

COFFEE ROASTERS—S. Pierce, of Troy, N. Y., (assignor to C. B. Pierce, of Troy, aforesaid). I am aware that it is not new to combine a cylindrical or a spherical roasting vessel with a portable furnace or other heater, nor to make the journals of a cylindrical roasting vessel hollow; and I do not claim any such combinations or modes of construction.

I claim constructing the roasting vessel of a series of alternate longitudinal angular parts, projecting inward, and co-extensive concave portions swelling outward, substantially as described, for the purpose specified.

OPENING AND CLOSING GATES—C. Winegar, of Union Springs, N. Y.: I claim the fan wheel, T, and shaft, 2, and cog wheel, N, the ratchet wheel, V, and spring catch, W, as applied to said invention.

All else I disclaim in this patent, as having been patented to me in said original machine. Date of patent, May 29, 1855, and held by me under said patent, not intending in these claims to limit myself to the precise arrangements of the parts described, but to vary the same at pleasure, while I attain the same ends by means substantially the same.

[The above gate is a *ne plus ultra*, in its way. Nothing can be more pleasing or satisfactory than its operations. If you are approaching one of them, in a carriage, you reach out the hand and touch a small lever, placed on a side post—when, presto, the gate opens and you pass through. Having passed, you touch another lever and the gate closes, in the same magic manner. The contrivance is quite simple and its cost is very moderate. It cannot fail to become very popular. Foreign patents have been secured through the Scientific American Agency.]

RE-ISSUES.

HOT WATER APPARATUS—John Brown, of New York City. Original Patent dated May 30, 1851. I claim connecting the ends of the horizontal, or nearly horizontal water pipes, and for the purposes specified, whether made in one piece, or the bend or elbow separate, and then united, the said elbow being connected with the next pipe above it, by entering the end thereof, substantially as, and for the purposes specified.

And I also claim making each horizontal or nearly horizontal pipe having the bend or elbow at one end of red lead caliber, with the calibers at top in the same line, substantially as, and for the purposes specified, whether made in one piece, or the bend or elbow separate, and then united, the said elbow being connected with the next pipe above it, by entering the end thereof, substantially as, and for the purposes specified.

And I claim the construction and arrangement of the apparatus for the purposes substantially as specified.

BATHING TUBS—J. L. Mott, of Mott Haven, N. Y.—Original patent dated Sept. 27, 1853. I do not claim broadly as of my invention, the connection of the hot and cold water pipes of a vessel, so as to discharge hot and cold water together, as this has before been done by a pipe or pipes coupled with the bottom of the vessel and discharging upwards.

Nor do I claim broadly the use of an overflow pipe, for carrying off the water, and preventing the water in the tub from overflowing, as a separate device has before been used for this purpose, but when so used it was so connected with the waste and supply pipes, as to necessitate the use of a valve within the pipe, or a double coupling therewith, together with all attendant disadvantages. And although I have described my said improvements in connection with and as applied to a bath tub, it will be obvious from the foregoing that they are equally applicable to other and analogous vessels, such as wash basins, wash tubs, or vats, sinks for kitchens, &c.

I claim as my invention, the mode of combining with a bathing-tub or other like vessel, either one or both of the channel-ways, substantially as described, and making, when constructed, part of the tub or vessel, one of which channel-ways connects the overflow and waste or discharge holes, with the waste pipe, and the other channel-way is adapted to the insertion of the hot and cold water pipes, and discharging the hot and cold water together, at or near the bottom of the vessel, and in a horizontal or nearly horizontal direction, substantially in the manner, and for the purposes specified.

WARMING AND VENTILATING BUILDINGS—Henry Rutan, of Ontario, Canada West.—Original patent dated Dec. 5, 1848; ante-dated June 23, 1848. I claim, first, the mode described of warming and ventilating buildings, railroad cars, and apartments of every known description, the same consisting in introducing the air from without, by conducting it under the floor of the building or apartment, and directly under the air warmer or ventilator, for the purpose of being warmed for distribution; the air after being thus warmed, rising in a central or otherwise convenient apartment or passage, and thence being admitted into the various rooms of the building, or into the apartment near the ceiling or roof, and out through pipes, and thence passing down through openings in the lower part of the rooms, or apartment, and thence outwards through the various channels provided, connected with the foul air shaft. I do not claim simply introducing warm air at the top of a room, and discharging it at the bottom, but only intend to claim this when effected in the manner substantially as described.

Secondly, I claim the arrangement of the radiating pipes, or flues of the air warmer in combination with the fire chamber situated within or between them, in the manner substantially as set forth.

Thirdly, in combination with the elevated air chamber and flues of the air warmer, I claim the arrangement of the openings for admitting heated air above the fire, to complete combustion, as set forth.

Fourthly, I claim the construction of the fire grate, as set forth, viz: without one or more grates of cylindrical or other form, raised above the ordinary grate floor; said raised grates being capped and covered in such manner as to protect the vertical bars from the fuel, substantially as set forth, and the principle of their action being substantially as set forth.

Fifthly, I claim the mode of conducting the air into the pure air shafts, whatever may be the direction of the wind, or of the external currents of air, by placing a swinging valve or shutter at the mouth of said shafts, substantially in the manner set forth.

Sixthly, I claim so constructing or placing the mouths of the pure air shafts for the ventilation of railroad cars, by the motion of the car, the incoming pure air may be increased in quantity, as set forth.

[It will be observed that the above claims are very broad. They almost cover the idea of ventilation in any shape, except through ordinary doors and windows. Certain it is that scarce any car ventilator can be used without infringing this patent, for the plan of employing a flaring mouth-piece of any sort, to catch air, is specially secured to the patentee.

It may seem strange to many persons that a patent carrying such a wide range, over an apparently well known field, should be granted at this late day. But it will be observed that the above is an old patent re-issued with its claims, which were originally defective, corrected.

Mr. Rutan is a patriarch in the science of ventilation. Years ago, before fresh air breathing was ever thought of by any one else, he devoted himself to the subject. This identical patent was the first ever granted in this country, for any mode of ventilation. Since that time the public knowledge of the subject has slightly improved. Wealthy gentlemen, when they build, are getting into the habit of having little holes cut in the chimneys of some of the rooms of their dwellings, to allow the escape of foul air. Many of the city school-houses, churches, and public edifices, where large crowds of people gather, have diminutive apertures left in their ceilings, for the same purpose. Railroad cars also have holes through their roofs; but these are generally covered with fine gauze, and the thick, sickening atmosphere, cannot escape. Great brags are made about good ventilation, when any of these plans are adopted. The truth is, the public know really little about the subject. The grossest ignorance still prevails.

No apartment, building, or car, can be said to be ventilated, unless some plan is adopted which moves and renews continually the entire mass of air. Rutan's system accomplishes this. No other does, that we are acquainted with. In winter or summer its operation is the same.

We do wish that our architects, school committees, public building committees, would open their eyes on the subject of ventilation.

FOR DESIGNS.

ORNAMENTING STOVE PLATES—S. W. Gibbs, of Albany, N. Y., (assignor to A. H. McArthur & Co., of Hudson, N. Y.)

COOKING STOVES—Apollos Richmond, of Providence, R. I., (assignor to A. C. Barstow & Co., of Providence.)

American Association for the Advancement of Science.—No. 1.

The Association commenced its Ninth Annual meeting in Brown University, Providence, R. I., on the 15th inst. Prof. Torrey, of New York city, was elected President for the year; Dr. Wolcott Gibbs, Sec. The members of the Association were welcomed in the morning by a neat address, and in the evening by a brilliant entertainment from the venerable Dr. Wayland.

COMBUSTION OF FUEL—The first paper read was by Prof. Henry, of the Smithsonian Institute, on the importance of combustion. For a number of years he had been prosecuting experiments with fire and flame, and had repeated those made many years since by our eminent countryman, Count Rumford, who noticed that more heat was evolved by burning a mixture of clay and sea coal than from sea coal alone. He also found that when the sides and back of a chimney were lined with fire brick, more heat was given out than from coal itself. These results seemed to be paradoxical—as they showed an increase of the quantity of heat without the decomposition of any material to supply it. Prof. Henry's experiments verified the results of Rumford's, and he seems to have discovered the cause. He supposes that the substances introduced into the coal did not increase the absolute amount of heat, but converted some of the heat of combination into that of radiation. He took a slip of mica and introduced it into the flame of a lamp, about midway, and then placed a platinum wire in the apex of the flame, where the heat is most intense. The result showed that the mica radiated both heat and light, while the apex of the flame in contact with the platinum was cooled. The conclusions to be drawn from these experiments are that a certain quantity of coal employed to generate steam will have its useful effects diminished by inserting in the fire a better radiating surface than the fuel itself; but in heating rooms, the opposite results will be produced.

HEAT OF THE PLANETS—Prof. Loomis, of New York city, read a paper on this subject, which brought on a sharp discussion. By his calculations, he showed that the temperature of Jupiter was 80° below zero, and the other large planets as low; and that of the moon 40°. He therefore contended that the planets could not be inhabited, and that animal and vegetable life could not exist in them. In those planets nearer the sun than the earth, he contended that animal life could not exist for the greater heat, except round the poles of Venus, which were 52°. He also contended that if the earth possessed any internal heat, it was of no effect upon its surface; that the sun was the great heating agent.

Prof. Rogers contended for the central heat theory, and for the other planets beside the earth, being the abodes of intelligent beings.

Prof. Agassiz stated that vegetable existence was found at the summits of high mountains, for he had obtained lichens on the Alps, at an altitude of 11,000 feet.

Prof. Henry treated the whole matter as a scientific speculation, but contended that all things were changing; that the outer old planets were past the epoch necessary to life, and the sun itself was fading. His views amounted to this:—that this earth was once a mass of fire; that it is now cooling, and will at last become an icicle in the heavens, and so with the sun.

THE TIDES—Prof. Bache, of the coast survey, in referring to the tides, stated that on our coast, in the Atlantic, they flow from east to west; in England, from west to east; while on the Pacific coast their motion is rotary. They sweep round by Asia, then turn and flow back.

Prof. Caswell stated that the tides was still a difficult subject, and so was the habitability of the planets. He preferred to remain in ignorance and omit conclusions, rather than to proceed and base opinions upon unfixed data, which was at least the case with the internal heat of the earth, and that of the planets.

[We will endeavor to present the substance of the useful, practical, and interesting papers read before the Association in future numbers.

Improvement in Safety Railroad Drawbridges.

Among the recent patents issued at the Patent Office in Washington, is one called a Safety Railroad Drawbridge, the invention of Messrs. John K. Gamble and Wm. P. Gamble, of this city. From an examination of a working model, now on exhibition at the store of the firm, No. 8 Margaretta street, below Front, we should presume that the invention will be a very valuable one. The invention consists of a novel manner of combining and arranging switch rails and inclined sidelings with a drawbridge, whereby the switch rails can be unlocked and moved in connection with the inclined sidelings, and locked simultaneously with the slightest opening of the draw, and again unlocked and thrown in connection with the main track with the closing of the draw, thus rendering the drawbridge perfectly safe, as no contingencies whatever are left, and the safety of passengers does not depend upon the sobriety or carefulness of the attendants at the bridge. The arrangement of this invention is in every respect self-adjusting.—*Phila. Ledger*.

[Engravings of this invention will be illustrated in our columns next week.

A Great Planetarium.

J. W. and W. B. Hatch, of Utica, N. Y., have recently constructed the largest planetarium ever exhibited in America. By it the planets are made to revolve in vertical orbits. These are projected on a screen or medium, behind which all the machinery is concealed, so that there appears no visible sustaining power between the planets and the sun.

The whole is arranged with folding curtains, by which the celestial scenery can be brought on with a beautiful theatrical effect. The eclipses of the satellites take place as they come into that part of their orbits relative to the sun to produce those results. To add to the splendor of the scene, the great comet of 1680 is represented traversing an elliptic orbit through a circuit of fifty feet.

The instrument is designed to accompany lectures on astronomy before Scientific Associations.

One great beauty of the instrument, and what appears to be the distinctive peculiarity of the contrivance, is the fact that not only the sun, but every planet and satellite is illuminated.

A Cheap Disinfecter.

The following is attributed to Prof. Nash, of Amherst College; we have seen it in a number of our exchanges:—"Take one barrel of lime and one bushel of salt dissolved in as little water as possible, which pour upon the lime and slack it, so as to form a thick paste. The result will be an impure chloride of lime, a very powerful deodorizer—equally good for outdoor purposes, with the article (chloride of lime) bought at the apothecaries, and not costing one-twentieth as much. It should be kept moist and applied wherever offensive odors are generated."

Chemists have denied that any decomposition of salt takes place—to set free its chlorine—when mixed with lime. This formed a subject of dispute not long since, among the "wise-acres" of the New York Farmers' Club. There was division among them on the subject and like many other topics discussed by them, it was left as clear and as fully settled, as before they commence to consider it. There can be no doubt, however, that the above compound of salt and lime, will make a cheap and good deodorizer, whether the chlorine be set free or not. It is, therefore, useful information.

Mechanics for Russia.

George Hamlin, a machinist, and for a long time foreman at Winans' machine shop, together with some five other Baltimore mechanics, started this morning for New York, en route for Russia, where they go to take charge of important positions on the great Russian Railroad. A half dozen other Baltimore machinists are already in England on their way out, and some twenty-five or thirty altogether will be sent out. All the Englishmen formerly employed in Russia have been compelled to quit their situations on account of the war, and their places are to be supplied in a great measure by Americans.—[Baltimore Patriot, Aug. 9.

Soldified and Artificial Milk.

Many experiments have been made in various parts of the world to produce a preparation of milk that will keep sweet in any climate and for a long time. The most successful experimenter among us is Gail Borden, Jr., inventor of the "Meat Biscuit," whose prepared milk we have used months after it was made, and found it to be as sweet as on the day when it was prepared. In Europe, the two kinds of milk indicated by the heading of this article, have lately been brought into public notice, and described as follows by one of our foreign exchanges:—

"These two substances are perfect types of our knowledge in organic chemistry. The solidified milk has been patented by M. Fadenike, London; the artificial milk is the invention of Mr. S. Piesse. Both these substances will confer a lasting benefit upon the maritime interests of the world, being so useful for a long sea voyage, especially for emigrants with children. Either of these materials being mixed with water, produces a real milk, which, with tea or coffee, cannot be distinguished from ordinary milk." For the public benefit, Mr. Piesse has given his recipe for preparing his Lactine, or Artificial Milk, which we subjoin:—Honey, four ounces; gum arabic, in powder, half an ounce; three yolks of eggs; fine salad oil, six ounces. Mix the honey and the gum first, then add the egg, and, finally, gradually mix in the oil. It will at once be seen that all the ingredients employed are perfectly nutritious, wonderfully representing the known composition of real milk. The oil is for the butter principle; the egg is the animal, or cheese matter; and the honey and gum are for the sugar, found in all milk. One ounce of lactine, dissolved in half a pint of water, produces half a pint of artificial milk. By a slight modification of the process, Mr. Piesse hopes shortly to produce artificial butter.

Inter-Oceanic Ship Canal.

The Washington *Star* learns from a reliable source, that some enterprising citizens of the United States and New Granada have discovered and explored the long sought for route for connecting the Atlantic and Pacific oceans by means of a ship canal. This great desideratum to the commercial world is certainly the most grand and important enterprise of this age, and worthy the attention and consideration of every civilized people and government. The plan, as the *Star* understands, is to go to the Atrato river, some fifty miles from its mouth, with a depth of from six to ten fathoms, and from thence to the Pacific, a distance of some sixty miles more, without a single lock or obstruction in the contemplated canal. A liberal grant has been made by the government of New Granada to the persons engaged in this grand undertaking; and the whole route, from one ocean to the other, has been accurately surveyed, and the facts developed are beyond doubt or question, so far as the feasibility of the work is concerned.

[We are acquainted with the gentlemen engaged in this enterprise, and have examined maps of the surveys and diagrams of the work to be executed. Judging from these, and the reports made on them—if they are correct—we conclude that the project is a practical one, and hope it will meet with success.

Parisian Telegraphs.

In Paris the telegraph wires are laid under ground, no poles being seen in the streets. A trench is dug twelve or fifteen inches wide, in which the wires are placed side by side, but so as not to touch each other. Liquid bitumen is then poured on, which surrounds the wires, and completely isolates them. It secures them from damage by accident or design, and from being deranged by atmospheric influence. The same plan is to be adopted at Lyons.

Ligneous Paper Mill.

A very large mill is now in the course of erection at Little Falls, N. Y., by G. W. Beardslee, of Albany, for the purpose of making paper from various kinds of wood. Its dimensions are to be 81 by 100 feet for the main building, with a wing 50 by 90 feet. Twenty paper machines will be employed, and about fifty tons of pulp prepared weekly. It is intended to have it in operation about the middle of October next.