#### American. Scientific

# Scientific American mending from morning till night, will yet blessed by the improved Sewing Machine.

NEW-YORK, JULY 17, 1852.

Sewing Machines.

In 1847, when we first noticed the Sewing Machine of E. B. Howe, Jr., of Cambridge Mass., we had a number of communications on the subject, afterwards, from persons wishing to know where Mr. Howe resided, many of them having written to Cambridge, but got no answer. We did the same, but received no answer, and concluded that Mr. Howe had removed his place of residence, which, we believe, was correct. It would have been well for Mr. Howe had he given publicity to his invention at that time, and had it illustrated in our columns. Like every invention of a useful nature, which we have noticed, our inventors took the hint and commenced inventing sewing machines for themselves. Since that time we have illustrated no less than seven sewing machines in the columns of the Scientific American. The first was on page 145, Vol. 4; it was Johnson & Morey's, agent, John Lerow. It was not a good machine, as it performed only by the running link stitch, with one thread. On page 153, same volume, we published an engraving of Magnin's French embroidering machine. On page 1 of Vol. 5, was illustrated Le Row & Blodgett's Rotary Sewing Machine; on page 73 Wilson's, and on pag 369 Watson's. (On page 216, same volume, we presented engravings of Lerow & Blodgett's machine improved). On page 58, this Vol., Sci. Am., we presented engravings of Singer's Sewing Ma-

Wilson's Sewing Machine embraced the principle of a reciprocating motion, and making a stitch during both the forward and backward stroke. It is now three years since we first noticed the sewing machine of A. B. Wilson, in Vol. 4, page 268; he was then living in Pittsfield, Mass., and he sent us a sample of the work performed by it; it was good, but when we saw his first model, we had no thought that he would ever have been able to bring sewing machines to that state of perfection which he now has. Since then he has obtained two American patents, and we have just completed arrangements-having made the drawings, &c.—to get his latest improved machine patented in all the important kingdoms of Europe. All the machines we have spoken of use two threads, excepting the one specified. We have nothing to say against any one of them, but the Wilson machine is, in our opinion, a great triumph of American genius. It is no larger than a neat small workbox, very portable and convenient, and we have seen fine shirt bosoms and collars stitched by it in a more perfect and accurate manner than any we have ever seen done by hand work. When we first noticed Howe's Sewing Machine, in 1847, there was not a solitary machine of the kind in active operation, in our whole country, if in the world. There are now, we believe, about five hundred in operation, and we have been told by Mr. Wilson that the orders for his machines cannot be supplied fast enough. There are at present a hundred machines about finished at the Company's works-Wheeler, Wilson & Co., Watertown, Conn., and these are all engaged. At present, until the patent is fully secured in Europe, we cannot illustrate nor describe this improved machine, which has received the name of A. B. Wilson's Patent Seaming Lathe, and was patented on the 15th of last June, but we will do so, perhaps, during the latter part of this year.

When we look at the progress made in Sewing Machines, we expect them to create a social revolution, for a good housewife will sew a fine shirt, doing all the seams in fine stitching, by one of Wilson's little machines. in a single hour. The time thus saved to wives, tailors, and seamstresses of every description, is of incalculable importance, for it will allow them to devote their attention to other things, during the time which used to be taken up with dull seam sewing. Young sure, along with 15,000 others, in viewing the and no less than 17 persons were drownladies will have more time to devote to ornamental work (it would be better for them all appointed in our expectations: the balloon, The fall of the bridge was a hinged leaf, supif they did more of it), and families in which with M. Petin in it, slowly arose from the ported by a chain. The hinge broke first, and position. locality, and the shape of the stones, there are a number of children, which require ground at about 3 P. M., but, unfortunately, it then the chain. There should be no fall-

mending from morning till night, will yet be legraph, which made it rock and sway, when times of inventive construction. About 12

The Sewing Machine is but on the thresh hold of its career; it is but partially known and applied in our country. Private families know nothing about its use, and shoemakers and saddlers have not yet tasted its benefits. Mr. Wilson informs us that he is about to make one that will sew boots and shoes with a rapidity that will astonish all the sons of St. Crispin. We suppose that, in a few years, we shall all be wearing shirts, coats, boots, and shoes-the whole habiliments of the genus Machine. We suppose there are now full 200 sewing machines in operation in this city.

#### Accidents.

No country in the world has such an unenviable reputation for fatal accidents as ours. Houses falling, steam boilers bursting, railroad trains coming into collision, are among the common news of every-day life. What can be the reason of this? Are our people less reflective, cool, and considerate than all the ductors, solid as well as gaseous, electrically. rest of the world beside? We believe not; our people are a thinking people, and they ossess much firmness and presence of mind. What then can be the reason for so many accidents in our country? One reason for the great number of accidents in our country is electricity of two of Daniell's cells to pass avarice; and another is the general prevalence | through it. When the glass became soft by of that stupid principle, "what is everybody's business, is no body's business." A wretched bridge is built, as cheap as possible, by a private company; it is dangerous, to be sure, but this is a free country, and it's nobody's business. A crowd gathers on the said bridge it falls, and 17 or more persons lose their lives; but then whose business is it? Nobody's. A child is shot by a pistol in the hands of a careless boy, and a physician and colored and began to show signs of redness. The deman are wounded by guns in the hands of | flection increased as the strips were lowered in others; yet who is to blame? Nobody. All the flame. When the flame was strongest these accident took place in and near the there was a permanent deflection of 70°. The city of New York, on the 5th inst.

The steamboat St. James, on the same day, while on Lake Ponchartrain, near New Or- of gas to the other strip. When the metallic leans, exploded her boilers, and it is believed that not less than fifty persons lost their lives. as the boat was crowded. Among the number of the killed was Judge Preston, of the Supreme Court of Louisiana, and some of the most prominent citizens of New Orleans. Yet who was to blame? Nobody. These things are a disgrace, not to our country, but to ourselves as a people. There is too much selfishness prevalent, consequently there | rior wire. By properly connecting a platiis a disregard for the safety of others by those num wire, which was dipped into the centre who are seeking after their own interests and | of the flame, with a condensing plate, the lattheir own enjoyments. Houses, bridges, &c., are built cheap; "this will do," says the constructor; "this will do," says the owner; "it electricity is given off by the outer surface of is safe enough, and I have paid enough for it." Down comes the structure, or up goes the boiler—scores of lives are lost—coroners' inquests are held-notes of the events are made in the papers—the matter is passed over, and other events of a like nature press on, transpire, and it seems to be nobody's business. Every child seems to stand on tip-toe, with the Declaration of Independence on its tongue's end, and men seem to act, as if they had no duties to yet, respecting one of the most common and perform to their fellow men in the Republic, except to make the most of them. True liberty can only exist where there is a healthy restraint upon all wrong-doing, and surely where wrong deeds go unpunished, no healthy restraint is there. It would be more to the honor, credit, and happiness of our people, if they would go a-head with a little more of the ballast of safety, and a more tender regard for the welfare and general happiness of the whole body of the people.

## The Great Balloon.

On Monday, the 5th inst., Mons. Petin, the daring balloonist, was to have made an ascent from Bridgeport, Conn., near the country-seat of the famous P. T. Barnum. A splendid large balloon was made for the occasion, it contained 47,000 cubic feet of gas, and was the the number. We anticipated no little plea-

were sadly disappointed at the unfortunate result. The ascent of a large balloon always gives us peculiar pleasure; we experience strange sensations at seeing the huge mass rise up grandly, shaking the earth from its feet for a season. From what we have seen of balloons, however, they require, in every instance, the most skillful management to be successful. M. Petin, although a bold aeroomo-stitched and completed by the Sewing | naut, has been very unfortunate in his plans | did. since he came to this country. We hope he will be more successful next time.

> The Electrical Properties of Flame---Light. Prof. Buff. of the University of Giessen, has recently published an interesting paper on the electrical properties of flame. He has come to the conclusion that gaseous bodies, which have been rendered conductable by strong heating, are capable of exciting other con-

> Two small strips of platinum were introduced into a glass tube closed at one end; they were separated by an interval of a thin line of air. The air within the tube could not be heated to a degree sufficient to permit the heating, and both pieces of platinum were permitted to touch it, a strong deflection of the needle of the galvanometer was the consequence.

> When the strips of platinum were exposed to the direct action of the flame of a spirit lamp, the first notice of the passage of the electricity was obtained, when they were placed at about three inches above its extreme point, flame current passed always from the hottest platinum strip through the separating interval wires or other conductors, connected at one end, are brought into contact with highly heated gas, it formed an electric circuit. One platinum wire was introduced into the obscure centre of the flame of a lamp, and the other wire was brought near the outer surface of the flame, a current of electricity immediately exhibited itself, which passed through the flame from the inner to the exteter became charged with negative electricity, and hence Prof. Buff concluded that positive the flame.

> It is our opinion that more discoveries will yet be made respecting flame and light. What do we know of flame, excepting this, "it is the exhibition of a certain action of certain substances, such as carbon, hydrogen, and oxygen?" Flame is an exhibition of these gases in a certain state. This definition is exceedingly unsatisfactory; we are in the dark, simple chemical phenomena. There are hopes of some rew discoveries being made, by directing the attention of electricians to this field of investigation. Actinism, and the recent discoveries of the properties of different colored solar rays, are enough to incite philosophers to investigate this subject with great diligence. We have light, in the particular excited action of some chemical substance; we do not call light a substance apart and distinct in itself, and yet it has exceedingly peof solar light—that is, how it is produced.

# An Afflicting Accident.

On Monday evening, the 5th of July, a sad accident took place at Staten Island, near this city. A crowd of those engaged in enjoying admiration of all who saw it, ourselves among the pleasures of that day, collected upon the "fall" of the Ferry Bridge, when it broke, ascent of such a noble balloon. We were dis- ed—they were mostly women and children. a continual stitching, stitching, in making and soon came incontact with the wires of the te-bridges—they are worthy of the most rude stream.

it reeled over against a barn and was torn to years ago, a bridge of the same kind fell, prepieces. M. Petin fell out when about twelve cipitating about twenty persons into the bafeet above the ground. The whole multitude sin, at Albany-fourteen were drowned. Such bridges are unsafe, and should not be tolerated. Is there a country on the face of the earth, where there are so many unsafe public structures suffered to exist? Our people are killed by scores every month. The late accident was a culpable one, for what did the women and children know about the safety of the bridge? Nothing :- they should not have been allowed to crowd upon it as they

#### The Climates of Countries.

Although Edinburgh, in Great Britain, is situated ten degress farther north than the city of New York, it has a much warmer climate in winter, and the heat and cold never attain to such extremes. The climate of England is, to the majority of our people, a mystery. The Island is situated between 500 and 550 north latitude, and it has a milder climate than we enjoy in the latitudes of 40 and 45°. The British Isles are situated in the path of warm ocean currents, which flow across the Atlantic and beat upon and circulate around them. The wild Orkney Islands which are situated in 59° 5', have warmer winters than we have in New York City, which is situated about 170 further south. In the city of Glasgow, the mean temperature in the month of January is 380, and it has never been below zero but twice in forty years, and then only 3° for two days. In Unst, in the Shetland Isles, in latitude 60° 5 min., the mean temperature in January is 40°. In many places of the United States, ranging from New York to Maine, in latitude 450, the mean temperature is 60 below zero. Unst is only one degree colder than Constantinople, in January; and no country in Europe, nor the world perhaps, enjoys the mildness of climate peculiar to Great Britain and Ireland. This must have a wonderful effect upon the health and organization of the people. The cause is, as we have stated, generally attributed to the currents of the Gulf Stream; one philosopher, however, attributes the genial warmth to moist breezes from Africa, which come over the Atlantic, crossing the equator. In Russia, Moscow is on the same line with Edinburgh, yet its mean temperature in winter is at least 13° lower. The climate of England is moist and wet. To foreigners, accustomed to clear skies, it is disagreeable. The atmosphere is cloudy in summer, and this is one reason why it is not so warm as in other countries in the same northern latitude. Were it not for the warm ocean currents and the warm breezes, the coasts of England would be ice-bound, and many of the plants which now flourish there as evergreens, would be unknown.

On the northern coast of our Continent—in northern Oregon-the climate is much warmer in winter than in places on the same lines of latitude in our Eastern States. It is believed that currents from the orient flow over the Pacific and wash the Oregonshores, as the Gulf Stream of the Atlantic does the British Isles. During the past winter the thermometer ranged at 170 above zero, and the prairies were green all the time, except when covered by occasional snow storms. The farmer is not compelled, as in the Eastern States, to depend for the winter sustenance of his cattle on hay raised the previous season, his cattle can graze there throughout the whole year, and wild flowers may often be plucked in the months of January and February.

## Are Lizards Poisonous?

L. M. Boatner, writing to the Southern Cultivator, says he has examined many snakes culiar properties, and produces many exceed- and lizards, to know if they were poisonous, ingly peculiar effects. We are still ignorant and he is satisfied that many snakes are destroyed which are not only harmless but useful. He has examined all sorts of lizards and never found a poisonous one. The large water lizards are also innocent—they are named "lamper eels."

### The Exhumed Macadamized Road.

A correspondent writing to us from Somerfield, Pa., inform us that a gentleman from that place has visited the supposed old Macadamized road, at Fairmount. He thinks, from its

# Scientific American.



Reported Officially for the Scientific American

# LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JULY 6, 1852. CENTRE SQUARE—By Nathan Ames, of Sangus, Mass (assignor to Walter Bryent, of Boston, Mass) I claim, first. the application to an instrument, substantially in the manner set forth, of a geometrical fact, viz., that any circle, touching the sides of a right angle, will be divided into two equal parts, by the line which divides the right angle into two equal

Second, the union of the above with the common "trying square," by means of the bar, as described.

BRIDGES—Abel Bradway & Elijah Valentine, of Monson, Mass.: We claim the combination of the string pieces with the posts, the cross joints, the saddles, the diagonal braces, and the ties of a bridge frame, in such manner that the said string pieces are enabled to move longitudinally under the influence of variations of temperature, or other causes, without injury to themselves or to the parts with which they are combined, substantially asset forth.

CAR SEATS—By John Briggs, of Boston, Mass: I claim a car seat constructed with a double back, which can be folded up or unfolded, by means of the hinged arms, operating as set forth, the two pieces which constitute the back being held together, when open or raised up by the spring lips, substantially as described.

TURNING ENGINES—By J. S. Brown, of Pawtucket, Mass: I claim the clasp, in combination with the slide and saddle, for the purpose of arresting the combined operation of the slide, and pattern, when required.

And I also claim the cylindrical nut, in combination with the standard and tool holder of the slide rest, as described, by which the edge of the tool is brought to the proper position to co-operate with the pattern bar and slide rest, substantially as set forth.

BRIDGES-By J. B. Gridley, of Brooklyn, N.Y. I am aware that diagonal or inclined counter braces, differently arranged, have before been used, such, therefore, irrespective of their disposition and combinaas specified, I do not claim.

But I claim the upper and lower counter braces in-clining in reverse directions to one another, for eith-er half of the span, as described, and connecting the double diagonal main brace with the upper and low-er chords, united by tie timbers, as specified, produ-cing the important results set forth.

HAND PLANES—Birdsill Holly, of Seneca Falls, N. Y.: I claim, first, the loop on the cap in combination with the plane iron, and the stem of the stock, in the manner substantially as described, to wit, the said loop fitting over, or embracing the plane iron and stem, and allowing the iron to be secured between the cap and the stem, by means of a wedge placed either between the back of the iron and front of the stem, between the back side of the stem and back part of the loop, the three positions of the wedge forming three different widths of throat, as explained.

Second, providing the cap with shoulders, which, hen the cap is placed in the stock of the plane, will fall on suitable resting pieces, provided in or upon the stock, as described.

PATTERNS FOR METAL HUBS, Etc.—By Jasper Johnson, of Geneseo, N Y: I claim furnishing the usual pattern with a shield, as described, whereby I am enabled more easily to draw the core and prevent chipping and breaking down thereof.

PORTABLE GRAIN MILLS—By Chas. Leavitt, of Quincy, Ill.: I claim forming the inner stationary cone with a cavity (square or otherwise), as described, for the purpose of readily securing the mill on the top of a post or stump, without the use of bolts or wedges, &c., as set forth.

CHURNS-By N.B. Livingston, of Portland, Ind.: I claim the racks, grooves, and pinions, by which the shaft and beaters are caused to traverse the milk or cream, with a compound vertical revolving and reci-procating motion, after the manner and for the pur-pose described.

RAILROAD CAR BRAKES—By Wm. Montgomery, of Roxbury, Mass.: I do not claim the mere combina-tion of the plates or surfaces, one of which shall be made to rub against the other and constitute a fric-tion, banks.

what I claim is my improved brake, composed of three or any greater number of plates or discs, arranged side by side and on a shaft, and having some one or more of them connected with the shaft, so as to be revolved by it, and the others held stationary, so as not to be revolved, and the whole, except one of the outer ones, made to slide endwise on the shaft, and combined with an apparatus or means of pressing them towards and against one another, substantially as specified.

I also claim the combination of the cross rods, with their friction plates and axle, for the purpose of sustaining the axle in case of fracture of it, as specified.

PROCESSES FOR DEFECATING SUGAR—By Robert & Jno. Oxland, of Plymouth, England. Patented in England May 15, 1851: We do not confine ourselves to the details as given, nor to the phosphates mentioned, as others may be substituted. We claim the use of aluminate of lime, in combination with the super-phosphate of alumina or of lime, with the phosphoric acid, for clarifying cane juice or syrups, as set forth; but we disclaim the use of phosphoric acid, except in combination with the above named bases.

CUTTER HEADS FOR PLANING—By James M. Patton & Wm. F. Fergus, of Philadelphia, Pa.: We claim our improved elliptical reducing and planing instrument, composed of obliquely acting cutters, secured to an elliptical plate in such a manner that the periphery of the said plate will gauge the depth of the action of the cutters, and also serve to hold down the material operated upon, substantially as set forth.

CORDAGE MACHINES—By J. W. Peer, of Schenectady, N. Y.: I claim the use of grooved scrolls and their combination with pinions and grooved rollers and friction rollers, or equivalents for such friction

rollers, to create a regular feed motion and equality of strain, whilst laying or forming in a rope, twine, or cordage machine, the whole being constructedin the manner and for the purpose substantially as de-

DOUBLE ACTING DOORS-By W. Rippon, of Provi dence, R. I.: I claim the manner, substantially as described, of arranging vertical and horizontal adjustable slats, along the front, top, and back edges of the door, for the purpose of allowing the door being opened in either direction, in or out, said slats being made to operate in the manner specified, by means of the door, levers, or their equivalents. and springs, the whole being constructed and arranged in the manner set forth.

MODE OF GRINDING PUPPET VALVES WHILE THE ENGINE IS IN MOTION—By Enos Rogers, of New York City: I claim the valve provided with spindles free to turn on their lifters, in combination with mechanical devices, substantially such as described, which rotate said valves, when down on their seats, but do not act on said valves, when rising or falling; the whole acting substantially in the manner described.

scribed.

MACHINES FOR RUBBING STONE—By P. E. Royse, of New Albany, Ind., & Ira Reynolds, of Republic, O.: We claim the arrangement of a revolving centre driving-wheel, with a series of stationary crank shaft pinions revolving on their own axes, whether in combination with the cranks or stationary pins, so constructed and arranged upon a radial line as to give the arms and rubbers a rotary or compound elliptical rotary motion, for the purpose set forth.

CUTTERS FOR THREADING WOOD SCREWS—By T J. Sloan, of New York City: I claim the method substantially as specified, of cutting away the mass of the metal to form the thread, by means of a bur cutter, in combination with the method substantially as specified, of finishing and smoothing the thread by means of the chaser, as set forth.

THERMOSTAL FOR REGULATING HEAT—By T. J. Sloan, of New York City: I claim the application of the physical principle of the expansion and contraction of substances by varying degrees of heat to regulate and control a mechanism, applied to operate a damper, register, valve, ventilator, or other equivalent device, which mechanism is actuated or propelled by some independent motor, substantially in pelled by some independent motor, substantially in the manner specified.

The manner specified.

PNEUMATIC SPRING—By Elijah Ware, of Roxbury,
Mass.: I claim in an air car spring, in which the piston operates upon the disc of rubber or other elastic
substance, which forms one side of the air chamber,
the combination of the movable diaphragm, constructed of the pieces F F, &c, operating substantially as described, with the rings placed loosely on
the same, as set forth.

PLANING MACHINES-By Wm. Watson, of Chica go, Ill.: I claim a reducing plane, composed of a series of oblique irons, arranged substantially as set

I also claim the combination of the before claimed reducing cutters with smoothing cutters, arranged substantially as set forth.

substantially as set forth.

RAILROAD CAR BRAKES—By L. F. Thompson, of Charlestown, Mass., & A. G. Bachelder, of Lowell, Mass. (assignors to Henry Tanner, of Buffalo, N. Y.) What is is claimed by us is to so combine the brakes of the two trucks of the operative windless, or their equivalents, at both ends of the car, by means of the vibrating lever or its equivalent, or mechanism essentially as specified, as to enable the brakeman, by operating either of the windlasses, to simultaneously apply the brakes of both trucks, or bring or force them against their respective wheels, and whether he be at the forward or rear part of the car.

he be at the forward or rear part of the car.

SCREW THREADING MACHINERY—By Cullen Whipple (assignor to the New England Screw Co.) of Providence, R. I. Ante-dated May 15, 1852: I claim a fusee, threading cutter for threading screw blanks, substantially as set forth.

I also claim the arrangement of the cutter and blank, in such manner that the adjacent portions of their peripheries shall move in opposite directions during the operation of threading, so that the metal may be cut from the grooves in the blank from the bottom outwards, to allow the chip to be freely discharged, substantially as set forth.

I also claim the combination of the vibration feeding trough and screw-driver arranged in such manner that when the driver is pushed forward to turn a blank while being threaded, an unthreaded blank may be in the trough upon the driver ready to drop into place before it, the instant it is drawn back, to allow the previous blank to be withdrawn from the cutter.

cutter.

I also claim the combination of the vibrating arm I also claim the combination of the viorating arm or its equivalent, to detaol the head of a threaded blank from the bit of the screw-driver, with a discharging punch, or its equivalent, to eject the threaded blank from the rest, the two thus operating, ensuring the discharge of one blank before another is

presented.

Lastly, I claim a spring, or the equivalent thereof, in the mandrel of the screw-driver, substantially as set forth, to impart to the bit of the screw driver a slight yielding pressure against the head of the blank, until it finds and enters the nick thereof, in combination with the lever and cam, which afterwards apply to the driver a positive motion to keep it engaged with the blank while the latter is turned to be threaded substantially as described. to be threaded, substantially as described.

or enfolded, the one part over the other, or united together, that is to say, I claim the combination of the two frames or halves of a box, each of said frames or halves consisting of a side, two ends, and bottom or slats, supporting wire, springs and a sacking affixed to its side and two ends, and supported on springs or stuffing, as occasion may require, and these halves or parts so united that when together or unfolded, they form but one box or frame supporting or holding fast the sacking at its entire extremity without any separating or supporting partition in the centre, and this union or junction of the two posts is effected by the above described lacing or its equivalent, and clamps, keys, wedges, or their equivalent.

valent.
I lay no claim to any one of the elements of the aforesaid or above described combination, when separate from the rest, but intending only to claim the whole as combinations, constituting a bedstead or foundation for a bed or mattress, to which the parts, as above tescribed, or their equivalents may be applied, as aforesaid.

DESIGN.

PARLOR STOVE—By J. D. Green (assignor to Alex. Morrison & T. M. Tibbitts), of Troy, N. Y.

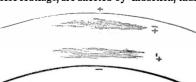
For the Scientific American

🌠 Thunder Storms, Electrical Phenomena. I received the following letter from Prof Henry, of the Smithsonian Institution in reply to the account of my aerial voyage from Portsmouth, Ohio, on the 3d inst., and of which I sent you a copy. The hypothesis here laid down, seems to be strongly sustained by the facts, as I witnesed them during that voyage. I would here remark what I forgot to mention in that account, that the electrical discharges in the lower cloud seemed to me, at the time, to be caused the same way that corruscations are caused on the surface of the 'Lightning Jar," because the cloud stratum was always broken and imperfect on the upper surface, where these discharges took place -the fluid jumping from one point of cloud to the other. As these facts must be interesting to meteorologists, particularly electricians, and as my account has been published, I will here quote Prof. Henry's letter :-

"SMITHSONIAN, INSTITUTE, June 16, 1852.

Dear Sir-Please accept my thanks for the copy of your account of the phenomena observed relative to the thunder storm which vou encountered in your last adventurous aerial voyage.

The fact of two clouds, one above the other with a discharge between them, is in accordance with the hypothesis that most of the etfects of atmospherical electricity is due to the inductive influence of the electricity of space around the earth and beyond the atmosphere. According to this hypothesis, the atmosphere of our globe is in the condition of a charged Leyden jar, of which the outer coating is the vacuum beyond the air, the inner coating the earth's surface. The clouds in the air, between these coatings, are affected by induction, thus,



the space without being + and the surface of the ground -, then, as a cloud ascends, the upper surface will, by induction, become strongly - and its lower surface +. The same will also take place but with less intensity in the lower cloud, and it the two be sufficiently near, the electricity from the upper will pass to the lower, and this in turn will discharge itself into the earth with loud explosions.

If I could have an opportunity of being with you at starting, with a proper supply of apparatus, I would be pleased to suggest a series of observations. There is a gentleman now connected with the Smithsonian Institute, who would be willing, had he an opportunity, to make an excursion with you tor the purpose of observation. Very truly, your obe-JOSEPH HENRY, Sec. S. I. dient servant.

John Wise, Esq., Aeronaut." Lancaster, Pa., June 26, 1852.

# Sal Ammoniac.

A great deal of the sal ammoniac which comes to this city, (New York) is manufactured in Edinburgh, Scotland, out of the refuse materials of the gas works.

to be threaded, substantially as described.

RE-ISSUE.

BEDSTEADS—By Nathaniel Colver. of Abington, Mass. Patented April 24, 1849: I lay no claim to a combination of rest bars or boards, spiral or wound wire springs, a sacking and closing frame used to support a cushion or mattress, such a combination having been employed in the manufacture of sofas and other articles of furniture.

I claim the method in which I construct the foundation of the bed or mattress by means of the above described pliances or their equivalents, to wit, the lacing and the clamps and keys or wedges, so as to render the bedstead portable by being taken apart, or enfolded, the one part over the other, or united to render the bedstead portable by the support of the content of the pass of the above described pliances or their equivalents, to wit, the lacing and the clamps and keys or wedges, so as to render the bedstead portable by being taken apart, or enfolded, the one part over the other, or united carried in barrels to Bonnington on the Water carted in barrels to Bonnington on the Water of Leith, where the chemical works are situated. Recently, however, the gas liquor has been lifted over the shoulder of the Calton Hill by an ingenious force-pump, and the ditference of level is then sufficient to carry the liquor to Bonnington, which, though higher than the Canongate is lower than the Calton Hill.

> The liquor separates into two strata; the lower and heavier being tar; the upper and lighter, an impure aqueous solution of carbocalled the ammonacal liquor. It is the less follows:-To separate it from a portion of wardly.

tar which always accompanies it, it is subjected to distillation. The distilled liquid is in greater part converted into salammoniac, but a considerable quantity is also manufactured into sulphate of ammonia.

The first step in the sal ammoniac process is, the neutralization of the distilled liquor with hydrochloric acid, which as well as sulphuric acid is made at the works. The neutralized solution is then pumped into large caldrons, where it is concentrated till it has reached the crystallizing point. It is then drawn into large vats or troughs, where, as it cools, it deposits multitudes of small feathery crystals, consisting of rows of minute octohedrons or allied forms attached to each other. In cold weather beautiful large cubes of sal ammoniac are sometimes produced.

The feathery crystals are transferred from the troughs to a drying apparatus, consisting of a shallow oblong open box, made of stone, and heated by a furnace below. The dried salt, in a state of granulation resembling brown sugar or salt, is then mixed with charcoal-powder, which is intended to reduce any oxide of iron present, so as to prevent a brown color being given to the sal ammoniac when raised in vapor. The salt after this treatment is subjected to sublimation. The subliming vessels are shaped exactly like a man's hat, arranged in the furnace with the crown downwards. They are some three feet in depth, and two and a half in diameter. When charged with salt they contain a quantity of material sufficient to demand a week's unceasing application of heat for its sublimation. Each pot is covered by a metal dome or cupola, which is luted on with clay, and has an aperture in the centre through which the salt is allowed to sublime away, for some period after the commencement of the process. This occasions a considerable loss of material, but no other way is known of securing a hard, coherent sublimate. There seems reason to believe that the presence of moisture in the imperfectly dried salt, is the cause of its condensing at the commencement of the process as a spongy mass. At all events a firm cake does not form till after some time. The workmen proceed empirically, and when they judge that a sufficient interval has elapsed, they close the central aperture in the metal dome by a plug of clay, and the sublimation continues for a week. The hemispherical cakes of salammoniac thus produced, are rasped on their outer surfaces to remove any crust or coloring matter, and broken into wedges, which are packed in barrels and sent all over the world.

### Extension of a Patent.

On the petition of Robert Newell, of New York City, praying for the extension of a patent, granted to him on the 25th of September, 1838, for an improvement in manifold permutation locks, for seven years from the expiration of said patent, which takes place on the 25th of September, 1852.

It is ordered that the said petition be heard at the Patent Office on Monday the 6th of September, 1852, at 12 o'clock M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specifically set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing, must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

THOS. EWBANK, Com. of Patents. Washington, July 7, 1852.

## Snake Bites.

The tincture of lobelia, given in doses of a table spoonful every few minutes, is said to be a perfect cure for the bite of a snake if taken in time. The person bitten should tie up his leg tight as quick as possible above the wound. It is well known that one or two of our southern correspondents have stated that if a person is bit by a snake, an antidote for it, is at once to chew a good piece of tonate and hydrosulphuret of ammonia; this is bacco in the mouth, lay it on the bite and tie up. Brandy is also said to be a cure for the valuable of the two liquids, and is treated as bite, if applied quickly outwardly and in-