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INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years. The term of years for which the fees have been paid, is given after the date of the patent.

No. 28,420. Extension Hanging Device.

(*Appareil d'étendage à extension.*)

William L. Richardson, Ansonia, Conn., U.S., 1st February, 1888; 5 years.

Claim.—1st. An extension suspending device consisting of a case, a shaft journalled therein, and a spring connected to said shaft and surrounding it, to the outer end of which the article to be suspended is attached. 2nd. An extension suspending device consisting of a case, a shaft journalled therein, a spring connected to the shaft, and a clamp through which the spring passes and which acts to hold the article suspended from the spring at any desired position. 3rd. An extension suspending device consisting of a case, a shaft journalled therein, a carrying spring attached to the shaft, and a clamp through which the spring passes, consisting of an inner rigid plate and an outer pivoted plate, said spring in use passing between the plates and over the end of the pivoted plate, thus causing the upper end of the pivoted plate to clamp the spring firmly. 4th. An extension suspending device consisting of a case, a shaft journalled therein, a carrying spring attached to the shaft, a clamp acting to hold the spring at any desired position, and a winding device whereby the spring may be adjusted if required.

No. 28,421. Sectional Steam Boiler.

(*Chaudière à vapeur en sections.*)

Andrew Mercer, Brooklyn, N. Y., U. S., 1st February, 1888; 5 years.

Claim.—1st. In a steam boiler composed of cast sections containing independent water or steam spaces, the combination of an intermediate series of like sections, as shown, comprising the furnace walls and the double series of direct sectional flues, with a front or door section containing the final sections of said flues, and having a flue chamber for connecting the same together, and a rear section comprising a draught passage, a flue delivery and a fire back in one piece. 2nd. In a steam boiler composed of a series of cast sections, the combination of a double series of direct unobstructed sectional flues, substantially as shown, a passage connecting the lower series at the rear with the furnace, a chamber connecting the lower with the upper series at the front thereof, and a draught eduction chamber or pipe located at the rear of the upper series, whereby a triple exposure of heated furnace gases to the water spaces of said boiler is obtained. 3rd. The combination, with the double series, of direct unobstructed flues of a front cleaning door located opposite both series, a rear receptacle or chamber opposite the upper series, and a draught passage for discharging deposits from the rear of the lower series into the furnace, for the purposes set forth. 4th. In a steam boiler composed of separable sections, the combination therewith of a double ribbed joint, the same consisting of a faced rib and of a lesser packing rib parallel to said faced rib, the said joints, when placed in juxtaposition, forming an enclosed packing space accessible from one side thereof, as specified. 5th. The combination, with the cast sections of a sectional steam boiler, of sockets or recesses cast in the water legs of said sections for the reception of the trunnions of the rocking grates, arranged substantially as described, the said sockets being vertically elongated to permit the introduction or removal of said grates. 6th. The combination, with the grate trunnion sockets, of protecting blocks for capping said trunnions, and castings, substantially as shown, for retaining said blocks and trunnions in place, said castings having inverted bearing sockets and provided with draught corrugations, as and for the purposes set forth. 7th. The means herein-described for securing the jacketing material upon the united boiler sections consisting, namely, of marginal ribs cast upon said sections, front and rear plates secured, as shown, to the end sections and sheathing supported upon said ribs and determinating at said plates, and means for binding the whole in place (as rods extending through lugs projecting from said ribs as shown).

No. 28,422. Tubular Lantern.

(*Lanterne tubulaire.*)

Ernest Schultz, Hamilton, Ont., 1st February, 1888; 5 years.

Claim.—1st. In a tubular lantern, the combination of the circular ring C, vertical wires *d*, *d*, *d*, *d* and disc D, substantially as and for the purpose specified. 2nd. In combination with the ring C and the canopy G, of the lift-wires F, F, their upper ends being secured to canopy G, and their lower ends bent at right angles to catch under, and hold the ring C, to raise the globe, substantially as and for the purpose specified. 3rd. The openings *f*, *f*, *f*, *f*, in the horizontal part of the tubes B, B, substantially as and for the purpose specified. 4th. The combination of the guard C, *d*, *d*, *d*, *d*, disc D, lifting wires F, F and loops J, J, substantially as and for the purposes specified. 5th. The combination of the elongated slot *i* in the collar M, hook *h* and spindle *k*, substantially as and for the purpose specified.

No. 28,423. Manufacture of Frame Plates for Rolling Stock. (*Fabrication de plaques de garde de matériel roulant.*)

Samson Fox, Harrogate, Eng., 1st February, 1888; 5 years.

Claim.—1st. The method or process of manufacturing frame plates for rolling stock, with flanges and with square corners and fillets or projections, which consists in cutting a suitable plate to approximately the form, but somewhat larger than the required frame plate, heating same, producing by pressure the required flange or flanges at one side, and bulgings or embossments at the contrary side, reheating the plate and, by pressure, forming out of the metal of said bulgings or embossments the desired square corners and fillets or projections, substantially in the manner hereinabove described. 2nd. As a new article of manufacture, a frame plate for rolling stock with flange or flanges at one side, and square corners, fillets or projections at the reverse side, produced by cutting a suitable plate to approximately the form, but somewhat larger than the required frame plate, heating same, producing by pressure the required flange or flanges at one side, and bulgings or embossments at the contrary side, reheating the plate and, by pressure, forming out of the metal of said bulgings or embossments the desired square corners and fillets or projections, substantially in the manner hereinabove described.

No. 28,424. String Fastening for Musical Instruments. (*Attache-corde pour instruments de musique.*)

Ellis L. Spencer, Brantford, Ont., 1st February, 1888; 5 years.

Claim.—1st. A string fastening for musical instruments consisting essentially of an adjusting screw, a plunger in contact with the end of said screw and carrying the end of the wire or string, a socket for said plunger, and a bearing for said screw, whereby the tension of the wire is regulated by the operation of the adjusting screw, substantially as and for the purpose described. 2nd. In a string fastening for musical instruments, the combination, with an adjusting screw, of the plunger D having perforations through which the wire is threaded or passed, for the purpose described. 3rd. The plunger pin or needle D having the holes *d*, *d*^{1} and seat or socket *d*^{2}, in combination with a wire threaded through said holes, as shown and described, and a screw for adjusting said plunger so as to regulate the tension of the wire, substantially as described. 4th. In a piano, the combination, with the series of strings and a suitable framing, of the beam C having sockets, recesses or perforations *c*, *c*, plungers or pins to which the wires are fastened, and means whereby said plungers or pins are adjusted within said sockets, recesses or perforations, substantially as and for the purpose specified. 5th. In a device for tuning pianos and like musical instruments, the combination, with a suitable framing and with the wires and their attachments, of the plate F and adjusting screws passing through said plates and serving to regulate the tension of the wires, substantially as described.

No. 28,425. Carpet Stretcher. (*Tendeur de tapis.*)

Charles T. Mantor, Bismark, Mo., U. S., 1st Februrry, 1888; 5 years.

Claim.—The combination, with the body A, provided with the long-