tially as described. 6th. In a system for transmitting signals, the combination of the following instrumentalities, viz.: a metallic 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 reversals of the current in the metallic 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 main line circuit, an electro-magnet to govern the said controller, a local circuit in which the controller magnet is located, a relay in the metallic circuit, and an armature for said relay controlling the local circuit containing the circuit terminal controlling magnet, operating the said magnet to operate the said circuit controller at each break in the metallic circuit, whereby the signal transmitted is repeated over the metallic circuit, substantially as described. 7th. In a fire alarm system, the combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism therein, a relay in said circuit operated by the transmitting mechanism, normally open circuit terminals co-operating with the signal transmitting mechanism, and to one of which the metallic circuit is connected, a third wire connected to the other terminal, and an independent relay in the third wire, to operate, substantially as described. 8th. The combination of the following instrumentalities, viz.: a district station, a metallic circuit extended therefrom, a signal transmitting mechanism included in said circuit, a relay in the metallic circuit responsive to the said signal mechanism, a second signal transmitting mechanism normally disconnect from the metallic circuit and adapted to be connected thereto when the first signal mechanism is operated, a ground connection at the transmitting mechanism, for said second signal mechanism, a ground tap at the district station normally disconnected from the metallic circuit, means to connect the ground tap with the metallic circuit, a relay in the ground tap, a central station, a main line connecting the central station with the district station, and armatures for the metallic circuit relay and the ground tap, forming part of the main line between the said stations, substantially as described. 9th. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism consisting of a shaft d^2, a signal wheel d, connected in the metallic circuit, a signal wheel d^6, mounted on the shaft to transmit its signal after the wheel d, a pen d^{10}, joined to one line wire of the metallic circuit, and normally electrically disconnected from the wheel d^6, a signal wheel d^7, mounted on the shaft d^2, to transmit its signal after the wheel d^6, a pen d^{12}, joined to the other line wire of the metallic circuit, a ground tap electrically connected to the signal wheels d^6, d^7, a circuit controller for said ground tap, a relay in the metallic circuit responsive to the signal wheel d, a ground tap at the receiving end of the metallic circuit normally disconnected from said circuit, a relay in the ground tap, and a switch to connect the ground tap to the metallic circuit, substantially as described. 10th. In a fire alarm system, the combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism included in said circuit, a third or auxiliary wire, circuit terminals in the transmitting mechanism included in the metallic circuit and third wire, included in the third wire circuit, a second normally open circuit controller and a transmitting mechanism, a normally open circuit controller at the transmitting mechanism, controlling a shunt circuit for the metallic circuit, as described, and a receiving mechanism in the third wire circuit, substantially as described. 11th. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism located therein, a normally open circuit controller at the transmitting mechanism in a shunt circuit around said transmitting mechanism, an independent signal mechanism normally disconnected from the metallic circuit, and adapted to be connected thereto when the first signal mechanism is operated, a ground connnection at the transmitting mechanism for said second signal transmitting mechanism, a normally closed circuit controller in said ground connection, a relay in the metallic circuit, an independent ground circuit at the receiving end of the metallic circuit, a relay therein, and a switch to connect the independent ground circuit with the metallic circuit, substantially as described. 12th. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism located therein, a normally open circuit controller at the transmitting mechanism in a shunt circuit around said transmitting mechanism, an independent signal mechanism normally disconnected from the metallic circuit, and adapted to be connected thereto when the first signal mechanism is operated, a ground connection at the transmitting mechanism for said second signal transmitting mechanism, a normally closed circuit controller in said ground connection, a third wire or auxiliary circuit, circuit terminals at the transmitting mechanism, connected to the metallic circuit and to the third wire circuit, a normally open circuit controller in the third wire circuit, a relay in the metallic circuit, a relay in the third wire, an independent ground tap or circuit, a relay therein and means to connect the independent ground circuit with the metallic circuit, substantially as described. 13th. 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, and a relay in the third wire circuit operated by the transmitting mechanism, substantially as described. 14th. 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, an electro-magnet to operate it, circuit terminals governing the operation of the said electro-magnet, a relay in the third wire circuit operated by the transmitting mechanism, and means operated by the said relay to actuate the terminals of the pole changer magnet and reproduce a signal at the transmitting mechanism, substantially as described. 15th. 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 condenser connected to the third wire and to the metallic circuit at the transmitting mechanism, a normally open circuit controller in the third wire circuit at the transmitting mechanism, adapted to have coupled to it a telephone, as described, and normally open contact arms in the receiving station, connected to the third wire and to the metallic circuit, and adapted to have coupled to them a telephone, as described, and a circuit controller or key in the third wire to prevent short circuiting of the telephone at the receiving or district station, substantially as described. 16th. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism included therein, a relay in the metallic circuit located in a district or receiving station, a relay in the central station responsive to change in current strength, a main line circuit independent of the said metallic circuit connecting said relays, a shunt circuit for said main line, a resistance c^{18}, in said main line shunt circuit, a signal transmitting mechanism in the main line shunt in multiple with the resistance, and a switch in the main line in multiple with the signal transmitting mechanism, substantially as described. 17th. The combination of the following instrumentalities, viz.: a district station, one or metallic circuits extended therefrom and provided each with a relay and a pole changer, a local circuit containing an electro-magnet to operate said pole changer, a central station, a main line connecting said central station to the district station, a polarized magnet in the line wire, an armature for said polarized magnet included to the local circuit of the pole changer magnet, a stop or terminal included in the local circuit and with which said armature co-operates to close said local circuit, a pole changer in the main line, an electro-magnet to operate it, a local circuit in which the main line pole changer, magnet is located, normally open circuit terminals for said local circuit in the central station, a circuit controller to operate the circuit terminals in the central station, an electro-magnet to operate the circuit controller, a local circuit in which said electro-magnet is located, a relay in the main line, and an armature for said relay governing the local circuit containing the circuit controller operating magnet, substantially as described. 18th. The combination of the following instrumentalities, viz.: a district station, a metallic circuit extended therefrom, a signal transmitting mechanism in said metallic circuit, a receiving instrument in the district station, operated by interruptions in the metallic circuit, a central station, an independent main line connecting said stations, a receiving instrument in the central station operated by interruptions in the main line connecting said stations, a resistance in the independent main line connecting the stations, a receiving instrument in the central station operated by changes in the current strength of the main line, and a switch in the main line in multiple with the resistance, substantially as described. 19th. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism located therein, a pole changer in said metallic circuit, a third wire or auxiliary circuit, circuit terminals connected to the third wire and metallic circuit operated by the transmitting mechanism, a receiving instrument in the third wire circuit, controlled in its operation by the circuit terminals at the transmitting mechanism, and means, substantially as described, operated by the receiving instrument to actuate the pole changer in the metallic circuit, substantially as and for the purpose specified. 20th. The combination of the following instrumentalities, viz.: a metallic circuit, a signal transmitting mechanism therein, a third wire or auxiliary circuit, circuit terminals connected to the metallic circuit and third wire, a normally open shunt at the transmitting mechanism for the metallic circuit, a relay in the third wire operated by the transmitting mechanism, an indicator in the metallic circuit at the transmitting mechanism, a circuit breaker in the metallic circuit at the receiving station, and a resistance in the metallic circuit in multiple with the said circuit breaker, substantially as described. 21st. In a signalling system, the combination with a box provided with a signal transmitting mechanism, of an audible signal for said box, a motor mechanism for said audible signal, a frangible covering for said and a releasing device for the motor mechanism, controlled by the frangible covering and automatically operated thereby, substantially as described. 22nd. In a fire alarm system, the combination of the following instrumentalities, viz.: a box, a signal transmitting mechanism located therein, an operating mechanism therefor, consisting of a pull bar or rod h^7, provided with a slot h^6, a hook h^5, extended through said slot, and a door for said box, composed of solid material to cover one of said pull bars or rods, and of frangible