

Scientific American

NEW YORK, MAY 4, 1850.

Navigating the Atmosphere.

The first complete work upon this subject, is one now on our table, by John Wise, a veteran aeronaut, of Lancaster, Pennsylvania. Hitherto we have had scraps of information from Encyclopædias and Magazines, relating to the art, but here we have a *Book* on the subject, written by one who has made many aerial voyages, and who relates his own adventures. It embraces a full history of the subject, commencing with the ancient artificial flying pigeon of Archylus, the Greek, and ending with the most recent experiments.

The subject of navigating the air has occupied the attention of many eminent men in almost every age of the world's history, but it was not until a recent period that any success was promised to an art which warmed the imagination of Bacon, and engaged the attention of the sober Bishop of Chester. In 1782 there lived at ancient Avignon, in France, two brothers, young men, named Stephen and Joseph Montgolfier, who, being of an ingenious turn of mind, conceived the project of sending up small balloons inflated with rarified air, and by many experiments they discovered that as they enlarged their balloons, their ascending power became greater, and from this they went on increasing their size, until they constructed one of a capacity of 23,000 cubic feet, and with it they sent up some animals in a basket. The voyage was successful, and this induced them to construct one of gigantic dimensions, viz., 74 feet high and 48 in diameter. With this balloon a brave and cool Frenchman, named M. Pilatre de Rozier, volunteered to make a voyage two or three hundred feet high, the balloon being secured by long cords to the earth. He made several ascents, and on the 21st May, 1783, he, along with the Marquis d'Arlandes, made the first free ascent into the aerial regions, rising to the height of 3,000 feet, and made a successful excursion over Paris, and finally landed a few miles from where they started. This formed an epoch in the history of aerial navigation, and the fame of the Montgolfiers soon spread over Europe and reached America. Although hydrogen gas was discovered long before the Montgolfiers made their balloon, and its utility to the purposes of aerial navigation had been previously suggested, yet it was never really applied for that purpose, except for experiment in the lecture room; but no sooner was the success of the Mongolfier balloon spread abroad, than the virtues of hydrogen became apparent, and it was firmly believed by many at that time, that balloons would soon be as common as crows. Napoleon frightened many an English matron, when he threatened to cross the channel with his Boulogne army in balloons. But his "paper walls," never ventured to baffle Old England's "wooden walls;" nor does it appear that we are any nearer to "a system" of aerial navigation at the present day, than they were then. It is the opinion of Mr. Wise, however, that ballooning is about half a century ahead of the age, and if the spirit of mechanical progress keeps pace with the onward march of intellect, he says, "our children will travel to any part of the globe without the inconvenience of smoke, sparks and sea sickness, and at the rate of one hundred miles per hour."

It would indeed be a glorious thing if we could career through the regions above at such a rate, but our dreams are far more moderate than those of friend Wise. We would be content with ten miles an hour, only let us have the wings, an independent pair. Then, when like Jeremiah of old, we were troubled in mind and sighed for the wings of a dove to fly away and begone, "to a lodge in some vast wilderness," all that we would have to do, would be to mount and be off, "over mountain and sea." Such things would be very pleasant—everybody would be rejoiced if such things could be done, and many strong arguments may be used respecting the probability of such things being yet accomplished, but not, in our

opinion, safely, conveniently nor economically, by any "aerial vessel" that we have ever yet seen, the opinion of aeronauts to the contrary notwithstanding.

The "revoloidal spindle," of Robjohn, which was in the course of construction at Hoboken, and which was to be propelled with two small steam engines, some time this summer, has been sadly damaged by the late tornado. If this be the means of preventing the balloon from enjoying her aerial flight by steam, we will regret it exceedingly.

Mr. Wise has made a great number of successful aerial voyages, and his book is one of the most valuable ever published—and is of great service to science as a historical and scientific work on the construction of balloons, and the manner of navigating them. There is one prominent and useful fact brought to light, viz., that ballooning is a *conservator of health*,—aerial navigation cured Mr. Wise of disease of the lungs and chronic dyspepsia, and he is confident that it would be of great benefit to invalids. This we believe is a new idea, but a correct one—and one agreeing with science and reason, but as these things trouble us not personally, we have a longing eye but weak faith, to mount the aerial ship, cleaving our way through "the blue ethereal sky," at the rate of 100 miles per hour, laughing at your lazy locomotives and steamboats crawling away below, as things good enough for a more benighted age.

Parker's Water Wheel.

As we have received a great number of communications on this subject, lately, we hereby present the opinions expressed by Judge Grier in the Circuit Court, U. S., Phila., as delivered on the 13th of last March in the case of Oliver A. P. Parker, assignee of Zebulon Parker vs. Joseph Brant, and divers other defendants:—

"I take this occasion to say, that the Court has no doubt, of the validity of the complainant's patent. That question has been fully settled here, by a trial at law, of extraordinary duration, and closeness of research. The report of the case of Parker vs. Hulme, by my brother Kane, who presided at the trial, and information derived from the affidavits and printed works, which have been read on both sides, during the present hearing, as well as the acquaintance with the subject which I derived while engaged in the trial of another case growing out of this patent, leaves no doubt on my mind, that the complainant's patent is not only valid, but of the greatest importance to the country.

I may add, on the part of both of us, that we approached the question without any previous leaning in favor of the rights asserted by Mr. Parker as an inventor, and that it was only upon a more than usually close scrutiny of the facts, that we came to the conclusion which we now express.

Indeed, it is a subject of regret that the public has been so tardy in acknowledging the merits of the Messrs. Parker as inventors.—Their improvement, as described in the patent before us, is not less ingenious and profound than useful. In France, M. Fourneyron received the highest honors, and most liberal rewards, for introducing into use this very improvement after it had been invented in this country by the Messrs. Parker. And it was not until the circulation of Fourneyron's paper, on Turbines in this country, that the public attention was fairly called to the valuable improvement of the Messrs. Parker.

Of the infringement by the defendants, the Court has no doubt. The wheels which they use are direct and positive violations of the complainant's right, as appear by the affidavits on behalf of the defendants, and the models which they themselves have submitted to the Court. In point of fact, the complainant has established his right to the injunction which he prays. But I do not wish to establish the precedent in this Court, that a party who relies upon the verdict of a Jury and the judgment of a Court of law, for the establishment of his title, as the foundation of his claim to be quieted in the possession and enjoyment of it, and for protecting him against infringements by others, shall omit, as the complain-

ant has here omitted to aver in his bill, that such proceedings at law have taken place.—Without such averment, the ground of the Court's action may be misunderstood, and the defendant may not be properly apprised, beforehand, of the case which he has to meet.—In these cases, we are the more ready to lay hold of omission, as we feel a reluctance to stop two hundred mills from grinding a bushel of grain or sawing a board, without giving the defendants a chance of making a settlement or compromise. On the other hand, it is by no means our intention to compel this complainant, to re-litigate his patent already established at law, against a combination of two hundred wealthy mill owners, in this district, who are, as these defendants alledge, using machines, of which the model above described, is the representation. By an amendment of this bill, the complainant may overcome his present technical difficulty.

No ground has been shown for the imputation, that an attempt has been made by this complainant, "to levy black mail," as it is called. Indeed, his course towards these defendants, as well as other persons, appears to have been one of great liberality and forbearance; and I advise these defendants to settle with him. If they do not, damages may be found against them, to the extent of their profits from the use of this patented improvement; at all events, amounting to the whole profits of their mills, since the time of filing these bills. This might be no more than equitable.

On default of settlement by defendants, the Court will order the injunctions to issue, on the first Monday of April next; the complainant, in the meantime, so amending his bill, as to alledge the establishments here at law, of his title to an exclusive right in this improvement, and filing the affidavit of the surviving patentee, which has been read to us in the course of the hearing.

In all this, I am authorized to say, that my brother Kane fully concurs with me.

[REMARKS.—One correspondent requests of us to know "when Parker's patent expires." We will give all the information in our possession on the subject. On the 19th Oct., 1829, a patent was granted to Zebulon and Austin Parker, for their improvement on water-wheels—which consists, 1st, in placing several wheels (always an even number) on one shaft, and conducting the water to them through spouts, which wind between concentric cylinders, producing thereby a whirling or vortical motion of the water, in the same direction with that of the wheels. 2nd, In a contrivance for introducing the water into a single horizontal wheel with a similar motion, together with an improvement in the construction of the wheel itself. 3rd, In a contrivance for applying the same principle to common wheels now in use.

Zebulon Parker subsequently came into possession of his deceased brother Austin's rights by deed, in 1839, with an improvement on the wheel, which consisted "in making the buckets at both ends as thin they can safely be made, and the rim no wider than is sufficient to cover them."

The patent of 1829 was renewed for seven years, consequently it will be in force until the 19th day of October, 1850 (this year), and will have a retrospective effect upon all against whom suits for damages have been instituted.

We have received a number of letters, pro and con, about Parker's patent. It is not for us to take sides with one party or the other, nor are our columns open for a mere paper war. We say, if Parker is the real and true inventor, his rights should be sustained to the fullest extent. If he is not, let this be proven fairly at a court of law, and let justice have its free course. Many have wrong opinions about patent rights. They suppose, that if they get a *patent* for an improvement, they may use the principle of another and a previous patent, with impunity. But the law will not allow this. No doubt there are many using water wheels that would be considered infringements on Parker's patent; and they are using them unconscious of wronging anybody. Perhaps many of them have been deluded by some plausible half patentee to purchase a right that belonged to another. We sympathise with such men, and the law is al-

ways favorably inclined towards them. There is not a week passes over our heads but we receive more than one communication about applying for patents on re-action water wheels. With but a few exceptions, we have advised the applicants not to apply for patents. Why? Because there are no less than thirty patents that have been issued for improvements on re-action water wheels, and it is our opinion that there are many conflicting claims among the number.

New Gunpowder.—Caution.

We learn by the Savannah Republican, Ga., that our friend Carruthers has been making some of the new gunpowder, described on page 228, No. 29, Sci. Am. It seems that while Mr. Carruther's boy was preparing about two ounces, it exploded in the mortar. We were particularly cautious in describing it, and those cautions we presume, were not observed.

Since we penned the above, we have received some of the powder from Mr. Carruthers, with the notices of it from our excellent exchange. We perceive that the credit of the discovery is given to Mr. James Napier, of Swansea, England, copied as a foreign extract. We should be happy to award any credit to an old acquaintance like Mr. Napier, who was in our country a few years ago, but the discovery was made by the gentleman referred to in the article (Sci. Am.) mentioned above. We would here state again, that the powder should not be used in steel nor Stubb & Twist barrels of firearms.

PITTSBURG, April 20, 1850.

MESSRS. EDITORS:—I have read with much interest a series of articles, published some time since in your truly valuable journal, entitled "Important Discovery that may lead to improvements of Great Value." The writer was apparently a man of information, and I have been watching, anxiously, for a more explicit description from him of the *form* of least resistance, and the application of "his reasoning to a familiar example." I do not, for one, like to be treated with so much theory as he presents; give us a clearer view of the matter, if possible, and see whether "Improvements of Great Value" will not be made by some of our scientific mechanics. "I. J. K." should make your journal the medium through which to enlighten the scientific community, as it is the only one to which we can look with any degree of accuracy, for a criticism, if his theory is predicated in error.

Yours, truly, CITRON.

[Our correspondent has called to mind a matter that we had overlooked, and we shall refer to the subject at some future time, for the purpose of showing the theory to be wrong—as we believe it to be.—ED.]

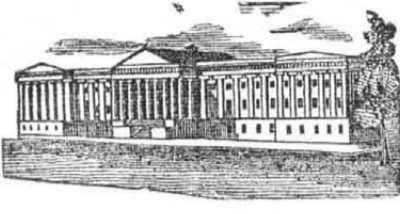
Consumption of Smoke.

In reference to an article in our last week's number, about the prize, offered for the consumption of smoke in Cincinnati, we see by the "Gazette" that there is a smoke consumer there, named "Burkhardt's Consumer," which is highly spoken of. It is in use in the Covington Factory, in that city, also at West's Flouring mills, and some other places. Mr. Burkhardt insures its successful operation, or makes no charge. The smoke nuisance is an intolerable one in places like Cincinnati and Pittsburg, where bituminous coal is principally used. This is a subject which has exercised the genius of many distinguished men. Watt invented a smoke consumer, and there are not a few described in Hebert's "History of the Steam Engine."

The "American Mechanic," Athens, Geo., should have remembered that the article, "To Prevent Dampness in Walls" was taken from the editorial columns of the "Sci. Am." of the 6th ult. This would have prevented our cotemporary in Nassau street from being led into an error as to the source of its origin.—We are not particular that articles taken from our paper should always be credited, but we do dislike to have them given to others.

Useful Sleigh.

A sleigh manufactured of gutta percha, convertible at pleasure into a boat, is to be sent out with the English Arctic expedition on the first of May.



Our weekly list of Patents and Designs contains every new Patent, Re-issue and Design emanating from the Department, and is prepared officially, expressly for the Scientific American, and for no other paper in the city, consequently other journals are obliged to wait the issue of the "Sci. Am." in order to profit by the expense to which we are subject, and of course must be one week behind. Those publishers who copy from this department in our columns, will, in justice to us, give proper credit for the same.

LIST OF PATENT CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending April 23, 1850.

To Wm. Abendroth, of Port Chester, N. Y., for improvement in cooking stoves.

I claim causing the heat and products of combustion to enter the flue over the oven on one side, and carrying the same across the top of the oven, down the other side thereof in a broad sheet, thence under the oven, and thence up in a broad flue to the smoke pipe, substantially as described.

To John Andrews, of Woburn, Mass., for improvement in Churns.

I claim the combination of the external chambers, their plungers and discharging passages, with the middle or air chamber; the whole being constructed, applied and used, substantially as specified.

And in combination with the above I claim the air entering passages, &c., applied and used as specified.

To A. M. Asay, of Philadelphia, Pa., for improvement in Dentists' Chairs.

I claim the manner in which I arrange the operating parts within the frame work and under the seat in combination with the seat so made as to move up and down within the frame work and appear like an entire seat, as herein set forth.

To D. H. Chamberlain, of Boston, Mass., (Assignor to T. J. Whittemore, of Cambridge, Mass., for improved method of attaching cylinder in revolving fire-arms.

I claim the improved mode of attaching the cylinder of barrels to the stock; viz, by means of the cylindrical tube, in combination with the flanch and stud or their equivalents, whereby I dispense with the usual spindle and hole for its reception in the centre of the cylinder of barrels, being thus enabled to enlarge the bore of the barrels in a cylinder of equal size.

To G. Fletcher, Sr., of Greensburgh, Ind., for improvement in machines for drilling stone.

What I claim is the combination of the lever, with the cranks and pitmen which operate it, for the purpose of rotating the drill periodically by impingement against the cogs of the pinion, at its greatest elevation, returning to position when the pinion is removed from its range, the whole arranged and operated substantially in the manner and for the purpose set forth.

To O. Edes, of Plymouth, Mass., for submerged rocker for separating ores.

What I claim is the combination of the rocking frame, the pans, the levers, and the bars, attached, and adjusted to the box, or to a platform or boat, in the manner and for the purpose substantially as herein described.

[The model of this invention worked admirably.]

To J. W. Hoffman, of the District of Southwark, Pa., for improvement in Safety Lamps.

I claim the sliding tubes, in combination with the screw, the said screw being furnished with the opening, through which to fill the lamp, substantially in the manner and for the purpose described.

To H. Jackson, of Evansville, Ind., for improvement in Double Cooking Stoves.

I claim the construction of a double cooking stove, having two compartments, and a smoke flue, passing round one compartment first and then around the other, in such manner that

one shall be heated in a much higher degree than the other, arranged and constructed substantially as herein described and for the purposes set forth.

[As stoves are not yet perfect, this one we are positive is a step towards that point. It is an excellent arrangement.]

To H. Lariorgan, of Boston, Mass., for improved arch-truss for bridges.

What I claim is the so combining or arranging them with respect to each other, and with the radial suspension rods, and on the cord or beam to which they are applied, that they and their suspension rods, may overlap one another, and have the feet or parts of each which rest on the cord, upheld by the crown, and suspension rods of the central part of an adjacent arch, all substantially as above specified.

To W. R. Nichols & B. C. Boyes, of Philadelphia, Pa., for improvement in coal-stirrers for furnaces.

What I claim is, first, the rake frame having numerous vertically moving fingers constructed and operating to stir and clean the fire only by a vertical movement, said fingers being distributed beneath the grate, substantially in the manner and for the purpose described.

Second, we claim in combination with the passages round the rim of the grate admitting warm air above the fire, the vertically moving rake-teeth which open passages for the free escape of combustible gases to be burned by said warm air, thereby maintaining a copious volume of flame, all around the interior of the fire-box, as set forth.

To S. R. Parkhurst, of New York, N. Y., for improvement in Cotton Gins.

What I claim is, first, the making card cylinders with gutta Percha, or other similar substance, filled in among the teeth, to form a regular surface, and stiffen the teeth, whether such cylinders, so fitted or used for this or any other purpose, for which they are available.

Second, I claim the application of one or more card cylinders with gutta percha or other similar substance, between the teeth, in connection with an equal number of smooth cylinders, to card cotton from the seed, substantially as described.

Third, I claim the application of the wire gauze drum and roller beneath; first, for the purpose of allowing the blast to drive the dust and chaff from the cotton; and second, for the purpose of leading the cleaned cotton out in a sheet, or batt, whether this roller and drum be applied to act with the card, or with the common saw gin.

To J. Ruck, of New York, N. Y., for improvement in Pianofortes.

I claim the manner of constructing the tuning block substantially as herein described, of the arched slab and the back piece, with the wedge or piece, and the diagonal bolts or keys, whereby it is made capable of withstanding the great strain of the strings.

And I also claim the metal plate, carrying the ribs projecting from and forming part of it, the plate being attached to the upper surface of the tuning block, each of the strings of the instrument passing over and resting on a rib, and passing through a hole in the rib immediately behind, whereby the strings obtain a solid bearing on the tuning block, which will make them produce a full round, clear tone.

[This is the second patent on pianos Mr. Ruck has taken out in a few weeks. His improved pianos are of no ordinary character.]

To N. Sawyer, of Baltimore, Md., for improvement in Brick Presses.

What I claim is, first, the combination of the grated disk and hopper, constructed and arranged substantially in the manner and for the purpose described, and in combination with the revolving moulds.

Secondly, I do not claim the mould as herein described, or the manner of holding the brick firmly while being cut off, these claims having already been granted to me in my Patent of September 27th, 1844; but what I claim is the arrangement of the mould (whether conical or otherwise, as before patented,) in a revolving cylinder, with pistons revolving with them, and working under a stationary cam, as herein described, in combination with stationary cutters, or cutters revolving on their

own axes, working in a groove near the lower ends of the moulds, in the manner and for the purpose herein specified.

Thirdly, I claim the apparatus for trimming the bricks, consisting of a stationary cutter and a piece in front thereof, to press up against the brick as the clay is cut.

Lastly, I claim the combination of adjustable headed pistons, with stationary cam, as herein full specified.

To B. M. Smith, of Ridgeway, N. Y., for improved arrangement of propellers and chimneys for canal boats.

What I claim is the employment in combination of two propellers arranged in a recess at the stern of a boat, each being on a separate shaft, one above the other, and one of the propellers being placed back of the other, substantially as herein described, whereby a greater amount of paddle surface can be obtained within a case and with a given width of stern than by any other known plan.

And I also claim in combination with the propellers arranged with a part of one of them above the water line and enclosed in the recess at the stern of the boat, substantially as herein specified, the employment of a fan for exhausting the products of the combustion into the recess in which the propellers work, substantially in the manner and for the purpose specified.

To H. G. Thompson, of New York, N. Y., for lathe for turning a peculiar species of curve.

What I claim is the method substantially as herein set forth, of turning the periphery of steam wheels, or other articles, with regularly curved projections and depressions from a true circle, by combining with the mandrel of a lathe, or (what is equivalent thereto,) the shaft of the steam wheel, a cutter, which, in addition to the usual longitudinal motion parallel with the axis receivers, a reciprocating motion towards and from the axis by means of a cog-wheel, pinion and crank, or their equivalent, as herein described.

To D. Ulam, of Mount Pleasant, Pa., for improvement in Smut Machines.

What I claim is the peculiar construction of the rubber pieces, substantially as described and represented, whereby all parts of their surfaces may be successively appropriated to the rubbing action, each plate being susceptible of four changes before it becomes necessary to replace it by a fresh rubber.

To S. Whitman, of New Albany, Ind., for improvement in Brick Presses.

What I claim is the clearers as used in connection with the two plungers, for the purpose of delivering the brick and preventing the plunger from becoming foul at their passing ends and the clearer itself being kept clean and polished by the action of the plunger upon its lower surface.

To E. F. Whiton, of West Stafford, Conn., for improvement in instruments for measuring cloth.

I claim the manner herein described of measuring cloth or other fabrics by causing the material to pass over and give rotary motion to the roller, carrying on its axis the endless screw gear, gearing into the teeth of, and giving motion to, the traveller wheel, carrying an indicator, pointing out the distance travelled by the periphery of the roller, on the graduated adjustable index plate, or by any other mechanical combination substantially the same.

[This measuring apparatus is also a registering machine.]

To D. Wolf, of North Lebanon, for improvement in adjustable shares of corn plows.

What I claim is increasing or diminishing the angle of the plows with the central line of draft, by shifting the screws to the holes in the plows, and the screws to other holes in the beams, without changing the position of the shanks and braces, by which more or less earth may be thrown toward the row of plants under culture, as described.

To Peter Yates, of Milwaukee, Wis., for improvements in changing a reciprocating motion into a rotary.

Having thus described the construction, and operation of the parts employed, and the effects they produce, or may be made to produce. I do not herein claim to have invented any one of the parts used, irrespective of the manner, in which I have described and shown them to

be employed for specific purposes, nor do I claim herein, any of the parts claimed in my patent of the twenty-fifth of April, 1843.

But I claim as new, and of my own invention the application of the levers, catch blocks, with the bevels and springs, or their equivalents to interlock and unlock with the crank arms.

And I claim, also, making the governing bar adjustable in combination with the levers, in such a manner as to give either a direct or reversed motion to the pulleys; and I claim the above applications severally, and in combination, in the whole and in the parts, the apparatus being constructed and operated in the manner and for the purpose herein described and represented.

[Now, since "Pulley," has made so much talk about his wonderful invention, and secured a patent for it, we hope he will "speak in deeds," for he has used steam enough in talking about it prospectively, to drive a locomotive at the rate of two hundred miles an hour. We predict, before a fair trial is made, that his springs "to interlock and unlock," will prove with pulleys and "crank-arms," (ah! crank arms,) a miserable substitute for the simple, incomparable crank.]

More about the Exhibition of the Industry of all Nations.

The commissioners for the exhibition of the industry of all nations, to be held in London, have fixed the time for opening, as we learn from an official communication, on the 1st of May, 1851. All articles intended for exhibition must be sent to the commissioners before the 1st of March 1851, as after this time none will be received. Attention will be given to the reception of articles after the 1st of January, 1851. By grant of Her Majesty, the exhibition will be held on the south side of Hyde Park, where a building is to be erected that will cover from sixteen to twenty acres.

"The productions of all nations will be exhibited together, under one general classification.

The building will be provided free from rent, and fire-proof.

Exhibitors will deliver their objects at their own charge and risk at the building in the Park, but no charges will be made while they remain there.

Colonial and foreign productions will be admitted duty free for the exhibition, but not for internal consumption. Such articles will be considered as bonded goods, and the Commissioners of the Exhibition will make suitable arrangements for their reception."

The commissioners desire the extension of local organizations in all districts from which it is proposed to send articles, and it is their wish that these committees will, as early as possible, procure an inventory or specification of articles proposed to be exhibited from their districts, and of the space required for their exhibition, that the Commissioners may determine as soon as possible the proportions of the building.

"Subscriptions should be paid to the treasurers of the local committees, and by them transferred to the general fund at the Bank of England, in the names of Messrs. A. K. Barclay, W. Cotton. Sir J. W. Lubbock, Bart.; S. M. Peto, Esq., M. P., and Baron L. de Rothschild, M. P.

Any surplus left after giving every facility to the exhibitors, and increasing the privileges of the public as spectators, will be applied to purposes strictly connected with the ends of the Exhibition, or for the establishment of future similar exhibitions.

The Commissioners are in communication with the Foreign Office in Downing-st. as to the means of informing foreign governments of the arrangements in progress.

The Commissioners will afford every information in their power on any point respecting which local committees may address inquiries to the secretaries of the commission.

(Signed) J. SCOTT RUSSELL.

STAFFORD H. NORTHCOLE.

At the New Place, Westminster, Feb. 21, 1850."

Temperance includes all the virtues and excludes all the vices.