metically sealed and enclosing, in a vacuum, material capable of being rendered incandescent by an electric current and provided at its base with contact pieces. 13th. The combination in an electric lamp of a glass globe enclosing in a vacuum material capable of being rendered incandescent by an electric current, an insulated base, spring contact and conductors therefrom, to the incandescent material. 14th. A socket or holder for electric lamps consisting of an insulating cylinder formed to receive and support the lamps, and provided with two contact plates and a circuit controlling device for controlling the circuit to one of the contact plates. 15th. The combination, with a bracket or chandelier arm, of a socket or holder adapted to receive and support an electric lamp. 16th. The combination of a holder, bracket or chandelier arm with a socket or holder adapted to be received thereon, and to receive and support an electric lamp and conductors passing through the arm to contact plates in the holder. 17th. The combination with a socket or holder provided with suitable contact plates, of a lamp provided with corresponding contact springs upon its exterior.

No. 11,521. Printing Machine. (*Machine à imprimer.*)

Edward Hely, Dublin, Ireland, 21st July, 1880: (Extension of Patent No. 5,020.)

No. 11,522. Improvements on Grates. (*Perfectionnements aux grilles.*)

Edward Card, Pawtucket, R. I., U. S., 21st July, 1880; for 5 years.

Claim.—1st. The pivoted dumping frames A, in combination with the bars B B, having both ends loosely and similarly connected to the rods *d d*, and operated to rise and fall independently of each other, by means of cams arranged as described and connected to the dumping frame, so that the whole combination may be turned to dump the coal and ashes without disturbing the parts in their relation to each other. 2nd. The independent grate bars B B and dumping frame A, in combination with a cam C arranged for operation at or near the middle of the bars. 3rd. The cams C combined with the independently moving grate bars.

No. 11,523. Improvements on Horse Power Links. (*Perfectionnements aux chaînons des manéges.*)

Jasper A. Rouse, East Berkshire, Vt., U. S., 21st., July, 1880; for 5 years.

Claim.—1st. The combination of the plate A, plate E having ends F vertical to the body of the same, and plate H having ends I forming wedges between the plates A and E. 2nd. The combination of the plates A and E with the plate H having ends I, forming wedges therewith.

No. 11,524. Improvements in Bung Bushes. (*Perfectionnements aux dés des bondes.*)

George B. Cornell, Chicago, Ill., U. S., 21st July, 1880; for 5 years.

Claim.—A frusto-conical shaped exterior surface without a flange and screw threaded from end to end of the bush, in combination with a like shaped interior surface, only when such interior surface is smooth and unbroken from end to end of the bush by any screw thread, or indentation or projection of any kind thereon.

No. 11,525. Improvements on Machines for Barbing Wire Fences. (*Perfectionnements aux machines à barbeler les clôtures métalliques.*)

Alanson Cary, New York, U. S., 21st July, 1880; for 5 years.

Claim.—1st. The stationary jaw V made with a straight grooved face, the movable jaw W made with an inclined face, and the bracket T with the pulley E having a hollow hub for wrapping a slitted strip S of sheet metal around a wire C. 2nd. The combination of the stationary hollow spindle B, the rotary sleeve D, the grooved feed rollers N O and their driving gearing, the pulley E, the jaw bracket and jaws T V W and the reel R with each other.

No. 11,526. Improvements on Machines for Heating Sad Irons. (*Perfectionnements aux machines à chauffer les fers à repasser.*)

Harrison H. Brown, Ladoga, Wis., U. S., 21st July, 1880; for 5 years.

Claim.—The heater *a* having fulera *e*, slotted lid *b* provided with ears b_2 on its sides, and bail *d* hinged to the ears b_2.

No. 11,527. Mode of Utilization of Electricity for Light, Heat or Power. (*Mode d'utilisation de l'électricité pour la lumière, la chaleur et la force.*)

Thomas A. Edison, Menlo Park, N. Y., U. S., 21st July, 1880; for 10 years.

Claim.—1st. The combination of means at a central station for generating the electricity and for indicating and regulating its pressure, means for distributing the electricity and devices for translating it into light or motive power. 2nd. A combination of means at a central station for generating the electricity and for indicating and regulating its pressure, means for distribution, means for translating and means for measuring the amount used by each consumer. 3rd. The method of regulating the electro motive force or pressure in the main conductors by regulating the strength of the field of force, magnets of the main magneto-electric machines, so that variation of pressure upon the connection or disconnection of translating devices may be prevented. 4th. The method of regulating the amount of effect at the translating devices by regulating the field of force current of the generators. 5th. The method of regulating the generative capacity of one or a battery of magnets, electric or dynamo electric machines, by regulating the current passing through the field of force magnets. 6th. The method of regulating the generative capacity of one or a battery of magnets, electric or dynamo electric machines, by varying the resistances of the circuit passing around the field of force magnets. 7th. The method of operating a battery of magneto-electric machines by using the entire current of one machine of the battery, to supply the field of force current of the remainder and throwing the entire current of the latter into a circuit for use. 8th. The combination, with one electrical circuit, of a number of separate translating devices. 9th. The combination, with one main electrical circuit, of a number of separate translating devices arranged therein upon the multiple arc system. 10th. The combination, with a number of translating devices, of one regulator placed at a central station and regulating all the said devices. 11th. The combination, with one or a battery of generators and a number of translating devices, of means for constantly indicating the electric pressure upon the translating devices. 12th. The combination of a number of generators and a number of translating devices, all arranged upon derived circuits or multiple arcs. 13th. The combination with means for constantly indicating the electric pressure of a battery for testing the indicating means.

No. 11,528. Improvements in Gas Apparatus. (*Perfectionnements aux appareils à gaz.*)

George Ramsdell, Oswego, N. Y., U. S., 21st July, 1880; for 5 years.

Claim.—1st. The combination, with the super-heating and the wood and oil retorts, of three intersecting pipes, forming a communication between said retorts, a three-way valve, located at the intersection of said pipes, two of said pipes connecting with the lower portions of the wood and oil retorts, and converging at their upper ends, forming an inverted V. 2nd. The combination, with an oil and air tank, of an oil pipe leading from the lower end of the oil tank upwardly and connected with a vertical pipe, which communicates at its lower end with the oil retort. 3rd. The combination, with the vertical oil feed pipe, of a cylinder surrounding the same and pipes for supplying the cylinder with water. 4th. The combination, with the cylinder having its lower end fitted to the top of the oil retort, of the vertical feed pipe screwed into the lower end of said cylinder, the lower end of said pipe being seated in the retort. 5th. The combination, with the cylinder arranged vertically upon the oil retort, of the oil feed pipe located within the cylinder and extending below the lower end thereof, and an opening in the retort to admit the lower end of the oil feed pipe, and an oil passage extending into the retort, said passage being equal in diameter to the inner diameter of the oil feed pipe. 6th. The combination, with the oil pipe connecting with the oil tank, of the vertical oil feed pipe provided with a T-connection at its upper end to one arm of which the oil pipe is secured, while the vertical arm or branch has a screw plug inserted therein. 7th. The combination, with the vertical oil feed pipe and cylinder surrounding the same, of set screws for retaining the pipe against lateral or axial displacement. 8th. The combination, with the vertical oil feed pipe, of a cylinder surrounding the same and secured at its lower end to the retort of a water supply pipe which extends down nearly to the bottom of said cylinder, and a discharge pipe communicating with the upper end of said cylinder. 9th. The combination, with the pipes E E¹ F, of the combined gas mixing and valve chambers, and rotary valve located therein. 10th. The pipes E E¹ F provided with a combined valve, and gas mixing and valve chamber, at three points of intersection and with flanges at their outer ends, said parts being cast in single pieces. 11th. The combination, with the hydraulic main, of dip pipes connecting with the wood and oil retorts, and a dip pipe communicating with the super-heating retort, the dip pipe of the latter having a lighter seat than the former. 12th. The combination, with the super-heating retort, of a combined oil and air tank. 13th. The stand pipes formed like an inverted V at their upper ends.

No. 11,529. Improvements on Grain Cars. (*Perfectionnements aux chars à grain.*)

William S. Hanson, Mount Pleasant, Iowa, U. S., 21st July, 1880; for 5 years.

Claim.—As an improvement in dumping cars or vehicles, the body A having hopper-shaped compartments D provided with spouts F, and slide-doors G having arms J provided with openings K, guides or cleats H, cross bars I having notches L and keys M.

No. 11,530. Improvements on Lacing Hooks for Boots and Shoes. (*Perfectionnements aux crochets à lacer les chaussures.*)

Mellen Bray, Newton, (Assignee of George Van Horne, Boston,) Mass., U. S., 21st July, 1880; for 15 years.

Claim.—A lace hook formed from a single piece of wire bent to form the eye *a*, neck *b* and prongs *c*.

No. 11,531. Improvements on Fire Extinguishers. (*Perfectionnements aux extincteurs d'incendie.*)

Charles Barnes, Dayton, Ky., U. S., 21st. July, 1880; for 5 years.

Claim.—1st. The combination of case A, valve C and cam shaft B with flange D, weighted lever E and a fusible jointed releasing wire as G. 2nd. The combination of a system of pipes, a supply valve for said system with two or more independent valve actuating devices, each of which is held by an independent wire passing to a different part of the building, either one of which wires, when released, will release a lever to throw the supply valve open. 3rd. In wires G, lever H and fusible jointed slide, or the equivalent of either. 4th. The combination, with a perforated distributor attached to the end of a discharge pipe, of a valve located within said perforated distributor and held to its seat by fusible solder. 5th. The combination of a perforated distributor, a valve located within said distributor and having a stem which projects through the shell of the distributor, and a lever as K_1 to hold the valve to its seat within the distributor, until its fusible joint is released by heat. 6th. The combination of a perforated distributor provided with a valve, the stem of which projects through the distributor, with a jointed lever K_1 and a latch K_2, said latch resting upon a projection of the distributor, and secured thereto by fusible solder, to hold the valve to its seat until fused by heat. 7th The combination of a perforated distributor, a valve to control the supply of water to said distributor, said valve being provided with a two-part stem and an elastic cushion between the parts, to hold the valve to its seat by elastic pressure until the fusible solder joint is released. 8th. The combination of a perforated distributor attached to the end of a discharge pipe with a perforated screen intervening between the ends of the discharge pipe and the perforated shell of the distributor. 9th. The combination of the water pipe, the automatic valve and the fire extinguishing liquid containing reservoir, connected with the water pipes, so that its contents will be discharged with and by the flow of the water.