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TRIFLES.

There is an entertaining work, with which we have all been familiar in our younger days, wherein a certain tutor expatiates to his pupils on the value of eyes. "Eyes and No Eyes," the story is called, and it is in the volume "Sandford and Merton." The substance of the matter is that one youth (No Eyes) goes gaping about the world, and sees nothing but that which he stumbles over, while the other (Eyes), finds something novel, something pleasing and useful, on every hand.

The world of mechanics, of science, of art, is full of trifles, or matters that seem to be, yet few take note of them. Wise above many is he who does.

We read, in a recent exchange, that "Towers's patent pin is being manufactured in large quantities, and is highly popular." "What is a patent pin?" asks No Eyes; "a pin is a pin, if it has a point, but what is there patentable about that? By the law, a thing that has been in common use for years cannot be protected!" That is true; but, as it happens, Mr. Towers did not patent the pin.

What then? Two little nicks in it, near the point. "And what's the use of two little nicks near the point, I should like to know?" pursues No Eyes.

Simply to prevent it from being drawn out by accident, so that it holds better, does its work more efficiently—in a word, is improved a hundred fold; and Mr. Towers will very likely reap a handsome reward for his idea. Thus "No Eyes" is silenced, and walks away with his hand on his beard and new ideas in his head. He begins to think that, if there is commercial value in two nicks near a pin's point, there must be other wrinkles worth discovering, and he is the man to find them.

Most frequently we are called upon to notice the organization of new companies to work patents on what are sometimes called trifles. They are trifles, but they exercise a most important influence on the world's comfort and economy; otherwise capitalists would not touch them.

It was a small thing to put a copper tip on a shoe; a small thing to put a crease in a bobbin to hold the first end of the yarn; a little matter to make an indentation in the rim of a tobacco box, to serve as a catch; yet each and all of these trifles, we are told, return their lucky owners handsome revenues. In making cut nails, a great difficulty has been to feed the sheet to the shears properly, so as to cut the metal without waste, and many complicated devices have been invented for the purpose. Recently, some wide-awake person discovered that, by cutting the nails with a punch, and skipping one at every stroke, the sheet might be fed straight through, saving an

immense amount of labor; this has been lately patented.

All these inventions are simply the practical illustration of the moral conveyed in the story mentioned at the head of this article. It is "Eyes and No Eyes" over again. Men without means go through the world crying out against their fellows for being rich when they are poor, and declaring that wealth is unequally divided, when some comrade equally poor in point of worldly goods, but with intelligence, energy, perseverance and determination to succeed, puts forth his hand and seizes a prize.

In this country there are abundant sources of wealth for those who wish it, but without eyes how can we see—without the will to succeed how can we hope to?

Some men, having burned their fingers with a patent, shake their heads sagaciously; they wag their beards, saying, "Catch me in that business again!" This is as if a shipwrecked sailor should forswear the main because of misfortune. Perpetual-motion people, water wheels that pump their own water, windmills that manufacture their own wind—because these are worthless so are all and sundry machines akin to them; but good inventions, which serve some purpose, even if it be only to cut a slice of bread straight, are saleable and valuable. "He who runs may read," says the proverb; but he who keeps his eyes open will see many things.

THE "WINOOSKI" AND "ALGONQUIN" TRIAL.

In our last issue we published the report of the "civilian experts" who conducted the unfinished trial between the engines of the *Winooski* and those of the *Algonquin*, and we now propose to inquire, very briefly, what may be learned from that experiment. An impression has been created in the minds of the community that the trial was to determine the comparative economy of working steam expansively and following full stroke; but the trial was not made for this purpose, nor did it incidentally throw any light whatever upon the problem.

Mr. Forbes made a proposal to the Navy Department to supply one of the Government gunboats with engines of peculiar construction, designed by Mr. E. N. Dickerson, and he offered, if this engine developed less power than those in the other gunboats, or developed its power at less economy of coal, to remove it and supply its place with an ordinary Government engine. Mr. Forbes's engine was placed in the gunboat *Algonquin*, and when it was completed the Department assigned the gunboat *Winooski* for comparison, and the questions which the experts who conducted the trial had to determine were, the power developed by the two engines and the cost of this power in coal. The measure of the power it was agreed should be the number of revolutions of the wheels, they being precisely alike and immersed to the same extent.

The problems seem simple enough, but they were not settled by the trial, and would not have been settled if the trial had been completed. All that would have been settled, was the power of the two engines and its cost under the exact conditions in which the engines were run during this trial. The *Algonquin's* engine, with a grate surface in the boiler of only 142 square feet, and cutting off at about one-ninth of the stroke, developed almost as much power as the *Winooski's* engine with 200 feet of grate surface and following four-tenths of the stroke; and this result was due simply to the fact that the *Algonquin's* engine was using steam at 70 pounds pressure, while the steam in the *Winooski's* boiler was at a pressure of only 17 pounds. But suppose that these conditions had been reversed; or suppose that the steam in the *Winooski's* boilers had been raised to 50 pounds pressure, or to 30 pounds, or even to 20 pounds, what would have been the result? No man can tell by any process whatever, except that of trying the experiment. Again, suppose that the steam in the *Algonquin's* engine, instead of being cut off at one-ninth of the stroke, had been cut off at two-ninths, or three-ninths, or four-ninths, what effect would have been produced on the amount of power and its relative cost? A dozen trials might be made with these two engines, and the results reversed at each trial by some change in the conditions of one or both of the engines.

If the attempt is made to draw from this trial any lessons in regard to the comparative economy of high and low measures of expansion, the absence of equality in the conditions is still more fatal. In an experiment for such a purpose a difference of a single pound to the inch in the pressure of the steam would wholly destroy the value of the results; but in this trial the mean pressure in one boiler was 16.8 pounds and in the other 70.79 pounds.

If the two parties to the contract are willing to accept the conditions under which the engines were run as sufficient to settle the questions, then the trial has accomplished the purpose for which it was undertaken, but it is idle to study the results of running two engines under such very different circumstances for any light on the science or art of steam engineering.

THE UNITED STATES AND THE FRENCH "EXPOSITION UNIVERSAL" OF 1867.

The principal motive which induces manufacturers to incur the large expense of transporting their articles to popular fairs and exhibitions, is, that the qualities of their wares may be more widely known, and thus a larger sale may be obtained. The fairs are great advertising agencies, and to this fact they owe their success. The trade between this country and Europe consists mainly in the export of cotton, tobacco, grain, petroleum, provisions, and other raw materials, and the import of innumerable manufactured articles in return. Our manufactures are almost exclusively for the domestic market, or for export to South America and the Indies. Consequently, European manufacturers, who are eagerly competing for our market, have an interest in presenting their wares at our exhibitions, while most of our manufacturers have no interest in sending their products for exhibition at European fairs. In consequence of this controlling element, the United States have made a sorry appearance at the international exhibitions of London and Paris. The English or French manufacturer of cassimere, or calico, or porcelain, may obtain an advantage over his competitors by sending samples of his goods to the exhibitions, but no individual grower of wheat, or cotton, or tobacco, is likely to have the demand for his products increased by displaying samples at these fairs. Our manufacturers of clocks, of porcelain teeth, and of a few other articles, find a demand for their wares in France, and they will probably send specimens of their work to the exhibition, but the great mass of our manufacturers and producers have no inducement to incur this expense.

We are indebted to the Hon. William H. Seward, Secretary of State of the United States, for a pamphlet containing a map of the "Exposition Universal for 1867," with the official correspondence in relation to it. From this it appears that the exhibition is to open on the 1st of April, 1867, and to close on the 31st of October, of the same year; all applications for admission, with a description of the articles to be exhibited, must be presented before the 31st of October, 1865; the expense of packing and transporting the articles must be borne by the exhibitors; if on the receipt of any article the exhibitor, or his agent, is not on hand to take charge of it, the carrier will be required to take it away immediately; goods will be admitted into the exhibition from January 15, 1867, to March 10, 1867, inclusive; the removal of all goods, after the close of the exhibition, must be completed before the 30th of November, 1867; all communications by exhibitors from this country should be addressed to N. M. Beckwith, Esq., care United States Legation, Paris, France. The space allotted to United States exhibitors is 2,788 square meters—about equal to an area of 100 by 300 feet.

Unless the time for making application for admission is extended beyond the close of the present month, certainly no considerable number of articles can be expected from this country. The exhibition has been mentioned to a very limited extent in our papers, and probably not one in ten thousand of our people has yet heard that such a fair is to be held in the summer of 1867. It would require extensive advertising, and probably an appropriation of money by Congress for paying the freight on articles, to fill even a quarter of the space which has been assigned to this country, but if all exhibitors must make their

applications before the close of the present month, the managers may reduce the space allotted to us from 2,788 square meters to 88, as that will be amply sufficient.

Since writing the above we have received a letter from the Secretary of State, in which he informs us that Mr. Bigelow, our Minister at Paris, has been instructed to ask for an extension of time of filing the applications of exhibitors residing in the United States. If this application is successful some competent person will, doubtless, be selected to take charge of the business in this city.



ISSUED FOR THE UNITED STATES PATENT-OFFICE
FOR THE WEEK ENDING OCTOBER 3, 1865.
Reported Officially for the Scientific American.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

50,214.—Bit Stock.—Charles H. Amidon, Greenfield, Mass.:

I claim the combination of the movable screw socket, A, jaws, B, and sleeve, C, with a bit stock, when constructed and operating substantially as described.

50,215.—Loom.—R. W. Andrews, Staffordville, Conn.:

I claim the arrangement of one or more elastic friction plates, or their equivalents, with the shuttle boxes of looms, in such a manner with relation to the picker staffs or picker blocks of said looms as to produce the within-described desirable results, and in substantially the manner herein set forth.

50,216.—Stove Damper.—George Asmus, Portage, Mich.:

As a new article of manufacture, I claim the hinged damper and slip weight, adjustable on the bar, C, in combination with the inclined face of the draught channel, A, of a heat generator, constructed and operating substantially as and for the purpose set forth.

Also, the curve, a, in the bar, C, in combination with the weight, D, hinged damper, B, and draught channel, A, constructed and operating substantially as and for the purpose described.

[This invention consists in the arrangement of a hinged damper and slip weight, in combination with the inclined face of the draught pole of a heat generator, in such a manner that the draught of the air rushing into the fire-place of the heat generator has a tendency to close said hinged chamber, whereas the gravity of the damper, combined with the slip weight, has a tendency to keep the same open, and that by adjusting the position of said slip weight the quantity of air admitted to the fire-place can be regulated at pleasure.]

50,217.—Cultivator.—Andrew Bouton, Napa, Cal.:

I claim the right and left cultivators, A, supported by the castor wheels, B, and adjustable wheels, C, and connected by transverse bars, G, all arranged substantially as and for the purpose herein set forth.

[This invention relates to a new and improved cultivator, designed more especially for cultivating the earth in orchards in California, where the trees branch out quite close to the ground, and preclude the plow being used near the trunks of the trees.]

50,218.—Valve Gear for Steam Engines.—Adam S. Cameron, New York City:

I claim the valve chamber, H, and valves, I, in the heads of the main cylinder, A, in combination with the supplementary cylinders, E, E', and E'', and slide valves, C, constructed and operating substantially as and for the purpose described.

50,219.—Globe Valve.—William Chesley, Cincinnati, Ohio:

I claim a globe valve, the part of whose stem below the stuffing chamber is smooth, to fit the correspondingly smooth interior of the tube, and the portion of whose stem above the stuffing chamber is partly screw threaded and partly smooth, so as to co-operate with the interiorly screw-threaded cap of the stuffing box, in the manner explained.

50,220.—Mode of Revivifying Loam Luting.—John Chilcott, Brooklyn, N. Y. Antedated Sept. 22, 1865:

I claim the revivification of spent loam luting by the addition of fresh loam, substantially as herein specified.

50,221.—Setting Steam Boilers.—John Chilcott, Brooklyn, N. Y. Antedated Sept. 18, 1865:

First, I claim the arrangement of water and steam tubes, A, A1, A2, A3, partitions, E, F, F1, F2, F3, and flues, D, D1, G, G1, G2, substantially as herein specified, whereby a horizontal and a vertical circulation of the gases or combustion between the tubes is provided for.

Second, Providing in the top side and back of the outside setting of a boiler a continuous system of flues, I, I1 and J, J1, whereby the gaseous products of combustion are caused to circulate many times back and forth through the setting, substantially as herein specified.

50,222.—Process for Tanning.—Orson A. Coe, Charleston, Ohio:

First, I claim the first solution herein described, and composed of the ingredients described under No. 1, and employed for tanning skins with the wool, hair or fur on.

Second, The combination of the first and second solutions, made and used substantially as and for the purpose specified.

Third, The combination of the first, second and third solutions, all made and used substantially as and for the purpose described.

[This invention relates to a process which is equally applicable to tanning light skins with wool, hair or fur on, or to tanning hides or skins for leather.]

50,223.—Saw Mill.—A. P. Conant, Smithland, Ky.:

I claim the vertical adjustable revolving head, E, provided with guide rods, F, and screw spindle, G, in combination with dogs, F', and with the head block, A, of a sewing machine, constructed and operating substantially as and for the purpose set forth.

This invention consists in the arrangement of two dogs, which

are adjustable according to the width or thickness of the log to be clamped between them, and which are guided by rods secured in the end of a swinging head, which can be raised or lowered on a standard rising from the head block, and which also allows of being turned in a horizontal plane in such a manner that by raising and lowering the head the position of the dogs can be readily adjusted to suit the diameters of different saws, or the size and shape of different logs or pieces to be sawed, and by turning said head the dogs can be swung back out of the way, or forward in their working position, and the operation of adjusting the log in the proper position for sawing is greatly facilitated.]

50,224.—Revolving Fire-arm.—Silas Crispin, New York City:

I claim the application to a revolver, having its barrel swinging from the frame by a hinge joint, of a transversely divided cylinder, when one section thereof is connected to the swinging barrel, and the other section to the stock or frame, each being retained by its own section of the center pin, in the manner shown and described.

50,225.—Sewine Machine for Making Ruffled Fabrics.—C. O. Crosby, New Haven, Conn.:

First, I claim the combination of the check and carrier for the second thread, substantially as and for the purpose specified.

Second, The combination of the check and carrier for the second thread with a sewing mechanism, substantially as and for the purpose set forth.

Third, The combination of the carrier for the second thread, feeding mechanism and clamp, substantially as and for the purpose described.

50,226.—Construction of Sheet-metal Boxes.—Daniel Croak, Milwaukee, Wis.:

I claim the constructing of sheet-metal boxes or cans with a seam composed of lips or projections and notches at the ends of the plate forming the body of the box or can, and also with slots, in order to form a locked joint, substantially as shown and described.

[This invention relates to a new and improved mode of constructing sheet-metal boxes or cans, and it consists in a novel manner of forming the seam.]

50,227.—Picker for Looms.—Benjamin F. Day and Chas. H. Nelson, Biddeford, Me.:

We claim the box constructed as described and represented, having a means of attachment to the picker staff, an opening in its face to permit the nose of the shuttle to strike the contained disks, and an opening, c, at the top for the ready insertion and retraction of the cushion disks, as may be required.

[It is common to protect the picker against the blow which it receives from the nose of the shuttle by means of cushions of leather, rubber or hide, the different layers being secured to each other and to the picker staff by bolts or bands. One of the defects of these cushions is their liability to split and be torn apart by the violent blows it gives to and receives from the shuttle, making it necessary to stop the loom to replace it with a new picker, thereby incurring a loss both of time and money. This improvement consists in using a metallic box, of any suitable form, to receive the leather or other substance composing the cushion of the picker.]

50,228.—Apparatus for Tanning.—Charles R. Dean, Randolph, N. Y.:

I claim the construction of a hollow cylinder, or its equivalent, with slots, or their equivalent, and compartments, and the applications thereof, in the process of tanning, substantially as above described.

50,229.—Cultivator.—Isaac Dunham, Lanesfield, Kansas:

I claim the arrangement and combination of the several parts, substantially as described, in their relation to the frame and running gear, whereby the machine is adapted to the different kinds of work, as explained.

50,230.—Spinning Jack.—Ezra Dews, South Britain, Conn.:

I claim the longitudinally sliding rod, A, connected to the cam lever, B, d, in combination with the belt shifter, k, and catch, l, operated by the faller or coping wire of a spinning jack, substantially as and for the purpose set forth.

50,231.—Cook Stove.—Albert S. Dunham, Taunton, Mass.:

First, I claim the construction of the air chambers, and placing them at each side and at the top of the fire box, to draw in the pure air to be heated and conveyed into the oven or through between the plates of the oven doors, as herein described, for the purposes set forth.

Second, I claim the arrangement of the air chambers, flues and dampers, whereby the atmospheric air can be heated and circulated without becoming impregnated with the gases from the fuel, to facilitate baking in cook stoves, as herein described.

50,232.—Many-barreled Fire-arm.—William H. Elliot, Iliou, N. Y.:

First, In a many-barreled arm, in which a separate firing point or pin is employed for each chamber, I claim so constructing and operating said pins in relation to the hammer that only one of them will be driving forward at a time, as herein shown.

Second, The combination of the cam and firing pins, for the purpose of throwing one or the other of said pins before the hammer, as herein set forth.

Third, The angular pin, n, in combination with the reflecting surfaces, n', for the purpose herein set forth.

50,233.—Lubricator.—J. H. Ferguson, Springfield, Mass.:

First, I claim the lateral passage, a, and its triangular groove in the valve plug, and the vertical passage, g, in the bottom of the plug, in combination with the screw thread, by means of which the plug is adjusted, substantially as above described.

Second, I also claim the finger, G, arranged with and projecting downward below the plug, D, constructed and operating substantially as above described.

[One of the objects of this invention is to apply oil to bearing surfaces continuously, and not intermittently at long intervals, according to the usual mode—experiments by Morin having demonstrated that the friction is about 28 per cent less when such surfaces are lubricated by a continuous flow than when they are lubricated from time to time, and that less oil is used, because there is less opportunity for wastefulness. Another object is to be able to adjust the lubricator and supply it while the machinery it is attached to is in motion.]

50,234.—Washing Machine.—Benj. S. Fletcher, Cornish Flat, N. H.:

I claim the movable slotted blocks, a, a, a, the screws, B, B, B, and the set screw, C, constructed, combined and arranged substantially as described, for the purposes specified.

50,235.—Fire Plug.—Jacob Fricker, Cincinnati, Ohio:

I claim as new and of my invention the reversible plug, B, provided with a waste way, C, in the described combination with the dip hole, D, and stops, G, G, or devices substantially equivalent, for the purposes described.

50,236.—Wooden-soled Boot and Shoe.—James Fulton, Zanesville, Ohio:

First, I claim an improvement in the manufacture of boots and shoes having a double sole, that is to say, an inner and an outer wooden sole, by combining the wooden sole with a double flexible shank joined to the outer and inner parts of the wooden sole at one end, and at the other to the outer and inner parts of the heel, or as the manufacturer may prefer having the inner thickness of the shank extended so far back as to make an inner heel or heel-piece, admitting the edge of the upper of the boot or shoe to be fastened between the inner and outer soles, and between the inner and outer shank and the inner and outer heel or heel-piece, substantially as hereinbefore described.

Second, The combination of the flexible shank with the double wooden soles, substantially as herein described.

[This invention consists in the combination of a double wooden sole—that is to say, an inner and outer wooden sole—with a double flexible shank joined to the inner and outer parts of the sole at one end, and at the other end to the outer heel and the inner heel or heel-piece, or having the inner thickness of the shank extended so far back as to make an inner heel or heel-piece, and having the upper of the boot or shoe fastened between the inner and outer sole, between the inner and outer thickness of the shank, and between the outer heel and inner heel or heel-piece.]

50,237.—Composition for Removing Incrustation from Boilers.—John G. Gansz and Jacob J. Savo, St. Louis, Mo.:

We claim a chemical compound for removing incrustation on boilers, which compound is composed of the ingredients mentioned in the foregoing specification, united and mixed together in the proportions specified, or their equivalents.

50,238.—Rendering Casks Oil-proof.—Smith Gardner, New York City. Antedated Sept. 23, 1865:

I claim rendering casks impervious to spirits of turpentine, petroleum, and like substances, by impregnating them with sulphate of iron and muriate of lime, as aforesaid, and for the purposes herein set forth.

50,239.—Combined Shutter Hinge and Fastening.—Wessell S. Gerard, Newburgh, N. Y.:

I claim the catch or fastening, B, when fitted within a socket, d, and applied to a shutter hinge, substantially in the manner herein shown and described.

[This invention consists in combining a fastening with a shutter hinge in such a manner that the shutter when thrown open will be secured in an open state, and the fastening be capable of being readily adjusted so as to release the shutter and admit of its being closed.]

50,240.—Bobbin Holder for Spinning.—John Goulding, Worcester, Mass.:

I claim the device herein described for holding bobbins upon spindles, the same consisting of two or more centrally bulging springs, secured, as described and shown, into a seat or base fitting the spindle.

50,241.—Bobbin Holder for Spinning.—John Goulding, Worcester, Mass.:

I claim the combination with the spindle, A, of the bobbin holder, C, when constructed with a long tube or spring, c, which serves as the only support to the bobbin holder, as set forth.

50,242.—Pantalons.—B. J. Greeley, New York City:

I claim forming the fronts and also the backs of pantaloons with laps, as shown and holding them in place by means of elastic straps, substantially as shown.

[This invention in pantaloons is applicable also to drawers for men, women and children, and it consists in a novel way of uniting them at the place of the seam or opening in front, whereby buttons and hooks and eyes are dispensed with, the front part of the body being made with an inner and outer lapel, the outer one of which folds over the inner one, both being drawn out to and kept in their proper positions by means of elastic straps made fast to the band at opposite sides, the strap which holds the inside lapel being attached to the inside of the band, and the other strap to the outside.]

50,243.—Railroad Rail.—Alexander Hamill, Sr., and Robert J. B. Hamill, Baltimore, Md.:

I claim the arrangement and combination of the tenons, B, and keys, D, with the rails, as herein described, for the purpose of fastening the rails, more permanently and securely to the cross-ties, and dispensing with the use of spikes.

50,244.—Device for Extracting Stumps.—E. C. Hase-rick, Lake Village, N. H.:

I claim the application to a carriage mounted truck of a hydraulic apparatus, constructed and arranged as described, with a water tank and a lifting frame, or its equivalent, for the purpose of raising heavy bodies, extracting stumps, etc., and transporting the same when desired, substantially as set forth.

I further claim the screw jacks, D, when arranged and applied to the axles, in the manner substantially as and for the purpose herein specified.

50,245.—Script Printing Type.—H. J. Hewitt, Brooklyn, N. Y.:

I claim reducing or forming the body of script printing type so as to make the extending letters with a kern to project over the body of the type and between the extended letters of the lines next above and below, substantially as and for the purpose described.

50,246.—Corn Planter.—A. F. Hines, Washington, D. C.:

I claim the slide valve, q, rod, i, spring, x, in combination with valve, m, plates, N and O, spout or seed duct, S, groove, y, and frames, H, in valve, m.

I also claim rubber or spring, a, rod, F, in combination with lever, E, and the inner ring of wheels, C, provided with pins, d, d, to operate on the lever.

I also claim the arrangement of two or more shelves in hopper, said shelves slanting upward that the corn or other seed in hopper, at the least motion of the machine, will fall off into the bottom of the hopper, the whole constructed and operated in the manner and for the purposes herein set forth.

50,247.—Roller-crushing Machine.—Alonzo Hitchcock, New York City. Antedated Sept. 23, 1865:

I claim the construction of the rollers in reversible half-lengths or sections, substantially in the manner described.

50,248.—Brakes for Carts.—Henry Holcroft and C. S. Smith, Media, Pa.

First, We claim as new, and desire to secure by Letters Patent, the liberation of the cart body from the hills or shafts, by the same arrangement and at the same time the brakes are put into action, as above described, or an equivalent arrangement of the same.

Second, We claim the pieces, B, supported by the shaft, f, and chains, o, as and for the above-described purpose.

50,249.—Caster for Furniture.—P. B. Holmes, New York City:

I claim the combination with the roller horn of a caster of the plate, c, with its hollow shaft or bushing, f, as a center or bearing, for the horn to turn upon, substantially as herein described and for the purpose specified.

[This invention has for its object the formation and construction of a caster, to be used for furniture more especially, in such a manner that the strength of the legs will not, in the least degree, be weakened thereby, while, at the same time, they can be securely fastened with the horn of the caster, free to swing, the advantages of which are obvious.]

50,250.—Apparatus for Carbureting Air.—J. H. Irwin, Chicago, Ill.:

I claim the application of heated air to a carbureting apparatus, when arranged within an inclosing case, substantially as and for the purposes specified and shown.

50,251.—Apparatus for Carbureting Air.—J. H. Irwin, Chicago, Ill.:

I claim, First, in combination with a carbureting apparatus, arranged with respect to the burners which it supplies with gas, substantially as herein described, any mechanical device so arranged as to force a current of air into said carbureter, substantially in the manner set forth.

Second, A carbureting apparatus and a mechanical device for forcing a current of air into the same, when so constructed and combined that the carbureting apparatus will generate gas and supply the burners when the mechanical device is not in operation.

50,252.—Last.—George Marshall, Brooklyn, N. Y.:

I claim a cast-iron last, made with a sole, A, socket, B, and strengthened rib, C, substantially as herein described.