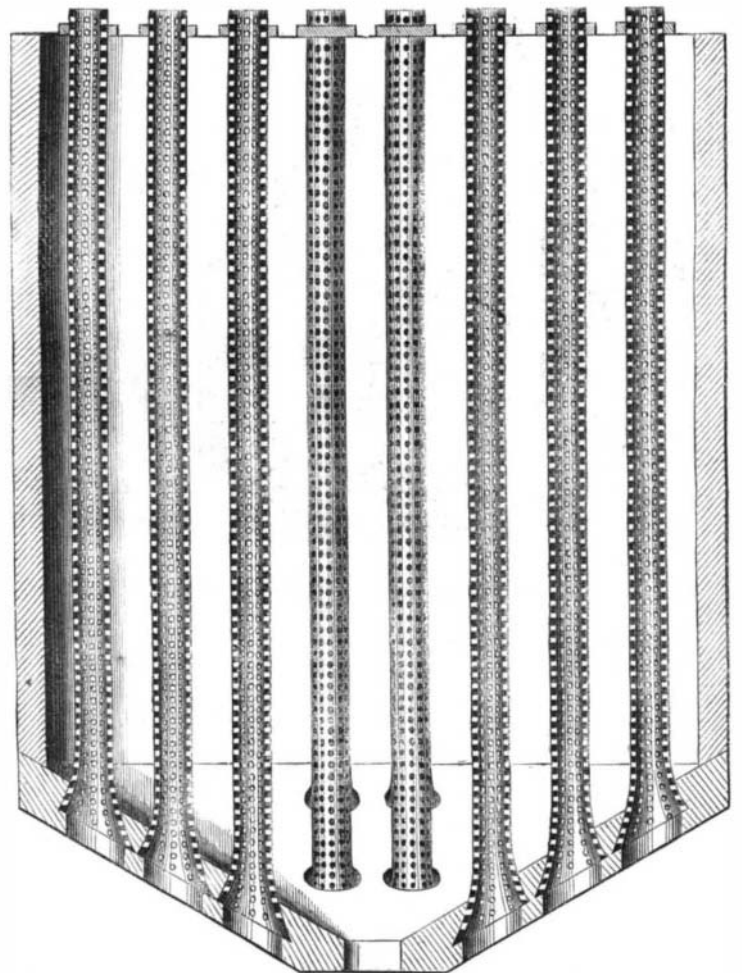
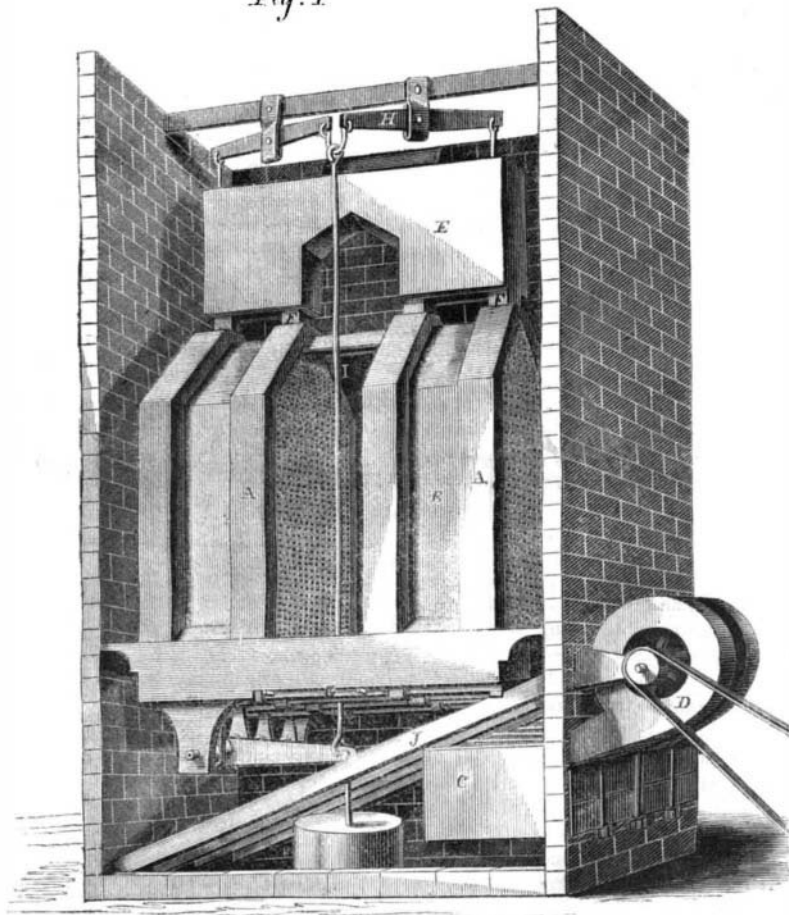
Improved Automatic Grain Dryer.

An immense business has sprung up of late years in the simple but very necessary matter of drying grain, so as to render it fit for transportation or storing. It is well known to most persons that when cereals are stored up in large quantities, the center of the mass is unventilated and rapidly deteriorates in value, until in the course of time it becomes utterly worthless. The chemical constituents of the grain change their character, undergoing fermentation and from thence molding, so that the produce is valueless. This fact

there is no other outlet the air must permeate the whole mass, thus drying every kernel as thoroughly as those on the outside, or next the metallic walls of the partition. In order that this shall be perfectly done the grain partitions are fitted with a self-acting hopper, E, which works in the following manner:—When the grain runs in at the top it passes down the spouts, F, into the drying room or grain bin; now, when the hopper is full it falls and opens the slides, G, at the bottom, through the action of the levers and rods, H and I, so that the grain is discharged into

bottom of the bin, as shown in our engraving; these occupy only a small portion of the space—in a full-sized bin but the 1-144th part. The inventor says he has thoroughly tested the utility of this dryer, having filled a bin 12 feet square and 25 feet deep with new damp corn on the 20th of November, 1861, and found it perfectly sound and dry in the ensuing August. When filled with corn heated by laying long in piles, the contents of this bin will be found quite cool in from six to eight days. The perforated tubes in this bin are to be replaced hereafter by others made of wire, by

Fig. 1



MARSH'S AUTOMATIC GRAIN DRYER.

is also observable in flour; when closely packed for a long time it becomes musty and sour, and barrels of a peculiar kind have been invented to guard against this evil.

Mr. S. Marsh, the inventor of the automatic grain dryer herewith illustrated, has been experimenting for a long time on this subject, and has produced this apparatus, believing it to be based on sound principles; and his faith in its value is well sustained by the results of practice; one of these grain dryers having been in operation for a long time in Brooklyn. The principle idea of this apparatus is to expose a large superficial area of grain in thin layers between perforated metallic partitions, as at A, in Fig. 1. These partitions have a hot-air flue, B, running up through them.

It will be seen, therefore, that as the heated air from the furnace, C, is forced up the flue by the action of the fan, D, that it comes in contact with the grain and deprives it of moisture; and not only this, but as

the troughs, J, at the foot of which, outside the building, are placed bags or other receptacles to contain the grain. By this means the drying bins are always full; if some self-acting arrangement of this kind were not applied the heated air would rush out of the holes in the top of the grain bins and escape, thus the operation would be costly and incomplete. In the engraving one side of the building is shown removed, to expose the interior; the fan is driven by a steam engine outside. A patent on this grain dryer is about to be issued. One of them has been in operation at A. E. Masters's elevator in Brooklyn since July last, and it dries and cools 1,500 bushels of grain per hour, so that it is in perfect condition to be shipped on voyages of any length. In this dryer the partitions are 40 feet high, 6 inches thick and 22 feet wide.

In Fig. 2 a section of a grain bin is shown, which is to be used either in connection with or separate from a hot-air blast. The ventilation is carried on through a series of perforated tubes which run from top to

a machine specially invented for the purpose. This plan for drying grain needs no special apparatus, as does the first one described, and every farmer should consult his interest by adopting it. Sour and musty grain is impossible in this system of ventilation, and no matter what quantity or what the size of the bin is, the contents will always be preserved in marketable condition. The patent on this bin was procured Oct. 20, 1863, and on the automatic grain dryer, first described, Feb. 10, 1863, by Sylvester Marsh, Esq. For further information address the inventor at Box 3,047 Postoffice, New York City.

WOOLEN FACTORIES.—There are 154 factories, with 999 sets of cards in Massachusetts, 56 in New Hampshire, with 228 sets of cards, 32 in Maine, with 32 sets of cards, 208 in New York State, running 541 sets of cards, 56 in Vermont, with 122 sets of cards, 56 in Rhode Island, with 225 sets of cards, and 93 in Connecticut, running 409 sets of cards.