material to cover the other of said pull bars, substantially as and for the purpose specified. 23rd. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism therein, a normally open circuit controller at the transmitting mechanism in a shunt circuit around said mechanism, a third wire or auxiliary circuit, circuit terminals connected to the metallic circuit, and to the third wire circuit, a pole changer in the metallic circuit, a receiving instrument in the third wire circuit operated by the transmitting mechanism, and means, substantially as described, actuated by the said receiving instrument to operate the pole changer, substantially as described. 24th. The combination of the following instrumentalities, viz.: a district station, one or more metallic circuits extended therefrom, one or more signal transmitting mechanisms in said circuits, a pole changer in the district circuits, a central station, a main line connecting said district and central stations, a receiving instrument therein operated by the transmitting mechanism in the district circuit, a pole changer in the main line, mechanism in the central station actuated by the receiving instrument therein to operate the pole channel in the main line and reverse the current in the main line, and mechanism in the main line actuated by reversal of current in the said main line to operate the pole changer in the district circuit and produce reversals of current in the district, substantially as and for the purpose specified. 25th. In a fire alarm system, the combination, with a closed metallic circuit, of a signal transmitting mechanism consisting of a signal wheel normally included in the closed metallic circuit, a second signal wheel normally disconnected from the metallic circuit, a pen or brush co-operating with the second signal wheel and connected to one side of the metallic circuit, a third signal wheel normally disconnected from the metallic circuit, a pen or brush co-operating therewith and connected to the other side of the metallic circuit, the second and third signal wheels being arranged to be connected to the metallic circuit in succession after the metallic circuit signal wheel has been operated, substantially as described. 26th. The combination of the following instrumentalities, viz. :—A district station, a central station, a main line connecting said stations, a relay in said central station, a local circuit in said central station, a recording instrument in said local circuit, an armature for said relay controlling said local circuit, a resistance in the district station in a shunt in the main line, a signal transmitting mechanism in multiple with said resistance, and a normally closed switch in the main line, to operate substantially as described. 27th. In a fire alarm system, the combination of the following instrumentalities, viz. :—A metallic circuit, a signal transmitting mechanism therein, a third or auxilliary wire, a relay e^2, including in said third wire, and a normally open circuit controller at the transmitting mechanism, having one terminal connected to the third wire and the other terminal joined to a metallic circuit wire, substantially as described. 28th. In a fire alarm system, the combination of the following instrumentalities, viz. :—A series of metallic circuits, a signal transmitting mechanism in each circuit, a receiving instrument in each metallic circuit, a pole changer in each circuit, an electro-magnet for operating each pole changer, a local circuit in which the electro-magnets for the said pole changers are connected in series, circuit terminals for said local circuit, and means, substantially as described, rendered effective by the operation of a signal transmitting mechanism, in any one of the metallic circuits to reverse the current over all the metallic circuits, substantially as described. 29th. In a system for transmitting signals, the combination of the following instrumentalities, viz. :—An electric circuit provided with one or more signal transmitting mechanisms, a pole changer in said circuit, an electro-magnet to operate said pole changer to produce reversable of the current in the electric circuit, a local circuit, in which the said electro-magnet is located, circuit terminals for said local circuit, an independent circuit controller to operate said terminals at each break in the electric circuit to actuate the pole changer to produce a reversal of the current in the electric circuit on the closure of the said electric circuit following the break in the said circuit, a relay in the electric circuit, and an armature for said relay operating the independent circuit controller at each break in the electric circuit, substantially as described. 30th. In a signalling system, the combination, with a box provided with a door and a signal transmitting mechanism in said box, of an audible signal in said box, a motor mechanism for said audible signal, and a releasing device for said motor mechanism disconnected from and independent of the box door, but adapted to be operated by the opening of the door, substantially as described.

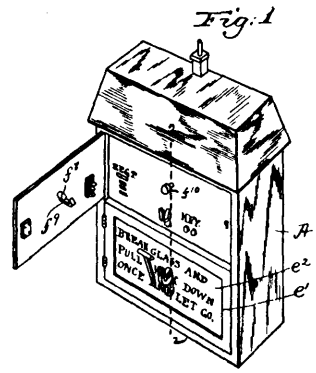
No. 42,795. Signal Transmitter.

(*Appareil pour transmettre les signaux.*)

Albert Watts, assignee of Henry A. Chase, both of Boston, Massachusetts, U.S.A., 2nd May, 1893; 6 years.

Claim.—1st. In a system for transmitting signals, the combination of the following instrumentalities, viz.: a normally closed electric circuit, a signal transmitting mechanism included therein and consisting of braek wheels a, a^1, and co-operating pens or brushes a^3, a^4, normally in contact with said braek wheel, independent paths for the current from the pens a^3, a^4, to one side of the line or electric circuit, a normally closed circuit controller in the path of the pen a^3, a normally open circuit controller in the path of the pen a^4, and a resistance c^{13}, connected to one side of the electric circuit and to the path of the pen a^4, to form a shunt around the braek wheel a^1, and two relays in the said circuit, both of which

Fig. 1



are responsive to the signals transmitted over the normally closed path of the pen a^3, and one of which is responsive only to the signals transmitted over the normally open path of the pen a^4, substantially as described. 2nd. In a system for transmitting signals, the combination of the following instrumentalities viz.: a metallic circuit a signal transmitting mechanism included therein and connected thereto by independent paths, a normally closed circuit controller in one of the said paths, a normally open circuit controller in the other of said paths, a motor mechanism to operate the signal transmitting mechanism, means for positively changing the speed of the motor mechanism and thereby the speed of the signal transmitting mechanism, and independent receiving instruments included in the metallic circuit, one of the said instruments being responsive to the transmitting mechanism when operated at one speed and not at the other speed, substantially as described. 3rd. In a system for transmitting signals, the combination of the following instrumentalities, viz. : a metallic circuit, a signal transmitting mechanism included in said metallic circuit, a motor mechanism to operate it, means for positively changing the rate of movement of the motor mechanism and thereby of the speed of the transmitting mechanism, and two relays included in the metallic circuit in multiple with each other, substantially as described. 4th. In a system for transmitting signals, the combination of the following instrumentalities, viz. : a metallic circuit, a signal transmitting mechanism included in said metallic circuit, a motor mechanism to operate it, means for positively changing the rate of movement of the motor mechanism and thereby of the speed of the transmitting mechanism, two relays included in the metallic circuit in multiple with each other, a pole changer in the metallic circuit, an electro-magnet to operate it, a register controlled by the operation of one of the said relays, and circuit terminals for the pole changer and an electro-magnet rendered effective by the operation of the said register, substantially as described. 5th. In a system for transmitting signals, the combination of the following instrumentalities, viz. : a metallic circuit, a signal transmitting mechanism included in the said metallic circuit, a motor mechanism to operate it, means for positively changing the rate of movement of the motor mechanism and thereby of the speed of the transmitting mechanism, two relays included in the metallic circuit in multiple with each other, a pole changer in the metallic circuit, an electro-magnet to operate it, a shaft, an electro-magnet to control its operation, a circuit terminal on said shaft connected to the pole changer electro-magnet, a second circuit terminal for the changer magnet, a circuit controller governing the operation of the electro-magnet controlling the circuit terminal carrying shaft, and a polarized electro-magnet in the metallic circuit at the transmitting mechanism, substantially as described. 6th. In a system for transmitting signals, the combination of the following instrumentalities, viz. : a metallic circuit, a signal transmitting mechanism included therein and consisting of signal wheels a a^1, two independent contact pens or terminals connected to the metallic circuit by independent paths and normally in contact with the said signal wheels, circuit controllers in said paths, a resistance interposed in one of the said paths when the circuit controller is operated, receiving instruments in the metallic circuit in multiple with each other, one of the said instruments being operated when the resistance is interposed in the metallic circuit, and two local circuits disconnected from each other and controlled by the said receiving instruments, substantially as described. 7th. In a fire alarm system, the combination of the following instrumentalities, viz. : a metallic circuit, a signal transmitting mechanism included therein, circuit terminals h^{14} h^{15}, connected to the metallic circuit, an electro-magnet h^2, a key h^3 and a resistance h^4 in shunt with said key, adapted to be connected to the circuit terminals h^{14} h^{15}, and relays d d^1 in multiple with each other, one relay as d^1, being responsive to the key h^3, substantially as described. 8th. In a fire alarm system, the combination of the following instrumentalities, viz. : a metallic circuit, a signal transmitting mechanism included therein, circuit terminals h^{14} h^{15}, connected to the metallic circuit, an electro-magnet h^2, a key h^3, and a resistance h^4 in shunt with said key, adapted to be connected to the circuit terminals h^{14} h^{15},