

**Advantages of this Machine.**

Ease in putting on and taking off the clothes; likewise the ease of elevating high, causing the clothes to dry quick, and keeping them clear of any thing moving through the yard.

**VENTILATING A CELLAR.**

A correspondent of the *Scientific American*, says:—

"In my sitting-room, immediately over the cellar, I have a small cast iron air-tight, wood-burning stove, with 3½ feet of 6-inch pipe connected through a thimble, with the chimney-flue at about 1 foot from the stove. I have made a T-connection with the stove pipe with pipe of the same size, passing through the floor, and reaching to within 1 foot of the cellar floor. At the top of this pipe, close to the connection with the stove pipe, there is a valve which regulates the draft of cool air taken from the cellar. The opening in the floor is ¾ inch larger than the pipe.\* The vacuum produced in the cellar by the draught in the chimney-flue draws air down from the chambers through the space around the pipe in the floor. My cellar, which was before damp, is now as dry and pleasant as any room in my house. Formerly, articles placed in my cellar soon became mouldy, and were spoiled for want of ventilation."

**ABRIDGED SPECIFICATIONS OF ENGLISH PATENTS.**

2096. A VIGNON. *Improvements in the means and apparatus for extinguishing fire, either on land or water.* (A communication.) Dated July 23, 1862.

The patentee claims,—1. The employment of a solution of carbonic acid gas, in water, either at a high or low pressure, for extinguishing fires on land or on board vessels. 2. The construction and employment of apparatus, either portable or fixed, for extinguishing fires, in which a solution of carbonic acid gas in water is prepared and stored up, and whence such solution is ejected with sufficient force without the aid of pumps.

2099. R. BELL. *Improvements in the manufacture of bricks.* (A communication.) Dated July 23, 1862.

This invention consists in certain improvements in the manufacture of bricks, by means of which they are enabled to register with each other in the process of building, and to bind the work together in such a manner that it shall form a mass incapable of being riven asunder or cracked. The bricks are to be formed with projections or tongues across or along one surface, and with grooves or recesses of corresponding size on the opposite side whereby they may be laid down on the other with the aid of a small quantity of mortar or Portland cement, in such order as to fit or bind together the upper layer with the lower layer, and to tie each other longitudinally and crosswise, so as to prevent any lateral or transverse deviation or fissure occurring in the work. With regard to bricks for arches, a similar system of construction is adopted, by means of which it is evident that centres will not be required in the construction of arches and vaults, for as soon

as one single layer of bricks has been thrown across the arch the series may be continued by inserting the second layer into the first, into which it will register and be self-supporting, and so on with the entire length of arch, or tunnel, or vault.

2176. W. E. NEWTON. *Improvements in lubricating compounds.* (A communication.) Dated July 31, 1862.

This consists in the production of a lubricating compound or fluid composed of coal oil obtained in a natural state, or simply by artificial distillation combined with caoutchouc, and with or without the addition of water.

2197. J. HIGGIN. *An improved substitute for cow-dung used in printing and dyeing textile fabrics or yarns.* Dated August 5, 1862.

The patentee has discovered that certain alkaline salts, namely, the tungstates and molybdates, may be used for neutralizing acid phosphates and arseniates without any insoluble compound being precipitated, and, consequently without any loss or waste of phosphoric or arsenic acid. The compound salts thus produced forms a convenient substitute for cow-dung in the dyeing process, without the disadvantages found inseparable from the old phosphate of lime and soda.

**Selected Articles.****ON RADIATION THROUGH THE EARTH'S ATMOSPHERE.**

BY JOHN TYNDALL, Esq., F.R.S.

Nobody ever obtained the idea of a line from Euclid's definition that it is length without breadth. The idea is obtained from a real physical line drawn by a pen or pencil, and, therefore, possessing width; the idea being afterwards brought, by a process of abstraction, more nearly into accordance with the conditions of the definition. So also with regard to physical phenomena; we must help ourselves to a conception of the invisible by means of proper images derived from the visible, afterwards purifying our conceptions to the needful extent. Definiteness of conceptions, even though at some expense to delicacy, is of the greatest utility in dealing with physical phenomena. Indeed, it may be questioned whether a mind trained in physical research can at all enjoy peace, without having made clear to itself some possible way of conceiving of those operations which lie beyond the boundaries of sense, and in which sensible phenomena originate.

When we speak of radiation through the atmosphere, we ought to be able to affix definite physical ideas, both to the term "atmosphere," and the term "radiation." It is well known that our atmosphere is mainly composed of the two elements, oxygen and nitrogen. These elementary atoms may be figured as small spheres scattered thickly in the space which immediately surrounds the earth. They constitute about 99½ per cent. of the atmosphere. Mixed with these atoms we have others of a totally different character; we have the molecules, or atomic groups, of carbonic acid, of ammonia, and of aqueous vapour. In these substances diverse atoms have coalesced to form little systems of atoms. The molecule of aqueous vapour for example, consists of two atoms of hydrogen