

SCIENCE AND MECHANICS.

ATMOSPHERIC CHURN—GREAT INVENTION.

This churn, which was the invention of Mr. Bishop, of Derry, England, and which has been slightly noticed in some of our journals, differs from all others in the method of making butter, which is accomplished by forcing a full current of atmospheric air through the cream, by means of a forcing pump. The churn is made of tin, very simple in its construction, portable and light, and requires but little expense to keep it in perfect order for working. A writer in the *Farmer's Magazine*, (Eng.) describes it as fitting into a tin cylinder provided with a stop-cock and funnel, so as to heat the cream to the necessary temperature. The air passes through a glass tube connected with the air-pump, descending nearly to the bottom of the churn. The pump is worked by means of a winch, which is not so laborious as the common churn. Independently of the happy application of science to this important department of domestic economy, in a practical point of view it is extremely valuable. The milk is not moved by a dasher, as in the common churn; but the oxygen of the atmosphere is brought into close contact with the cream, so as to effect a full combination of the butyraceous part, and convert it all into butter. On one occasion the churning was carried on for the space of one hundred and forty-five minutes, and eleven gallons of cream produced twenty-six pounds of butter. Churns constructed on the above principle would be rather a novelty in this country.

The foregoing is from the *Maine Farmer* of the 3d. instant. We have seen similar notices in a number of our exchange papers during the past two years, but until quite recently we have seen no mention that these churns have been made or used in this country. The following is from a late number of the *N. Y. Evening Mirror*:

Impromptu Butter.—We yesterday morning saw wet milk converted into butter in four minutes, probably a dash of cold water would have brought the butter in less time. This wonderful effect was produced by one of the most simple churning machines that we have ever seen. It consists of a square box, having a hollow perpendicular shaft with two hollow arms or tubes at the lower end. The shaft rests on a pivot and is turned by a small crank and cog-wheel, the motion causes the air to rush down the tube into the milk and produces a commotion like boiling water. The butter began to come immediately, and after it was made the milk was as sweet as new. By this process, good churn butter may be made for breakfast by any family, after the milkman has come in the morning, and the luxury of pure fresh butter enjoyed all the year round. When the cakes are baking or the muffins toasting, the head of the family may be amusing himself by churning the butter to eat with them.

The following is from the *N. Y. Spirit of the Times* of July 29—by which it appears that some Yankee has claimed the invention as original (!), or, perhaps the patent is granted for an improvement on the English churn mentioned above:—

Atmospheric churn.—Our country readers will be pleased to find that a very simple machine has been invented and patented by Messrs. Lewis and Johnson, for making butter with a great economy of time and labor. Declining to guarantee its merits on the printed testimonials of others, we saw it ourselves in operation on Wednesday last, at the New-England Hotel. From fresh milk it made butter in ten minutes, and from cream in four. To this fact we need only add, that its cost is very slight; and that it is so simple and so easily worked that a child of six years old might manage it.

Without vouching for the truth of all that is above said, we doubt not that this churn will prove a valuable labor saving invention; and we hope it may be speedily introduced throughout the country. We have heard it stated that one of the churns was on exhibition at Cincinnati, but we have seen no notice of it in the papers of that city.

Will not some body invent a machine to milk the cows? We shall then! be able to grow our own butter.—*Ohio Cult.*

INDURATING BUILDING MATERIALS.

Among the extraordinary discoveries of the present day, by which materials of the most humble pretensions in works of art are rendered of the utmost utility the most refractory substances made to bend to the power of scientific research, and many productions, which have for ages been thrown away as useless, brought into most extensive usefulness—we know of none by which a more extraordinary note to say magical metamorphosis is effected, than the operation patented by Mr. William Hutchinson, by which plaster of Paris, Bath, Caen, and other soft stone, chalk, wood, pasteboard, and, in fact, any other material, is rendered hard as metal, receiving the most brilliant polish, and made absolutely impishable from atmospheric action, vermin, &c. The purposes to which this patent can be applied are innumerable. The first idea of the patentee was the induration of the softer and more common, and almost useless, stones for the purpose of paving; but so ample was his success, that he soon took a loftier view; and has rendered the operation, not only applicable to all common purposes for which stones and slates are used in building, such as paving, both internal and external, window-sills, fittings of dairies, &c.—but now ap-

plies the higher works of art. Plaster of Paris casts, of the most elaborate designs, in busts, reliefs, architectural ornaments, fountains, and ornamental flooring for churches, trellis work for balconies, ornamental iron-stands, &c., are rendered imperishable by the operation of the elements, and hard and tough as metal. Sculptors who may so choose, may work in Bath or Caen Stone, or even chalk, and the production will be rendered superior to marble, and in all these operations the finest edges of the cuttings are preserved, and not a chisel mark is lost.

In inspecting specimens of Mr. H's work, we were shown a slab of soft sandstone, from Tonbridge Wells—so soft, that it might be rubbed into powder by the hand—rendered hard as granite, and rung like a bell; numerous plaster of Paris ornaments and busts, metamorphosed into bronze, granite, and parti-colored marbles—drain, water and gas pipes, made from Bath stone, chalk, or paper, hard as granite, and polished internally like marble; in fact, the results of the operations are most extraordinary. The water-pipes, and prepared sheets for roofing, will be found most economical, both in first cost and wear and tear; in fact they can be rendered at a cost which comes far below any other description of material which has yet been introduced for these purposes; the sheets would also be highly applicable for railways, and many other public engineering uses.—*London Mining Journal.*

LUNG PROTECTOR.—An invention has lately appeared in Louisville, Kentucky, named as above, and described as follows: It consists of a small air cylinder, with a valve at each end, one working inward, when the air is inhaled, and the other outward, when the air is exhaled, the inhaling valve being surrounded by a woollen net work, through which the air is filtered.—In case of injurious gasses, a flexible tube runs from the inhaling valve along the leg to near the floor, by which the worker inhales only the lower part of the column of air and avoids the smoke and gasses. It is for the purpose of protecting the health of operatives who may be engaged in labor which exposes them to the gas of charcoal. There is no use of the inhaling valve. A silk handkerchief tied loosely over the mouth and nostrils and kept a little moist will answer the purpose without a valve. In connection with noticing this contrivance we would call the attention of those persons who live in situations prolific with billious diseases, and state that diseases may be often prevented if care was taken to cover the mouth and nose with a thin silk handkerchief whenever they go abroad in the morning before the dew has taken flight, or in the evening when the sun has set and the dew is falling.—*Ohio Cult.*

IMPROVED PLANTING MACHINE.—Mr. Robert Crisswell, residing at Buena Vista, Franklin Co., Pa., has invented a new and ingenious machine, combining a plough and planting machine, and answering alike for corn, potatoes, &c. It is so constructed as to score out two rows at a time, for either corn or potatoes, to drop and cover them as it passes along, dropping at any required distance apart, and covering to any required depth, and by a peculiar arrangement, the rows are at once kept straight and parallel.—As the hoppers drop opposite and at the same time, corn can be planted so that it can be farmed both ways, without the necessity of scoring the ground out in the opposite direction previous to planting. By this means one man and team can plant from 12 to 15 acres per day, whereas, it would require four men and teams to score that number of acres both ways, and eight or ten persons to plant and cover them in the ordinary way. After planting, the hoppers, wheels, &c., can be taken off, and the plough remains with which double the amount of labor can be performed, that a common plough will do.—*Ohio Cult.*

KILLING MADE EASY.—A cannon has been exhibited, says the *New York Express*, in Wall street, constructed on an entirely new plan. Its maker is Mr. J. Fitzgerald of this city. The canon is composed of between four and five hundred thin plates of wrought iron riveted together in sections of seven plates each, and these sections again screwed together on 8 by 12 inch and a half bolts, six of which are visible at the muzzle, and the other six are counter sunk. It is estimated to endure a force of sixty thousand pounds to the square inch, or that it is capable of throwing a leaden ball of seventeen pounds weight twelve miles in perpendicular height. And the aggregate force which it is capable of sustaining is supposed to be about one million two hundred thousand pounds. The length of this new peace making invention, for which a patent has been secured in Europe, as well as in this country, is seven and a half feet. Diameter of bore, four five-eighths inches. It is soon to be tested at the Navy Yard, Philadelphia, unless orders should be received to take it to West Point.

IMPROVED HORSE COLLAR.—The *Providence Journal* describes a horse collar which has been invented in England, which must be regarded as a very great improvement. It consists of a tube of India rubber or other suitable substance, inflated with air like a life-preserver. Its advantage is that it fits the horse exactly, easily, without undue pressure upon any part, and leaves the breast and joints of the fore legs free from galling and sudden pressure, to which the common collar subjects them. "The merciful man is merciful to his beast," and we hope that this improvement will be generally adopted.—*N. Y. Merc.*