

Scientific American.

NEW YORK, FEBRUARY 10, 1855.

American Commissioner at the World's Fair.

It is well known that Edward Riddle, of Boston, was appointed U. S. Commissioner at the World's Fair in London, in 1851, without the least public qualification to recommend him for that position. He was not known as an inventor, manufacturer, or artist. He was undistinguished for engineering or mechanical capacity, and as for any sympathy with American Exhibitors at the World's Fair, he was never charged with the possession of such a noble feeling. Our government provided a frigate to carry exhibitors' articles to England, but so defective were the arrangements, and so deficient was the Commissioner in means to do anything for the honor of his country, that but for George Peabody, the American banker in London, who advanced ten thousand dollars for decorations and incidental expenses in fitting up the American department, the whole affair, so far as the Commission was concerned, would have fallen—disgracefully fallen—through. It is well known that American exhibitors paid pretty well for the whistle in London, but we have never heard it asserted that Mr. Riddle was a loser by the taxes levied by him upon his countrymen.

A meeting was held in this city on the 11th of April, 1853, by the American Exhibitors at the London World's Fair, at which they expressed their opinions very freely respecting the modest demands of Commissioner Riddle upon them. Mr. Bell, of West Farms, near this city, stated that he was an exhibitor in London, had sent his articles by a private vessel, paid all expenses himself, and was awarded a medal, which was given to the Commissioner for delivery, but was refused by his secretary until he—Mr. Bell—paid £2 2s. (\$10 12cts.) Mr. Roy, of West Troy, N. Y., stated that he had sent four plaid long shawls to the Exhibition, worth \$24 15 cts. each, that Mr. Riddle sold two of them for \$5 6cts. each, that one had been stolen, and that a lady to whom he sent an order to draw the other was refused it. Numerous other cases of a like character were related at that meeting, and it was unanimously admitted, that the seven hundred American exhibitors at the World's Fair, paid several thousands dollars for overcharges. Those whom our government sent to England to watch over their interests, were the very persons who, above all others, seemed to watch for an opportunity to make all out of them which they honestly could, in a pecuniary sense. We never conversed with an exhibitor on the subject who did not seem to be possessed with the feeling that the Commissioner—Mr. Riddle—instead of losing anything, was, on the contrary, a great gainer, yet we now find him applying to Congress, for remuneration for his services at the World's Fair in London. This evinces that he has either suffered from the position he occupied, or that he is ungrateful for the positive and incidental advantages which accrued to him from it.

On the 1st of this month, Senator Stuart presented Mr. E. Riddle's memorial asking for remuneration, and his petition was referred to the Committee on Finance. We respectfully suggest to that Committee the examination of competent witnesses, before they make their report on the matter. They will find the names and residences of quite a number of them on page 254, Vol. 8, Sci. Am. We have not the least doubt but a universal burst of indignation would be manifested by all these exhibitors, if a single cent were paid to Mr. Riddle without a full examination into the case, and a full investigation cannot be had unless exhibitors are called upon to give their testimony. As servants of the public, and as advocates of American industry everywhere, we call upon the Finance Committee of the U. S. Senate, to whom Mr. Riddle's petition has been referred, to give this subject a full investigation, and report on the same at an early date.

This is a question which interests a great number of our citizens, and an opportunity is now presented to the Committee to unveil important facts that have been hid from the public for four years, although many efforts have been made to reach them. Such an investigation, carried out fully, will be an act of justice to all. If Mr. Riddle is innocent of the charges which have been made against him, and if he has suffered pecuniarily by his services in London, then he has been a much abused man, and a full investigation, for his sake, is demanded. If he has done what exhibitors have charged him with, at the meeting referred to, justice also demands that his conduct should be held up in an official and national light, as a warning to all unfaithful stewards in the Republic.

Muntz Metal Sheathing and Bolts—Caution to Shipbuilders.

In the last number of the *London Artisan* there is a letter from R. Armstrong, on Muntz patent metal, as an article of ship sheathing and bolting—a subject of the deepest importance to shipbuilders and underwriters. He asserts there should be an immediate investigation to see if mixed metals, such as Muntz metal, when used for the bolting and sheathing of vessels exposed to the action of sea water, retains its tenacity and ductility. He says, "in every case in my experience where it has been necessary to have bolts removed, I have found them broken asunder, or so brittle that the slightest force was sufficient to break them. From the appearance of the metal its nature seemed to be quite changed, having more the appearance of brown earthenware than brass. The same metal when used as sheathing becomes so brittle in a few years that it may be crushed in the palm of the hand. If such is the case with the sheathing the same agency may be supposed to be at work with the bolts when exposed to the action of sea water. The most prominent parts of a vessel, such as the stem, keel, and stern post, are bolted wholly with this metal. Vessels must be brought into great peril when fastened with bolts of such a treacherous material. I have no doubt that many of the ships that are never heard of are lost in consequence of the bolts having lost that tenacity and ductility so necessary to enable them to fulfill the purposes for which they are employed."

Mr. Armstrong thinks that an electrical action takes place when Muntz metal, which is composed of copper and zinc, is exposed to sea water, and that the operation is the same as in a galvanic battery. It is at least a most important question for practical chemists to investigate, and a most vital one to our ship owners. We believe that most all our ships are sheathed with this metal, and a great quantity of such bolts are used. As our mercantile navy is nearly the largest in the world, and is increasing with great rapidity, no time should be lost in investigating this question in all its bearings. If Muntz metal is merely cheaper in price than pure copper, it cannot be so economical and safe if it deteriorates in the manner described in the above extract. If Mr. Armstrong is correct, and he asserts positively he is, the sooner we go back to the use of pure copper for ship sheathing and bolts, so much the better as a matter of economy and safety for our ships.

Impure Coal.

A half-a-dollar, or even a dollar difference in the price of a ton of coal, is but a small amount, when quality is taken into consideration. Different qualities of coal come from the same mine, and neither the name nor price are evidence of its real value. We have known coals sold this season for seven dollars per ton that were really dearer than others—said to be from the same mine—which cost seven and a half dollars. Those who used and tested the two kinds informed us, and presented evidence of the truth of their assertions, that the kind which they bought at half a dollar less per ton, was about two dollars dearer than the other kind.

It is not an easy matter to decide upon the quality of coal from its appearance. It requires considerable experience to do this,

hence it is easy to deceive those who buy. The coal which produces the least refuse (ashes) is the best. Some coals contain twice as much shale and incombustible matter as others. Great care should be exercised at the mines in selecting coal for the market. Coal has been very high in price this winter, and is very bad in quality; we never heard so many complaints before respecting bad coal. One evil is enough, but to combine two is far from flattering to our friends at the mines of Pennsylvania.

High Winds in New York.

We have paid close attention for a number of years to the periods of the day when high winds have prevailed in this city and Long Island, and we have been surprised at their occurring with almost undeviating regularity during night. Excepting sudden thunder gusts, gales of wind rise and continue during night, and die away with increasing daylight. Gales commence blowing generally from the south-east, then shift to the north-east, and expire in the north-west, with terrible dying throes. Sometimes, however, they commence in the north-east, and die out in the south-west. They all shift suddenly from point to point. We have often noticed that many moderate gales of wind take place between 9 and 12 P. M. We do not know why this should be so, we only know that such is the fact.

The Smithsonian Institute.

The *Virginia Sentinel*, speaking of the manner of carrying out the will of the founder of the above named Institution, takes the ground, that the method of active operations by scientific investigations, and by cheap publications of new discoveries for general distribution, is the only way of doing this. It says, "If a mammoth and indiscriminate library had been the agency to which Smithsonian looked to accomplish his purpose, he would have said so, because he could have said so in a word. Smithsonian was an ardent devotee of science and general knowledge, and pursued his researches with great zeal. He had a high reputation as a chemist, and as an illustration of his analytic skill, it is related of him that 'on one occasion he caught a tear as it was trickling down the face of a lady, lost half, examined the remainder, and discovered in it several salts.'"

Railroad Explosive Signals.

The *Railroad Advocate* of the 27th ult. says, "We do not think under any circumstances that Mr. Wilkinson can be justly accused of having pirated any essential ideas of the Explosive Alarm Signals from the last volume of the *SCIENTIFIC AMERICAN*."

He never has been accused of pirating any essential ideas of Explosive Signals from our columns. If he obtained any such ideas from our columns when they were not the subject of a patent, they were free property to him and every other person. It always affords us pleasure when we hear of any suggestions made through our columns put into practice.

The *Advocate* further says, "previous to 1852, we had been accustomed to hear of detonating or fog signals, as being in general use in England." We never heard of their being in general use in England until now.

The Franklin Institute.

The annual election of officers for this old and respectable Institution, took place on the 25th ult., when John Cresson was elected President, and John Agnew and Matthew Baldwin Vice-Presidents. Saml. L. U. Merrick, the former President, was one of the founders of the Institution, and had been President since the decease of James Ronaldson, an honored name. He declined a reelection, because he considered that others were also entitled to share the honors of such an office. The officers who have been elected, are men of reputation as inventors and engineers.

Ocean Steamers.

Cornelius Vanderbilt, the great steamship proprietor, has published a letter stating his willingness to carry the semi-monthly mail to Liverpool and back for \$15,000. He considers that the large sums now paid by the American and British governments for car-

rying the mail, blights individual enterprise, and defies individual competition.

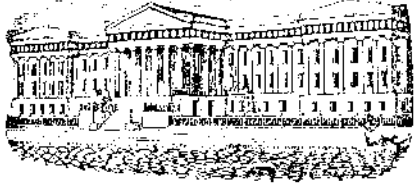
Steam Engine without a Boiler.

By invitation of Mr. William O'Brien, on Friday last, in company with several others, we witnessed the operation of a "steam engine without a boiler," in the yard of a blacksmith's shop, in Twelfth street, below Locust. This engine is said to be of some five-horse power, is very simple in construction and mode of operation, and occupies but little room. The furnace is about the size of an ordinary cooking stove, and in the midst of the fire are two cast-iron steam generating cylinders, about five or six inches in diameter, lying horizontally and arranged longitudinally, and at the rear end turning up at an angle of ninety degrees into what may be termed the chimney, thence extending upwards to about the height the flames are supposed to rise from the fire.—These cylinders, being entirely surrounded by and within the fire, are kept constantly red hot. Near the front end of these cylinders, from a water tank above, a given quantity of water is ejected into each alternately, by means of peculiarly contrived valves, worked by the engine. The water in certain definite quantities being thus thrown into the red hot cylinders, is instantly converted into its appropriate quantity and bulk of steam (or decomposed into its original gases,) at a high temperature, and is simultaneously therewith worked off through the upright part or end of the cylinders in the chimney, to which the two working cylinders of the engine, which are of smaller size, and situated in the rear, are connected. What is here stated, with the piston, connecting rods, cranks and shafts, comprise the entire apparatus. Owing to its simplicity of construction and operation, the little room it occupies, the small amount of metal used, it must be much less expensive in first cost than the ordinary steam engine with its cumbersome water boilers, &c.—[Phila. Ledger, Jan. 20.]

[The above plan for generating steam is neither new nor scientific, and the *Ledger*, in a sentence which we have not quoted, does not seem to have much confidence in its practicability. The red hot cylinders cannot convert water into steam as rapidly as a common steam boiler. When water is placed upon a red hot plate of metal, it at once assumes the spheroidal form, and repels the action of heat, and is converted into steam but very slowly. Red hot cylinders are weak, and cannot stand any amount of steam pressure. Red hot iron decomposes water, by absorbing the oxygen and setting the hydrogen free, therefore a red hot iron boiler will soon be destroyed. It is similar in character to Dr. Aban's steam apparatus. The boiler of Theodore Paul, patented in England in 1824, was composed of a coil of pipe, in the center of which was the fire, and is thus described on page 369 of Hebert's History of the Steam Engine, "when the fuel is ignited and the pipes are heated to redness, the water is injected by a force pump in such small portions as to cause it to be immediately converted into steam." The same principle of generating steam is embraced in McCurdy's boiler, illustrated on page 192, Vol. 7, *SCIENTIFIC AMERICAN*, in a series of articles on steam boilers.]

Means of Saving Life in Shipwreck.

It seems to us that our government is getting worse and worse with respect to providing sufficient means for saving life in cases of shipwreck. Thus on the night of the 28th ult., the brig *Argyle* went ashore on Squam Beach, and the crew, eleven in number, took to the rigging. There they clung, with the sea breaking over them all night, and part of next day, while quite a number of persons stood on shore looking on, unable to render any assistance for the want of proper means to do so. At last the rigging gave way, and ten of the unfortunate crew were drowned before the eyes of the on-lookers, while only one was saved—he being washed ashore by the billows. Is not this disgraceful? What is the use of your Francis' surf-boots and life-boats if not fit to be applied when required in such cases.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS Issued from the United States Patent Office. FOR THE WEEK ENDING JANUARY 30, 1855.

IMPLEMENT FOR BORING WELLS—I. J. W. Adams, of Sharpsburg, Md.: I do not claim the hollow auger, G, for that has been previously used.

But I claim the employment or use of the spring g, attached to the handle, F, of the swinging or suspended auger, G, arranged substantially as shown, viz., with a knob or projection, h, on its outer surface, which knob or projection catches into a cavity in the under surface of the bail, F, for the purpose of holding the auger in its proper position while being operated.

[A notice of this invention may be found on another page.]

CLARIFYING GLUE—William Adamson, of Philadelphia, Pa.: I claim the employment of the material specified, for the purpose of clarifying glue, gelatin, size, &c.

HOT AIR FURNACES—A. H. Bartlett, of King's Bridge, N. Y.: I do not claim, of itself, in a hot air furnace, preventing the admixture of deleterious gases, generated on hot metallic surfaces, with the warmed fresh air, by means of jacketed air spaces interposed between the surfaces exposed to the action of the fire and the air to be heated; nor yet providing an escape pipe or passage to carry off the deleterious gases.

But I claim, first, in combination with the arrangement specified, of the serpentine fire and air flues, or courses, C and D, providing each horizontal flue with an escape easing or jacket connected by branch or otherwise (each horizontal casing) with a gas pipe or pipes uniting them with the chimney, as shown and described, whereby a sure and quick escape is established for the deleterious gases at each horizontal flue to travel where the fire and air are retarded in taking their upward course, and the air being heated, consequently more exposed to absorption of deleterious gas, and whereby the stratum of air being heated, and traveling in succession the several horizontal flues, D, is protected from admixture with it of the deleterious gas throughout its entire exposure to heat in the furnace, as described.

Second, I claim the arrangement of the fire flues, C, and air heating passages, D, specified, and traversing at right angles to each other when combined with division plates or their equivalents, so arranged that the one stratum or current of air to be heated passes upward throughout the several hot air passages or channels in a serpentine course, similar to but at right angles with the course given the flame simultaneously passing upwards in the fire flues, C, over, under, and between the hot air passages or flues, D, as shown and described.

[For a brief description of this useful improvement in furnaces, see No. 12 present Vol. Sci. Am.]

CAR VENTILATOR—T. Babbitt, of New York City: I claim the arrangement of a wind wheel, as described in connection with a wire gauze disk or screen revolving in a tank of water, the air passing through the said disk previous to entering the car, in the manner and for the purpose set forth.

SEED PLANTERS—John Blackwood, of Franklin Co., O.: I claim the additional hopper to catch the seed which falls off of the slide after it passes the brush, substantially as described.

SEED PLANTERS—Job Brown, of Lawn Ridge, Ill.: I do not claim, separately, the distributing plates, I, for they have been previously used.

But I claim the combination of the cups, F, placed obliquely on a rotating cylinder, in combination with the distributing plates, I, the above parts operating in the manner and for the purpose shown and described.

[See notice of this invention on another page.]

FOUNTAIN BRUSH—D. H. Chamberlain and John Hartshorn, of Boston, Mass.: We do not claim the combination of a fountain or reservoir with a brush or marking implement. Nor do we claim a tapering valve applied to a long rod and working in a socket or tapering hole made through the bottom of a fountain holder, the long rod extending through the fountain thereof. Nor do we claim a movable pin inserted in a conical tube extending into the body of a brush, and arranged at the lower end of a fountain tube or reservoir, such pin, in order to increase the flow of the marking fluid into the brush, being raised by pressing the brush downwards against an object.

What we claim is arranging or applying the brush, B, the valve, C, its rod, E, and the socket tube, F, together, as described, so that not only shall the brush be fixed directly to the valve and be movable backward and forward and around with and by it, but the socket be made so to encompass the valve and brush that the marking fluid may flow down around the external surface of the brush before penetrating into its interior, the same affording important advantages in cleansing the valve and maintaining the flow of marking liquid.

We do not claim the application of a piston to the reservoir, so that by the movement of such piston the reservoir may be filled with or emptied of marking fluid. We claim so combining with the slide, B, and the fountain, A, a mouth tube, F, open at both ends, that such tube may not only serve to enable a person to supply the reservoir with paint or marking fluid, as described, but also to enable him to move longitudinally or rotate the rod, E, and its valve and brush.

And we claim the float, H, in combination with the opening at the inner end of the tube, F, and as arranged to move on the slide rod, E, and within the tube, A, and to operate therewith substantially in the manner and for the purposes as stated.

Plows—Alfred Doe, of Concord, N. H.: I claim, first, two separate furrow boards arranged to vibrate perpendicularly, independent of the point and share, so as to turn alternately right and left furrows on level or inclined land, with equal facility; operating in combination with a swivel point and shares arranged to vibrate upon the land side with the body or front portion of the furrow board, substantially as described.

Second, in combination with the swivel point shares, body and one of the furrow boards mentioned in the above claim, I claim a sub-furrow board arranged to vibrate perpendicularly, so constructed as to turn a subsoil furrow in one direction upon the top of the furrow just plowed in the opposite direction, thereby making it serve as a common plow, in one direction, and a subsoil in the other, substantially as described.

DIES FOR COP TUBE MACHINES—James Eaton, of Townsend Harbor, Mass.: I claim in machines for making cop tubes, the method described of securing the step to the die for the purpose set forth.

DOUBLE-ACTING FORCE PUMP—George Fowler, of Northford, Conn.: I claim the combination of the solid piston with the cylinder and reservoir, when the piston is inserted from the lower end of the cylinder, and worked by a parallel side rod, or shaft outside of the cylinder, whether for single or double-acting pumps, so as to constitute it an efficient lifting pump, without suction valves, and the whole is constructed, combined, and arranged, substantially as set forth.

YOKE OF SHIRTS—Hezekiah Griswold, of Hartford, Ct.: I do not claim the insertion of gores upon the shoulders of shirts or other garments, that being old.

I claim, in shirts, the compound yoke, substantially as and for the purpose set forth.

CLOVER HULLERS—Johnathan Hibbs, of Tullytown, Pa.: I claim combining with the concave shell two flanges diverging from a central point, and so acting as to divide the chaff from the fresh fed straw during the time that the former is passing a second time round the cylinder, substantially as described.

PIANOFORTES—Alexander Hall, of Lloydsville, O.: I claim sinking the middle octave bridge, a, below the level of the normal strings, so as to be clear of their vibrations, as set forth.

I claim, in combination with the depressed bridge, a, the perforations in the bridge, b, on the level with the top of bridge a for the purpose set forth.

I claim the extra hitch plate, c, in combination with the depressed bridge, a, and perforated bridge, b, as set forth. I claim the adjustable bridge pin for the normal strings furnished with a screw and the notches and channels on its two sides, so that the normal strings can be regulated in their relative distances from the octave strings either vertically or laterally, as set forth.

I claim making the buff stop of two qualities of leather, a hard and a soft, for producing the harp effect, as set forth.

REIN STAFF SCREWS FOR SHIP CARPENTERS—John Hobbs, of Hallowell, Me.: I claim the arrangement of the screw stems, C, D, and E, F, passing through the rein staff, A, B, the sharp threaded screws, G and H, forced into the timber or side of the vessel by the lever, I, inserted in the aperture, k, and the nuts, g, g, moved by the lever, i, to force the rein staff towards the vessel, together with the set down, L, on each screw, for the purpose of inserting wedges between it and the edge of the plank, to bring the plank into place for spiking on the side of the vessel.

CARRIAGE WHEELS—Washburn Race and Birasill Holly, of Seneca Falls, N. Y.: We do not claim a hollow cast iron or metal hub.

But we claim the compressed tenon in combination with the annular cavity, in the manner and for the purpose set forth.

BUGGERS—Russell Jennings, of Deep River, Conn.: I claim so constructing the cutting edges of a double twist auger bit, that the vertical scores shall follow the chisel, i. e., so that the cutting edges of scores and chisel shall never intersect the worm or helix of the shaft at the same point.

LOOKING SPINDLE DOOR LATCHES—W. H. McNamee, of Philadelphia, Pa.: I claim the guides, g, and the rim, f, of the escutcheon; the shelf, d, on the face plate, and the upright stem, i, inclosed with a spiral wire working through the shelf piece, d; the projecting arm, e, on the spindle and the forked bolt, B; the whole combined for the purpose of a latch and lock, as described.

MACHINE FOR FELTING HAT BODIES—S. S. Middlebrook, J. B. Blaklee & Chas. F. Blaklee, of Newtown, Conn.: I claim the employment or use of the two beds or plates, E, J, corrugated on their inner surfaces, substantially as shown, the upper bed or plate, B, having an up-and-down, and also a lateral vibratory movement, given it by the cams, C, or their equivalents, and the lower bed, J, being elastic or yielding for the purpose of subjecting hat bodies to a rolling motion under requisite pressure, and thereby thoroughly felting the same, as described.

SEWING MACHINES—John B. Nichols, of Lynn, Mass.: I claim the machine of a binding guide with a sewing machine, meaning to claim the combination of mechanism, whereby the operations of directing or applying the binding to the edge of any material and sewing it thereon, are conducted by an automatic process.

FRAME OF GRASS HARVESTERS—Aaron Palmer, of Brockport, N. Y.: I claim connecting the wheel, A, the cutter beam, B, and the tongue, C, to the frame, D, in the manner described, by which the frame operates as a lever, of which the axle of the wheel, A, is the fulcrum, and by which means the cutter beam rises and falls independent of the wheel, thereby adapting itself to undulating surfaces; and by which means the draught of the team holds the cutter beam snug to the ground, thereby causing the machine to cut close and smooth.

LANTERN FRAMES—E. F. Parker, of Proctorsville, Vt.: I claim passing the guard wires of lantern frames through suitable holes in the corners or uprights, by which means soldering at such points may be dispensed with, as described.

CABLE STOPPERS—Jesse Reed, of Marshfield, Mass.: I do not claim stopping the motion of a chain cable by subjecting it to pressure between two plane surfaces.

But I claim the described arrangement of the lever, H, the crank, G, and the upper jaw, B, whereby the latter is allowed to accommodate itself to the varying size of the links, and the operation of stopping the chain is assisted by the friction of the chain itself upon the upper jaw.

FORCE PUMP—Henry Rogers, of Ferrisburgh, Vt.: I claim the combination of the suspended valve bucket with the stationary hollow plunger, or of the suspended hollow plunger with the stationary valve bucket, when so constructed, arranged, and operated as to serve automatically to clear the delivery pipe of water, as and for the purposes set forth.

HARVESTER CUTTERS—David Russell, of Brewsterburgh, Ind.: I claim the combination of cutters with an endless chain or chains operating as described and for the purposes set forth.

PORTABLE FIRE ARMS—A. O. H. P. Sehorn, of Murfreesboro', Tenn.: I claim the combination of the box, springs, S and S', coils spring, I, hammer, n, and casing, p, constructed, arranged, and operating as set forth, when used in connection with an external case, C, H, for the purposes specified.

WORKING FRANKLINITE ORE—Theodore Sellack, of Greenwich, Conn.: I claim the process of reducing Franklinite ore to obtain iron and the white oxide of zinc therefrom, by working it under a light heat, in a vertical walled low cupola furnace, substantially as described.

CARRIAGE WHEELS—Jno. Skelley, of Brooklyn, N. Y.: I claim constructing the wheel as shown and described, viz., having a concentric ring or band, B, constructed of wood, as shown, and secured by metallic bars, E, E, on its sides said ring or band being at any proper point between the hub, A, and rim, B, of the wheel, and having the half spokes, F, secured between the rim and ring or band, the whole spokes passing through said ring or band, for the purpose as shown and described.

STRAW CUTTERS—G. L. Squier, of Chicopee, Mass.: I do not claim, separately, the circular cutters or knives, for they have been used for analogous purposes.

But I claim the combination of the circular cutters or knives, b, b', and finger plates, B, with the hangers, A, attached to them, which said cutters and finger plates are secured the proper distance from each other on their shafts, B, B', by means of the rods, D, D', and nuts, c, c', as shown and described.

[A notice of this machine may be found on another page.]

CULTIVATOR TEETH—Joseph Stockdale, of Ypsilanti, Mich.: I claim the reversible cast iron plate, marked fig. 3, with the groove on the under side, marked letter K, round cast iron screw pin on the upper side, B, and the application of the top of the cultivator tooth in the groove, foresaid, and also the application of the wrought-iron belt or shank, passing through the said plate, as described.

FURNACES FOR ZINC WHITE—J. G. Trotter, of Newark, N. J.: I claim the manufacture of white oxide of zinc, whether from native ores or metals, the use of the atmospheric air supply pipe, L, flues, M, M, heating chambers, H, H, and J, and series of aperture, h, h, in the sides thereof, or substantially like parts, for the purpose of conveying into the oven, a great number of infinitely small jets or blasts of heated atmospheric air (independent of the blast of atmospheric air supplied through the shaft of the furnace to support combustion), for the purpose of more thoroughly consuming the gases from the ore and carbon.

MAKING INDIA RUBBER CLOTH—H. G. Tyler and John Helm, of New Brunswick, N. J.: We do not claim the process described of making elastic fabrics without a previous preparation of threads, strips, or sheets, or the coating of the cloth by cement.

CYLINDRICAL BOXES—Elisha Waters, of Troy, N. Y.: I do not claim in general the combination of wood and paper in the manufacture of all descriptions of boxes.

But I claim, in the manufacture of cylindrical boxes, making the sides of said boxes of paper tubes, and the ends of wooden disks, substantially as and for the purpose set forth and described, whereby I am enabled to produce at once a better and a cheaper box, by making each part from the most suitable material and in the cheapest manner.

WAXING THREAD IN SEWING MACHINES—Salem Wilder, of Lynn, Mass.: I claim so applying the wax holder to the frame or arm of the machine, and the needle and the eye of the needle carrier, that the vertical movements of the carrier shall cause the thread to be moved or drawn up and down through the wax holder and its elastic bottom, whereby the saturating of the thread becomes improved, as specified.

I also claim the combination of an elastic bottom or partition and its compressor with the wax holder, the same being to regulate the application of the wax to the thread and to prevent its escape from the wax holder, essentially as described.

SAWING MACHINES—Finney Youngs, of Milwaukee, Wis.: I claim, first, the employment or use of two pairs of guides, c, secured to the ends of levers, D, D, and arranged as shown, or in an equivalent way, so that said levers will be operated by the movement of the carriage, and each pair of guides brought alternately in contact with the saw near its cutting edge, the levers, D, D, being operated simultaneously

with the reversing movement of the carriage, for the purpose of allowing the saw to be properly guided or stayed while cutting in either direction, as set forth.

Second, I claim the combination of the toothed wheels, A', A', arms or levers, P, P', q', q'; and pawls, w', w', attached to plates, v', v', the arms, q', plates, v', and pawls, w', forming a clutch, and so arranged as to operate the wheels, A', and rotate the screw shafts, z, as shown and described, for the purpose of properly setting the log or timber to the saw; the movement of the wheels, A', being regulated by adjusting the pins, n', on the segments, o', or in an equivalent way, so as to give the required set to the log or timber.

[A description of this machine was published in No. 4, present Vol. Sci. Am.]

SPURS—J. S. Ewbank, (assignor to Wm. Everdell, Jr.), of New York City: I claim the construction of a spur having a divided hinge branch, a, a, for embracing the heel of the boot or shoe.

Also, I claim the mode of sustaining the divided branches, a, a, by means of the shoulder screw nut, either as constructed by having said nut, E, with its bearing outside of the hinge of the jaws, or as sustained by means of the cone, F, substantially as described.

DELIVERING APPARATUS OF GRAIN HARVESTERS—E. A. Morrison, of Laurenceville, Va. (assignor to himself and R. J. Morrison, of Richmond, Va.): I am fully aware, that an endless belt with rakes thereon for conveying the cut grain from the platform, and hinged doors, controlled by weight or spring, have both been used on reaping machines, for gathering and delivering the cut grain in bundles; these I do not claim.

But I claim, in combination with an endless conveying belt with rakes thereon, and the weighted or spring door, the inclined flange on said door, under which the grain is carried and compressed, until the rake teeth come against said flange, when the door is forced upward on its hinges, and the cut grain delivered in compact bundles, as set forth.

WINDOW WASHER—G. A. Meacham, of New York City: I claim the arrangement of a sponge or brush at the end of a hollow handle or tube, connected by a hose or pipe to a body of water higher than the object to be washed, so that the water flows through the sponge or brush at the very time it is rubbed or scrubbed against the window.

[An engraving of this invention will appear in next week's Sci. Am.]

RE-ISSUES. PLOWS—C. R. Brinkerhoff, of Batavia, N. Y. Patented originally Oct. 11, 1853: I claim, first, combining with the plow beam and the plow and the forward end of the clevis, by means of a single shaft, two wheels, one on each side of the beam, and of different diameters, the one resting in the furrow and the other on the land, for the purposes set forth.

Second, I also claim making the tread of the furrow wheel narrow for the purposes described.

Third, I also claim making the furrow wheel beveling outward on the side which presses against the land, as above described, and for the purposes set forth.

Fourth, I also claim making the small wheel adjustable with reference to the shaft or axle, and the large wheel, as described.

I also claim the adjustable hangers, in combination with the plow beam and axle, for the combined purpose of bracing the axle, and rendering the wheel simultaneously adjustable with reference to the beam, without disturbing their adjustment relatively to each other, as described.

FASTENING LANTERNS—Chas. Monnin & Wm. M. Booth, of Buffalo, N. Y. Patented originally Aug. 1, 1854: We claim attaching the lamp to the lantern by means of the combination of the catches, e, with the flanges, a and f, and the ring to which the catches are hinged, or its equivalent; the purpose and object of the ring being to give the hinged end of the catches a motion concentric or parallel, or nearly so, to the side of the lantern or the flange through which the catches pass.

Patent Case.

At the General Term of the Superior Court held in this city, a very important and interesting case of appeal relating to inventions was decided on the 27th ult. The parties were Sherwood and others, against Pierce and others, who had sued previously to compel the performance of an agreement to purchase of plaintiff and D. Fitzgerald, the improvement of the latter on iron safes, and pay them for the first two years ten per cent. on the sales, and after that twelve per cent. After using the invention for two years, the parties said it was not new, but a patent had been obtained, and the refusal to pay was still maintained. The question of fraud on the part of the plaintiffs had been laid before the jury on the trial at common law, who found there was no fraud as charged by the Judge, and the plaintiffs were entitled to the ten per cent. on the manufacture of the safes for two years. The Superior Court affirmed the judgment, the appeal being on the charge of the Judge.

Evaporating Cane Juice.

MESSRS. EDITORS—From the description of Wethered's stame and steam apparatus, on page 45, this volume, SCIENTIFIC AMERICAN, I am led to believe that if any benefit can be obtained from its use, there is a wide field for its application in Louisiana, for evaporating cane juice in sugar houses. On this plantation during the season of sugar making, we evaporate about 30,000 gallons of water from the cane juice daily, and there are several other plantations where the same amount of work is done. In 1847 Isaac P. Morris & Co., iron founders, Philadelphia, constructed for a planter in this State an apparatus for heating steam by passing it through a cast-iron pipe under the boilers before it was taken to the evaporators, but I do not know what was the result of the experiment. Of course it is only by fair practical experiment, continued, say for one season, that the merits or demerits of Wethered's plan can be settled. I desire to call attention to this, simply from a desire to see every useful improvement relating to that branch of business in which I am interested, introduced for the benefit of all concerned.

Plantation near Thebodaux, La., Jan. 1855.

(For the Scientific American.)

Remarks on Lateral Motion of the Earth.

Mr. H. Pollard, in No. 18, supposes that the direction of the earth's axis is changing, and regards this change as the cause of "the emergence of the new land, and the submergence of the old." That the greater part of the present dry land was once the bottom of the ocean, is undoubtedly true, but it is just as true that the cause of this emergence and submergence is not the lateral motion of the earth. The direction of the earth's axis does not change, this is an established fact, proved above the possibility of a doubt by all astronomical observations, in all times and all countries.

One of Mr. P's reasons for believing in a lateral motion of the earth, is the well known fact that fossil remains of plants and animals which grow only in tropical and temperate climates, are found near the Arctic regions, indicating a great change of climate. This latter change is, at the present day, generally attributed to the internal heat of the earth itself, the surface of the earth having then not yet cooled down to the present temperature. Mr. H. P. says, the lines of the public surveys, no doubt run on the true or astronomical meridian, vary from the magnetic meridian one degree east for about every twenty years since the surveys were made, and he therefore comes to the most singular conclusion, that the axis of the earth is moving east. If you go aboard a steamer in Liverpool, and find yourself after about twelve days in New York, the conclusion is, New York has moved east towards you, yourself having been stationary. The astronomical meridian never changes, the variations of the magnetic meridian are different at different times, they were for Paris as follows:

Table with 4 columns: Year, Longitude East, Year, Longitude West. Data points: 1580. 11° 30' East, 1814. 22° 34' West, 1618. 8 " " 1816. 22 25 " " 1663. 0 " " 1825. 22 22 " " 1700. 8 10 West, 1828. 22 5 " " 1780. 19 55 " " 1832. 22 3 " " 1805. 22 5 " " 1835. 22 4 " "

It may here be stated, that besides these, the secular variations, there are daily variations, which are for Paris as follows: during the night the needle is nearly stationary, at sunrise the needle commences moving west, till about 5 P. M., when the needle moves back east till 9, 10, or 11 P. M. These variations are greater in summer than in winter, from April to September 13 to 15 minutes, from October till March 5 to 6 minutes, on some days 25 minutes, on others only 5 to 6 minutes. South of the magnetic equator, these variations are in opposite directions, the north pole moves east from morning till 5 P. M.

A. Z. Baltimore, Jan. 30th, 1855.

[Our mind never has been able to receive the internal heat theory of the earth, as affording an explanation of evidences which have been furnished in abundance, of the cold arctic regions being once the abode of elephants, and other animals now belonging to the tropical regions. It has always appeared to us to be irrational; probably the cause will yet be discovered.]

Life Boat Ships.

MESSRS. EDITORS—With reference to an article in the SCIENTIFIC AMERICAN two weeks ago, upon the "Safety of Ships," allow me to correct your rendering of my suggestions for the same, on page 131. It will there be seen that I proposed the adoption of one longitudinal keelson of plate iron, and two transverse bulkheads only of the same. These are all the partitions necessary to divide the hold into six compartments.

Since writing to you first upon this subject, I find that the mover of this improvement for constructing life boat Steamers—Mr. Griffiths—advocates its immediate adoption, in his Nautical Magazine. I am glad to find you, as well as our highest naval authorities, so well agreed upon the importance of embodying this principle in any new legislation by Congress upon this subject.

PRACTICAL OBSERVER. East Broadway, Jan. 28, 1855.