gine, and geared to operate upon the steam supply valve, and a drive wheel or driving shaft, which is connected to said main shaft or receives its motion therefrom, by being connected with said centrifugal governing device, whereby the resistance of the load acts against, or opposes the centrifugal force of said centrifugal governing device for the purpose mentioned. 3rd. The combination of the following elements: a centrifugal governing device mounted upon the main shaft and operating concentrically therewith, and a drive wheel mounted to move concentrically with said main shaft and connected therewith, so as to receive its motion therefrom by being connected with the centrifugal moving parts of said governing device, whereby the resistance of the load opposes the centrifugal movements of the balls of said governing device for the purposes mentioned. 4th. The combination of the following elements upon the main shaft of the engine: a frame or cross-head B keyed upon said shaft, a disk D having an eccentric D_1 mounted loosely upon said shaft, centrifugal balls F F connected by their arms F_1 F_1 to said disk, a drive wheel C mounted loosely on said shaft and, finally, bars $f f$ F_2 F_4 F_4, levers F_3 F_3 and springs S S arranged in connection with said cross-head disk and drive wheel. 5th. The combination, with frame fixed upon the main shaft, of a disk D with eccentric D_1, centrifugal balls F connected by arms to said disk and adapted to move said disk upon the shaft, a yoke D_3 upon said eccentric D_1, an eccentric E having an elongated shaft opening and connected to said yoke D_3, a pendant E_3 for suspending said eccentric E from the frame, and finally springs S S for opposing the centrifugal movement of said balls F F.

No. 15,843. Improvements on Current Regulators for Dynamo-Electric Machines. (*Perfectionnements aux régulateurs du courant des machines électro-dynamiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd November, 1882; for 15 years.

Claim.—1st. The method of controlling or regulating the generative force of a dynamo or magneto-electric machine, consisting in throwing into the field magnet circuit a variable and controllable counter electro-motive force. 2nd. The combination, with a generator, of an electro-motor included in, and regulating the field magnet circuit by its counter eletro-motive force. 3rd. The combination of a generator, an electro-motor included in the field magnet circuit and a magnet in the supply or consumption circuit, controlling the rate of rotation of the motor. 4th. The combination, with a motor, of a disk driven thereby, and a magnet between whose poles, or in whose field the disk rotates, to vary and control the rate of rotation of the motor. 5th. The combination of a generator, an electro-motor in the field magnet circuit carrying a disk upon its rotating shaft, and a magnet in the supply circuit in whose field the disk rotates, whereby the rate of the motor and the strength of the field circuit are varied and controlled.

No. 15,844. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd November, 1882; for 15 years.

Claim.—1st. The method of manufacturing incandescent electric lamps by forming the enclosing bulb or globe directly from molten, or pot glass, forming separately the supporting tube or neck for the incandescent conductor, sealing therein the leading-in wires, attaching the carbon thereto and then hermetically uniting the parts by welding together, prior to the exhaustion of the lamp. 2nd. A leading-in wire composed of a central platinum section for sealing into the glass an outer section, and an inner section having a clamping device formed integral therewith.

No. 15,845. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd November, 1882; for 15 years.

Claim.—1st. The leading-in conductor for an incandescent electric lamp, consisting of a central platinum piece for sealing into the glass envelope of a lamp and terminals attached thereto of cheaper metal, the one for union with the incandescing conductor, the other for connection to the exterior conductors. 2nd. The combination of a piece of platinum sealed into the glass and terminals of other metals affixed thereto, one extending into the lamp for union with the incandescing conductor, the other protruding therefrom for connection to the ordinary conductors.

No. 15,846. Improvements on Regulators for Magneto on Dynamo-Electric Machines. (*Perfectionnements aux régulateurs des machines électro-magnétiques ou dynamiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd November, 1882; for 15 years.

Claim.—1st. The combination, with an electric generator, or battery, of electrical generators, of one magneto or dynamo electric machine, furnishing the current for the field circuit of the generator or battery, and an engine driving said magneto or dynamo-electric machine, and means for adjustably regulating the governor of the engine. 2nd. The combination, with an electrical generator, of an engine, a governor controlling the cut-off mechanism of the engine and means for adjustably controlling the governor so as to vary the speed of the engine. 3rd. The combination, with an electric circuit containing translating devices, of a condenser.

No. 15,847. Improvements on Regulators for Dynamo or Magneto-Electric Machines. (*Perfectionnements aux régulateurs des machines électro-dynamiques ou magnétiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd November, 1882; for 15 years.

Claim.—1st. The combination, with a generator of a variable resistance in its field circuit, a magnet in a derived circuit to the main or supply circuit of the generator, and a movable contact arm controlled by the magnet, for effecting an automatic regulation of the field of the generator. 2nd. The combination of a generator, a resistance in its field circuit, an axial magnet composed of a helix and an electro-magnet as a core thereto, both included in one circuit derived from the main or supply circuit, and a movable contact arm controlled by the magnet and contacting with the resistance.

No. 15,848. Improvements on Regulators for Magneto or Dynamo-Electric Machines. (*Perfectionnements aux régulateurs des machines électro-magnétiques ou dynamiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd November. 1882; for 15 years.

Claim.—1st. The combination, with each generator of a battery of magneto or dynamo-electric machines arranged in multiple arc of a resistance in its field circuit and a switch controlling equally and simultaneously all the resistance of the generators of the battery. 2nd. The combination of a battery of dynamo or magneto electric machines, a series of equal resistances, one series for each generator, a switch, a circuit to the switch and resistances and special circuits, one for the field of each generator, from the resistances to the field of force coils of the generators. 3rd. The combination of a battery of magneto or dynamo generators, a series of resistances in the field circuits, one for each generator, and means for automatically controlling equally and simultaneously the resistances of the field circuits of all the generators.

No. 15,849. Improvements on Screw Nails. (*Perfectionnements aux vis.*)

Charles D. Rogers, Providence, R. I., U. S., 23rd November, 1882; for 15 years.

Claim.—A screw nail having a pointed or driving end, a shank portion provided with threaded or serrated longitudinal sections *a*, and intermediate plain longitudinal groove-sections *b*, and a head adapted to be engaged by a screw-driver or equivalent instrument, for turning the nails axially.

No. 15,850. Improvement in Horse Shoes. (*Perfectionnement des fers à cheval.*)

Thomas M. Marshall, Truro, N. S., 23rd November, 1882; for 5 years.

Claim.—The steel springs D with the disk A, made of rubber or any suitable material, when used in combination with a horse shoe.

No. 15,851. Improvement in the Method of Erecting Temporary Buildings. (*Perfectionnement dans la méthode de construire des bâtisses temporaires.*)

Joseph Westman, Toronto, Ont., 23rd November, 1882; for 5 years.

Claim.—1st. In a frame building, vertical studs bound together by a series of transverse timbers, in combination with ropes of hay, grass, straw or flax, soaked in a solution of alum, copperas and vegetable ashes, the said ropes being arranged to form a covering over the frame buildings. 2nd. In a frame building in which vertical studs of unhewn timber are bound together by a series of transverse timbers also unhewn, the combination of a covering composed of ropes made from prairie grass or other fibrous material, and thatched with thatching of similar material.

No. 15,852. Improvements on Hydraulic Motors. (*Perfectionnements aux moteurs hydrauliques.*)

Frederick W. Tuerk, jr., Chicago, Ill., U. S., 23rd November, 1882; for 5 years.

Claim.—1st. In a water motor, the wheel D having the angular projections *r* upon its periphery, in combination with the trough like buckets F, inverted upon, and secured to the said projections. 2nd. In combination with the case A, having the inlet pipe *v* and discharge pipe *u*, and the wheel D having the buckets F, of the flange B formed, partly on the back, and partly on the lid of the case, and recessed to receive the wheel. 3rd. The combination, with the case, wheel and buckets of a water motor, of the conical valve G passing through a cylindrical orifice *o* in said case, whereby the entering water follows the surface of the valve and leaves the end thereof in a solid stream. 4th. In combination with the case, wheel and buckets of a water motor, the adjustable conical valve G passing through a cylindrical orifice *o* in said case, and the governor H. 5th. In combination with the shaft-bearings in a water motor, the funnel-shaped projections I I, around and extending over the wheel hubs. 6th. A chambered bushing T, through which a movable stem W passes, for the purpose of being lubricated, and preventing water from passing outside without packing.