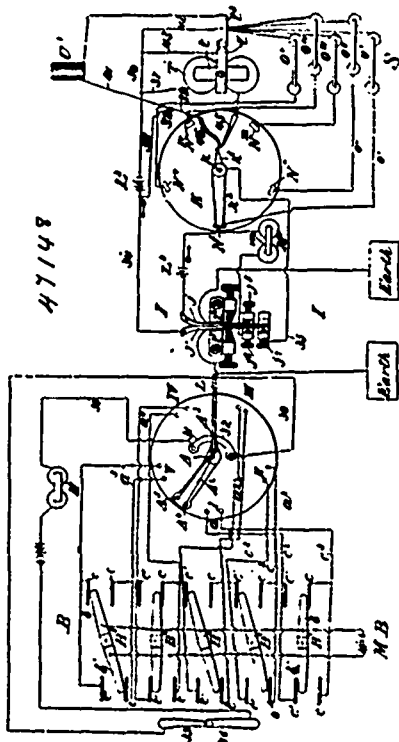


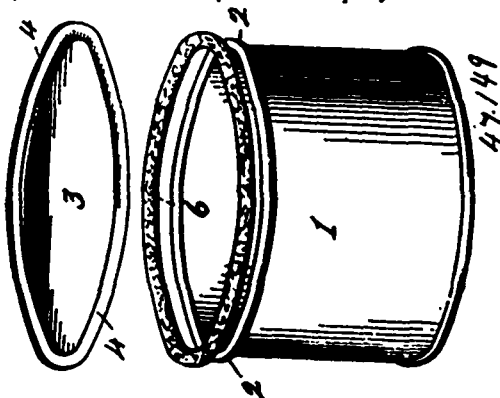
maker, a series of circuit-changers, one in each branch, a series of keys each representing a different character, and connections between said keys and circuit-changers, whereby each key operates a distinct



combination of circuit-changers and sends to a line a signal made up of an impulse or group of impulses differing in number of impulses or the intervals that separate them, substantially as described. 3rd. In an electrical signalling transmitting apparatus, the combination of a rotary main line circuit-maker, a series of battery branches connected to terminals in the path of said circuit-maker, a pole-changer or current reverser in each branch, and a series of keys each operating a distinct combination of pole-changers, whereby the normal connections of any one or more of the battery branches at the points of contact with the circuit-maker may be reversed by striking the proper key, substantially as described. 4th. In an electrical signalling transmitting instrument, the combination of a main line circuit-maker, a series of battery branches adapted to be connected to line by said circuit-maker, a series of circuit-changers one in each branch, a series of keys exceeding the number of circuit-changers, a series of rods one connected with each key, actuating bars for said circuit-changers, and projecting arms on said rods for operating said bars, each rod having a distinct number or arrangement of arms, so that it actuates a distinct combination of circuit-changers, substantially as described. 5th. The described combination-forming mechanism, comprising, the combination of finger-keys, a series of rods, one for each key, each rod having one or more projecting arms, and a series of transverse bars, arranged relatively to said rods and arms as set forth, so that each rod actuates a distinct bar or combination of bars, substantially as described. 6th. The combination, with the main line circuit-maker, the finger-keys, pole-changers and key-levers, and connections whereby the said pole-changers are actuated from the said key-levers, of a catch or holder for engaging a key when depressed, a releasing magnet for withdrawing said catch, a circuit including said magnet, and contacts controlled by said circuit-maker for closing the circuit of said magnet at the proper time, substantially as described. 7th. In an electrical signalling system, the combination with a transmitting apparatus adapted to send to line impulses of either polarity, of a polarized relay magnet having its coils wound in opposite directions and provided with two vibrating tongues each set nearer to one of the poles than to the other so that one is normally attracted in one direction and the other in the opposite direction, and local circuits having contacts controlled by said tongues, as set forth. 8th. The combination in a polarized relay, of a permanent magnet having at one end two reversely wound coils with their cores at one end, and at the other end two pivoted tongues free to vibrate between the extremities of the cores, one being normally attracted by the permanent magnetism toward one of the cores, and the other toward the opposite core, whereby the tongues will respectively respond to currents of opposite polarity, as set forth. 9th. The combination with the transmitting apparatus, including a rotary circuit-maker and a series of battery branches connected to terminals arranged at suitable distances apart in the path of said circuit-maker, of a distributor comprising a circuit-maker, and terminal contact points corresponding with those of the transmitting apparatus, escapement mechanism for arresting the arm of the

distributor at each contact, an escapement magnet for releasing the distributor arm at each impulse traversing the line from the transmitting station, and a motor for driving said arm at a greater speed than the circuit-maker of the transmitting station, substantially as described. 10th. The combination with a transmitting apparatus including a rotary circuit-maker, a series of battery branches connected to terminals in the path of said circuit-maker, pole-changers, one in each branch, whereby a current of either polarity can be sent to each line at each contact point, a polarized relay at the receiving station controlling two local circuits, a distributor in one of said circuits, controlling contacts in branches corresponding with battery branches of the sending station, driving mechanism for said distributor, an escapement therefor, an escapement magnet in both of said local circuits, substantially as described. 11th. The combination of a series of parallel selecting bars, a magnet for moving each bar independently of the others, and a series of transverse rods intersecting said bars and normally upheld by lugs, said bars having release notches adapted to register with said lugs when the bar is moved by its magnet, substantially as described. 12th. The combination of a series of selecting bars, electro-magnetic operating mechanism therefor, a series of rods, each controlled by a bar or combination of bars, a head bar normally upholding all the rods, and means for depressing said head bar when the desired selecting bar or combination of bars has been operated, substantially as described. 13th. The combination of a series of parallel selecting bars having release notches and locking lugs, a series of transverse rods, each controlled by a distinct bar or combination of bars, and each having notches and lugs adapted to register with certain of those on the selecting bars, and means for moving any bar or combination of bars longitudinally, thereby releasing one of the rods and locking all the others, substantially as described. 14th. The combination of a transmitting apparatus comprising a rotating circuit-maker, a series of contact points in the path thereof, pole-changers one in the circuit of each contact point, circuits and connections whereby a series of impulses of negative or positive polarity may be thrown to line during the rotating of the circuit-maker, a distributor at the receiving station comprising a rotating arm adapted to move in unison with the transmitting circuit-maker, a series of contacts in the path of said arm corresponding in number and location with the contact points at the transmitting station, a polarized relay in the main line controlling the circuits through the contact points of the distributor selecting magnets in separate branches terminating each at one of said contacts, selecting bars actuated each by one of said magnets, and a series of rods each controlled by one of said bars, or by a combination of bars, substantially as described. 15th. The combination with the selecting bars, and the rods controlled thereby of a magnet for each selecting bar, and a restoring magnet and its circuit, and connections as set forth for restoring the selecting bars to their normal positions, substantially as described. 16th. In an electrical signalling system comprising terminal and intermediate stations connected by a line conductor, the combination of a transmitting apparatus at the several stations adapted to send signals composed of groups of impulses of positive and negative polarity, main batteries at the two terminal stations of the line, switches whereby a portion of the batteries at one or the other may be cut out, and circuit connections between the line and the local transmitters, whereby to send currents in one direction both the terminal batteries are included in circuit, and to send reverse currents the stronger group of batteries are cut out, and the line completed to earth at the transmitting station, thereby giving each station while transmitting complete control of the polarity of the line, substantially as described. 17th. The combination with the selecting mechanism comprising a series of selecting bars, electro-magnetic actuating mechanism therefor, and character rods each actuated by a distinct bar or combination of bars, of recording mechanism, whereby the movement of each rod is recorded, substantially as described.

No. 47,149. Tin Can. (Boîte métallique.)



William Haaker, New York, State of New York, U.S.A., 3rd October, 1894; 6 years.

Claim.—The combination with a can having an outwardly extend-