

Science and Art.

Meat Fly.

The large, buzzing meat-fly, named *Musca (Calliphora) vomitoria*, is of a blue-black color, with a broad, dark blue, and hairy hind body. It is found all summer about slaughter-houses, butchers' stalls, and pantries, which it frequents for the purpose of laying its eggs on meat. The eggs are commonly called fly-blows; they hatch in two or three hours after they are laid, and the maggots produced from them come to their growth in three or four days, after which they creep away in into some dark crevice, or burrow in the ground, if they can get at it, turn to egg-shaped pupæ, and come out as flies, in a few days more; or they remain unchanged through the winter, if they have been hatched late in the summer. A smaller fly, of a brilliant blue-green color, with black legs, also lays its eggs on meat, but more often on dead animals in the fields.—[Pennsylvania Farm Journal.

[The above article from our contemporary on the production of flies, brings to our remembrance, the statement made by Prof. Bedford, M. D., of this city, and published in the *American Lancet* for April last, page 12,

He says, "if we are to abide by the testimony of observers, it seems undoubtedly proved that spontaneous generation is possible, and experiments have satisfactorily demonstrated, that living beings may originate without the previous deposit of ova. Animalculæ for example, will spring from putrefaction, etc."

We believe Professor Bedford is in error, in asserting that living beings originate spontaneously without the egg. He cannot, we are confident, produce good authority, to sustain his opinions. We know they are opposed to those of Dr. Burnett, on the reproduction of viviparous aphididæ.

Electricity and Gravitation.

Professor Faraday says that we are on the verge of important discoveries concerning the nature of physical forces, and their relation to life and physiology. He expressed an opinion that all "forces" have a similar dual property, and that even "gravitation" will be ultimately determined to possess it. One force cannot be called into action in electricity without the other, and they are always equal. When the north poles of four powerful magnets are placed together at right angles, so as to form a deep square cell, in the centre of that cell there is no magnetic attraction at all. The "northness" and "southness" of a magnet, Professor Faraday, in conclusion, said, took place in curved lines outside, not inside a magnet—an opinion somewhat similar to that held by Newton as regarded gravitation.

[The above is from an interesting lecture recently delivered at the Royal Institution, London, by Dr. Faraday; taken in connection with the subject of "Attraction" and the probable Suspension of Gravitation, by Septimus Piesse, and which has given rise to some discussion in our columns, the remarks of the learned professor possess further interest.

Lunar Eclipse.

Observations of the Lunar Eclipse, May 1st, 1855 at William's College Observatory:

	H. M. S.
First contact (sidereal time)	11 57 34
" " (mean solar)	9 20 26
Disappearance (sidereal time)	13 1 27
Reappearance " "	14 37 33
" " (mean solar)	12 0 13
Last contact with shadow (sidereal time)	15 41 2
Transit of the Sun	2 32 29

During the total obscuration, the satellite occulted two little stars in Virgo, which appeared one to the naked eye.

An Immense Breakwater.

The Chicago and Rock Island Railroad Company are preparing to erect a vast breakwater in the Mississippi, just above and adjoining the great center pier, on which will swing the draw on the railroad bridge. This breakwater will require about 506,000 feet

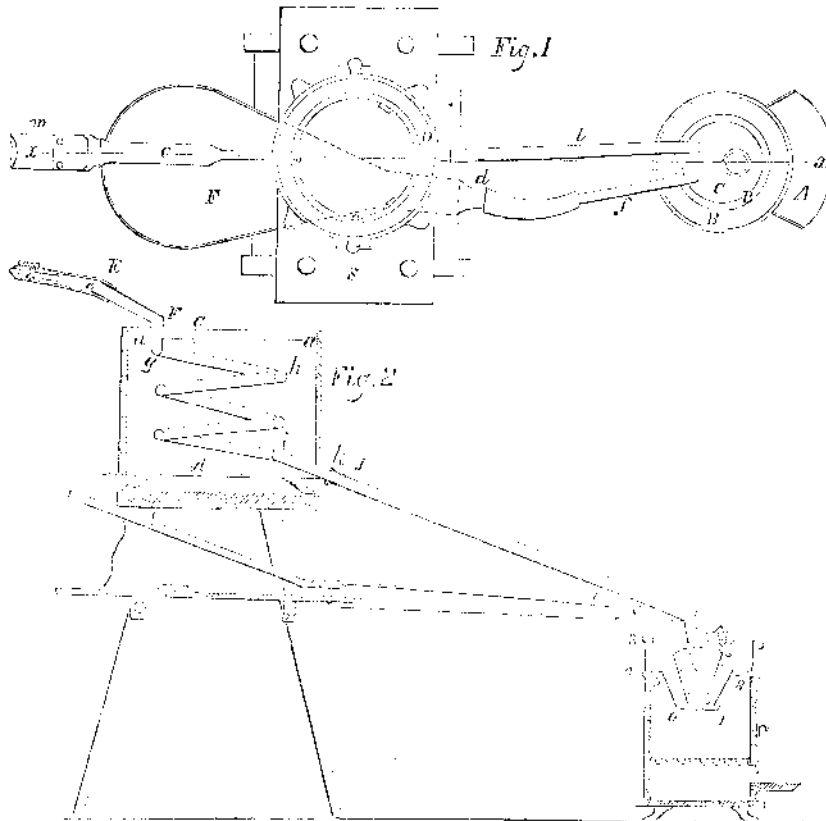
of lumber and 13,000 yards of rock for its construction. It is intended for the great draw to rest upon when swung around; the upper end of it is for a house to be built upon for the draw-keeper to reside in, and for an ice-breaker and breakwater. Its huge dimensions will defy the storm and floods.

New Railroad Telegraph.

Cavaliere Bonelli (the director of the telegraphs in the kingdom of Sardinia) has

commenced experiments with his newly-invented "locomotive telegraph," wherewith he professes to communicate from a train in motion with any station on the line, or with another train on the line. The great advantages to the world at large from the success of such an invention, are at once so obvious, that the result of the experiment is naturally looked for with much anxiety.—[London Mining Journal and Railway Gazette.

MEDICAL INSPIRATOR.



The accompanying figure represents a medical inhaling apparatus, for which a patent was granted to Samuel H. T. Tilghman, of Snow Hill, Maryland, on the 21st of last November.

Fig. 1 is a top view of the inspirator, and fig. 2 is an elevated vertical section on the line, x x, fig. 1. A, fig. 1, is a portable furnace. B is a vessel of water, in which is contained a distilling medicating vessel, C, containing herbs, or any other drug or substance, the vapor or gas from which is to be inhaled. F is a bellows, situated on a stand, S. f is the tube of the pipe of the bellows connected to the nozzle, d. D is a refrigerator or cooler of cold water, in which is a worm, a a, which has its pipe, l, inserted into the distilling vessel, C. m is a mouth-piece with a valve in it, and c is the tube of the mouth-piece connected with the worm, a a. The patient inhales by this mouth piece the vapor or gas passing up from vessel, C, through the worm in the cooler.

Figure 2 shows the bellows, having a metallic tube, V, dipping into the vessel, C, and descending near to its bottom, as shown by the dotted lines. There is a valve on the nozzle of the bellows, to prevent any of the liquid ascending into the bellows. The furnace is eight inches in diameter, and eight inches from the top to the grate. The top end of the pipe at E is 39 inches high. The dimensions of the rest of the apparatus are from 3 to 4=3 inches, from 4 to 5=2 inches, from 5 to 6=3 inches, and from 6 to 6=3½ inches. From a to a (cooler)=14 inches, from C to d=11 inches deep, from e to F=5 inches, from g to h=10 inches, from i to k at joint J=6 inches. The length of the tube, J, to its bend above the medicating vessel in the furnace, is 27½ inches. The vessel containing the medicating herbs, or other drugs, has a plug for putting in the substances in the vessel, and for cleaning it out.

The herbs, or other drugs, are distilled, or gas generated therefrom, in the vessel, C, by the heat in the furnace. The vapor, or the gas ascends through the tube into the worm of the cooler, where it is cooled, and as much of the moisture in it as possible is condensed. The patient, therefore, inhales a compara-

tively dry vapor when herbs are the substances used for medication.

It is not necessary always to use the valve mouth-piece, m; indeed it may be entirely dispensed with by the patient inhaling from a common tube connected with the upper end of the worm.

The use of the bellows is for persons of very weak lungs, to force air gently through the vessel, C, and up through the cooler.

The object of the apparatus is to furnish medicated air in a comparatively dry state, to persons having diseased lungs and to assist the respiration of the patients.

More information may be obtained by letter addressed to the patentee, at Snow Hill, Worcester Co., Md.

(For the Scientific American.)

The New American Manufacture of Metallic Ware.

I observed an article in your last week's number, in reference to a paper read by Dr. W. H. Smith of this city, before the Royal Academy of Sciences in England, in reference to the utility of converting the slag of iron furnaces into things useful and ornamental. Having had business transactions with him in this city, in the way of encouraging his invention before he left for Europe, I thought it might not be uninteresting to your readers to know how he succeeded with his experiments while here. After securing his patents he commenced operations at Conshohocken, Mont'y Co., Pa., by undertaking to convert the slag of a large anthracite furnace at that place, into paving tile, glass-ware, &c. For this purpose he built annealing ovens and fixed other necessary fixtures to carry on the business. These, till after having been cast and annealed, were taken to Philadelphia. They were then ground smooth on the one surface and were ready for use. I had a foot way laid with them in this city, the only one ever laid by him, which has been in use for about two and a half years, and answers a pretty good purpose. The great difficulty that he met with was, that a great many of them broke in annealing, and many others had fire flaws in them, making them unfit for use. This material as manufactured by Mr. Smith, was

too brittle, partaking too much of the character of brittle glass. The desideratum seemed to be a something that would make it less brittle. I saw some beautiful colored glass ware made by him of this material, it was too expensive to be brought into practical use. If the difficulty of the fire cracks and the brittleness of the material; could be overcome by some of our men of genius, then this material would become of incalculable benefit to the world. It takes a much higher polish than marble and is much handsomer. It would make a most splendid article for mantels, table tops, &c.

E. R. NORRY.

Philadelphia, May 7th, 1855.

St. Louis Mechanics' Institute.

From the Annual Report of the above association, published in the *Louisville Courier*, we learn that it is in a prosperous condition. The Library contains 4,300 volumes, 375 being added during the past year. This association has a fine reading room supplied with a great number of magazines and papers. It numbers 1,179 members, (more, we believe, than the New-York Mechanics' Institute). Its receipts for the year amounted to \$8,749, and its expenditure were \$8,656. It has an excellent Board of Managers, able and faithful officers; has done wonders for the few short years of its existence; does credit to the mechanics of that city, and deserves the respect and countenance of all its citizens.

Worcester Mechanics Institute.

A Committee of this Association has reported in favor of building a new hall for a library, reading, and lecture room, at a cost of \$60,000. The reserved funds of the Association amount to \$22,000. They propose to issue bonds for the extra amount required



Inventors, and Manufacturers

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