

mounted within the case and operatively connected to the switch, a horizontally rotating disc mounted on the annular bearing upon the case and provided with a vertical contact pin and operatively connected to the levers within the case below. 7th. A switch-operating mechanism comprising a pair of counterpart cases, levers mounted in the cases and connected together comparatively, a rod connecting the switch with the lever in one case, a vertical contact pin mounted above the opposite case and operatively connected to the lever therein, a pair of vertically movable trip bars each having a bevelled foot facing each other and carried by a motor vehicle and controlled by either of the trip bars to contact with the railway rail or like stable element already existing as a gauge whereby accurate adjustment may be had for either of the pair of trip bars in contact with the vertical contact pin. 8th. A switch operating mechanism comprising a pair of connected cases, a disc mounted upon one of the cases, a vertical contact pin secured to the disc, a lever in each of the cases and connected, and one of which is operatively connected to the switch, a pair of trip bars each provided with an adjacently disposed bevelled contact face whereby the contact pin is engaged, a guide bar adapted to engage the downward movement of the pair of trip bars and operated by either of the trip bars independently of the other, and means whereby the trip bars are operated. 9th. In a switch operating mechanism, the combination of the motor, the brackets attached to the motor frame, the housings attached to the brackets, the trip bar, the guide bar, the supporting springs for the trip bar and the guide bar, the compression beam, and the levers and connections whereby the trip bar and guide bar are forced downwardly, substantially as shown and described. 10th. In a switch operating mechanism, the combination of the switch, the motor, the separately situated cases, the connecting tubes, the levers mounted in the cases, the switch connecting rod, the rods extending through the tubes and connecting the levers in the cases, the disc connected to the case cover and provided with a shaft removably connected to the lever in the case below, the vertical pin attached to the disc, the stops, the trip bars, the guide bars, the compression beam, the supporting springs, the levers for operating the trip bars, the pressure bars, and the connecting cables, substantially as specified. 11th. In a switch operating mechanism, the combination with a switch, of the cases B and B', the connecting tubes *b*, *b'*, the lever C' and attached lever C<sup>2</sup> mounted in the case B, the switch connecting rod, the jaws G<sup>1</sup>, the lever C in the case C and having the aperture C<sup>4</sup>, the cover 2 upon the case B', the cover 3 upon the case B and provided with the annular bearings 5 and stops, 9, the journal bearing 10 and annular flange *h* surrounding the top of the bearing 10, the disc D provided with the annular bearing 6 and flange 7 and stops 8, the annular air chamber *i* above the flange *h*, the shaft D<sup>1</sup> attached to said disc and extending through the bearing 10 and aperture C<sup>4</sup>, and the pin E, substantially as shown and described. 12th. In a switch operating mechanism, the combination of the switch, the operating levers connected with the switch the vertical crank pin whereby the levers are actuated, the motor, the brackets attached to the motor frame, the housings attached to the brackets, the trip bars in pairs spring pressed upward in a housing, the guide bars spring pressed upward in a housing, the compression beam extending through the trip bar and connecting a guide bar whereby the same is pressed down as a gauge, the levers whereby the trip bars are forced down, and the pressure bars and connections whereby the trip bar levers are operated, substantially as set forth. 13th. The combination of the cases B B', the connecting tubes adjustably attached to said cases, the lever C' and its supporting shaft, the lever C<sup>2</sup> rigidly connected to said lever and its shaft, the connecting rod *a*, the lever C having the square central aperture, the rods *d*, *d'*, extending through said tubes and adjustably connected to said levers C and C', the cover 2, the cover 3 having the journal bearing 10, the shaft *d'* engaging said lever C and provided with the nut to retain the same in position, the lever at the top of said shaft D<sup>1</sup> and having the pin E, whereby said levers may be actuated, substantially as set forth. 14th. The combination of the case B having the bottom 1 provided with the bearing 12, the cover 3 provided with the bearings 10 and 5, the raised flange *h* around the one of said bearing 10, the disc lever having the pin E and provided with the bearing 6 and flange 7, and annular air chamber *i*, substantially as shown and described. 15th. The combination with the motor vehicle of the bracket G, the housings H and *k* secured to said bracket, the trip bar 1 and a spring therefor, the guide bar J and a spring therefor, the compression beam I, connecting said trip bar and said guide bar, and the compression levers suitably actuated, substantially as set forth. 16th. In a railway switch, the combination with the switch of a case and a horizontal lever mounted therein having a connected rod attached to the switch point and having a pair of oppositely disposed horizontal arms situate at a right angle to the horizontal lever, a second case and a horizontal lever mounted thereon and provided with a vertical contact pin and having a pair of oppositely disposed horizontal arms situate at right angles thereto, and rods connecting the four described horizontal arms, substantially as set forth. 17th. In a railway switch operating mechanism, the combination of a pair of serrated cases one of which is provided with an annular bearing upon the top thereof and a journal bearing at the centre of the annular bearing, a vertical shaft in the journal bearing and provided with a disc bearing upon the annular bearing, a vertical contact pin secured to the disc, a pair of tubes adjustably connecting the cases, a lever in each of the cases and having each three arms situate hori-

zontally, one of which is detachably secured to the vertical shaft and one of the arms of which in the opposite case is connected with the switch point, adjustable rods extending through the tubes and connecting the levers in the two cases, and an annular air chamber at the top of the journal bearing whereby water is prevented from entering the journal bearing, substantially as set forth. 18th. In a switch board operating mechanism, the combination of the switch, the motor, the separately situated cases, the connecting tubes, the levers mounted in the cases, the switch connecting rod, the rods extending through the tubes and connecting the levers in the cases, the disc mounted upon the case cover and having frictional bearing surfaces and provided with the shaft connected to the lever in the case below, the vertical pin attached to the disc, the trip bars, the guide bars, the compression beam, the supporting springs, and means whereby the trip bars may be operated, substantially as shown and described. 19th. In a switch operating mechanism, the combination of the contact pin, the motor, the brackets mounted on the motor, the trip bars in pairs supported by the brackets and spring pressed upward, the guide bars supported by the brackets and spring pressed upward, the compressing beam extending through the trip bars and connecting a guide bar whereby the same is pressed down as a gauge by the trip bar, and means whereby the trip bars are forced down, substantially as shown and described. 20th. In a switch operating mechanism, the combination with a switch, of the cases B and B' the connecting tubes *b*, *b'*, the lever C' and attached lever C<sup>2</sup> mounted in the case B', the cover 3 upon the case B and provided with the annular bearing 5, the journal bearing 10 and annular flange *h* surrounding the top of the bearing 10, the disc D provided with the annular bearing 6 and flange 7, the annular air chamber *i* above the flange *h*, the shaft D<sup>1</sup> attached to said disc and extending through the bearing 10 and aperture C<sup>4</sup> and removably secured in said aperture, and the contact pin E, substantially as shown and described. 21st. The combination of the case B having the bottom *i* provided with the bearing 12, the cover 3 provided with the bearing 10, the shaft D<sup>1</sup> in said bearings, the lever detachably secured to such shaft, and the vertical contact pin operatively connected to such shaft D<sup>1</sup> whereby the same may be rotated, substantially as set forth. 22nd. The combination of the case B provided with the cover 3 having the bearing 10, the shaft D<sup>1</sup> in said bearing, the disc lever secured at the top of said shaft, the contact pin secured to said disc lever, the lever C secured to said shaft, the case B', the three arm lever in said case B', and the rods connecting said three arm lever with said lever C substantially as set forth. 23rd. The combination of the case B', the shaft D<sup>1</sup>, the lever C', the lever C<sup>2</sup>, the rod A, the tubes *b*, *b'*, and the connecting rods *d*, *d'*, substantially as set forth. 24th. The combination of the case B, the cover 3 provided with the bearing 10 and the annular flange at the top thereof, the shaft D<sup>1</sup> in said bearing and provided with the disc at the top thereof and the annular air chamber between said flange and the disc, substantially as set forth. 25th. The combination of the case B, the cover provided with the annular frictional bearing, the shaft mounted vertically in the case, the lever attached to the shaft, the disc provided with the annular frictional bearing upon the cover whereby the shaft is prevented from shifting accidentally, and the contact pin attached to the disc, substantially as set forth. 26th. The combination with a vertical contact pin for actuating the switch, of a pair of vertically moving trip bars mounted on a vehicle face to face and each provided with a foot bevelled at the working face so that the point of either foot when depressed may engage with such contact pin and draw the same laterally so as to pass under the adjacent one of such pair of trip bars, substantially as set forth. The combination with a vertical contact pin for actuating the switch, of a pair of vertically moving trip bars mounted on a vehicle and provided each with a bevelled or laterally curved foot and a vertical slot in the body of the bar, a guide bar also mounted on the vehicle and provided with a compression beam extending through the slots in the trip bars whereby either of the trip bars may actuate the guide bar, and means whereby the trip bars may be operated independently, substantially as set forth. 26th. In a switch operating mechanism, the combination of the trip bars *l* provided with the foot 14 and slot *t*, the supporting springs, the guide bar, and the compression beam connected to the guide bar and extending through the slots *t*, substantially as set forth. 29th. In a switch operating mechanism, the combination of the trip bars *l* provided each with the opening *u*, the bearing plate *v* extending through said opening *u* in both bars, and the spring in each of said openings, substantially as set forth. 30th. In a switch operating mechanism, the combination of the guide bar J provided with the opening *n*, the bearing plate *p*, the spring in said opening, the compression beam connected to said guide bar, substantially as set forth.

#### No. 66,877. Card Shuffling Machine.

(Appareil à mélanger les cartes.)

John M. Bowden, Pittsburg, Pennsylvania, U.S.A., 2nd April 1900; 6 years. (Filed 19th March, 1900.)

Claim.—1st. A card shuffling machine comprising two suitably operated feed rolls arranged one above and shiftable toward and from the other, a table arranged at the receiving side of the rolls, in position to deliver a pack of cards from it to and between the rolls, and means for obstructing the feed of all the cards of a pack of cards interposed between the rolls except the limited number desired to