



Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS Issued from the United States Patent Office FOR THE WEEK ENDING SEPTEMBER 13, 1853.

GEAR OF VARIABLE CUT-OFF VALVES FOR STEAM ENGINES—By M. W. Baldwin, of Philadelphia, Pa. I claim the arrangement of the sliding pivot block fitted with a stem, connected with the sector by straps, chains or cogs, the hand lever, and the intermediate connecting mechanism, as described.

INDIA RUBBER SOLES FOR BOOTS AND SHOES—By John Chilcott & Robert Snell, of Brooklyn, N. Y. We claim constructing the whole, or any portion of the sole of a boot or shoe, as described, of india rubber, with the inside and edges covered and protected by leather, which is united with it by any water-proof cement, with or without stitching, and forms a hard, firm, leather edge.

CUTTING BOOTS AND SHOES—By John Chilcott & Robert Snell, of Brooklyn, N. Y. Patented in Belgium Sept. 16, 1852; in France Sept. 17, 1852; in England Sept. 30, 1852: We do not claim the manufacture of boots without crimping; but we claim the form of the piece of leather or other material, as described, by which we are enabled to make what is termed the "upper leather" of a boot, to fit any leg, foot, and heel, not absolutely deformed, of one piece, without crimping or joining other pieces thereto, the distinguishing characteristics of this form being that one half of the boot is formed by a part, A, without joint, and the other half or side by the junction of a part, B, folded from the back of the side, A, and part, C, which is partly cut from, or which when flat lays close or near to the front of A above the instep, and partly folded over from the instep; the part C being of such shape as to form one side of the foot, and extend round the heel to the other side, A, and cover an opening made in the lower part of the back, to give the required form to the heel, and also to make part or all of the necessary stiffening.

BED BOTTOMS—By Pierre Demeure & Auguste Mauritz, of New York City. We claim the manner of constructing the spring mattress by combining the vertical springs with an elastic or spring net-work of spiral metallic springs for supporting said vertical springs, or for increasing the elasticity so that a person lying upon the bed will be equally supported on all sides, as described.

SHAPE OF SCYTHES—By Wm. P. Greenleaf, of Washington, N. H. I claim widening and curving the blade of the scythe at the shank, in the manner described, for the purpose of strengthening the same and adapting it to cutting bushes as well as grass.

SAFETY VALVES FOR STEAM BOILERS—By Z. H. Mann, of Cincinnati, Ohio: I claim the construction and application to a safety valve of flutter wheel, governor, and supplementary lever, as described, or equivalent devices, in order to ensure promptness of action and an increase of vent, according to the force of steam; and this I claim either with or without the adjustable link and counter weight, as described.

REVOLVING MANDREL FOR LINING CYLINDERS WITH METAL—By George Potts, of Cincinnati, Ohio: I claim the revolving mandrel, furnished with one or more rollers, whose distance from the axis of the mandrel can be increased or diminished by means of a nut, sleeve, and conical head, as described, or any equivalent device, for the purpose of lining with one metal the interior of a cylinder formed of another metal.

BUCKING CLOTH—By Andrew Robeson, Jr., of Newport, R. I. Patented in England Nov. 5, 1852: I claim the employment of a closed sizer or vessel, as described, and extracting the bowking liquor from the lower part of it, and forcing it into the upper part of it while steam is being injected only into the upper part of the said vessel, and on the top of the goods, whereby, while the bowking liquor is being thrown on the top of the mass of goods, the steam is constantly and simultaneously made to press upon and pass into and through the goods, and facilitate the action of the bowking liquor, and its pass ge through the cloth, as stated.

[What is the difference between this plan and that of the closed sizers, for clearing Turkey-red goods—the closed vomiting boiler? We can see none.—Ed.]

FENCES—By Hervey S. Ross, of Cincinnati, Ohio: I claim the zig-zag and interlocked arrangement of panel, supported by a single line, and the intervals between the panels being jointed between the two middle panels furnished with inclined hook and eye, each of said middle panels being provided with boards sloping in opposite directions, so that by the action of a flood, each half of the intervening line of panels may separate midway and swing in direction of the current, or devices substantially equivalent.

BOOT JACKS—By Samuel B. Sumner, of Grantville, Mass.: I claim the application to an instrument for taking off boots of the side bars, B, the shaft and the bar, D, arranged and operated in the manner as described.

CUTTER HEAD FOR MOULDING MACHINES—By Josiah M. Smith, of New York City: I claim the combination of the slotted supporting flanges, or their equivalents, with the chisels hinged and operated as set forth.

WORKING THE VALVES OF STEAM ENGINES—By Richard H. Townsena, of New York City: I claim, first, the combination of a cam and eccentric by means of the sector or its equivalent, to operate on the valve or parts that move the same, and cut off or work with the full pressure by the eccentric, according to the position of said sector, as described.

Second, I claim adjusting the position of the sector by means of the governor through the screw, or other suitable means, whereby the governor regulates the position of the sector to communicate the desired motion to the valve of the engine from the eccentric or cam, or both, according to the power required from the engine, as specified.

Third, I claim the rod and points to take motion from the block at its extremes of motion, and communicate the same by means of the right angle lever to the throttle or stop valves, as specified.

MANUFACTURE OF PLAIN AND FIGURED FABRICS—By Frederick W. Norton, of Lasswade, Great Britain: I do not confine or restrict myself to the precise details or arrangements which I have had occasion to describe or refer to, as many variations may be made therefrom, without deviating from the principles or main features of my invention.

I claim, first, the manufacture of woven fabrics by cross-weaving, by carrying the cross warp alternately over a stationary warp, and binding the cross warp on each side of the stationary warp by a shot of filling.

Second, carrying contiguous movable cross-warps over and across each other's path, and over one or more stationary warps, and binding said cross-warps to the stationary warps by shots of filling.

Third, the manufacture of ornamental fabrics by cross-weaving elongated printed warps, as described.

HANGING MILL SAWS—By James Rankin, of Detroit, Mich.: I claim the arrangement of an air chamber, cylinder, and valve, as described, for the purpose of straining saws in motion by the elastic pressure of compressed air, or its equivalent.

SCREW FASTENINGS FOR BOOTS AND SHOES—By John Chilcott & Robert Snell, of Brooklyn, N. Y.: We claim the combination, as described, of two screws, of which one forms a nut for the other, and will hold it secure until it is all worn away.

LAMP LAMPS—By L. A. Stockwell, of Batavia, N. Y.: I claim the combination of a reservoir of a lamp for burning hard or tallow, with an outer covering so arranged as to form an air chamber surrounding the reservoir, in the manner described.

FANCY POWER LOOMS—By William Crompton, of Hartford, Ct. (assignor to Merrill H. Furbush & Geo. Crompton, of Worcester, Mass.) First patented Nov. 25, 1837; extended April 9, 1851; re-issued Sept. 13, 1853: I claim first, the jacks with hooks or projections thereon, capable of being taken on or passed by the lifter and depresser, as required, in combination with the harness or headies, for the purpose of opening the shed.

Second, the combination of the jacks, constructed and arranged as described, with the lifter and depresser.

Third, the combination of the pattern chain or cylinder with the jacks, constructed as described.

Fourth, arranging and connecting the lifter and depresser which operate the jacks in such a manner that they shall operate simultaneously to elevate and depress the jacks and warps in forming the shed, as described.

Fifth, giving motion to the pattern chain or cylinder, as described.

Sixth, the combination of the pattern chain or cylinder with the jacks, lifter, and depresser, as described.

Seventh, so constructing or arranging the lifter and depresser, and the hooks or projections on the jacks, with reference to each other, as set forth, so to bring the upper warps all into the same plane, and the lower warp all into another, when the shed is opened.

I do not claim broadly the bringing of the warps into said planes.

Eighth, connecting the hook jacks to the bottom treadles or levers, by inclined wires or their equivalents, to hold the jacks against the tubes or bars of the pattern cylinder or chain, when not thrown out by the rollers or other projections thereon.

ADDITIONAL IMPROVEMENT. WINNERS AND THRESHERS—By Geo. F. S. Zimmerman, of Charlestown, Va. First patented Feb. 8, 1853: I claim constructing the suction pipe or tube, of any desired form, with a sliding hinged flap bottom, attaching said tube to the side of the thresher or winnower in any position, and also attaching said pipe or tube to the grain discharge or bagging spout, having a sieve-like or reticulated bottom, and using said attachments in combination, for the purpose of cleaning and chaffing, or double winnowing grain of all kinds, with a blowing blast of air and a suction draught or current of wind, also in combination, and in one operation, and at the same time, as set forth.

I do not, however, claim inventing or originating the double cleaning of grain, but simply the peculiar combination mentioned.

[For the Scientific American.] Steam Boiler Explosions—Lieut. Hunt Criticized.

In the "Scientific American" of the 3rd inst., you published an abstract of a paper by E. B. Hunt, U. S. N.; to me the whole article is extremely illogical and "quantitatively" unmeaning. He says that "perfectly deaerated water, with a limited surface, would not boil," &c. This statement hardly needs a contradiction, for perhaps there may not be one in a thousand but knows that as perfectly deaerated water as we can get, boils as readily as any other, and in a vacuum boils at 140 degs. less temperature than in the open air, and under certain circumstances it may be boiled by the application of cold to the out side of the boiler.

Lieut. Hunt makes it essential to an explosion that air bubbles or aerated water be thrown into the boilers, and in his explanation he says the boat stops at the wharf; the "doctor" or pump supplying the water to the engine (a new feature in making steam) being worked by the engine itself, stops the water supply when the engine stops; the water in the boiler then goes on boiling until all the air bubbles are boiled off from the water &c. &c. Again in connection he says, the engineer then starts the engine; this starts the pump, which throws a stream of air charged with water, directly into the glowing fluid. Then comes the terrific consequences &c.

Now Messrs. Editors if this is an explanation, the result must be uniform; it must be infallible, and every steam boiler pursuing the routine described must and will be blown up. That all are not blown up sufficiently, perhaps, overturns this beautiful theory; but I wish to follow it up a little more closely, for I do not think a document can be found among all the absurd theories which have ever been written in explanation of steam boiler explosions that show more ignorance or want of knowledge of the existing arrangements of pumps, doctors, engines, and boilers now in use on our Western rivers of "tragic reputation" than the article quoted.

The doctors upon the Western rivers are small engines (not pumps) for driving the force pumps to supply the boilers, and are separate and distinct from the main engine, and are never started simultaneously with the main engine.—Very often the doctor may not be started at all; this depends entirely upon the will of the engineer; he must either start it before he goes to the other or afterward; if he should start it before, why the explosion would follow at once, if delayed until after the main engine is started, explosions would not follow so uniformly as they now do at the 2nd or 3rd revolution.

Had Lieut. Hunt said the pumps threw a stream of water charged with air, it would have been a much fairer statement of the case, though without any foundation in fact—for the pump never "throws a stream of air charged with water," nor even "a stream of water charged with air."

Taking all the steamboats upon the Western rivers, perhaps 700 in all, few are without doctors, and so few as to be of little moment in the examination of the subject. The average capacity of the forcing pumps will not exceed 150 cubic inches at a single stroke; now then, giving every latitude to Mr. Hunt's premises, what

will be the proportion of air contained in this water? It is less than 4 per cent, or 6 cubic inches; now this is injected into the remotest corners of the water in the boilers, which average, on each boat, about 1,600 gallons, or, in round numbers, 500,000 inches of water against 6 of "air bubbles;" at this rate these air bubbles are agents of tremendous power, and if they could only be controlled, we have nothing to do but squeeze a "Highland bagpipe" into the back end of a boiler, and any amount of power could be created at pleasure.

The worst of this theory is, that not a particle of air is ever pumped into the boiler in the ordinary running; the truth is, that when the water reaches the pump, in all the western boats without exception, by being passed through the heater, it is very nearly at the boiling point, say 210 degs. Every intelligent engineer knows that this expels the air as effectually as if it were under an exhaust pipe.

This subject of explosions has been mystified quite too much: do not let the true fact be obscured by inexperienced writers;—proclaim the truth, that in ninety-nine cases out of every hundred, explosions occur from negligence of the engineer, in letting the water get low in his boilers. Keep up a good supply of water—place a limit to excessive pressures, and employ competent engineers—are rules of more value than all the abstruse theories that can be written. Show me a good supply of water and I will risk the air bubbles. AN ENGINEER.

Telegraph Batteries.

MESSRS. EDITORS—In No. 46, page 363, I noticed a communication under the head of telegraph batteries; I often wished some one more competent than myself, would take this subject in hand, and as it is now started, allow me to make a short statement as far as my experience goes. I have been an operator on a Morse line for the last four years, and should know something about it. For two years I used Grove's battery, but during all this time I often wished for something cheaper and more convenient, taking out each cup and cleaning it every evening, and again putting it in in the morning, is no small trouble. About eighteen months ago I heard of Olmstead's battery, which is merely a modification of Daniells'; it consists of a strong glass cup holding about a quart, into this is placed a cylinder of copper sheeting, then comes a porous cup, and again into this is placed the zinc cylinder. Into the glass vessel is put a strong solution of sulphate of copper, and in the porous cup pure water, some would perhaps add a few drops of sulphuric acid, but this is not necessary, as the acid contained in the sulphate of copper will shortly penetrate the porous cup and action commence. One cup of this battery is nearly equal to one of Grove's, I say nearly, as I do not think it quite so, but the difference is so small that it is of no moment in telegraphing.

The expense of Grove's for a local battery of two cups for one year—

50 lbs. nitric acid at 12 cts. per lb. \$6,25
6 zinc cylinders 25 cts. per piece 1,50

Total \$7,75

Olmstead's, same number of cups, and the same time—

10 lbs. sulphate of copper 10 cts. per lb. \$1,00
2 zinc cylinders 25 cts. 50

Total \$1,50

Balance in favor of Olmstead's, \$6,25

This would make in a main or line battery of thirty cups, a difference of \$93,75, saying nothing about the mercury which can be entirely dispensed with in Olmstead's. Another item is the convenience, there is no taking out the cups every evening and cleaning them, if it is once in operation, all that is necessary is to break the circuit during the night, and it will work for months, merely adding crystals of sulphate of copper when it seems to give way.—Of course the zinc cylinders will have to be cleaned about once a month, and at the same time fresh water placed into the porous cup.—There are no nitrous fumes, and therefore no corrosion at the connections. Perhaps some telegraph operators who are tired of Grove's battery, can benefit by it, and all I have to tell is, try it with a local of two cups, and it will re-

commend itself. The platina of a Grove's will pay for the whole of an Olmstead's. Nazareth, Pa., Sept. 10, 1853- C. G. B.

Inventors—Their Rights and Wrongs.

The "Wall Street Journal," of this city, after some censurable remarks on the management of the Patent Office, says:—

"But there are outside influences injurious to the interests of real men of genius, and tending to perpetuate evils in the Patent Office, by destroying sympathy for the labors in the public mind.—Similar causes have been at work here detrimental to the literary class. We allude to the intrusion of pirates, pretenders, and humbugs into every society organized for the purpose of securing adequate protection by law for property in intellectual labor, whether in literature or mechanism. Call a national convention of inventors or authors, and what is the inevitable result? A brazen and impudent pretender rises with his budget of resolutions, or his speech, at every turn, brimful of humbug and himself, and so sickens off men of merit, that they leave the field to the braggadocio and the little circle who may be deluded by his boasts into toleration or support. The folly, the contemptible silliness, the arrogance of some of these universal humbugs who have figured in literary and inventive associations, must even now be remembered with a smile by the members of these bodies.—We appeal to them if their experience does not recur to some Katerfelto starting from his chair at the first pause after organization, and insisting on reading a bombastic series of resolutions, full of sound and fury, or a constitution of a society in which he hopes to be factotum, so utterly complicated and impracticable as to seem as if concocted during a nightmare. These vain and selfish idiots, their insufferable vanity, and the disgust inspired by their presence, have hitherto prevented any concert of action among inventors to effect any good. The same cause has prevailed among authors; in fact, the literary class is morbid, and but very few are unaffected by inordinate self-conceit, which takes the form either of excessive impudence or excessive shyness."

[The Patent Laws are not yet perfect; there are some reforms required, and these will no doubt be brought about in the way and by the means pointed out by the "Wall Street Journal." The picture drawn in the above of the officious Katerfelto is true to the life. A number of Inventors' Conventions have been held in this city and elsewhere, for the purpose of reforming the Patent Laws, and just such characters have always had too much to say and do with them, hence such conventions resulted in evil instead of good. Honest and worthy inventors have been jostled aside by pirates who pretended to be their friends.]

Manufacturing Gold.

M. Theodore Taffereau has laid a paper before the Academy of Sciences at Paris, in which he asserts that he has produced gold by artificial means. He believes that there are very few simple substances in nature, and considers that "the forty metals now assumed to be such are in reality compound ones, probably of one radical with some unknown body, hitherto not studied, but which of itself alone modifies the properties of this radical, and thus presents us apparently with forty bodies, while in reality there is but one." He asserts that he has discovered this body, by which the radical is converted into gold.

[The above we have seen in a number of our exchanges. Mons. Taffereau is no doubt more rogue than fool. He merely revives the old piece of scoundrelism, by which humbug-chemists cheated so many crowned fools during the middle ages.]

New York Mechanics' Institute.

At the regular monthly meeting, on the 13th inst., James Rodges, Esq., Chairman, and Mr. John Tagliube, Sec'y., it was moved, seconded, and voted, that the Institute now proceed to fill the vacancies in its corps of Officers and Directors, and that the ballots should be cast for each candidate separately; whereupon Charles H. Delevan was elected second Vice-President, C. Godfrey Gunther third Vice-President, and Messrs Charles Burdell, Thomas Hunt, C. H. Hankins, and M. C. Tracy were elected Directors.