

connected thereto, consisting of a plurality of parallel flat sheets of metal arranged side by side, with air spaces between, and connected together in series by posts of metal, non-conducting pieces to stay and support the posts, and a suitable frame or case inclosing the device, substantially as described. 8th. In an electric heater, the combination, with the supply conductors, of a radiating device connected thereto, consisting of a plurality of parallel flat sheets of metal arranged side by side, with air spaces between, and connected together in series by posts of metal, non-conducting pieces to stay and support the posts, a suitable frame or case inclosing the device, and one end of the radiating device arranged to have free movement longitudinally within the case to allow for expansion and contraction due to heating by the passage there through of the electric current and cooling upon the cessation of the current, substantially as set forth. 9th. In an electric heater, the combination, with the supply conductors, of a radiating device connected thereto, consisting of a plurality of parallel flat sheets of metal arranged side by side, with air spaces between, and connected together in series by posts of metal, non-conducting pieces to stay and support the posts, a suitable frame or case inclosing the device, one end of the radiating device arranged to have free movement longitudinally within the case to allow for expansion and contraction due to heating by the passage therethrough of the electric current and cooling upon the cessation of the current, and a circuit maker and breaker adapted to be operated by said movement. 10th. In an electric heater, the combination, with the supply conductors, of a radiating device connected thereto, consisting of a plurality of parallel flat sheets of metal arranged side by side, with air spaces between, and connected together in series by posts of metal, non-conducting pieces to stay and support the posts, a suitable frame or case inclosing the device, one end of the radiating device arranged to have free movement longitudinally within the case to allow for expansion and contraction due to heating by the passage therethrough of the electric current and cooling upon the cessation of the current, and an adjustable circuit maker and breaker adapted to be operated by said movement. 11th. In an electric heater, the combination, with the supply conductors, of a radiating device connected thereto, consisting of a plurality of parallel flat sheets of metal arranged side by side, with air spaces between, a suitable frame or case inclosing the device, one end of the radiating device arranged to have free movement longitudinally within the case to allow for expansion and contraction due to heating by the passage therethrough of the electric current and cooling upon the cessation of the current, and a circuit maker and breaker adapted to be operated by said movement. 12th. In an electric heater, the combination, with the supply conductors, of a radiating device connected thereto, consisting of a plurality of parallel flat sheets of metal arranged side by side, with air spaces between, a suitable frame or case inclosing the device, one end of the radiating device arranged to have free movement longitudinally within the case to allow for expansion and contraction due to heating by the passage therethrough of the electric current and cooling upon the cessation of the current, and a circuit maker and breaker adapted to be operated by said movement.

No. 39,327. Electric Refrigerating Apparatus for Railway Cars. (*Appareil de réfrigération électrique pour chars.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 13th July, 1892; 6 years.

Claim.—1st. In a system of cooling cars by electricity, the combination of a moving car, a dynamo electric machine carried on the car and having its armature mechanically connected to the axle or wheel of the vehicle and to be driven by the latter, conductors connected to the dynamo, an electric conductor having one or more parts adapted to be cooled by a current, and a secondary battery in parallel circuit with the dynamo, and suitable current controlling devices. 2nd. In a system of cooling cars by electricity, the combination of a moving car, a generator of electricity arranged to be driven by the movement of said car, an electric conductor having one or more parts adapted to be cooled by a current, and a secondary battery in parallel circuit with the generator, and suitable current controlling devices. 3rd. In a system of cooling vehicles by electricity, the combination of a moving vehicle, a generator of electricity on the vehicle and arranged to be driven when the vehicle is in motion, an electric conductor having one or more parts adapted to be cooled by a current and in circuit with the generator, and suitable current controlling devices. 4th. In a system of cooling cars by electricity, the combination of a plurality of cars coupled together, an electric supply conductor on one of said cars, and cooling or freezing apparatus carried on two or more of said cars and connected to the supply conductor. 5th. The combination of a moving vehicle, a generator of electricity driven by the vehicle, and an electric cooling or freezing apparatus to cool said vehicle and in circuit with the generator. 6th. The combination of a vehicle, a suitable source of electricity, and an electric cooling apparatus on the vehicle in circuit with the source. 7th. The combination of a vehicle, a source of electricity, an electric cooling apparatus to cool said vehicle, a secondary battery to accumulate a portion of the current from the source, and electric circuits including said cooling apparatus and battery in multiple arc connection. 8th. The combination of a vehicle, a source of electricity, an electric cooling apparatus to cool said vehicle, and a secondary battery to accumulate a portion of the electric energy from the source, and in electrical

connection with the latter. 9th. The combination of a vehicle, a suitable source of electricity, an electric cooling apparatus on the vehicle in circuit with the source, and suitable controlling or regulating devices. 10th. The combination of a vehicle, a suitable source of electricity, an electric conductor on the vehicle and having parts adapted to be cooled by a current and connected to the source, a reservoir containing a medium and arranged to be cooled by the said parts, and a pipe extending from the reservoir through the interior of the car and back to said reservoir. 11th. The combination of a vehicle, a suitable source of electricity, an electric conductor on the vehicle and having parts adapted to be cooled by a current and connected to the source, a reservoir containing a medium and arranged to be cooled by the said parts, and a pipe extending from the reservoir through the interior of the car and back to said reservoir, and means for circulating the medium through the pipe. 12th. The combination of a vehicle, a suitable source of electricity, an electric conductor on the vehicle and having parts adapted to be cooled by a current and connected to the source, a reservoir containing an uncoagulable medium and arranged to be cooled by the said parts, and a pipe extending from the reservoir through the interior of the car and back to said reservoir, and means for circulating the medium through the pipe. 13th. The combination of a vehicle, a suitable source of electricity, an electric conductor on the vehicle and having parts adapted to be cooled by a current and connected to the source, a reservoir containing a medium and arranged to be cooled by the said parts, and a pipe extending from the reservoir through the interior of the car and back to said reservoir, and a pump and motor for forcing the medium through the pipe. 14th. In a system of cooling cars by electricity, the combination of a plurality of moving cars coupled together, a generator of electricity driven by one of the cars, and cooling or freezing apparatus on two or more of said cars and in circuit with the generator. 15th. The combination of a vehicle, a suitable source of electricity, an electric conductor on the vehicle and having parts adapted to be cooled by a current and connected to the source, a reservoir containing a medium and arranged to be cooled by the said parts, and a pipe extending from the reservoir through the interior of the car and back to said reservoir, and a pump and motor for forcing the medium through the pipe and suitable controlling or regulating devices. 16th. The combination of a vehicle, a suitable source of electricity, an electric conductor on the vehicle and having parts adapted to be cooled and other parts adapted to be heated by a current and connected to the source, an apartment on the vehicle to be cooled by the cooled parts of the conductor, and a ventilated apartment on the vehicles containing the heated parts of the conductor. 17th. The combination of a vehicle, a generator of electricity on the vehicle, and driven by the movement of the vehicle, an electric conductor on the vehicle and having parts adapted to be cooled and other parts adapted to be heated by a current from the generator, an apartment on the vehicle to be cooled by the cooled parts of the conductor, and a ventilated apartment on the vehicle containing the heated parts of the conductor. 18th. The combination of a vehicle, a suitable source of electricity, an electric cooling apparatus on the vehicle in circuit with the source, and suitable automatic controlling or regulating devices. 19th. In a system of cooling cars by electricity, the combination of a plurality of cars coupled together, an electric supply conductor on one of said cars, an electric conductor having one or more parts adapted to be cooled by a current and connected to the supply conductor, a reservoir containing a medium and arranged to be cooled by the said parts, pipes extending from the car containing the reservoir to one or more of the other cars, and means for circulating the medium. 20th. In a system of cooling cars by electricity, the combination of a plurality of cars coupled together, an electric supply conductor on one of said cars, an electric conductor having one or more parts adapted to be cooled by a current and connected to the supply conductor, a reservoir containing a medium and arranged to be cooled by the said parts, and pipes extending from the car containing the reservoir to one or more of the other cars coupled thereto.

No. 39,328. Wire Weaving Fence Machine.

(*Machine à tisser les clôtures en fil de fer.*)

Haggart S. Cochrane, Cleveland, Ohio, and Grace Cochrane, St. Thomas, Ontario, Canada, assignees of Edward S. Morgan, Richmond, Indiana, U.S.A., 13th July, 1892; 6 years.

Claim.—1st. In a wire weaving fence machine, the combination, of a series of shifting pins or levers fastened to a movable bar having an upright and downward movement, substantially as shown. 2nd. In a wire weaving fence machine, having a series of double concave plates, in combination, with shifting pins or levers fastened to a movable bar, with an upright and downward movement, substantially as and for the purpose specified. 3rd. In a wire weaving fence machine, a series of plates for holding the spools and twisting the wire, in combination, with double convex plates into which loosely fit shifting pins or levers with double concave plates, the said pins or levers being fastened to a movable bar with upright and downward movement, substantially as described and shown. 4th. The combination, of a series of shifting pins or levers, which act on double convex plates giving them an upward and downward movement, substantially as shown. 5th. The combination, of spool plates connected to double convex plates between which fit a series of main revolving disks with parallel slots or grooves running from near their