be indistinguishable or illegible. 5th. A visual indicator consisting of a series of characters, a movable part, the extent of whose uninterrupted movement, when released, determines which character of the series is displayed or pointed out, in combination with an electro-magnetically actuated stop device adapted to control the extent of movement of said part, whereby the character displayed depends upon the number of times the operating circuit is broken and closed. 6th. The combination of an electrically actuated escapement with a non-intermittently moving part whose movement is controlled by the escapement, and the extent of whose movement determines which figure or character of a series is to be indicated. 7th. An electro-visual indicator consisting of an intermittently moving part whose movement is controlled by an electro-magnetic escapement, in combination with a non-intermittently moving part, the extent of whose movement is determined by the extent of movement of the first named part, and which itself determines which character of a series is to be indicated. 8th. The combination of a part D capable of successive short progressive movements, an electro-magnetic escapement E capable of controlling the number of such movements, and a part A capable of continuous movement from its starting to its stoppage, and adapted to be stopped at any one of a series of points by the action of the part A and the extent of its movement determining which character of a series shall be indicated. 9th. The combination of a moving part A bearing a series of pins or stops c c arranged successively in advance of one another, and each moving in a separate path, with an electrically controlled tooth or stop D adapted to move across the paths of the said pins, and by stopping in the path of either to arrest the movement of the part A at the corresponding point in its revolutions. 10th. The combination of magnet G, armature F, pallet f, rack d having teeth e e and connected with stop D and wheel, or its equivalent A, bearing a series of pins or stops c c. 11th. The combination, with electrically controlled stop D and wheel A, bearing pins or stops c c, of a locking device or brake for said wheel adapted to engage and hold it, and adapted to be operated by the striking of a pin c against the stop D. 12th. The combination of electrically actuated stop D, wheel A bearing pins c c, rod i and locking lever or brake lever I. 13th. The combination of electrically actuated stop D, wheel A, pins c c thereon, pinion b and toothed weight B meshing with said pinion, whereby said wheel is given a tendency to revolve. 14th. The combination, with the rack d bearing stop D, wheel A bearing pins c c, pinion b and toothed weight B, of restoring mechanism consisting of lifting toe d borne by rod M, and a lifting device to lift both said rod and weight. 15th. The combination of the wheel A, means for releasing it, means for rotating it, and means for stopping it, lever T bearing the friction brake K, drop J, inclined or wedging surface l and means for releasing said drop by the stoppage of the wheel. 16th. One indicating system consisting of a non-intermittently moving part, so arranged relatively to a series of characters that the extent of its movement from its normal position determines which of said characters is displayed, an intermittently moving part, the number of whose advances determines the extent of movement of the first named part, and an escapement whose operation controls the movement of said intermittently moving part, in combination with a second like indicating system, with one electro-magnet adapted to operate the escapement of either system and normally in operative connection with that of the first system only, and with means actuated automatically by the stoppage of the movement of the non-intermittently moving part of the first system, for bringing said magnet into operative connection with the escapement of the second system. 17th. An indicating system consisting of a pallet f, rack d having teeth e e, intermittent stop D and non-intermittently moving part A having a series of pins c c, in combination with second like system, with means for vibrating the pallets of both systems simultaneously with means for holding the rack of the second system up out of engagement with its pallet during the operation of the first system, and with means for automatically dropping it into said pallet upon the completion of the operation of the first system. 18th. The combination of two electrically actuated indicator systems, each adapted to advance one character for each break or closure of their actuating circuit, the first system only being in operative connection with said circuit, with means for bringing the second system into connection therewith upon the completion of the operation of the first system, and with means for preventing the act of effecting this connection from prematurely starting the second system in case the circuit, at the time said connection is made, is in the condition (either open or closed) pre-arranged to effect the starting thereof. 19th. An indicating system consisting of a character displaying mechanism, whose movement is controlled by a pallet f and rack d having teeth e e, in combination with a second like system whose rack d is formed with an additional tooth e^2 and is normally sustained with said tooth above its pallet, with means for vibrating said pallets and with means for dropping the said rack into connection with its pallet, upon the completion of the operation of the first system. 20th. The combination, with the brake lever I inclined surface l and drop J J1, of restoring device consisting of lifting rod M having incline or cam surface q. 21st. An automatic transmitter for electrical indicators constructed so as to transmit groups of simple signals by alternately breaking and closing the circuit at short intervals, and to separate said groups by prolonging the terminal signal of each group, whether said signal was produced by opening or by closing the circuit, and adapted to transmit always one signal answering to the number or character peculiar to itself, and to effect a greater or less number or circuit manipulations under the control of the operator, so as to transmit any desired character of a series. 22nd. The combination of wheel R, tooth or stop v in connection therewith, and a stop or stops u adapted to be placed in the path of said tooth, and to intercept the same at pre-determined points in its travel, and thereby to stop the wheel R. 23rd. In a transmitter, the combination of circuit manipulating wheel R, means for rotating the same, one revolution in one direction at each operation of the transmitter, a stop or stops v in connection therewith, a series of teeth or tops u u, each normally held out of the path of the stop v, but capable of being manually moved into its path so as to intercept it and stop the wheel R, and each adapted to stop the wheel at a different point in its revolution. 24th. The combination of wheel R, stops v v^2, stops u u, springs P^1 P^1 and buttons P P.

No. 13,508. Process and Apparatus for the Manufacture of Fertilizers. (*Procédé et appareil pour la préparation des engrais.*)

William Blumer, Lexington, Mass., U.S., 1st October, 1881; for 5 years.

Claim.—The process of depriving night soil, or other raw fertilizing materials, of their noxious gases and injurious properties and converting them into a dry innoxious fertilizer having all the valuable properties originally contained in the raw material, said process consisting in heating the raw material for the double purpose of desiccating it and expelling its noxious gases and vapours mingling, when required, antiseptic vapour with the desiccated material to destroy any noxious gases and spores of infectious diseases, not removed by desiccation, saving a fixing in the form of crude sulphate of ammonia, the free ammonia necessarily escaping with the gases and vapours during the desiccating operation, and mixing the crude sulphate of ammonia with the disinfected desiccated material to complete the fertilizer, the latter being then ready for transportation and use. 2nd. The process of destroying noxious gases and spores of infectious diseases in desiccated night soil or other fertilizing material, consisting in mingling carbonic acid or other antiseptic vapour with said material while it is in a dry heated condition and contained in a tightly closed receptacle. 3rd. In combination with a receptacle for containing and desiccating night soil or any other material, a stuffing box connected therewith, and a tester P adapted to reciprocate in the stuffing box and withdraw a sample of the material for examination. 4th. The combination of a retort having a rotating, stirring or propelling device, a pipe N communicating with said retort, which may be made in sections or otherwise, a condensing apparatus to condense steam passing through said pipe, a vacuum pump to draw steam and gases through the condensing apparatus and to force onward the condensed water and gases, an air chamber located between the condenser and the pump, and a kettle or heater connected to the pump to heat the condensed water, and a tank for containing sulphuric acid connected to the kettle or heater. 5th. The combination of the connected retorts A A^1 made in sections to be fitted together or otherwise, a chamber F connected to said retorts either over the top or within the retorts and, if within, perforated with small holes, the pipe H communicating with the chamber or pipe F, the vacuum pump R, the condenser S T, the pipe W, the kettle or heater x and the tank N. 6th. The retorts A A^1, the pipe H, the condenser S T and the vacuum pump R combined with the stand pipe b, the condenser c d and the air chamber a, whereby the pump R is aided in its operation. 7th. The combination of the connected retorts A A^1, a chamber F connected to said retorts, a blower i communicating with the pipe or chamber F, and the pipe j to contain the chemical. 8th. In a stirrer or propeller, the combination of a hexagonal or many sided shaft, a series of collars, each having correspondingly-shaped socket E3 to fit on said shaft, and two or more many sided orifices E^5 and arms E^4 having many sided lugs E^5 adapted to fit the orifices E^5. 9th. In combination with the pipe J and receptacles Q, the retort f and pipe f^1, whereby the desiccated material is subjected to antiseptic vapour.

No. 13,509. Method of Making Sulphuric Acid from Pyrites. (*Méthode pour faire l'acide sulphurique avec des pyrites.*)

Henry Wurtz, New York, N.Y., U.S., 1st October, 1881; for 15 years.

Claim.—1st. The consolidation of all varieties of granular sulphurets into cakes, lumps or blocks, by mixing therewith metallic iron in comminuted or divided form, and causing this iron to rust and form hydrated oxide or a basic salt in the interstices of the mass, by admixture with a saline solution. 2nd. The combined process of preparing metallic sulphurets for the operation of desulphurization and burning out of the sulphur therefrom by crushing to granular condition, removing the gangue and impurities by means of a current of air or water, or otherwise, and then reconnecting the purified granules together into masses by the rusting of comminuted metallic iron mingled therewith. 3rd. In accelerating and intensifying the rusting and cementing action of metallic iron when mingled with other materials by the process of alternately moistening the mixture with water and drying either spontaneously or by a gentle heat. 4th. As an article of commerce of new composition of matter, a consolidated product, made by mingling together granulated metallic sulphurets with granulated metallic iron and causing the latter to rust by the action of a saline solution, either with or without the addition thereto of asbestos or of mica. 5th. Increasing the cohesion and infrangibility of caked masses of granulated sulphurets, and of the cinders or residues left after burning the same by mingling therewith asbestos or other fibrous refractory mineral substance. 6th. Increasing the cohesion and infrangibility of caked masses of granulated sulphurets and of the cinders or residues left after burning the same, by mingling therewith common mica or other refractory foliated or micaceous mineral substance in their scales. 7th. The use of metallic iron in the form of iron sponge produced by reducing to metallic form granulated or powdered iron oxide, or ore, or pyrites cinders by exposure to heat in admixture with carbon or a combustible gas, for cementing together granular materials by the rusting action thereon of a saline solution.

No. 13,510. Improvements on Gate Locks. (*Perfectionnements aux fermetures des barrières.*)

George A. Schram, St. Thomas, Ont., 1st October, 1881; for 5 years.

Claim.—The circular faced casting A, having edge b and guard wire D attached to gate port E, and in combination therewith, the casting B, also circular and provided with lugs C C1 for locking the two castings together, and confining or releasing the gate F.

No. 13,511. Improvements on Grain Forks. (*Perfectionnements aux fourches à grain.*)

Vincent B. Southard, Fenelon, Ont., 1st October, 1881; for 5 years.

Claim.—1st. The combination of the handle A, bow B and cross bar C. 2nd. The tines D.

No. 13,512. Edge Trimming Machine for Boots and Shoes. (*Machine à polir la tranche des semelles de chaussures.*)

Charles H. Helms, Poughkeepsie, N.Y., U.S., 1st October, 1881; for 5 years.