

Claim.—1st. The combination of the traction wheels, the main engine shaft, the train or series of gearing wheels driven by said shaft, the mechanism separated from said train or series of wheels for driving the traction wheels, and the friction clutch interposed between said traction driving mechanism and the train of wheels operated by the shaft. 2nd. The combination of the traction wheels, the main engine shaft, the train or series of gear wheels driven by said shaft, the means for reversing the direction of the last wheel of the train or series, and the friction clutch between the mechanism for driving the traction wheels and the reversible wheel. 3rd. The combination of the traction wheels, the engine shaft, the train or series of gear wheels driven by said shaft, the chain wheel C² for driving the traction wheels, the means for reversing said chain wheel, and the friction clutch interposed between the reversing mechanism and the chain wheel. 4th. The combination, with the chain wheel C², the wheel σ and the intermediate mechanism for driving the chain wheel, of the shaft Q⁵ situated centrally within said chain wheel, and the journals γ γ attached to said shaft eccentrically, and the shifting mechanism for rolling the shaft Q⁵ on said eccentric journal. 5th. The combination, with the chain C³ and the shifting gear wheel Q⁴, of the sprocket wheel C² loosely supported by said wheel Q⁴, and mechanism for forcing the sprocket-wheel into frictional engagement with the said wheel Q⁴. 6th. The combination of the following elements, namely: a boiler, an engine thereon, a rear truck, a driving mechanism mounted on said truck for moving the rear wheels, a front truck movable relatively to the boiler and engine, a driving mechanism on said front truck for moving the front wheels, and an automatically extensible power transmitting mechanism connecting the driving mechanism on the rear truck with the driving mechanism on the front truck. 7th. The combination of the following elements, viz: the rear truck, a driving mechanism on said truck for moving the rear wheels, a front truck, a driving mechanism mounted thereon for moving the front wheels, the sprocket wheel D⁷ D⁸ arranged to approach and recede from each other, the sprocket chain E³, and devices for expanding the chain. 8th. The combination of the rear truck, the counter shaft C⁴ on said truck, the wheels on said shaft engaging directly with the rear traction wheels, the compensating gear on said shaft, the front truck, the counter-shaft D¹ on the front truck, the wheels on said shaft D¹ which engage directly with the front machine wheels, the compensating gear on said shaft D¹, the short counter-shaft D³, the bevel gearing on the rear truck, the bevel gearing on the front truck and the flexible power transmitting devices between the trucks. 9th. The combination of the front traction wheels mounted loosely, the front counter-shaft D¹ engaging directly with said wheels, the compensating gear on said shaft, the rear traction wheels mounted loosely, the counter-shaft C⁴ engaging directly therewith, the compensating gear on said shaft C⁴ and the extensible power transmitting mechanism between said shafts C⁴ and D¹. 10th. The combination, with the driving mechanism which moves the rear traction wheels and the chain E³, of the counter-shaft D¹ engaging with the front traction wheels, the compensating gear on said counter-shaft D¹, and the shaft D³ mounted upon the front truck to receive the power from the chain E³ and impart it to the compensating gear on the shaft. 11th. The combination of a driving mechanism for the rear wheels, a driving mechanism for the front wheels, a power transmitting mechanism, a frame work for supporting upon the front wheels the mechanism which drives them, the pivotal bearing of the boiler resting upon said frame work, and the arms F⁴ arranged to loosely connect said frame work to the boiler.

No. 16,831. Improvements on Potato-Diggers. (*Perfectionnements aux arrache-patates.*)

Robert A. Clark, Liverpool, Eng., 11th May, 1883; for 5 years.

Claim.—1st. The combination of an exterior stationary frame, nearly or entirely encircling the riddle and carrying bearing pulleys with the riddle, having a circular rim running upon said rollers and revolving inside said stationary frame and supported thereby. 2nd. A rotating cylindrical or conical riddle open at one end, to receive the potatoes from a travelling band projecting into it, and supported at the other end by a central pivot or shaft, round which the gear-wheel revolves that transmits motion to the riddle. 3rd. The combination of the riddle driven from one of the carrying shafts of the machine, with the digging and conveying apparatus driven from the other conveying shaft. 4th. The combination of the riddle with backward projecting arms k , and plate j protecting the bevel gearing from the dirt escaping from the riddle, and the bevel gearing l . 5th. In combination with the riddle F in a potato digging and separating machine, the spade D and travelling belt E. 6th. The combination of a finger-wheel helping forward the material detached by the spade D, with the belt E carrying forward the material to riddle F. 7th. The vertical adjustment actuating both the digging and conveying apparatus so that, in proportion as the digging apparatus is raised or lowered, the conveying apparatus is proportionally raised or lowered with it. 8th. The combination, with the trough C, of a tie-rod c and screw b . 9th. In combination with the riddle F in a potato digging and separating machine, a hoop h having rollers h . 10th. The combination of a chain of balls lying in the exterior of the riddle, with the riddle so arranged that, as it rotates, the balls shall tumble over the bars and thus shake adhering material off. 11th. In combination with a potato digging machine, a bar G projecting from the posterior or extremity, so as to enable the attendant to slow the machine round more easily. 12th. The combination of the conveying device E not run directly from the main shaft, but from intermediate gearing which increases the speed, so that the conveying is done quicker than the actual digging.

No. 16,832. Improvements in the Manufacture of White Lead. (*Perfectionnements dans la fabrication du blanc de plomb.*)

Edward V. Gardner, London, Eng., 11th May, 1883; for 5 years.

Claim.—1st. The preparation of lead by submitting it to the action of a mixture of acetic acid and acetate or nitrate of lead and water, or in a mixture of nitric acid, acetate or nitrate of lead and water, or in a mixture of these acids and the said salts of lead and water. 2nd. The method of granulating or sponging lead by dropping the molten

metal on to a slab arranged within a tank. 3rd. The arrangement of electro-negatives to lead such as carbon, platinum and so on, in connection with the lead to be converted into white lead, so that they shall be in electrical relationship to each other. 4th. The employment of ozonized material (such material being ozonized before entering the chamber, or they may be ozonized within the chamber by electrical discharges) alone or in combination with the electro-negatives referred to in the third claim. 5th. The method of producing carbonic acid gas, by causing paraffine petroleum or other such like carbonaceous substances, or a mixture of the same to act upon heated carbonates, and by fully oxidizing the products of such action. 6th. The manufacture of oxide and sub-oxide, and sub-salts of lead. 7th. The construction and arrangement of the apparatus, consisting of tank D, containers G having pipes I to L and K within body A having outlet E, with or without inlets S L, and connected to feed tank N by pipes O P. 8th. The employment of the mixed vapours of acetic and nitric acids and water, alone or mixed with air or oxygen, or carbonic acid in ordinary condition, or with ozonized materials. 9th. The construction of the communicating apparatus, consisting of body A having one or more hoppers F² F³, and internally provided with one or more perforated cylinders F¹ and sieves G².

No. 16,833. Railroad Construction Car.

(*Char de chemin de fer de construction.*)

Adélard F. Martel, Montreal, Que., 11th May, 1883; for 5 years.

Claim.—1st. The car of a construction train fitted with a trough, channel or gutter, yieldingly connected at the joints of the cars and supporting the upper course of an endless chain which is actuated by hand or other power through the medium of a winch at one end of the train, by the rearward movement of which the chain, the ties and rails, with which the train is loaded, being thrown into the said trough, may be deposited as nearly as may be on the spot where they are required to be secured on the track. 2nd. The combination of the troughs T secured by the brackets B carrying the endless chains E, friction pulleys F, chain wheels W, crank-handle H, intermediate transmission gear between said chain-wheels and crank-handle, with the cars of an ordinary construction train. 3rd. The short trough T₁ pivoted at the rear end of the car to the trough T, and overlapping the forward end of the trough T of the rearward car, forming a sliding and yielding joint of the trough.

No. 16,834. Improvements on Atmospheric Motors. (*Perfectionnements aux moteurs atmosphériques.*)

Benjamin J. Forster, Glen-Williams, Ont., 11th May, 1883; for 5 years.

Claim.—1st. In a flexible air-tight vessel, in combination with mechanism so arranged in connection with the flexible vessel that the reciprocating movement of the vessel produced by the expansion and contraction of the air within it, due to the increase or decrease in the temperature of the atmosphere, shall impart movement to a motor capable of storing the power thereby produced, and reproducing the same at such times as required. 2nd. In an apparatus to produce motion by the expansion and contraction of air, due to the increase or decrease in the temperature of the atmosphere, an air-tight flexible vessel connected to mechanism, deriving its motion from the expansion and contraction of the said vessel, in combination with an inflexible air reservoir, also air-tight but communicating with the flexible vessel. 3rd. In an apparatus for utilizing the changes in the temperature of the atmosphere and in which motive power is applied to mechanism by the reciprocating movement of an air-tight flexible vessel, the combination of an inflexible air-tight vessel connected to the flexible vessel and provided with a mercurial safety valve. 4th. An air-tight flexible cylinder A, fixed at one end to the table C and having its movable head provided with friction rollers D working in guide-bars E, in combination with the counterbalance weights I. 5th. In an apparatus for utilizing the changes in the temperature of the atmosphere, by the expansion and contraction of a flexible cylinder, an endless chain L passing around the pulleys M N, in combination with the cross-head G connected to, and effected by the movement of the flexible cylinder, and having pivoted on it the dogs O P, arranged to engage with the chain L. 6th. In an apparatus for utilizing the changes in the temperature of the atmosphere, by the expansion and contraction of a flexible cylinder arranged to impart a rotary movement to a spindle, the combination of a ribbon spring S, the inner end of which is connected to the spindle M₁ and the outer end to the flange T.

No. 16,835 Improvements on Creamers.

(*Perfectionnements aux boîtes à lait.*)

Pierre Lessard and Benjamin Boutin, Ste-Marguerite, Que., 11th May, 1883; for 5 years.

Claim.—1st. In a milk can, the tube V having holes v , the can provided with a cover having a conical tube t_2 and a cross-tube t_3 . 2nd. The combination, in a milk can having a sloping bottom, a glass gauge faucet-tube V provided with holes v , a cover having conical tube t_2 and cross-tube t_3 .

No. 16,836. Improvements on Vehicles.

(*Perfectionnements aux voitures.*)

James Allen, Alliston, Ont., 11th May, 1883; for 5 years.

Claim.—1st. In a buggy or other vehicle, a malleable iron fifth-wheel, the lower half of which is made solid with the metal bed-plate and has a groove cut round its top surface, to receive a projection formed on the upper half of the fifth-wheel. 2nd. In a buggy or other vehicle, a malleable iron fifth-wheel, the lower half of which is made solid with the metal bed-plate, which has a socket formed on its centre, and metal lug extending from it on either side of the head-block and axle. 3rd. In a buggy or other vehicle, a malleable iron fifth-wheel, the upper half of which is made solid with the metal head-plate and reach, in combination with lugs cast on the fifth-