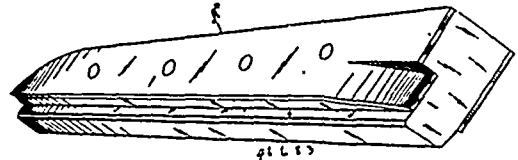


controlling the discharge of liquid through said pipe, a stand-pipe p^2 , in connection with pipes p , p^1 , a float r in said stand-pipe, and means controlled by said float for governing the speed of the pump. 10th. In a calcining furnace comprising a calcining chamber and a stack, the combination of a supply tank for liquid to be treated, means for introducing liquid from said tank into the stack, so that it shall descend therethrough and be thereby concentrated, a tank for receiving the liquid thus concentrated, means for introducing the concentrated liquid from this tank into the calcining chamber, and means for controlling the admission of liquid to the stack consisting of a valve operated by a float responding to variations in the level of the concentrated liquid in said receiving tank. 11th. In a calcining furnace, the combination with a calcining chamber and an upright stack, of a supply tank for the liquid to be treated, a pump drawing from said supply tank, a pipe leading from the outlet of said pump extending upward and discharging the liquid into said stack, whereby the liquid is showered down the stack, and a receiving tank at the base of said stack for receiving the liquid thus concentrated. 12th. In a calcining furnace, the combination of a calcining chamber and an upright stack, a supply tank for the liquid to be treated, a pipe extending therefrom to a pump, a pipe leading from the outlet of said pump extending upward and discharging into the stack to shower the liquid down therethrough, a receiving tank at the base of the stack to receive the liquid thus concentrated, and means for controlling the flow of liquid from said supply tank, consisting of a valve, and a float operating said valve and responding to variations of level in said receiving tank. 13th. In a calcining furnace comprising a calcining chamber and a stack, the combination of a receiving tank at the base of said stack, a supply tank for the liquid to be treated, a pump, pipes leading from said supply tank and said receiving tank to said pump, and the discharge pipe of said pump extending upward and discharging the liquid therefrom into said stack, whereby the liquid thus discharged into the stack may be drawn either from said supply tank or said receiving tank, or partly from each. 14th. In a calcining furnace, the combination with calcining chamber A, stack B and tank C, of supply tank F, pump G, pipe e leading from tank F, controlled by float valves f , g , pipe c^1 , leading from tank C, to pump G, valve c^2 controlling said pipe, and discharge pipe e^1 extending from said pump upwardly and discharging into the stack, whereby the degree of concentration of the liquid in tank C may be determined by the adjustment of valve c^2 , the flow from tank F being governed automatically and proportionally to such adjustment by the float-valve. 15th. In a calcining furnace, the combination with calcining chamber A and stack B, of tank C, pump G, drawing therefrom, pipes p and p^2 receiving the liquid from said pump and discharging it into the calcining chamber, and removable cap p^0 in line with pipe p , whereby by removing this cap access may be gained to the interior of pipe p for cleaning it. 16th. In a calcining furnace, the combination of a calcining chamber and stack, a concentrating tank within the furnace, an upright shaft carrying stirring arms within said tank, a driving shaft passing laterally through said tank, and bevel gears within the tank for communicating motion from said driving shaft to said stirrer shaft, whereby the material in said tank may be effectively agitated and commingled. 17th. In a calcining furnace, comprising a calcining chamber and stack, the combination of a save-all L, supply tank F, pipe e leading to pump G, and valved pipe e^2 communicating with pipe e , whereby the tank F may be drained into the save-all through pipe e^2 , and its contents afterward pumped out through said pipe to the pump. 18th. The combination of a stationary stack, a horizontal furnace comprising as part thereof a revolving calcining chamber having its receiving end communicating with said stack, and arranged to discharge the calcined material from its opposite end, a tilting framework for supporting said furnace and tilting it to varying angles, pivoted adjacent to the receiving end of said chamber, and mechanism for raising or lowering said framework to raise or lower the discharge end of said chamber at will. 19th. The combination of a stationary stack, a horizontal furnace comprising a revolving calcining chamber having its receiving end communicating with said stack, and means at its opposite or discharge end for partially closing it and for supplying ignited fuel to it, a tilting framework for supporting said furnace and tilting it to varying angles, pivoted adjacent to the receiving end of said chamber, and mechanism for raising or lowering said framework to raise or lower the discharge end of said chamber at will. 20th. The combination of a stationary stack, a horizontal furnace comprising a revolving calcining chamber having its receiving end communicating with said stack, and a stationary shield or initial combustion chamber at its opposite or discharge end for partially closing it and having an opening for supplying fuel to it, the supporting wheels and shafts of said rotary chamber, a support for said stationary shield or chamber, a tilting framework for supporting said furnace, on which said wheels and shafts and said support are mounted, and mechanism for raising or lowering said framework to tilt it to different angles at will. 21st. The combination of a stationary stack, a horizontal furnace comprising a revolving calcining chamber having its receiving end communicating with said stack, and a stationary shield or initial combustion chamber at its opposite or discharge end for partially closing it and having an opening for supplying fuel to it, the supporting wheels and shafts of said rotary chamber, a support for said stationary shield or chamber, constructed with slideways to admit of the adjustment of the shield or chamber toward or from

the discharge end of the rotary chamber, a tilting framework for supporting said furnace, on which said wheels and shafts and said support are mounted, and mechanism for tilting said framework to different angles at will. 22nd. In a rotary calcining furnace, the combination with the revolving calcining chamber of a shield exterior thereto and arranged against the opening at the discharge end thereof to cover and close said opening, formed with its bottom portion eccentric to said opening and above the bottom thereof, so as to leave a space x uncovered at the bottom thereof through which to discharge the calcined ash, and said shield mounted to be bodily adjustable toward and from the chamber to afford a narrower or wider space for entrance of air, whereby such adjustment of the shield cannot close the opening x through which the ash is discharged, nor reduce its area beyond the minimum predetermined area circumscribed by the eccentric arcs bounding said opening. 23rd. In a rotary calcining furnace, the combination with the revolving calcining chamber thereof, of a fire-box or furnace applied to its discharge end eccentrically and nearest the ascending side of the calcining chamber, whereby the flames from said fire-box are directed over the greater mass of material within the calcining chamber at the ascending side thereof. 24th. In a rotary calcining furnace, the combination with the revolving calcining chamber thereof, of a shield for closing the discharge end of said chamber, constructed with a fire-box or furnace arranged eccentrically and nearest the ascending side of the calcining chamber, and the shield formed with a hole close to the opposite and descending side of the chamber, whereby during the ascent of the material it is exposed to the flames from said fire-box, and during its descent the calcined material may be observed through said hole, or manipulated by a poker inserted through said hole. 25th. The combination with a revolving calcining chamber and its shield or initial combustion chamber, a tilting platform supporting them, and a lifting mechanism therefor consisting of upright screws to which the ends of the longitudinal beams of the platform are connected, worm-wheels having threaded hubs engaging said screws, and a transverse shaft having worms meshing with said worm-wheels.

No. 46,083. Safety Switch. (*Aiguille de sûreté.*)



Edward Best and John D. Lebel, both of London, Ontario, Canada, 1st August, 1894; 6 years.

Claim.—1st. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body, the upper face of which is inclined laterally towards the adjacent rail, substantially as shown and described, and for the purpose specified. 2nd. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with a flange M , inclined longitudinally towards the adjacent rail, substantially as shown and described, and for the purpose specified. 3rd. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with a recess O , substantially as shown and described, and for the purpose specified. 4th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with a recess O , and flange M , substantially as shown and described, and for the purpose specified. 5th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with an inclined face P , and recess O , substantially as shown and described, and for the purpose specified. 6th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with a flange M , and an inclined face P , substantially as shown and described, and for the purpose specified. 7th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with a flange M , inclined face P , and recess O , substantially as shown and described, and for the purpose specified. 8th. As a new article of manufacture, a safety attachment for railroad switches, consisting of a body A^2 , formed with an inclined recess N , and with an upper face inclined laterally towards the adjacent rail, substantially as shown and described, and for the purpose specified. 9th. A safety attachment for railroad switches, consisting of a body A^2 , formed with a flange M , and an inclined face P , in combination with the safety attachment, consisting of a body A^2 , formed with an inclined recess N , and the rails R , R^1 , R^2 and R^3 , and means for securing said attachments to the rails R , R^1 , substantially as shown and described, and for the purpose specified. 10th. A safety attachment for railroad switches, consisting of a body A^2 , formed with a flange M , an inclined face P , and a recess O , in combination with a safety attachment, consisting of a body A^2 , formed with an inclined recess N , and with an inclined upper face, and the rails R , R^1 , R^2 and R^3 , and means for securing said attachments to the rails R , R^1 , substantially as shown and described, and for the purpose specified. 11th. A safety attachment for railroad switches, consist-