Scientific American.

Scientific American NEW-YORK, OCTOBER 4, 1851.

A New Science. In this age of new ideas and new developement, no subject is of equal importance to that of sanatory reform-the health of the people. What signifies prosperity in business to the merchant who languishes in sickness; or what pleasure can be derived from all the luxuries and abundance that can be obtained in this world, if disease sits brooding at the fountain of public health? The sanatory condition of the people is a new science, because it takes cognizance of the durability of general life, and examines into those causes which shorten or prolong it. When thousands suffer from the fever, it examines into the causes of the plague (for plague it is), and seeks out the best means to remove them. If a disease like the cholera suddenly strikes down multitudes in our midst it investigates the causes and endeavors to provide a remedy. It is the same with all other diseases-nothing escapes its searching scrutiny, for it includes not only medical, but religious, social, and political considerations; the fault with it, if conducted in the right spirit, ness. We see from this that there is apparentfield is of boundless range—it encircles the by just Examiners, but it happens strangely ly a selfish current running through the whole whole human race, the earth, the air, the wa- that more patent litigation has resulted in ters, the sky. Its first process is the collection connection with patents which he has passed, From our experience, and trom our acquainof knowledge, next, the arrangement of facts, and then the best means of applying those trouble in every way has resulted from his ex- in a hundred applies for a patent who is not holacts to effect the desired object, namely, the aminations, and to prove this we have but to nestly sincere about the originality of his inprevention and alleviation of disease. Thus the decay of vegetable matter, filth, and Machines. He should not have taken so much bad ventilation are known to generate, fevers. Statistics of health are very useful, for by them we can form a good idea of the sanatory condition of cities, villages, &c. Thus, in cities in the same latitude, we find the average duration of life to be twenty-five in one; in another thirty, and in another thirty-five allowed some parts of this Report to appear years-hence we conclude that there must some powerful local evil causes in operation appears to be a cypher—Examiner of the second se which thus shorten life in the one place by ten the head of the Department. years less than it is in the other. As it is with different cities and localities, so it is with individuals; here we find two men working at the same beach, and each furnished with equal physical constitutions, yet the one is always in the enjoyment of exuberant health, while the other is frequently confined to his bed, unable to follow his occupation. There can be no doubt, in our opinion, but more than one half of our diseases are manufactured, and while this is the case, we hold ourselves responsible, and every man is responsible according to his influence, for those evils. It is, therefore, our duty to speak out and labor for the removal of them. A few years ago the ship fever carried off hundreds in this city; then came the cholera with its frightful bill of mortality; and at present there is not a single week passes away but what it will be found that some peculiar disease has carried off more victims in the city than any other: yea, perhaps a greater number than all the rest put toge ther. When such a fact presents itself we should mark it well, for there must be some important cause at the bottom of it. At present we do not mean to speak of

the causes-the specific evils, nor the remedies; we merely wish to direct the attention of every for every person who has eyes to see, ears to observation and reflection, know a great deal about it, and, what is more to the purpose, be a counsellor in the good work, for this science links both the moral and the physical sciences together.

Patent Office Report for 1850 No. 3.

system of examinations, applications for pa- than simply references, to which he has no fugal force theory: as a consolation to our

1836, and the new superior system, under the lawyer who has no pretentions to science and supervision of men having artistic knowledge, | refuses all responsibility. Depend upon it, inwent into effect, and "it was found that the ventors, there is little real candor in such proinfringement of a patent, which had been per- | fessions, and to prove this we have only to petrated without fear and with impunity, had become a dangerous experiment." The new from the office, he sets himself up as conspisystem of examinations is good, we find no cuous as possible, in the Patent Agency busithan those of any other Examiner. More refer to the numberless suits about Planing credit to himself, but, like Atlas, he bears the whole Patent Office on his shoulders. His Report takes cognisance of all the past, and present operations of the Patent Office. The Commissioner must have had a very insignifican view of his own place and office, to have

Twenty-four patents were granted for mills, thirteen of which were for grinding and crushing,-one of which was for an improved way of steaming grain before grinding, as it passes from the hopper—a bad plan, as we have heard many millers say. Seven or eight patents were granted for cast-iron car wheels; six patents were granted for pumps, one of which was illustrated and described on page 12 of our fourth volume : sixty patents were granted for improvements in working on timber, many of which, Mr. Fitzgerald suggests, have been got up from bad motives. Perhaps they have, but it appears to us, that he looks upon almost every applicant for a patent as a rogue or a fool and perhaps more for our own republic. We -a bad disposition truly. Fourteen patents were granted for machinery to plane boards and shingles, every one of which machines, we believe, has been sued on the improved principle of Mr. Fitzgerald's examination for infringement of another old patent. This Report takes the ground, that an improved system of granting patents commenced in 1836, by which they at once became more valuablethan they were before, but knowing that there are just as many law suits as ever, he gets over the difficulty, by saying the "patents are granted person to the importance of this new science, for whatever is novel." and insinuates that very, and having a large amount of interesting these novel granted patents are obtained for hear, and common sense to appreciate, can, by bad purposes : it is really shameful ; but if patents are more valuable from the superior examination of such men as Mr. Fitzgerald, how did it happen that two patents were as good as declared void on the 11th of last month, before Judges Grier and Kane, in Philadelphia?

yet, owing to a want of revision by men ofar- their profession, can readily refer to the cases found to be so imperfect, and so large a pro- rejection, and expose the falsity of his posi- not suffer in reputation by the trial. portion of them were granted for things that tion where errors are committed: this is anwere old, that they afforded very little securi- noying to the Examiner, and hence the clause ty. No one feared to infringe a patent, as he | in the "Information" against agents. Any one, was almost sure to be able to defeat it, for in- on a moment's reflection, can see the shallowsufficiency of description, a defective laim, or ness of the pretext; and we believe that those for covering what could be shown to be old. who undertake their own cases will, in ninety-The maxim was, that any patentee could be nine cases in a hundred, express the regretthat defeated who dared to commence a suit, and they had not employed an agent to execute the most valuable invention seldom afforded their drawings and specifications. It is unany remuneration to the inventor. Patents reasonable to suppose that the Examiners in were not only defective, but their reputation the Patent Office would choose a set of imperwas bad, and the government did little else for | fect drawings, a cloudy and indefinite specifithe inventor than keep its promise to the ear." | cation, simply because they were prepared by He says the old system was abandoned in the inventor, or what is generally worse by a state that the moment an Examiner retires of this Report, and we are sorry to see it. tance with inventors, we believe that not one vention and his claims to the improvement. We have calculated that about three apply to us to act as agents in procuring patents, for one that we take in hand to do the business for. If we believe no patent can be granted, we say so at once; but it is sometimes very difficult to know what to say or what to do. The action of the Patent Office is so eccentric : sometimes like that of an inebriate and sometimes like that of a sober man, that we find it very difficult to give that clear advice which we should like to give, was there a different spirit existing from that exhibited in this Report, and uniformly displayed in the Patent Office.

Inventions.

The following ideas are selected from the Buffalo Pathfinder. The first paragraph is so true that we wish more of our people understood it.

"There is nothing which contributes so much to the permanent prosperity of a nation as its inventive talent. It is what has contributed more to the wealth, commercial importance, and national prosperity of England than any other cause, and is at this time doing as much are behind no other people in mechanical ingenuity and genius, and this cause is surely, though perhaps silently and imperceptibly, working out for us the first position among the nations of the earth.

Perhaps nothing does more to foster our mechanical interests than the circulation of good mechanical papers; and we know of no publication which is doing more in this respect than the Scientific American, published by Munn & Co. ; it is a valuable repertory of inventions and a record of the progress of scientific discoand valuable reading matter.

The weekly report of patents is alone worth the price of the paper."

To our cotemporaries generally, we return our sincere thanks for the flattering notices extended to the Scientific American. If snace would permit, we should present the names of As we said before, we do not find fault with such of our friends as have spoken indulgently of our humble abilities.

tents were never numerous. Although pa- means of access; while, on the other hand, countrymen, we would state that there are tents were granted to all who applied for them, agents, qualified for the proper discharge of plenty of pumps here which never could have been beaten, four to one; no, not one to one. tistic knowledge and experience, they were named by the Commissioner, in his letter of In the estimation of scientific men we shall

> Webster's Unabridged Quarte Dictionary. It gives us pleasure to hear of the increasing popularity of the Great Dictionary of the English Language; and as its price has been reduced to six dollars by the enterprising publishers, Messrs. G. & C. Merriam, Springfield, Mass. it is our opinion that the time is at hand when it will be used (for it is the recognized one) in all parts of the world as the exclusive standard of the English language; we say this because we know that no person that wi hes or requires a new dictionary, would ever think of purchasing any other. The last Legislative Assembly of this State (New York) exhibited its wisdom and high sense of the value of this Dictionary, by passing a law to supply all the Common Schools with it. The State of Massachusetts has also furnished about three thousand copies of it to her Common Schools. The most eminent men in our country have expressed their decided opinion respecting its superiority. Daniel Webster said that he "never felt armed and equipped without Dr. Webster at command." The London Times has said that it was the best Dictionary of our language; Dick, the Christian Philosopher, says, " it is the most complete Dictionary of the English language ever published." Judge Spencer, of this State (and we have not a better umpire) says, " it is relied on in our Courts of Justice, Legislative bodies, and in public discussions, as conclusive." It is indeed the standard work of our language, and as such it is relied on in the Court, the Camp, the College, the Bench, the Printing Office, and the School Room.

We have nothing to add to what others have so well said respecting the general merits of

pecting its peculiar scientific qualities. We have a number of dictionaries relating to Science and Art, and we have glossaries of scientific terms, and those relating to the operations and particular parts of machinery, &c., and we must pay this compliment to Webster—" it contains scientific terms not to be found in any other work," and we have often been surprised to find that it contained full and clear definitions of many technical phrases, which we thought had never been heard outside of the workshop. It is a real Encyclopedia of Science, for it not only gives the definitions of scientific terms, but describes the nature of many chemical actions and the operations of many machines. In its unabridged present form, it is complete, and no man pretending to scientific knowledge can be without it: we mean the Unabridged Dictionary, the present new edition, which contains all the results of Dr. Webster's fortyseven years' labor and revising, and the labors, for a number of years, of Prof. Goodrich and several other gentlemen distinguished in science and literature. In Chemistry, Architecture, Geology, Engineering, Mechanics, &c. &c., it is full and accurate, and is not only essential to the student in science, but the most erudite philosopher. We are proud of this work as an American production; it is certainly gratifying to know and feel that England looks to America as having now produced the standard work of the English language.

Our New Type.

We have been congratulated in a number of instances, upon the beauty of the type, and the general typographical appearance of our new

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American. Scientific



Reported expressly for the Scientific Ameri can, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which the publicare accustomed to refer for the latest improve ments. No charge is made except for the execution of the engravings, which belong to the patentee af ter publication.

LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING SEPTEMBER 23, 1851. To G. B. Clarke, of Leonardsville, N. Y., for improvement in Churns.

First, I claim the employment of a revolving vessel containing the cream or milk, with or without cleats, constructed either plain or with pins, or having any other suitable internal projections, and operating in combination with a toothed or plain stationary cross-bar, removable or permanently secured to the fixed axles, and situated in the space forming the upper half of the vessel, at any desired distance from the centre thereof.

Second, I also claim the employment of a tempering cylinder and tubes, in combination with the revolving vessel and cross-bar, for cooling or warming, and agitating the milk, by its precipitation thereon, as caused by the circular motion conveyed to the milk, and interruption or arresting effect produced, substantially as described.

To O. W. Crimes, of Puducah, Ky., for improvements in machines for Scutching and Hackling Hemp and Flax.

I claim the method described, or any other means essentially the same of throwing the teeth in and out of the cylinder or drum at pleasure, whilst in motion, so as to present a greater or less length of teeth to the hemp, or of drawing them entirely within the cylinder, in case the hemp should become entangled and likely to break up the machine.

Second, I claim, in combination with the bar holding the teeth, the spiral spring for allowing said bar to yield to knots or other obstructions, and for drawing back into proper position the said bar, after it is released from said obstruction.

Third, I claim, in combination with the bar and teeth, arranged as described, the adjustable guides for setting the teeth at such angle as will give them more or less hold upon the hemp, as described.

To L. D. Grosvenor, of South Groton, Mass, for improvement in machines for Stripping Seed from Broom Corn.

I claim the endless bearded belt, constructed of any proper material, and having lugs or spikes, as described, in combination with the

ded with a spring knife or saw, operated by found, last year, to be a great error, by a new said shoe, acting in conjunction with a socket the same spindle of the rotary saw, as descricams, and also with ribs, or projections, and survey of the English engineers, when laying or eyelet, and a catch or hook secured to other bed; nor do I claim the returning table, congrooves, for the purpose of nearly severing the out the new railroad route for the East India parts of the shoe, and operating substantially sisting of a series of rollers arranged and opefilaments of the paper, as it passes through be-Mail. It is our opinion that the same error in the manner set forth. rated in the manner described; but what I tween said rollers, and for the purpose also of will be found to have been committed in resclaim is the director and carrying belt, in com-To Asa Willard, of Boston, Mass., for improvement pect to the waters of the Atlantic and Pacific: creasing the paper for the more easily folding in the Churn and Butter Worker. bination with the apparatus for registering, subwe should like, at least, to have every doubt of it. stantially such as described, for delivering bun-I claim the combination of one or more fluted Third, I claim, in combination with the parremoved, and clear evidence of the fact or falsedles ready counted. rollers with one or more floats, to operate so hood set before the public. Would it not be ally cutting and creasing cylinders, the diffe I also claim the rounded surface of the re- as not only to aid in the process of separating rent sized cylinders, C D, geared together for well to have a new survey made? ceiving table, in conjunction with the bentform the butter from the cream, but afterwards, and the purpose of tearing apart the partially cut of the strip, which effects, in the simplest manwhen the motion of the dasher is reversed, to Milton's Daughters. paper-the cylinders, C, holding, and the inner, the delivery on the returning rollers of the throw into ridges the butter spread on the bot-The Chatham Society has published papers, creased motion of the cylinders, D, at their showing that Milton's eldest daughter, Anne, unsawed slab, to the attendant, for another cut. tom of the floats. periphery (they being the larger), drawing the could not write; that his second daughter To Patrick O'Neil, of Brooklyn, N. Y., for improve And I claim the improvement of giving a paper sufficiently to separate it. ment in Easy Chairs for Invalids, etc. longitudinal hollow, or curve, to the external Mary, could not spell; and that his third Fourth, I claim, in combination with the se-I claim the manner of combining the jointed daughter, Deborsh, was much in the same consurface of each float, for the purpose of gatherlinders, the tunnel for guiding, and the wheel ing the spread butter towards its middle, and dition, though it has been so often said that she chair with the jointed ottomans, whereby the divided into a suitable number of compartments whole is made to subserve the several purpopreventing the butter from adhering to the was her father's amanuensis, and that she read for receiving the sheets as they are delivered ends or the reservoir, as specified. to him in, Hebrew, Greek, Latin, and Italian, ses described. from the machine, the whole being constructed I also claim furnishing the back of the chair To L. H. Browne, of Beston, Mass., forimprovement without understanding a word of any one of substantially as described and for the purposes with an additional joint, whereby the back of in Pianofortes. set forth. the languages. the chair is rendered susceptible of such ad-I claim, first, arranging the sounding board To Washburn Race, of Seneca Falls, N. Y., for Blind The Fair of the American Institute opened. justment as to form a support to the spine of in a springing form, and supporting its back on or Shutter Fasteners. I claim the combination of the fast and free at Castle Garden, this city, on the 1st inst. the occupant of the chair, as described. a straining lever, made to bear with more or

I also claim the employment of the triple less force against it, in the manner and for the hooks with the inner plate, the same being arjointed hinges, in combination with the spiral springs, for securing the flexible bolster by which it is steadied and retained in its proper position, when expanded and contracted, as set forth.

To A. J. Sexton, of Brooklyn, N. Y., and Wm. Ennis, of New York, N. Y., for improvement in Ventilating Ships.

We do not claim to have invented either the caboose, water back, ventiducts, or valves, although we do not know of the several parts referred to having heen used for the purpose described; but what we claim as our joint invention is the combination and application of the caboose, water back, ventiducts, and valves, in connection with our water surface and the cowl and vane, for the introduction of pure air. and the expelling of impure air, as described and for the purpose mentioned.

To T. J. Sloan, of New York. N. Y., for improvementin machinery for threading Wood Screws and Feed Apparatus therefor.

I claim the employment of two cams in combination, substantially as described, for the purpose of operating the fingers, which supply and present the blanks to the griping jaws, as described.

I also claim the employment of one cutter to form the thread on the conical point, when combined and operating simultaneously with a second cutter, for forming the thread on the main part of the shank, substantially as described and for the end specified, provided the motion of one of the cutters is extended into the track of the other, to insure the making of the thread on the conical point, a continuation of the thread on the main part of the shank.

To Wm. Mt. Storm, of New York, N. Y., for Engine, in which compressed air or other gas, heated and expanded by admixture therewith of a heated fluid, is used as a Motive Agent.

I claim actuating an engine, such as is now usually driven by steam, or of any convenient form, by means of a measured or detailed quantity of air, previously compressed, and having naa its tension are to such compression, highly increased and augmented by the jetting or flashing into or commixture with it, of a measured or detailed quantity of a medium, or, in other words of a heated liquid, as water or a vapor, (simple or super-heated), as steam; said jetting of the steam into the air (or vice versa, the air into the steam, which I claim as equivalent,) and their commixture being effected in a vessel or vessels, disconnected previous to and during that process, or at least prior to its consummation, from the reservoir or main source of compressed air, and from that of the steam, &c., and each separate and distinct charge or detailed quantity of compressed air, heated by its corresponding charge or detailed quantity of steam being allowed to act upon the piston or its equivalent, prior to the admission or introduction of another charge of air and steam into the vessel or vessels in which their commixture is effected, the whole operation being carried on by means of mechanism, in

ment in Shoe Latchets.

purpose specified.

Second, I claim the combination of the short subsiding iron frame, having a rectangular socket on its front rail, with the long main iron frame, having a wooden block on the under side of its front rail, which fits and is glued into the aforesaid socket, as set forth.

Third, I claim casting the bridge of the long iron frame, with curved brackets, so as to have it raised above the level of the bottom of the front rail of said frame, and permit the strings to be strained, or strung under the same, as explained.

Fourth, I claim easing the escapement of the fly of the jack from under the centre block of the hammer, by means of a spring combined with said block and the stem of the hammer, as stated.

Fifth, I claim arranging the back catch on a lever having a fulcrum in the jack, and arranged so as to cause the catch to follow the hammer in a stroke of the same, and cause it to repeat the stroke or note, if desired, when the fly of the jack fails to operate, so as to effect said second stroke.

Sixth, I claim using a piece of gutta percha on the top of the hammer head, in lieu of some of the layers of leather, in the manner and for the purpose specified.

To Benj Chambers, of Washington, D C., for im provement in Letter Stamps.

I claim so making and operating the detruding rods, or followers, of a letter stamp, so as to act wholly within the body of the stamp block, whereby I avoid cutting away tho handle, and the weakening which would be caused thereby.

I also claim making the detruding rod, wing, and thumb slide, in a single piece, whereby I greatly economize the labor of making this part of the stamp, as set forth.

To J. H. Manny, of Waddam's Grove, Ill., for im-I claim hanging the attended of a triangular frame, in

such manner that neither extremity of the cutser shall be liable to sag below the other extremity, as set forth.

To Jacob Worms, of Paris, France, (assignor to Jacob Phalen, of New York, N. Y. Patented in France, (in part), May 19, 1849, and (in part) Sept. 27, 1849, for improvement in Printing Presses.

I will here observe that engraved or sunken cylinders have been already used for the printing of woven fabrics; but these are very expensive to manufacture compared with the cylinders' prepared as I have described. I wish it also to be understood that, in the apparatus described, I do not confine myself to the exact details set forth, for these must necessarily vary with the size of the matter to be printed, or with the greater or less rapidity with which the movements are to be executed.

It must also be understood that I do not claim, individually or separately, any of the parts of the apparatus or machinery; but I claim, first, in combination with the ink troughs

ranged as set forth, in such manner that the fast hook forms the pivot for the free one, and the two are connected to the inner plate in such a manner, that the movement, breakage, or removal of the free hook, does not affect the security of the fastening, while, at the same time, the two hooks are secured to the inner plate by the fastening of the latter to the shutter. [See engraving of this invention in No. 49, Vol. 6, page

To S. P. Ruggles, of Boston, Mass., for improvement in Hand Stamps.

I claim securing the plate of a hand stamp to the shank or handle, by means of a universal ball and socket, or other joint, so as to allow the stamp to make a fair impression, at whatever angle it may strike the material to be stamped, as set forth.

Steamboat Question .--- Pacific and Atlantic 2 Tides.

MESSRS. EDITORS .- Respecting the " Steamboat Question," on page 389 of the last volume of the Scientific American, suppose the current equal to 5 miles per hour, and let us suppose, also, that a steamboat, or other body, placed in the current would acquire a velocity equal to that of the current, (not greater, as contended for in the "Floating Raft" question); such a body, although moving at the rate offive miles per hour, would be actually at rest with respect to the current. Suppose again that this steamboat will run fifteen miles per hour in still water, and be set in motion against the current, will not her distance be lessened by exactly the velocity of the current, that is to say, her speed will equal 10 miles per hour, and conversely, if running with the current, it will equal 20 miles per hour: this appears to me to be self-evident, and that the effect of the current on the paddles is nothing.

Your " Conversations on Mechanics " leads me to the query, whether there is any positive evidence of what has been so often asserted, that the Pacific is higher than the Atlantic. Were we to draw inferences from existing facts, it would seem that the reverse should be the case, and that the Gulf should be higher than the Pacific, else why this out-pouring of the waters between Florida and Cuba, which had been piled up in the Gulf by the equato-G. L. ANDERSON. rial trade winds.

[We did not state what quantity of effect the current would have, in the article referred to by Mr. Anderson, for that we do not know-experiment alone can determine itfor in hydrodynamics there is still much to learn. If the paddles did not act on the water and pass through it to propel the boat, then the effect of the current would be nothing, as stated ; but if the current does affect the velocity of the boat, it must affect all that belongs to it, which passes through the water; but the effect of a moderate current upon paddles having a high velocity, must be very small indeed.

and printing cylinder, the arrangementt of the Our opinion about the difference of height in substance such as represented, or any more fitcam cylinders, reciprocating cylinders, (two) the waters of the Pacific and the Atlantic, coting mechanism that shall effect the same in comb rollers set diagonally upon the frame, operated by levers; and two cylinders for reincides with that of our correspondent. It was the manner here claimed. in the manner and for the purposes substanceiving, carrying and distributing the ink from held at one time to be an established fact, ow-To Isaac Banister. of Newark, N. J., for improvetially as set forth. the said trough to the said cylinders. ing to a bad survey of a French engineer, that Second, I claim, in combination with the To Wm. Merrell, of Randolph, O., for improvement the waters of the Red Sea were thirty feet I claim confining a shoe to the foot by means in Lath Machines. printing cylinders, two other cylinders, proviabove those of the Mediterranean: this was of a flexible latch secured to one portion of the I do not claim mounting a rotary cutter on