

forth. 52nd. The combination of the slotted platform, the block 43 having a beveled face *u*, and movable two part mould, substantially as set forth. 53rd. The combination of the pivoted vertically swinging mould, and the lead box *E*, movable to and from its position above the mould, substantially as set forth. 54th. The combination with the pivoted vertically swinging mould of the heater *H*, substantially as set forth. 55th. The lead box provided with a plug cock in combination with an independent mould, substantially as set forth. 56th. The combination of the mould, the shaft 42, carried thereby and supported in bearings in the frame of the machine, a pinion mounted on the said shaft, a rack for rocking the pinion, and operative connections between a moving shaft of the machine and the rack, substantially as set forth. 57th. The combination of the blocks and carriers, plate *B*, slotted at *x*, justifying device *G*, mould movable to and from the slot, and lead box movable to and from the mould, substantially as set forth. 58th. The combination with a series of keys, of a series of rigid carriers supporting blocks, connections between the keys and carriers, and a justifying device the parts whereof are arranged in position to be introduced between the blocks when arranged in line by the action of keys, substantially as set forth. 59th. The combination with a series of keys, of a series of carriers supporting blocks, connections between the keys and the carriers, a justifying device the parts whereof are arranged in position to be introduced between the blocks by the action of a key, and a movable slide forming a clamp arranged to take its position at the end of the line of blocks, substantially as set forth. 60th. The combination with a series of keys, of a series of rigid carriers supporting blocks, connections between the keys and carriers, a justifying device, a movable mould, and a lead box separate therefrom arranged to move over the mould, substantially as set forth. 61st. The combination with the slotted platform, of the two part mould hinged to swing over the said slot, the bar 45, for closing the parts of the mould together, arranged adjacent to the slot, the wedge for separating the parts of the mould when moved away from the slot, the lead box movable to and from the mould, and operative connections for moving the mould and lead box, and for delivering the molten lead to the mould, substantially as set forth. 62nd. The combination of a continuously driven shaft, an intermittently driven shaft provided with cams for giving motion to various parts of the machine, a clutch between the said shafts, a revolving drum, a cord connected with a clutch operative lever and passing round said drum, and a key to which the said cord is connected, substantially as set forth. 63rd. The combination, with the key board and keys, of two fonts of blocks and carriers, connections whereby either font of blocks may be moved from the keys, substantially as set forth. 64th. The combination of two fonts of blocks and carriers and connections extending to a position adjacent to a shifting key board, substantially as set forth. 65th. The combination of a key board provided with a single series of keys, two fonts of blocks and carriers, two sets of levers arranged adjacent to the keys, operative connections between each set of levers and each set of carriers, and a shifting key board in which the keys are mounted, whereby the keys may be brought into position to operate either set of levers, substantially as set forth. 66. The combination of a movable key board provided with a single series of keys, two fonts of blocks and two sets of carriers for the blocks, two sets of levers arranged adjacent to the movable key board, operative connections between each set of levers and each set of carriers, levers bearing against the movable key board for shifting it to bring the keys above one or other set of levers and means for operating the levers bearing against the movable key board, substantially as set forth. 67. The combination of a movable key board having a single set of keys, two fonts of blocks and two sets of carriers each having a single set of keys, two fonts of blocks and two sets of carriers for the blocks, two sets of levers arranged adjacent to the movable key board and a single set of levers arranged adjacent to each stationary key board, operative connections between one set of carriers and the levers adjacent to one of the stationary key boards and one set of levers adjacent to the movable key board, other operative connections between the other set of carriers and the levers adjacent to the other stationary key board, and the other set of levers adjacent to the movable key board, and means for moving the movable key board to bring its keys into position to operate either set of levers adjacent thereto, substantially as set forth. 68th. The combination of a continuously rotating shaft, a clutch thereon with a pin 78, a shaft intermittently driven from the shaft provided with a disk adjacent to the clutch and provided with a slot 125, arranged to receive the pin 73, and means for shifting the clutch, substantially as set forth. 69th. The combination of two fonts of blocks, two sets of carriers therefor, the casting devices, a set of keys in a moveable key board, connections extending from the two sets of carriers to a position adjacent to the key board, and keys for shifting the key board and throwing into operation the operating mechanisms, substantially as set forth. 70th. The combination of two fonts of blocks and two sets of carriers therefor, two sets of levers operatively connected with the carriers, a movable key board carrying a single set of keys for operating the said levers, two sets of casting devices, and mechanisms for operating them, clutches for putting the said mechanism into and out of operation, and keys connected to shift the key board in opposite directions and to simultaneously operate the clutches, substantially as set forth.

No. 42,467. Circuit Controller.*(Contrôleur de circuit.)*

William Bingham Cleveland, Geneva, Ohio, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. The combination, with a stationary contact and a movable contact, of a casing and a comminuted, non-liquid filling in said casing, said filling being so disposed in the casing as to tumble into the space between the contacts when the movable contact is withdrawn, substantially as set forth. 2nd. The combination of a casing, a comminuted, non-liquid filling therein, a stationary contact above said filling, and a movable contact arranged to be withdrawn into the filling, substantially as set forth. 3rd. The combination of a casing, a comminuted, non-liquid filling therein, a slitted contact sleeve above said filling, and a contact rod sliding in the casing and through the filling and registering with and sliding into the contact sleeve, substantially as set forth. 4th. The combination of a casing, slitted contact sleeves in the upper and lower portions of said casing, a comminuted, non-liquid filling partly occupying the space in the casing between said sleeves, and a contact rod insulated from the casing and movably inserted through the latter and through the contact sleeves, substantially as set forth. 5th. The combination of a stationary and movable contact, a casing and a non-liquid filling in said casing, said filling being so disposed as to interpose between said contacts when the movable contact is withdrawn, substantially as set forth.

No. 42,468. Split Pulley. (Poulie d'assemblage.)

Daniel Taylor McNeil, Kokomo, Indiana, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. In a split pulley, two clamping blocks, between which the shaft passes, having a series of grooves in their outer faces, which extend entirely across them, and transverse bolt holes between the grooves, continuous truss arms placed in said grooves, a plate or plates which are applied to the blocks outside of the truss arms, and transverse to the grooves, and clamping bolts, which pass through the plates and the said bolt holes, substantially as shown. 2nd. In a split pulley, the rim, two clamping blocks between which the shaft passes, having a series of grooves which extend entirely across the outer faces of the blocks, and continuous truss arms, which are formed of plates having a straight central portion placed edgewise in the said grooves, bent edgewise outward from the blocks and then secured to the rims, and a means for securing the truss arms to the blocks, whereby they extend edgewise entirely across the pulley, and the arms in the two blocks diverge from each other, the parts combined, substantially as shown.

No. 42,469. Signal for Railways.*(Signal de chemin de fer.)*

William Dart Sheldon, Providence, Rhode Island, U.S.A., 5th April, 1893; 6 years.

Claim.—1st. The method herein described for lighting the road-bed of a railroad, the same consisting in lighting electric lamps and extinguishing the same automatically by closing and opening an electric circuit, as described. 2nd. The method herein described of signalling the approach of a train on a railroad, the same consisting in closing an electric circuit, conducting electric energy of high tension automatically by the passage of the train and lighting an electric lamp at a distance in advance of the train, as described. 3rd. A railroad signal consisting of an electric lamp lighted automatically in front of a passing train by closing the electric circuit, as described. 4th. The combination in a railroad signal, with a source of electric energy sufficient to supply two or more arc lights, of lamps placed at intervals along the road and the devices herein shown and described for automatically lighting and extinguishing the lamps, as described. 5th. In combination, with a source of electric energy sufficient to supply one or more arc lights and the positive and negative electrodes forming a circuit extending along a railroad, of switches constructed to operate by a passing train and signal the approaching train in advance of the switch operated upon, as described. 6th. A railroad signal, consisting in two lamps placed one near each end of a section of the railroad connected with conductor wires adapted to carry electric energy of high tension, a source of electric energy constructed to make the circuit to light the lamps and break the same to extinguish the lamps automatically by the passing train, as described. 7th. The combination, with the source of electric energy 8, of the conductors 9 and 10, and lamps connected with the conductors through an intermediate switch operated by the passage of a train, as described. 8th. The combination, with a source of electric energy of high tension sufficient to supply two or more arc lamps, of the conductors 9 and 10, a railroad, the conductors 11 and 12, a switch operated by the passage of a train, the magnet 27, and conductors 13, constructed to close the electric circuit and utilize the electric energy at a point in advance of the passing train, as described.