

No. 32,460. Device for Protecting Electric Conductors. (*Appareil pour protéger les conducteurs d'électricité.*)

Edward G. Acheson and Joseph W. Marsh, Pittsburgh, Penn., U.S. 7th October, 1889; 5 years.

Claim.—1st. As a means of preventing the disruptive discharge of a conductor through its surrounding insulator, an arm arranged to receive the discharge at a potential below that necessary for striking through the insulator, substantially as described. 2nd. An insulated conductor or cable having static discharge points arranged at a less electrical distance than the electrical distance of the insulation surrounding the conductor, substantially as described. 3rd. The combination, with an insulated conductor and its enclosing casing, of static discharge rods arranged on the conductor and case, substantially as described. 4th. The combination, with an insulated conductor, and an enclosing case, of adjustable rods connected to the conductor and case, substantially as described. 5th. The combination, with an insulated conductor and enclosing case, of clamps mounted on said conductor, and case, and adjustable rods supported in said clamps, substantially as described. 6th. The combination, with a cable having an insulated conductor, of static discharge points connected therewith, and a signal apparatus connected with the cable to indicate the discharge, substantially as described. 7th. The combination, with an insulated conductor and enclosing case, of static discharge rods connected with the conductor and case, and a fusible connection between the rods and conductor, substantially as described.

No. 32,461. Connector for the Elements of Electric Batteries. (*Appareil pour relier les couples des piles électriques.*)

The Railway Electric Car Lighting and Signal Company, East Orange and Camden, N.J., (assignee of Sidney H. Barrett, Springfield, Mass.), U.S. 7th October, 1889; 5 years.

Claim.—1st. In a connector for secondary batteries, the combination of mercury-cups on rigid projections from the electrodes, and the immersed U-formed coupler. 2nd. A flexible and protected connector for secondary batteries, consisting of the combination of rigid integral projections from the electrodes to points outside of and below the cell-tops, the mercury cups rigidly attached to the respective projections, the U-formed coupling wire and the protecting and flexible sleeves. 3rd. The connector consisting of electrode-projections 3 terminating in mercury cups 4, which receives the end of the coupling wire 5, and the protecting sleeve 7. 4th. In a connector for secondary batteries, the combination of electrode-projections 3, mercury cups 4, U-formed coupling wire 5 having the insulating coverings 6, and the projecting rubber sleeves 7, for the purposes set forth.

No. 32,462. Potato Digger and Picker.

(*Scarificateur-trieur à patates.*)

Herbert Horner, Port Perry, Ont., 8th October, 1889; 5 years.

Claim.—1st. A potato digger, consisting of a bar iron frame carrying a platform, the gearing shoe and a sifting cage, and supported at the rear by a castor wheel, and near the front by wheels at an adjustable height, an axle journaled in levers having their rear end pivoted near the rear of the front portion of the frame and within the same, and having their segmental fronts attached to chains secured to chain wheels upon a shaft carrying ratchet wheels held by detents and operated by hand levers, wheels journaled upon the axle and operated by ratchet connections, and adapted for lateral adjustment, a sprocket wheel journaled upon the axle, a clutch feathered upon the axle and pressed into gear by a spring and controlled by a shifting fork controlled by an operating device, a shaft parallel to the axle and in rear thereof carrying a smaller sprocket wheel, and geared to the other sprocket wheel by a pitch chain, said shaft carrying a mitre wheel, the conical sifting cage composed of ends connected by longitudinal wires or bars, and having a shaft journaled longitudinally upon the rear portion of the main frame, and carrying a mitred wheel gearing in the mitre wheel, upon the rear cross shaft, said cage having internal archimedean screw blades, and provided with shields at the front rear end on one side, and a shoe K carried on a bracket Kr, secured to the frame in front of the cage, substantially as set forth. 2nd. In a potato digger, the combination of the bar frame A, A¹, and the longitudinal bars A¹¹ being arched over the axle to allow the axle to rise above the level of the frame, and carrying a platform A¹¹¹, the axle B journaled in the levers B¹, the levers B having segmental front ends b¹¹, and having their rear ends pivoted at the rear of the front portion of the frame and to the inside thereof, and the upper end of each of the segments having the end of a chain secured thereto, the platform A¹¹¹ secured upon the bars A¹¹, a shaft D journaled upon the front of the frame A, chain wheels C¹, secured in said shaft, chain C, each having one end secured to one of the chain wheels c¹¹, and the other to the segments b¹¹, and passing over a friction pulley C¹, ratchet wheel D¹ secured upon the shaft D by set screw, and having a detent d¹ gearing into it, lever D¹¹¹ pivoted upon the shaft by an oblong eye, and having a dog d¹¹¹ adapted to engage the teeth of the ratchet wheel, substantially as set forth. 3rd. In a potato digger, the combination, with the frame A, A¹, and foot board A¹¹¹, the shaft D journaled thereon, chain wheels C¹ keyed to said shaft, ratchet wheel D¹ secured upon one end of said shaft by set-screw a, lever D¹ pivoted to said shaft by an oblong eye, and having a dog d¹ adapted to engage the teeth of said ratchet wheel, a detent d¹ pivoted to said frame A and engaging the teeth of said ratchet wheel and having a handle d¹, substantially as set forth. 4th. In a potato digger, the combination of the frame A, A¹, the levers B¹ and axle B, the wheels F journaled upon said shaft and connected therewith by a ratchet movement, the sprocket wheel G journaled upon said axle, and provided with lateral teeth adapted to be engaged by a clutch, the clutch H feathered to said axle and adapted to engage said sprocket wheel, and controlled by a shifting fork, the spring H held

by a collar on said axle, and adapted to push the clutch H into gear, the shifting fork I engaging said clutch H and held at one end upon a rod, the rod or bolt I holding one end of said fork and secured to said bars A¹¹, parallel to the axle B, the bracket I¹¹ secured to one of the bars A¹¹ and having a hub or bearing i¹¹, the flat bar I¹¹¹ journaled to said bracket I¹¹, and provided with handle i¹¹¹, and adapted to bear with one edge on the shifting fork T, and press the same, so as to push the clutch H out of gear, substantially as set forth. 5th. In a potato digger, the combination of the frame A, A¹, the levers B¹ and axle B, the wheels F journaled upon said shaft, and connected therewith by a ratchet movement, the sprocket wheel G journaled upon said axle, and provided with lateral teeth adapted to be engaged by a clutch H feathered to said axle and adapted to engage said sprocket wheel and controlled by a shifting fork, the spring H¹ held by a collar on said axle, and adapted to push the clutch H into gear, the shifting fork I engaging said clutch H and held at one end upon a rod, the rod or bolt I¹ holding one end of said fork and secured to said bars A¹¹, parallel to the axle B, the bracket I¹¹ secured to one of the bars A¹¹, and having a hub or bearing i¹¹, the flat bar I¹¹¹ journaled in said bracket I¹¹, and provided with handle i¹¹¹ and adapted to bear with one edge on the shifting fork T and press the same, so as to push the clutch H out of gear, substantially as set forth. 5th. In a potato digger, the combination of the frame A, A¹, and levers B¹, the axle B carrying the sprocket wheel, the shaft J journaled to the bars A¹¹, parallel to the axle B, a small sprocket wheel G¹ keyed upon said shaft and geared to the sprocket wheel G, by a pitch chain G¹¹ the cage shaft M journaled upon the mean part of the frame and connected by mitre gear to the shaft J, the mitre gear J¹, J¹¹ upon the said shafts J and M, substantially as set forth. 6th. In a potato digger, the combination of the frame A, A¹, the bracket K secured to said bracket, substantially as set forth. 7th. In a potato digger, the combination of the frame A, A¹, the conical sifting cage M, having open ends mounted upon a shaft M journaled upon said frame and connected by gearing, said ends connected by longitudinal bars or wires o, and held by a hoop N¹, and said cage provided with internal archimedean screw blades M¹, M¹¹, and with an adjustable front shield O and side shield Q, substantially as set forth. In the sifting cage of a potato digger, the combination of the central shaft M, the open ends M connected by longitudinal bars or wires N held by a hoop N¹, said ends varying, its diameter being larger in front and smaller at the rear, so as to give a conical shape, the archimedean screw blades M¹ extending through the cage and the short screw blades M¹¹, the front shield O held adjustably to the cross bar of the frame by a slotted bar O¹ pivoted to said plate, and the side shield S secured to the frame, substantially as set forth.

No. 32,463. Radiator Coupling.

(*Assemblage de calorifère.*)

William C. Sellers and Charles Sellers, Toronto, Ont., 8th October, 1889; 5 years.

Claim.—1st. The combination of two or more radiator sections having top and base chambers a, provided with two openings at one end on opposite sides, and an internal bridge or stay formed in the same chamber, and a tie-rod or bolt passing through the said bridges and openings, substantially as and for the purpose set forth. 2nd. The combination of two or more radiator sections, having top and base chambers a provided with two openings at one end on opposite sides, the male collar D fitting into the female collar E, having a small flange e on its inner end, and an internal bridge or stay formed in the said chambers, and a tie rod or bolt passing through the said bridges and openings, as and for the purpose set forth.

No. 32,464. Stove Drum or Heater.

(*Poêle soudé.*)

Robert O. Dobbin, Breslan, Ont., 8th October, 1889; 5 years.

Claim.—The construction of a drum or heater, with the partition C in the upper drum head, in combination with the damper D, the pipes F, F¹, e, e, e, etc., and the lower drum head, substantially as above described and set forth.

No. 32,465. Water Works. (*Aqueduc.*)

Robert C. Sayer, Bristol, Eng., 8th October, 1889; 5 years.

Claim.—1st. The construction and arrangement of apparatus for gathering, cleansing, filtering and storing water, consisting of a strainer A, a separator B, an auxiliary storage tank C for unfiltered water, a filter D and a storage tank E for filtered water, provided with an overflow flushing and drawing off apparatus F, substantially as set forth. 2nd. In apparatus for gathering, cleansing, filtering and storing water, a strainer, consisting of sleeve I, sliding on pipe 2 and passing through cover 3 into vessel 4, with outlet 5 and with wire netting 6 containing carbon, the water passing through the sleeve I into wire netting 6 and drawing in air under the cover 3 and to the outlet 5, substantially as set forth. 3rd. In apparatus for gathering, cleansing, filtering and storing water, a separator for separating the dirty water first collected from the clean water subsequently collected, comprising a container 8, with dish cover 7, and outlet at 16, central taper pipe 9 working in horizontal spindle 10, and being secured to lever 11, carrying balance weight 13 and pan 12, and the jaw 12 with overflow pipe 14, the water first collected on the dish cover passing through aperture 15 to pan 12, which is depressed, diverting the water from trough 18 to container 8 and outlet at 16, substantially as set forth. 4th. In apparatus for gathering, cleansing, filtering and storing water, a separator for separating the dirty water first collected from the clean water subsequently collected, comprising a container 8 with outlet, a small pipe 19 with variable orifice 20 opening into supply pipe 17 and into pan 12, central taper tube 9, working on horizontal spindle 10 and secured to lever 11, carrying pan 12 and pan 12 with perforated overflow 21, a portion of the water first collected passing through pipe 19 to pan 12, which is depressed, diverting the water from trough 18 to container 8 and outlet at 16, substantially as set forth. 5th. In apparatus for gathering, cleansing, filter-