

by their natural heat. Entrance to the latter is afforded through the holes, L.

It is claimed that all the advantages of movable comb hives are here combined without the attendant defects. Ready access to the combs, when it is necessary to pry them straight, is gained by removing one or more of the detachable boards, an operation which, it is clear, will not disturb the bees as much as if the whole side were, as is usually the case, displaced. There are eight separate comb frames, each one of which, with its comb and bees, may be lifted out and transported to another hive without exposing the insects in adjoining portions except at the place of division. The inventor further states that the hive can be opened and closed without killing a single bee or causing a drop of honey to run, and that it has been proved excellently adapted for purposes of artificial swarming, dividing, equalizing, and other apicultural operations.

Patented through the Scientific American Patent Agency, September 24, 1872. For further information address Messrs. Hixson & Co., Gallipolis, Ohio.

#### New Relation between Heat and Electricity.

Mr. Frederick Guthrie, in the *Chemical News*, states that it is found that the reaction between an electrified body and a neighboring neutral one, whereby the electricity in the neutral body is inductively decomposed and attraction produced, undergoes a modification when the neutral body is considerably heated. Under many circumstances, the electrified body is rapidly and completely discharged, a fact proved to depend upon the temperature of the discharging body and its distance from the electrified one and the nature (+ or -) of the latter's electricity. The discharging power of a hot body diminishes with its distance and increases with its temperature. It also depends on the quality and not the quantity of heat radiated from it to the electrified body. It is necessary for the discharge that heat of intensity pass to the electrified body from a neutral body within inductive range.

It is shown that various flames, both earth-connected and isolated, have an exceedingly great power of discharging both kinds of electricity. As hot iron shows a preferential power of discharging - over + electricity, so it is found that white hot but isolated iron refuses to be charged with either + or - electricity. As the iron cools, it acquires first the power of receiving - and afterwards of receiving +. While white hot iron, in contact with an electrified body, prevents that body from retaining a charge of either kind of electricity, as it cools, it permits a + charge to be received and subsequently a - one.

A suggestion is made as to the existence of an artificial coercive force, the presence of which, together with its diminution by heat, would explain much of the above.

#### Alcohol, Whiskey, Brandy, Wine and Ale.

Dr. Willard Parker, of this city, one of our oldest and most prominent physicians, in a recent address made the following statement concerning the effects of alcohol upon the human system:

For many years I was connected with the care of inebriates and paid particular attention to the character of those in my charge, and I have arrived at the conclusion that drunkenness is a disease. A man so affected cannot control his appetite, and must have drink regularly, and will have it at all hazards. A healthy man can refrain from drinking, but a diseased man cannot; and these men so addicted readily admit that. Men suffering from the disease have been cured and they will with tears in their eyes promise to abstain, yet on passing a liquor store they cannot help themselves, and will go in and have their whiskey. Now the question arises: What can be done? How shall we go to work? Society has been all the time trying to show what the use of alcohol makes us do, and many will reply it makes them feel good, and some will say it makes them crazy, drives them to desperation and to fight. Now let us drop that mode, and ask what does alcohol do to me, and not what it makes me do. That is the great starting point. We have to teach the people what alcohol does to them, and how it acts on them. It is as poisonous as arsenic or belladonna, and produces its deadly effect on those who use it; but then it is used in an adulterated state. Whiskey is a poison, but some believe and have the idea if we can get pure spirits that it is all right, but that is a mistake. Alcohol is poison, and the purer it is the more deadly is it in its effect, and if I were going to partake of it I would prefer that which is adulterated. With regard to ales and beer, it is believed that they are harmless, but with the presence of alcohol there is always danger. Those who partake of it become drowsy, and those who drink wines become stupid. In lager beer there is 3 or 4 per cent of alcohol, in ale 7 or 8 per cent; wine contains 23, gin 51 per cent, and brandy 53 per cent of alcohol. Even in cider there is 2 or 3 per cent of the poison present.

#### Ignition by Superheated Steam.

A correspondent, J. H., Jr., says that an engineer asserts positively that ignition can take place from steam pipes. He spoke of three instances where he knew it to be a fact. Shavings were set on fire, so that they blazed, at three different times. I told him I thought there must have been oil or other combustible matter mixed with them. He said there was nothing of the kind, nothing but dry pine shavings. The shavings were piled up against the pipes.

Professor E. S. Breidenbaugh, of Yale College, shows, by recent analysis, the very exhausting nature of tobacco crops in respect to soils. It appears that for every 1,000 pounds of tobacco grown, 102 pounds of the most valuable ash constituents of the soil are carried away.

#### Biogenesis.

Dr. William Roberts states that the results of over 300 experiments performed by him support the conclusion that the fungi, monads and acteria, which make their appearance in boiled organic mixtures, are not due to spontaneous evolution, but arise exclusively under the influence of pre-existing germs or ferments introduced from without. This method of experimenting consisted in exposing organic solutions and mixtures to a boiling heat in glass flasks, the necks of which had been previously plugged with cotton wool. The fluid or mixture in the flask may be exposed afterwards to the full influence of light, warmth, and air; and yet it remains perfectly barren. As evaporation takes place, no organic growth makes its appearance for even years; but if the plug of cotton wool be withdrawn for a few minutes or a single drop of any natural water, however pure or well filtered, be introduced, then all is changed. In a few days the clear solution becomes turbid with bacteria and monads, or a mass of mildew covers its surface and soon half fills the flask.

A plug of cotton wool acts as an absolutely impervious filter to the solid particles of the atmosphere, while it permits a free passage to the gaseous constituents. It is considered impossible to doubt that the biogenic power of the atmosphere resides in its dust, and not in its gaseous ingredients; but as to whether it be a specific germ or ferment, or what its nature is, no sufficient evidence has yet been adduced.

#### Death of Professor Torrey.

John Torrey, a most eminent botanist, died on March 10, at Columbia College, of which institution he had long held the botanical professorship. His first contribution to science was a catalogue of the plants growing within 30 miles of New York city; this was published in 1817, and was followed by the "Flora of the Northern United States" in 1824.

His learning was extensive and varied. In 1824 he was Professor of Chemistry at West Point, and he afterward held a similar appointment at the College of Physicians and Surgeons in this city. He was also chief of the Assay Office in the United States Sub Treasury. He was stricken by pneumonia at the age of 80 years. Columbia College is largely his debtor for his eminent services as a teacher, and for his fostering care of her interests.

#### Death of Professor Sedgwick.

The eminent veteran geologist, Adam Sedgwick, died on January 27, at Trinity College, Cambridge, England, at the age of 87 years. His contributions to the literature of his favorite science were exceedingly numerous and valuable, and make up a large amount of work even for a career so lengthened. He was elected to a fellowship of his college in 1810, and had won for himself a name in science while the youth Roderick Murchison was fighting battles in Spain. His services to the world of knowledge are everywhere known and valued. By his care and, to a great degree, through his generosity the collections of rocks and fossils under his charge at Cambridge have become the most complete of any now open to the student.

#### Extinguishing Fires by Vapors.

In our description of the Babcock self acting tank, published on page 143 of the current volume, it is pointed out that "the gas seems to interpose a wall of non-conducting vapor between the hoseman and the fire, which protects him from the heat." A correspondent, W. M., refers to Professor Tyndall's work, "Heat Considered as a Mode of Motion," in which the fact is stated that the arresting power of carbonic oxide to heat rays compares with the similar resistance of the air to such rays as 750 to 1; and carbonic acid compares to air as 752 to 1. The apparent wall of vapor is, therefore, a scientific fact.

A BILL was recently passed in Congress authorizing the President to cause such experiments to be made and such information to be collected as in his opinion may be useful and important to guard against the bursting of steam boilers, and requesting him to communicate the same to Congress. The sum of \$100,000 is appropriated for the purposes of the act.

DR. D. T. SHUMWAY, in a recent paper read before the Massachusetts Dental Society, advocates the use of ivory points, instead of steel, in packing gold fillings. The advantages claimed for the use of the ivory are that the gold will have better cohesion, its softness is preserved, it better adapts itself to its position, and the filling wears better.

A COUPLE of immense wire ropes, each between three and four miles long, have just been completed by Messrs. J. and E. Wright, of the Universe Works, Birmingham, Eng. One of these ropes, intended for the Wapping tunnel of the London and Northwestern Railway, at Liverpool, is six thousand yards in length, 5½ inches in circumference, and is composed of six strands having ten wires in each. The wire is wound round a hempen core. The weight of the rope is 34 tons. The second rope is for the Cowlan's tunnel, at Glasgow, is five thousand yards long, and weighs 25 tons.

#### Inventions Patented in England by Americans.

(Compiled from the Commissioners of Patents' Journal.)  
From February 18 to February 19, 1873, inclusive.  
FINISHING TOOL.—H. E. Forrest, Boston, Mass.  
GOVERNOR.—R. W. Gardner, Quincy, Ill.  
JOURNAL BOX.—J. A. Montgomery, Millburn, N. J.  
LOOK.—S. T. Thomas, Gilford, N. H.  
PRINTING PRESS.—H. S. Bingham, Philadelphia, Pa., et al.  
SEWING MACHINE.—D. McC. Smyth, Orange, N. J.

#### DECISIONS OF THE COURTS.

##### United States Circuit Court—Southern District of New York.

TRADE MARK—J. L. SMITH et al. vs. REYNOLDS AND JACOBS.

[In Equity.—Before Judge Blachford.—Decision July 27, 1872.]

The plaintiffs as owners of a trade mark for paints, consisting of the representation of a crown to be stamped or branded upon their goods, to wit: upon paint packages of all kinds, brought suit against the defendants, who also used the crown upon their packages. The court held the following points:

Causing the name of the firm which claims a trade mark and its place of business, to be recorded in the Patent Office is sufficient compliance with the first requirement of section 77 of the act of 1870, without specifying the names of those who compose the firm.

To designate "paints" as the goods for which a trade mark is to be appropriated is sufficient, without a more particular description.

The figure of a crown used as a trade mark for paints may indicate to buyers and dealers, by association, the origin and ownership of the same, and is of itself a lawful trade mark.

The case of R. W. English, Com'r's Dec. 1870, p. 142, and that of the Dutcher Temple Company, ibid., 1871, p. 248, cited and approved.

Registering a figure as a trade mark for paints in general, without any restriction as to the kind, gives no title to it if the figure has been previously used, in connection with words or other figures, as a trade mark for any particular kind of paint.

A trade mark must stand or fall as a whole, and the registry of one cannot be sustained, like a patent, for a part of it, though void as to the rest.

It was shown on behalf of the defendants that the use of the crown on paint packages was not original with the plaintiffs, and the Court therefore denied the motion for injunction.

J. Hough, for complainants.

F. Blount, for defendants.

#### Recent American and Foreign Patents.

##### Improved Fire Kinder.

Montraville Gernsey, Middleburgh, N. Y.—In preparing this kindling, any desired quantity of ordinary charcoal is immersed for thirty minutes, more or less, in a saturated solution of chlorate of potash and nitrate of potassa, dissolved in water. The charcoal is then dried and then immersed in a saturated solution of resin in ordinary petroleum oil. This solution is prepared by heating the petroleum to a temperature of from 180° to 200° Fahrenheit, and putting into it resin until no more will be dissolved. The charcoal is then dried in any convenient manner until the petroleum is evaporated. The petroleum dissolves or cuts the resin and carries it into the pores of the charcoal, where it is left when the petroleum evaporates. The resin is readily set on fire by a match or piece of lighted paper, and the heat thus produced decomposes the chlorate and nitrate, and sets free large quantities of oxygen to support combustion, thus producing an intense heat, kindling the coal or wood fuel quickly and effectually.

##### Improved Window Shade.

Edward E. Johnson, Palmsville, Ohio.—This invention has for its object to improve the construction of window shades, inside blinds, etc., which improved blinds shall be so constructed that any desired part of the window may be uncovered to admit the light. The invention consists in sections formed in the body of the main blind or shade in such a way that the said sections may be rolled up from their lower ends, or the blind and sections may be rolled up together.

##### Improved Millstone Balance.

George W. Wilson, Chebanse, Ill.—The importance of having the running stone of a grinding mill perfectly balanced is well understood. In this invention it is accomplished by means of a metallic riveted band and a series of adjustable grooved or ribbed metallic weights. The band is made by riveting together the ends of a piece of band metal. It is made larger in diameter than the stone, so that the weights may be inserted. The band is tightened around the stone by the weights. The latter are somewhat tapering in form, and are made circular on their outer and inner sides, so as to conform somewhat to the circle of the stone and the band. The outer or convex sides of the weights are grooved or ribbed, which prevents them from working out of their places. They may be placed in any part of the band, as may be required to balance the stone.

##### Improved Scissors.

John A. Correa, Green Bay, Wis.—The object of this invention is to provide means for securing the blades of scissors or shears together, so that they may be adjusted at pleasure to work tightly or loosely without the use of a screw or nut; and it consists in one or more cam wheels working in combination with the fulcrum pin. When the wheel is turned, an inclined plane bears against the upper edge of a slot and draws the pin upward and the blades together.

##### Improved Land Marker.

John Cuff, Emery, Ohio.—This invention has for its object to furnish an improved machine for marking the ground in cross-row for planting corn, by crossing the field in only one direction. The axle is made of such a length that the wheels may be at the distance apart required for the rows, so that the tracks of the wheels may mark the places for the rows in one direction. The wheels are rigidly attached to the axle so that they will revolve exactly together at a distance apart equal to the desired distance apart of the hills of corn. The cross blocks upon the two wheels are exactly in line with each other, so that the corresponding blocks of the two wheels may strike the ground at the same time and thus mark the cross rows. Arms are made of such a length that, when swung down into, or nearly into, a vertical position, the wheels will be raised from the ground, so that the machine can be conveniently turned or moved from place to place. By this construction, by moving a lever forward the wheels will be allowed to come in contact with the ground, and by moving the said lever rearward the wheels will be raised from the ground.

##### Improved Scraping Instrument.

Van Ness Davis, Stoneham, Mass., assigns to himself and Frank A. Davis, of same place.—The object of this invention is to furnish a tool or implement for scraping kitchen utensils, and cleaning deposits of burned gravy or other sedimentary deposits from the corners of angles, and also to be used in house cleaning; and it consists in a simple flat blade with the scraping edge at the end, and with a shank and handle.

##### Improved Tool Holder.

Levi L. Lamb, Chelsea, Mass.—This invention consists of a box handle for containing the tools and holding them for use, comprising a box and cover, which are pivoted together near the end for holding the tools for use, so as to open by swinging the cover in the plane of the top of the box and close by a reverse movement. The box and cover have each a jaw, between which the dovetail shaped heads of the tools will be secured, to be held for use when the box handle is closed, and opened to release the tools when the handle is opened. By the same operation by which the tool in use is released to be taken out, the box is opened to receive the tool to be changed and allow of taking out another, thus economizing labor and time. A spring catch is used to fasten the box closed.

##### Improved Beer Cooler.

John Chandless, New York city.—This invention relates to a new apparatus for cooling ale, and has for its object not to destroy the vitality of the ale while cooling it. A box or tank, of suitable size, is arranged to contain ice and water, and also serve as a refrigerator. A zigzag or coiled pipe is coiled therein, its upper end projecting above the top and terminating in a funnel or enlargement. The lower end of the pipe extends through a side or the bottom of the refrigerator, and has a cock whereby it can be closed or opened. Being surrounded by ice water the pipe is necessarily cool, and will serve to cool whatever liquor may flow through it.

##### Improved Cultivator.

William T. Parker, Verona, Miss.—Two "scutic" plows are framed together, with the side pieces of the frame of the machineries near the rear ends. The side pieces of the frame are jointed to cross pieces so that they can vibrate to allow the plows which are guided by handles to be brought toward or from the row, as may be demanded by the condition of it. The two sides of the frame are prevented from shifting forward or behind each other by suitable means. A vertical bar, rigidly connected to the side piece, rises from each, to considerable height near the center, and, being connected by the cross bars loosely jointed to it, assists in keeping the frame in proper shape while allowing the plows to be vibrated. The rear support for the shaft is elongated vertically to allow the height of the choppers to be regulated to the ground along which they run.