

THE POLYTECHNIC ASSOCIATION OF THE AMERICAN INSTITUTE.

[Reported for the Scientific American.]

The usual weekly meeting of the Polytechnic Association of the American Institute was held, at their room, in the Cooper Building, this city, on Wednesday evening, March 6, 1861, Professor Mason in the chair.

PLAN OF OPERATIONS.

Mr. LAWTON extended an invitation to members to cooperate with the Farmers' Club of the American Institute, not only by meeting with them, but by discussing here scientific questions relating to agriculture.

Mr. VEDDER said that the fundamental question of growth would be an interesting subject of discussion.

The PRESIDENT took occasion to allude to the improving prospects of the American Institute with regard to the practical accomplishment of scientific work. The proceedings of this Association were now reported, and 200,000 impressions circulated every week. These reports were copied from the SCIENTIFIC AMERICAN into more than a hundred country papers each week. And he believed that the American Institute would before long have a permanent home, with a laboratory devoted to scientific investigation. He was confident that men of wealth would be glad to sustain permanently in such a laboratory the best investigator that could be found. We might hope, therefore, to obtain new light upon fundamental questions which yet remain unanswered as they were in the days of Newton and of the elder Bacon, the questions of vital force, and the beginning of the encroachment of vitality upon the regions of purely elementary matter, what are its laws, and how they operate.

ELECTRIC TELEGRAPH.

The Association proceeded to the consideration of the "Electric Telegraph and Telegraphing Apparatus."

Mr. DIBBEN said that in the first employment of telegraphing apparatus the spark was used. The first experiments were generally made by Germans. The next step was the discovery that a current of electricity would deflect the magnetic needle; and this was applied to the transmission of messages, and is the basis now of the English system of telegraphing. About the year 1826, Mr. Harrison Gray Dyer, of Long Island, used a registering apparatus, which produced a chemical effect from the spark upon prepared paper, somewhat similar to the plan Bain used afterward. Cook and Wheatstone invented an apparatus, in which they used a double-line alphabet, making the alphabet much more brief by its combinations, and also a temporary and a permanent magnet somewhat resembling the plan of Mr. Holcomb. After that came the electro-magnetic telegraph, invented by Professor Morse, or, as others say, by Professor Henry, or perhaps by some other person. At any rate Professor Morse made the first practical instrument, and being aided by the government in trying the experiment, that experiment was the beginning of practically sending messages by the electric telegraph. Then came the House telegraph, using a type-wheel, printing the message in common type, instead of using the Morse alphabet of dots and strokes. The American system of telegraphing has been far in advance of that of any other country; one reason for which is the fact that wires are elevated more, and thus the prime current is not induced to leave the wire so rapidly. The Atlantic telegraph should theoretically have worked; but the gutta-percha insulation was so defective that the prime current soon found its way to the iron wires, and thus the insulation was destroyed. There are two theories of electricity; the first, that of Ampère and others, that the elementary molecules of matter possess inherent in their substances and inseparable from them, quantities of electric fluid. Those substances that possess negative electricity, such as oxygen and chlorine, are called electro-negatives, and have in practice a tendency to appear at the positive pole of the battery in electrical decomposition. The metals, and hydrogen, are electro-positives. The other theory accounts for all the phenomena of electricity by physical action, by a certain force set free during chemical action. When we decompose zinc, we set free a positive energy that before was the combining force holding the particles of zinc together in their peculiar position. This force is not a fluid passing through the conducting wire, but acts upon the first particle of matter, that acting upon the second, that

upon the third, and so on through. Mr. Holcomb's method uses a permanent as well as a temporary magnet. Assuming the power of the electro-magnet to be two, and of the permanent magnet to be four, it would seem that the power of the two combined should be six; but instead of that we find it to be sixteen. It would seem from Faraday's law, that the decomposition of a certain amount of zinc will generate a certain force, that with the combination there should be a greater consumption of zinc; but while he had, by trying it over and over again, ascertained beyond all possible doubt, that the power was thus increased, he had been unable to determine whether there was really any more zinc used.

Mr. JOHNSON stated that by placing a galvanometer between the battery and the magnet, it appeared that the magnet did not act upon the battery at all.

Mr. DIBBEN said that it might be that the resistance at the end was overcome, and that there was a faster current although no stronger. He could not conceive of any other rational explanation of the increased power than an increased consumption of the zinc.

Mr. HOLCOMB exhibited specimens of chemical electro-magnet printing, a mode which has now nearly gone out of use. As the time required for the printing is less than that required for manipulation, perforated paper is used to complete and break the circuit, the paper being prepared by operators, and passed rapidly through the instrument. He had devised a new method of preparing chemical paper, by freeing it from glutinous matter and then wetting it with a solution of the nitrate of silver, which is much more sensitive than the prussiate of potash. The impression is fixed by dipping the paper into the iodide of potassium, which changes the nitrate of silver into an iodide of silver. As to his invention, now before the Committee, he had been for some time very doubtful of the fact of the increase of power, for the reason that there were no known laws to account for it. The nearest experiment made by others, was that of Prof. Faraday, of placing a permanent magnet in a coil, and endeavoring to ascertain whether it produced any effect upon the current. Prof. Faraday thought it did not.

Mr. JOHNSON said that it was Oersted who discovered that when a needle was brought into proximity to the wire, it was deflected to the east or west, depending upon its position above or below the wire. Ampère afterwards increased the number of turns and made it available as a multiplier. He proceeded to give an account of experiments in telegraphing which he had made in 1837. He had put up a wire, three miles in length, in a yard, crossing back and forth, and found that a single drop of acid would act through the wire, the entire amount of the wire being uninsulated. It had previously been supposed to be necessary to wind it. He had tried various methods of recording, by sand, by iron filings, and by ink.

The PRESIDENT remarked that the Chinese claim to have used the magnetic needle as a means of guiding their wagons long before they had any roads. It seemed remarkable that a power so long known had never been made available for any other purpose, excepting to find a protection against it in lightning rods, than as a means of carrying messages.

Mr. BLISS suggested that it was used medicinally.

The PRESIDENT replied that it had not secured the assent of the medical profession.

Mr. JOHNSON said that electro-metallurgy was now taking a very wide range in the arts.

Mr. ROWELL stated that over 400 perfect messages were transmitted through the Atlantic telegraph cable, after it was laid. The failure was in consequence of the defective state of the wire when it was laid. Twenty miles of it were cut out; but they did not cut out enough. He had been assured by the book-keeper of Mr. Cyrus W. Field that the 400 messages referred to had been testified to under oath.

Mr. HOLCOMB said that the great difficulties in telegraphing were the adjustment of the relay magnets; and the interference of other powers beside that of the battery, as electricity from other sources. If some means could be devised to discharge the induced electricity, or opposite electricity, from the outer coating of the wire, it would very much facilitate telegraphing. These difficulties are so great and so variable that it is impracticable to work with repeaters. For very long distances, it was found to be necessary for some person to be continually adjusting the relay

magnets; and the result had been that the repeaters had been laid aside, and the messages were now repeated with the fingers.

Mr. VEDDER suggested that if the action of the current is vibratory, it would require liberty of the wire; and there might therefore be an advantage of passing the wire loosely through insulating tubes at the poles.

NEW STEAM BRAKE.

Dr. VAN DER WEYDE, in behalf of the inventor, exhibited drawings of a brake for car-wheels, to be operated by steam from the locomotive, and capable of stopping the train within a distance of 60 feet. Dr. V. remarked that, without having investigated it, he should think it dangerous to apply such a brake. The inventor proposes to use the steam also to warm the cars. He also adds a hook to the locomotive, so that the engineer can hook on cars or release them at will. He asked for a committee to investigate his inventions.

Mr. DIBBEN said that a train moving at the rate of 40 miles an hour could not be stopped within 60 feet. The Creamer brake, operating by a spring, was effective in stopping the train as quickly as was compatible with safety.

The PRESIDENT said that stopping a train moving 40 miles an hour within 300 feet, was as much as could be borne without the destruction of the train itself. This had been ascertained by experiment upon the Hudson River Railroad.

Mr. DIBBEN said that this corresponded with the experience of other countries.

Mr. VEDDER would rather run the risk of stopping the train a little more suddenly than to have a collision, or to have the train plunged into the Hudson river; and moved that a committee be appointed.

The PRESIDENT appointed Messrs. Vedder, Seely and Rowell.

NEW SUBJECTS.

The subject of the "Electric Telegraph" was continued for another evening; and it is expected that the microscopical examination of cotton and other fibers will be taken up during the miscellaneous business.

The following subjects were proposed for future consideration:—

"The Manufacture and Refining of Steel," by Mr. Bliss.

"The Relation of Climate to Invention, and the Applications of Inventions," by Prof. Mason.

"Spontaneous Movements among Unorganized Bodies," by Prof. Mason.

"The Unity of the Human Family," by Mr. Nash.

"The Appropriate Place for the Several Metals and Minerals in the Geological Series," by Mr. Nash.

"The Variety of Food Desirable for the Human Race in Different Climates, and its Effects upon the Physical and Mental Condition," by Messrs. Vedder and Nash.

"The Effects of Alcohol upon the System in Large or Small Quantities," by Mr. Lawton.

On motion, the meeting adjourned until half-past seven o'clock on Thursday evening the 14th inst.

GIVE THE CHILDREN FRESH AIR.—Some parents make the great mistake of keeping their children in-doors during cold weather. Such a practice is pernicious in many respects. It enfeebles the bodies of children, and renders them peculiarly liable to be attacked by colds and coughs. A child should have its feet well shod with socks and boots, its body well wrapped in warm clothing, its head and ears securely protected from the cold, and then be let loose to play in the keen, bracing, winter air. By this means its body will become robust, and its spirits be kept bright and cheerful; whereas, if a child be shut up in the house, it will become fretful and feverish, and perhaps wind up with a severe attack of illness. The coroners' inquests in London daily show that every week, in that city, children are suffocated in bed, or under the shawls of mothers. They die, as the coroner is constantly stating, in consequence of inhaling their own breath, which is a compound of carbonic acid gas. They are, in fact, in the same situation as a person who is locked up in a room which is full of the fumes of charcoal. The children are gradually overpowered by the deleterious atmosphere, and die without a struggle, it being thought that they were in a sound sleep.

The average duration of human life in Paris is 28 years; in all France it is 36 years.

Recent American Inventions.

The following inventions are among the most useful improvements lately patented:—

BRUSH.

This invention refers to an improvement in the construction of round, square or oval brushes, where the tuft of bristles is secured around the end of a stick or handle, the object of which improvement is to more firmly secure the bristles or brush part to the handle than hitherto, by the employment of a flanged cap which is screwed on the handle over the head of the brush and imbedded into the cemented bristles. This invention is patented by Daniel Fleming, of Brooklyn, N. Y.

CALENDAR CLOCK.

This invention consists in the arrangement of a compound dial, in combination with an ordinary clock, said compound dial being composed of an ordinary clock dial, provided with suitable apertures and surrounded by a circle having the figures, from 1 to 31, marked on it at regular intervals, and provided with two additional movable dials, one of which is marked with the names of the week days and the other with the names of the months, and each dial being made to rotate independent of the other around the common center of the common dial in such a manner that one hand attached to the central arbor of the clock movement indicates the days of the week and the date or the day of the month, and that, at the end of each month, the required change can easily be effected by shifting said hand and also the dials in order to bring the name of the next succeeding month, and the name of the proper day of the week, before the respective apertures in the face of the clock. The credit of this contrivance is due to G. Maranville, Hampton Corners, N. Y.

STEAM BOILER.

This invention consists in a detachable fire box, constructed and applied in combination with the body of the boiler, in a manner to obtain a portable boiler which may be made of large capacity, is easily set, is little liable to get out of repair and is a very effective steam operator. John Porter, of Jefferson, Texas, is the patentee of this invention.

DRAWER.

This invention relates to an improvement in drawers for the use of grocers and other merchants whose stock is weighty and kept in quite large receptacles. The object of the invention is to supersede the ordinary bins and barrels by obtaining the capacity of the latter with a greater ease of adjustment than the ordinary drawer, and the enabling of the invention to be placed one over the other in rows, so as to economize in space. The invention consists in having the drawer placed on a crosspiece, in such a way that it may be tilted thereon, and its contents rendered accessible, instead of being drawn out bodily as hitherto. This device was patented by S. B. Schultz of Princeton, Ill.

IMPROVEMENT IN JOINTS OF TELEGRAPH CABLES.

Much difficulty has been hitherto experienced in making perfectly insulated joints in the gutta-percha insulated telegraph wires or cables employed as submerged conductors at the crossings of rivers and other waters. The method generally adopted of making the joints has been to strip off the gutta-percha covering from the terminal portions of the conducting wire or wires, taper off the said covering for some distance from the stripped portions, and after twisting the uncovered portions of the wire or wires together, to cover the connection thus formed with gutta-percha, by warming a lump of the latter sufficiently to make it plastic and adhesive, and working it round the connection with the hand. By that method, however, it is difficult to make the gutta-percha covering free from crevices, and, in many cases, when the insulation of the joint appears perfect, it will prove not to be so a short time after it has been submerged. This invention consists in enveloping the connection formed as above described, with a wrapper of sheet gutta-percha or india-rubber, or of cloth coated with either of those substances, having one or both surfaces covered with a cement composed of said substances reduced to a plastic state with naphtha or other solvent, such wrapper being applied by rolling it around the connection. The patentee of this invention is J. N. Power, of New York City.



ISSUED FROM THE UNITED STATES PATENT OFFICE
FOR THE WEEK ENDING MARCH 5, 1861.

Reported Officially for the Scientific American.

*** Pamphlets giving full particulars of the mode of applying for patents, under the new law which went into force March 4, 1861, 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.

580.—Clark Alvord, of Westford, Wis., for an Improvement in Binding Attachment to Harvesters:

I claim, first, The reciprocating gavel carrier, A, constructed and operating as described for the purposes set forth.

Second, I claim the combined pressers, D and E, constructed and operating as described and for the purposes set forth.

Third, I claim the combination of the reciprocating gavel carrier, A, with the pressing apparatus, D and E, at both ends of the machine or at but one end, as set forth.

581.—Wm. W. Austin and F. Creasy, of Carrollton, Mo., for an Improvement in Hemp Breaks:

We claim the above-mentioned arrangement of the swords or splitters, h, h, and breaking slats, g, g, upon the cylinder, G, for the purposes shown and described.

[This invention has for its object the preparing of hemp or flax without rotting, and to separate the liquous matter from the fibers in a more rapid and better manner than can be done with breaking machines now in use. It consists in so arranging on a rotary cylinder a suitable number of swords or knives and breaking slats that half their length will be brought to act upon the stalks alternately, thus equalizing to a greater degree the movement of the cylinder, and consequently lessening the power required to drive the machine than if the slats and swords run continuously from end to end of the cylinder.]

582.—Wm. R. Axe, of Beloit, Wis., for an Improved Mop-holder:

I claim, first, Confining the cloth on a needle bar, c, formed on one of the jaws, a, in combination with an interlocking jaw, b, the whole constructed and operating substantially as described.

Second, I claim adjusting and securing the jaws, a and b, in their proper relative positions with each other and the handle by means of a single screw, B, in combination with the concave recesses, 1 and 2, and correspondingly convex shanks, the whole constructed and operating as described.

583.—Benjamin Best, of Dayton, Ohio, for a Composition to Prevent the Premature Decay of Trees, Wires, &c.:

I claim the compound mixture of the above materials and its application and use to and for trees, vines and other growing vegetation.

584.—Cyrus Chambers, Jr., of Philadelphia, Pa., for an Improvement in Machines for Folding, Pasting and Cutting Paper:

I claim, first, The combination of the arms, L and M and N, lever, O, pawl, P, arm, Q, and treadle, R, or equivalent mechanism, for the purpose of arresting the motion of the pasteur wheel to prevent its coming in contact with the paper when this is not properly placed on the machine, as described.

Second, So connecting the pasteur wheel with the first folding knife that both can be simultaneously arrested by the same mechanism, substantially as specified.

Third, Trimming off the heads or edges of pamphlets or signatures during the process of folding, substantially as set forth.

Fourth, So regulating the position of the cutters by means of the stop that both may be simultaneously adjusted to sheets of different sizes, as specified.

Fifth, Adjusting the end of the folding blade to correspond with the position of the stop and cutters, as and for the purpose specified.

Sixth, Combining in one machine the mechanism for pasting, folding and trimming off the heads or edges of pamphlets or signatures, substantially as specified.

Seventh, The combination in a folding blade of a serrated and curved or angular concave edge for the purpose of preventing the sheet from slipping on the knife, and also to introduce the edges of the paper between the rollers slightly in advance of the middle as described.

585.—Samuel Clark, of New York City, for an Improvement in Tuning Pins for Musical Instruments:

I claim a tuning pin for stringed instruments, when the same is constructed in the manner substantially as described.

586.—B. Coe and M. Geon, of Dalton, Ohio, for an Improvement in Vessels for Evaporating Saccharine Juices:

We claim the evaporator in combination with the protectors to the furnace, as shown in Fig. 3, the shaft, B, the pinions, b, b, the segments, c, c, the sliding loops, E, E, the ratchet wheel, A, lock, d, and the pivot, D, as shown in Fig. 1, as described and for the purpose set forth.

587.—E. Davis and Alonzo Palmer, of Hudson, Mich., for an Improvement in Grain Separators:

We claim the employment, in connection with the shoe, of the connecting rod, a, the spring, d, the rod, e, attached eccentrically to the fan shaft pulley, G, the bar, F, and the rod, l, when arranged as shown, by means of which a lateral and longitudinal, and at the same time a partially circular motion is communicated to said shoe, substantially as set forth.

Second, The arrangement of the sliding section, H, of the fan case with the trap door, I, spring, m, and strap, n, for the purpose of directing and regulating the draft at the head of the shoe, substantially as set forth.

588.—W. E. Doubleday and S. H. Lyon, of Brooklyn, N. Y., for an Improved Die for Pressing Hats:

We claim the crown die, b, fitted to be raised or lowered in the brim die, a, for the purposes and as set forth.

And in combination with the adjustable crown die, b, we claim the adjustable tip die, f, in the die, c, for the purposes and as specified.

589.—Daniel Fleming, of Brooklyn, N. Y., for an Improved Brush:

I claim the screw cap, D, or its equivalent, combined with a brush, essentially as and for the purposes described.

590.—G. W. T. Grant, of Winona county, Minn., for an Improvement in Picket Fences:

I claim the construction of a picket fence with only one rail to the panel, having the rails supported on the shouldered pickets, and being placed at a sufficient angle with each other consecutively, to give the necessary strength to the fence to resist lateral pressure, the pickets fitting loosely in the holes of the rails and the lower ends of the pickets sunk sufficiently into the earth to prevent them from being moved laterally out of place, all in the manner and for the purpose set forth and as described.

591.—John Griffin, of Louisville, Ky., for an Improved Mode of Regulating the Speed of Vehicles Moved by Mechanical Power:

I claim the arrangement of the two connecting rods, K, M, attached respectively to the cranks, L, N, of the axles, D, and shafts, O, the latter, when in use, being connected to the axles by the gearing, g, h, Q, substantially as and for the purpose set forth.

592.—John Griffin, of Louisville, Ky., for an Improvement in Cotton Pickers:

I claim The arrangement of the tubes, A, D, cylinder, E, and valves, c, F, substantially as and for the purposes set forth.

593.—D. D. Hardy and J. J. Morris, of Cincinnati, Ohio, for an Improvement in Rotary Pumps:

We claim the employment of the rotary pistons, B, B', formed of two semi-cylinders of different diameters, in combination with the two central inner tongues or projections, D, D', of the case, A, substantially as shown and described.

[This invention consists in the employment of two rotary pistons each formed of two semi-cylinders of different diameters, in combination with two central inner tongues or projections within the shell or case; the whole being constructed and operated in such a way as to overcome the difficulties attending the operation of rotary pumps, both as regards durability and the amount of work performed in a given time, as well as the power required to operate them.]

594.—John Hastings and L. P. Gautier, of San Francisco, Cal., for an Improvement in the Process of Treating Gold and Silver Ores:

We claim the manner of extracting gold and silver from their ores by the use, in the manner set forth, of chloride of copper, whether prepared in the manner described or by any other means.

595.—G. E. Hayes, of Buffalo, N. Y., for an Improved Apparatus for Vulcanizing Caoutchouc:

I claim, first, So constructing and using a vulcanizing vessel with a flattened bottom so that the plaster mold, containing the rubber compound, shall lie in contact with the inside of the lower part of the vessel, so that the heat from the lamp, or other heating body, shall be applied directly to that part of the vessel upon which the mold lies, for the purposes and substantially as set forth.

Second, I claim a mercury chamber formed in the upper section, the same being constructed and arranged with the thermometer substantially as set forth.

Third, I claim the opening, c, in combination with the bottom, A, band, D, and cover, E, substantially as described.

596.—J. S. Hooton, of New Carlisle, Ind., for an Improved Condenser and Water Heater for Steam Engines:

I claim the arrangement of the induction and education pipes, A and B, the induction and education pipes, I and O, the waste water pipe, S, and the alternating opposite plates or shelves, x, x, with each other and with the vertical box or tube of the apparatus, when the said plates or shelves are placed at such distances from each other that the water can be made to fall in succession from one shelf to another in broadly expanded and thin sheets, and, whilst thus falling, be acted upon by the ascending steam within the apparatus, in the manner set forth.

597.—J. W. Howlett, of Greensboro', N. C., for an Improvement in Sewing Machines:

I claim, first, Producing the necessary tension of the upper needle thread, N, by passing it between two glass plates, M, M', held in dovetail slots at the end of a bent spring, J, when this spring is combined with an adjustable clamp screw, L, substantially as and for the purposes set forth.

Second, Making the tension plates of glass, substantially as and for the purposes set forth.

Third, The arrangement of a rod, W, with a tapering face, U, V, and spiral spring, Y, in combination with a vertical and horizontal reciprocating needle, substantially as and for the purposes set forth.

[This invention consists, first, in an improved construction of clamp for maintaining the requisite tension of the upper needle thread, and, second, in an ingenious and effective device to insure the correct looping action of the lower needle.]

598.—Josiah Howell, of Sacramento, Cal., for an Improvement in Hemming Guides:

I claim the division of the tube in three parts, a, d and b, c, of which the two lower parts, a and d, are connected together by a bar, F, passing over the plate, D, of which the upper portion, b, c, forms part, the whole arranged and applied substantially as set forth.

[This invention relates to hemmers of the tubular kind. It consists in a certain construction of the tube of the hemmer in three pieces, whereby the hemmer is made adjustable so as to turn hems of various widths, in a very simple manner and without the complication of parts found in adjustable hemmers of other construction.]

599.—R. M. Hughes, of Pleasant Grove, Pa., for an Improvement in Railroad Car Couplings:

I claim a car coupling consisting of a link and pin combined in one piece and pivoted or swung near the middle, one end serving as a link and the other as a catch, so constructed and arranged as to be self-coupling and detachable by means of a lever or other equivalent device, substantially as described.

600.—J. L. Hyde, of New York City, for an Improvement in Sewing Machines:

I claim the combination of a foot plate with the shank of the presser foot, by means of a foot frame open at one side so as to permit the introduction of the foot plate edgewise therein, substantially as described.

601.—George Ives, of Detroit, Mich., for an Improved Wood Saw Horse:

I claim the application to saw horses of a pedal with hook and spring attached, for the purposes mentioned, namely, the better means of making firm and holding secure in its place any stick of wood or other articles to be sawn, using for such purpose any style of hook and means of turning the same, or any kind of spring that will produce, by the aid of the pedal or otherwise, the intended effect.

602.—Josiah James, of Ogdensburgh, N. Y., for an Improvement in Mechanical Movements:

I claim as my invention the joint walking beam as shown in Fig. 1, consisting of the jaws or upper and lower portions of joint, as shown in A, A' and A'', the end of the lever or other portions of the joints, as shown in B, B' and B'', together with the pin, C.

I claim as my invention the joint placed at the point where the walking beam is poised, to give a compound or rotary motion to the end of the walking beam, inserted in the fly or balance wheel, E.

603.—Mathias Kæfer, of Factoryville, N. Y., for an Improvement in Transmitting Motion:

I claim the arrangement of the shaft, A, guide rods, E, E, and fly wheel, B, with the arms, F, F, and rockshaft, b, in the manner and for the purpose shown and described.

[This invention consists in arranging the fly wheel shaft of a steam engine or other device in the ends of two arms or pendents, which swing on a rockshaft in such a manner that the same, with its appendages, oscillates in an arc described around the center of said rockshaft, and that all the friction created by the oscillating or reciprocating motion of the fly wheel and its shaft are thrown on the journals of the rockshaft.]

604.—Jacob Kleiber, of Memphis, Tenn., for an Improvement in Swimming Propellers:

I claim the arrangement and combination of the hollow shank, D, with its flanged part, H, the rod, E, and spiral spring, F, when used in connection with arms, K, rods, l, and a waterproof covering, A—the whole being made and operated in the manner and for the purpose set forth.

605.—W. A. Lightall, of New York City, for an Improved Method of Supplying Water to Steam Vessels, for the Purpose of Condensing Steam or Cooling Water:

I claim the arrangement of the hoods, D, D', constructed as shown, in their relation to the condenser or cooler, C, and the vessel, A, as described and for the purpose set forth.

606.—R. Little, of Middle Branch, Ohio, for an Improved Device to Prevent Hogs from Rooting:

I claim, as an improved article of manufacture, a device for preventing hogs from rooting, formed from a single piece of wire, in the manner described and as fully shown in Fig. 1 of the accompanying drawings.

607.—G. B. Mallette, of Millport, N. Y., for an Improvement in Portable Field Fences:

I claim the stakes, C, C, armed with the splice pieces, c, c, when pivoted to their supporting stretcher bar, B, and provided with the notches, h, h, in their inner edges or sides, in combination with the sections, A, A, substantially as and for the purpose specified.