

IMPROVEMENTS FOR VAPOR LAMPS.—E. M. Williams (assignor to himself and John Gabel), of Philadelphia, Pa.: I am aware that vapor lamps have been constructed in which a supplemental flame has been employed for volatilizing the fluid, but I am not aware that a sliding supplemental wick tube arranged as shown and described has been employed for the purpose of graduating the heat employed for volatilizing the fluid within the lamp, and thereby regulating the power of the illuminating flame as may be desired. I do not claim, therefore, broadly, the employment or use of a supplemental flame for volatilizing the fluid within the lamp.

But I claim the supplemental sliding wick tube, D, arranged relatively with one or more vapor tubes, C, to operate substantially as and for the purpose set forth.

[This is an improvement in that class of lamp in which the fluid or burning material is volatilized, and the vapor burned as it is generated. The invention consists in the use of a sliding wick tube fitted in the cap of the lamp and placed in close relation with one or more vapor tubes, whereby the latter, by the adjustment of the former, may be heated to a greater or less degree, and an illuminating flame of greater or less brilliancy obtained.]

PREVENTING EXPLOSIONS IN STEAM BOILERS.—Jane H. Lloyd, executrix of E. L. Lloyd, deceased, late of Philadelphia, Pa., assignor to G. P. Perry, of said Philadelphia: I wish it to be understood that I do not desire to limit the claim of the invention to such special mode, as modifications of the same may be necessary in adapting it to different forms of steam boilers.

But I claim as the invention of the said Richard L. Lloyd placing within a steam boiler or metallic conductor, arranged to communicate with the outside of the said boiler, substantially in the manner set forth, in order to maintain an electrical equilibrium between the inside of the boiler and outside thereof, or with any matter surrounding or in connection therewith for the purpose specified.

RE-ISSUES.

METALLIC TIPS FOR BOOTS AND SHOES.—George A. Mitchell, of Turner, Me. Patented Jan. 5, 1858: I claim as a new article of manufacture my described metallic tips, constructed in the manner and for the purposes fully set forth.

I also claim as a new article of manufacture a metallic tipped boot or shoe, constructed essentially in the manner and for the purposes fully set forth and described.

DESIGNS.

METALLIC COFFIN.—Wm. H. Forbes, of New York City.

COOKS' STOVES.—G. B. Sprechler, of Lancaster, Pa.

INVENTIONS EXAMINED at the Patent Office, and advice given as to the patentability of inventions, before the expense of an application is incurred. This service is carefully performed by Editors of this Journal, through their Branch Office at Washington, for the small fee of \$5. A sketch and description of the invention only are wanted to enable them to make the examination. Address **MUNN & COMPANY,** No. 125 Fulton street, New York.

Invention of Balloons.

The admirers of crinoline will be proud to learn that the invention of balloons is owing to a similar contrivance. The French give a curious anecdote of a simple occurrence which led the inventor of such machines—Montgolfier—to turn his attention to the subject. It is to this effect:—A washerwoman of the Rue aux Juifs, in the Marais, placed a petticoat on a basket-work frame, over a stove, to dry. In order to concentrate all the heat, and to prevent its escaping by the aperture at the top, she drew the strings closely together which are used to tie it round the waist. By degrees the stuff dried, became lighter, and the stove continuing to heat and rarify the air concentrated under the framework, the petticoat began to move, and at last rose in the air. The washerwoman was so astonished that she ran out to call her neighbors; and they, seeing it suspended in the air, were amazed. One individual, however, a simple paper-maker from Annonay, named Montgolfier, as much astonished, but more sensible, than the others, returned home, and without loss of time, studied the works of Priestley on different kinds of atmospheres. The result was, the manufacture of the first balloon, called Montgolfier's, of which he was the inventor. As the nautilus probably gave the idea of a sailing vessel, so also do very simple causes often produce great and unexpected results.—*Chambre's Recollections.*

"A NEW TELEGRAPHIC invention has been exhibited in London. The model consists simply of a trough filled with water, on each side of which are two copper plates, the plates on the one side being connected with a common electric battery; and it is found that, without any wire, the electricity passes through the water and makes signals on the other side, in the ordinary manner—the theory being that the copper plates guide the electric current in the circuit."

[We copy the above from our venerable neighbor, the New York Sun. What a nice idea it would be, if we could only send our messages through the briny deep without the aid of ocean cables, simply using water, as the conducting medium! This great discovery has, however, not even the merit of novelty to recommend it. To our certain knowledge it is thirty years old, and we know not how much older. The idea is impracticable.

Something about Magnetism.

At no great distance from Constantinople is the ancient town of Magnesia, once a city, and the residence of the great Ottoman rulers of the East, and the centre of Oriental splendor. A pleasant ride from this old Magnesia brings us to the vicinity of the most remarkable iron-mines in the world; remarkable not for the quantity of metal produced, but for the peculiar properties of the ore. The mineral here obtained has the specific name of loadstone, or (as now corrupted) lodestone. If a strip of this stone be balanced on a point, it will turn on that point till it takes a direction which is opposite to the motion of the earth; and as the globe revolves from west to east, so therefore does the loadstone stand in a direction north and south.

According both to history and tradition, round and about Magnesia dwelt, at a very remote period, a civilized race. Men of thought and science naturally had their attention directed to the astonishing and almost life-like property of this stone. Nearly all of us have read, or intend to read, the story of Sinbad the Sailor, in the "Arabian Nights' Entertainments." How long ago it is since that tale was written it is difficult to say; but it is certain that it was as popular before the Christian era as it is now. The loadstone of the tale is the Mountain of Adamant, which drew the nails out of the wonderful navigator's ship. We read in the legend, that "about noon we had come so near that we found what the pilot had foretold to be true, for we saw all the nails and iron in the ship fly towards the mountain by the violence of attraction, with a horrible noise; so the ship split and sank into the sea."

Since the Crimean war navigation has been much extended in the Black Sea, and here is a confirmation of the Arabian fable by a recent traveler. "Ships have lately run ashore on the coasts of the Black Sea near Sinope; and the captain of one that narrowly escaped wreck, suspected that the compass had been deflected by magnetic influence. This suspicion led to an investigation, which has issued in the discovery of a valuable mine of iron ore or loadstone on those coasts, the danger of which is calamitous." Now if this, or the mines near Magnesia, (and both are not far apart,) be not the identical Mountain of Adamant referred to by Sinbad, it is certainly a very remarkable coincidence.

The power which we call magnetism, derives its name from Magnesia, because of this loadstone; and as the subject is an old one, we ought perhaps to know all about it; but, nevertheless, it still mystifies the most profound philosophers. What we do know has been discovered by men of our own age.

As we have before said, if a piece of this adamant, or loadstone, be balanced, it will turn till its direction is north and south, and then remain stationary; but this is not all, for the loadstone has the power to impart the same quality to a piece of steel, which it does by mere friction, losing by the operation not the slightest power itself, yet giving to the steel no less an amount of power than itself possesses; and steel thus treated is said to be magnetized. But this power of placing itself at right angles to the motion of the earth is not the only quality that a magnet possesses. The attractive influence it exercises over iron and steel is no less wonderful, and indeed so much so that considerable force is necessary to remove the object attracted when once brought in contact with it. A number of mechanics are now engaged in solving the problem—how to make this power useful for locomotion, and there is great probability that they may eventually succeed. Although we are not able to explain the cause of magnetism, yet we have ascertained that it is intimately connected with electricity, for we can produce the one from the other. The mariner's compass consists of a piece of steel shaped like an arrow, that has been rubbed with either a loadstone or magnet. When thus treated, it is called a magnetic needle; it is

then fixed to a card on which are marked all the points of the horizon; in this way it becomes useful to the traveler by land and by sea, as he can direct his course to any point he pleases, knowing well that—

The obedient steel with living instinct moves,
And veers for ever to the pole it loves.

Hence the old name lead-stone is correct.

Another remarkable property inherent in magnet is that of having a power, which we call the repulsive or repelling power, this is no less active than its attracting power. In this way the chemists have given to the mechanics two horses—one that pushes and one that pulls; and it is for them to solve the means of harnessing them to a vehicle—a feat probably beyond the horse-taming powers of Mr. Rarey himself. **SEPTIMUS PIESSE.**

Influence of Out-door Air and Sunshine on Longevity.

A writer in one of the medical magazines argues that the more out-door air and cheery sunshine a man can use, the longer he will live. Go along any of the fashionable streets of New York, says the writer, and you will find no less than three, and often six, distinct contrivances to keep out sunshine and gladness. First, the Venetian blind on the outside; second, the close shutter on the inside; third, the shade which is moved by rollers; then there are the lace curtains, the damask or other material, &c. In the train comes the exclusion of external air by means of the double sash, and a variety of patent contrivances to keep out any stray whiff of air from entering from the bottom, sides and tops of doors and windows. At this rate, we shall dwindle into Lilliputs, if we do not die off sooner.

Course of Refinement.

The same age which produces great philosophers and politicians, renowned generals and poets, usually abounds with skillful weavers and ship-carpenters. The spirit of the age affects all the arts; and the minds of men, being once roused from their lethargy, and put into a fermentation, turn themselves on all sides, and carry improvements into every art and science. Profound ignorance is totally banished, and men enjoy the privilege of rational creatures, to think as well as act; to cultivate the pleasures of the mind as well as those of the body. The more these refined arts advance, the more sociable men become; nor is it possible that when enriched with science, and possessed of a fund of conversation, they should be content to remain in solitude, or live with their fellow creatures in that distant manner which is peculiar to ignorant and barbarous nations.—*Hume.*

To Raise the Pile on Velvet.

We are sometimes asked "What is the best thing to do with a velvet mantle after it has been in the rain?" Velvet that is rough and knotty, from rain spots and splashes, can be rendered smooth again by thoroughly dampening the back of it, and then passing the back of the velvet over a hot iron—the velvet, remember, must be passed over the iron, and not the iron over the velvet. The heat converts the water into steam, which rises through the pile, and so separates every filament. Some contrivance must be made to hold the iron upside down while the velvet is passed over it. If rested between two bricks covered with flannel, it will do very well; but if the same pair of hands that carried the umbrella over the mantle when it was out in the rain can be secured for that office, they will be found suitable. **S. P.**

WEIGHING COAL.—The good people of Philadelphia are agitating the question of a law, to compel all coal dealers to weigh their coals at the door of the purchasers. In London coals are delivered in sacks each of which is required by law to be of uniform weight, so that the purchaser can, by weighing one or more, detect any fraud in short weight. The better plan would be to use Martin's self-weighing coal carts illustrated on page 129, Vol. XII, SCIENTIFIC AMERICAN.

Golden Canals.

During the past five years, there have been constructed in California 4,405 miles of artificial canals for gold-washing, at a cost of \$12,000,000. These canals are generally strong flumes for conveying mountain streams to the dry diggings, and are used to wash out the golden nuggets. They are mostly erected in the mountainous regions, and afford evidence of the daring and energy of our people. At one place a canal may be witnessed spanning some awful abyss; in another it will be seen carried in tortuous courses for miles round lofty mountain peaks, and finally it will terminate in a high fall of one hundred feet or more. It is here used as an immense hydraulic power, being conveyed in long hempen hose, and employed ingeniously like the streams of fire engines to wash down great gravel hills containing the golden deposits of past ages.

California Wool.

The San Francisco Bulletin states that California will soon be as distinguished for growing wool as it has been for producing gold. The clip of the present year, it is believed, will reach a million and a quarter pounds, and some qualities rival the finest Australian fleeces, which are so highly prized in England. California will do more good to the world by raising wool than collecting gold. The former is an article of necessary use, and gives employment to millions in manufacturing it into various fabrics, while the latter gives employment to comparatively few, and is only employed as a medium of exchange and ornament. Our flannels, broadcloths, shawls, and a multiplicity of the most beautiful textile productions are made of wool, and the increase of its product in California is a favorable sign for the future rise and progress of manufactures in that State.

Cold Water to cure Scalds.

A writer in the Ohio Cultivator says:—"I placed a large tub full of water with plenty of ice in it, by the side of a large kettle full of water which was boiling very fast. I then rolled up my sleeve above my elbow, and thrust my arm into the kettle of boiling water up to my elbow, then immediately back into the tub of ice-water, letting it remain a few seconds, then into the boiling water again, repeating this process ten times in a minute, without injury or inconvenience, not even making my arm look red. From this experiment, I suggest the propriety of using cold water baths immediately after being scalded. Cold water is always handier than hot water. The sooner cold water is applied after scalding, the surer will be the cure."

American Cotton in England.

Although much has been done by the British manufacturers to obtain greater supplies of cotton from other countries than the United States, it appears that they are more dependent than ever upon the American supply. At a recent meeting of the "Cotton Supply Association," held in Glasgow, it was stated that in 1801 England obtained 45 per cent. of its cotton from the United States, now it takes 80 per cent. In 1810, 60,000,000 pounds were obtained from America, in 1812 it declined to 17,806,000, (during the war), then in 1817 it rose to 85,649,000 pounds. The supply of cotton from India, Pernambuco, and Bahia, has greatly declined during the past two years, and as a consequence, an increased quantity is demanded from America.

LARGE CAST IRON COLUMNS.—Twelve cast iron columns for the State House, Madison, Wis., are being cast at Cincinnati. They are each 50ft. in height, 4ft. in diameter, and weigh between 200 and 300 tons, and will cost about \$30,000.

Stearine is composed of 78-8 parts of carbon, 11-8 of hydrogen and 9-4 of oxygen, and it is coming into very general use for candles and the like, as it gives a splendid light and is free from grease.