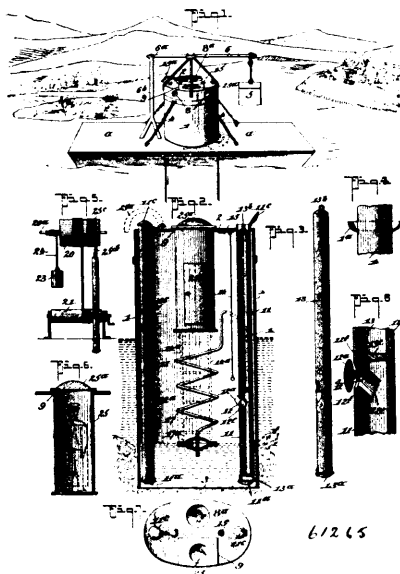


depending end portion that enters said clamping sleeve, and a set-screw for holding said depending end portion and the arms of the guide-rods within said clamping-sleeve.

**No. 61,265. Mining Caisson.**

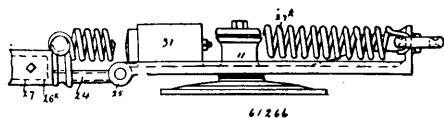
(Caisson pour l'exploitation des mines.)



Joseph Buchtel, Portland, Oregon, U.S.A., 26th September, 1898; 6 years. (Filed 9th May, 1898.)

**Claim.**—1st. A caisson, comprising a shell having an open bottom, and an air supplying pipe, pendent tubes having feed openings at the side, and closure valves therefor, and air charging tubes having drop valves at the bottom, side openings and closure caps for the upper end, all being arranged substantially as shown and described. 2nd. A caisson, having an open bottom, a man hole having a closure top, a pendent tube or tubes, having outwardly opening therefor, supplemental or discharging tubes, having outwardly opening valves at the bottom, closure caps at the top, and side openings of the pendent tubes, when fitted therein, and an air supplying pipe, all being arranged substantially as shown and described. 3rd. A caisson, comprising a shell closed at the top and open at the bottom, having an apertured float provided with an escape pipe having its discharge end projected through the shell at a point above the water line, as set forth. 4th. A caisson, comprising a shell closed at the top and open at the bottom, means for normally forcing it down as the bed is being excavated, means for supplying air thereto, and means for admitting of the ingress or egress of the operator without the escape of air within the shell for the purposes described. 5th. In a caisson as described, the combination with the shell<sup>1</sup>, having a man hole 9, of the supplemental caisson section 25, held to slide in the man hole 9, and having a suitable door 25d, as specified. 6th. In a caisson as described, the combination with the shell<sup>1</sup>, and the tube 11, having a valved filling opening, of the inner tube 13, having a filling opening corresponding to the outer tube opening and having its portion above such opening closed, as described. 7th. A caisson, comprising a shell open at the bottom and closed at the top, means for forcing air into the shell and vertical apertured float having a flexible pipe, the upper end of which is extended through the shell at a point above the water line, substantially as shown and described. 8th. A caisson, having an open bottom, a pendent top outwardly extended through the top of the caisson and provided with a side opening having a closure valve, a supplemental or discharge tube adapted to be fitted within the first tube, said discharging tube being closed at the top and having an outwardly opening valve at the bottom provided with a side opening adapted to register with the opening in the first or outer tube, and the guide shield 2d, all being arranged substantially as shown and for the purposes described.

**No. 61,266. Trolley Base.** (Base de trolley.)



Harrison Gates Taylor, Montreal, Quebec, Canada, 26th September, 1898; 6 years. (Filed 28th September, 1897.)

**Claim.**—1st. In a trolley base, a base plate presenting an upwardly projecting trunion and having a groove to receive anti-friction bearings, a swinging pole carrying plate provided with a hub adapted to take over said trunion and presenting upper and lower bearing surfaces having grooves to receive anti-friction bearings, and a cap having grooves for anti-friction bearings on its under side and adapted to fit over said hub, anti-friction balls within said grooves and a central retaining bolt passing through said cap and screwing into said hub for holding said swinging plate in place, as shown and described. 2nd. In a trolley base, a base plate presenting an upwardly projecting trunion, a swinging pole carrying plate provided with a hub adapted to take over said trunion, a cap adapted to fit over said trunion and hub, bearing surfaces having grooves to receive anti-friction bearings between said cap and hub and between said hub and base plate, and a central retaining bolt passing through said cap and screwing into said hub for holding said cap in place upon such bearing. 3rd. In a trolley base, the combination with the frame having a vertical projection at one end, and the trolley pole at the other end, of an adjustable yielding resistance adapted to normally yieldingly hold said trolley-pole in its working position, and means, comprising an integral T-shaped section having its cross arms of curved hook form to receive the ends of the yielding resistance and its central arm screw-threaded to work in a screw-threaded horizontal boring in said vertical projection with jam nuts on either side, for adjusting said yielding resistance, the latter having its ends connected through the pole carrier to the pole and to the hooked arms of said T-shaped section, as and for the purpose set forth. 4th. A trolley base comprising a stationary base-plate said base-plate having a vertically projecting trunion formed integrally with and concentric thereof and having a central vertical screw-threaded perforation, a swinging plate having a hub formed centrally thereof and with a perforation extending vertically and centrally therethrough and through the swinging plate, the upper end of said hub being extended in thickness and grooved concentrically of the vertical perforation therethrough, a boss formed upon the lower side of said swinging plate, said boss and the face of the base plate being correspondingly grooved to form a runway concentric of the said vertical perforation, for a series of balls, a circular cap of a circumference equal to the circumference of the upper end of the hub, and grooved correspondingly in order to form, with the groove in the upper end of the said hub, a runway for a series of balls, a headed screw-threaded bolt adapted to pass freely downwardly through a perforation in said cap and take into the vertical screw-threaded perforation in the trunion, said swinging plate carrying the trolley pole normally yieldingly held in a vertical position and means for holding said pole, substantially as and for the purpose set forth. 5th. A trolley base comprising a stationary base plate, said base plate having a vertically projecting trunion formed integrally with and concentric thereof and having a central vertical screw-threaded perforation, a swinging plate having a hub formed centrally thereof and with a perforation extending vertically therethrough and through the swinging plate, the upper end of said hub being extended in thickness and grooved concentrically of the vertical perforation therethrough, a boss formed upon the lower side of said swinging plate, said boss and the face of the base plate being correspondingly grooved to form a runway concentric of the said vertical perforation, for a series of balls, a circular cap of a circumference equal to the circumference of the upper end of the hub, and grooved correspondingly in order to form, with the groove in the upper end of said hub, runway for a series of balls. a headed screw threaded bolt adapted to take downwardly through a perforation in said cap and into the vertical screw threaded perforation in the trunion, a trolley-pole-carrying section pivotally connected to one end of said carrying-plate, one or more coiled springs connected at one end to said trolley pole section and at the other end to the opposite end of said carrying plate, and a buffer consisting of a hollow cylindrical section, having one end closed, connected rigidly to said plate adjacent to said trolley pole section, a second hollow cylindrical section, having one end closed, adapted to slide within said first mentioned cylindrical section, a spiral spring carried within said inner cylindrical section and adapted to bear between the inner side of the closed ends of said cylindrical sections, and a bolt connected to the closed end of the inner cylindrical section, and extending through a perforation in the closed end of the outer cylindrical section and having a nut screwed thereon, all substantially as described. 6th. In combination with a carrying plate, a trolley pole, pivotally connected to one end of said carrying plate, a bracket formed upon the opposite end of said carrying plate and horizontally perforated in line with said trolley pole, a T-shaped section having its vertical arm screw-threaded and adapted to take through said perforation in said bracket, a pair of jam nuts taking upon said screw-threaded arm and located one at each side of said bracket, the cross arms of said T-section being extended in a horizontal plane and having their ends hooked, a curved cross piece formed upon said trolley pole section and having its ends hooked, and a pair of retractile spiral springs each connected at one end to one of the hooks of the T-shaped section and at its other end to one of the hooks of the trolley pole section, substantially as and for the purpose set forth. 7th. A trolley base comprising a stationary base plate, said base plate having a vertically projecting trunion formed integrally with and concentric thereof, and having a central vertical screw threaded perforation, a swinging plate having a hub formed centrally thereof and with a perforation extending vertically therethrough and through the swinging plate, the upper end of said hub