

No. 27,907. Car Axle Lubricator.*(Bottle à graisse.)*

Chester L. Flyint, Brooklyn, N. Y., U. S., 2nd November, 1887; 5 years.

Claim.—1st. In a car axle lubricator, a pad having its body composed of sponge or other soft porous substance, in combination with a supporting spring and wick both secured to the bottom of the pad, substantially as and for the purpose described. 2nd. In a car axle lubricator, a pad having its body composed entirely of sponge or other soft porous substance, and a suitable covering, in combination with a supporting spring and a wick, both secured to the bottom of the pad, substantially as and for the purpose described. 3rd. In combination, with a pad, constructed as described, the wipers E, arranged and operating substantially as and for the purpose herein described.

No. 27,908. Snow Shovel. (Pelle à neige.)

John J. Magee, London, Ont., 2nd November, 1887; 5 years.

Claim.—The combination of the blade A, having a shoulder A' formed integral therewith, handle D, bar C and band B, substantially as shown and for the purposes hereinbefore set forth.

No. 27,909. Gas Engine. (Machine à gaz.)

Peter Murray, jr., Newark, N. J., U. S., 2nd November, 1887; 5 years.

Claim.—1st. The combination, with the power cylinder having its exhaust opening located in position to be uncovered by the power piston as it arrives at the end of its stroke, of a pump for forcing the charges of the explosive mixture into the power cylinder, the pump piston being set in advance of the power piston, and arranged to complete its stroke directly after the power piston has recovered the exhaust opening, substantially as described. 2nd. The combination, with the power cylinder and piston of a pump for charging the cylinder, having its piston arranged to complete its stroke in advance of the power piston, and a positively actuated charging valve, arranged to close the induction port at or substantially at the time the pump completes its stroke, substantially as described. 3rd. The combination, with the power cylinder having induction ports at its opposite ends, and an exhaust opening at its middle, of a pump for forcing the charges of the explosive mixture directly into the power cylinder, the position of the pump being arranged to complete its stroke in advance of the power piston, and directly after the power piston has recovered the exhaust opening, substantially as described. 4th. The combination, with the power cylinder having induction ports at its opposite ends, and an exhaust opening at its middle, of a pump for forcing the charges of the explosive mixture directly into the power cylinder, the piston of the pump being set in advance of the power piston, and a valve for closing the induction port at or substantially at the time the pump completes its stroke, substantially as described. 5th. The combination, with the power cylinder having an exhaust opening in position to be uncovered by the power piston as it arrives at the end of its stroke, of a pump for forcing the charges of the explosive mixture into the power cylinder, the piston of the pump being set in advance of the power piston, and a valve for opening the induction port after the pump piston has commenced its stroke and for closing the port, at or substantially at the time the pump piston completes its stroke substantially as described. 6th. The combination, with the power cylinder having an exhaust opening at its middle, of a pump for charging the cylinder, the piston of said pump being set in advance of the power piston, and a single valve arranged to open the induction port after the pump piston has commenced its stroke, close said port at or substantially at the completion of the stroke of the pump piston, and fire the charge at or after the completion of the stroke of the power piston, substantially as described. 7th. The combination, with the power cylinder having a double-acting piston, of a pump for charging said cylinder, and a single exhaust opening located at or near the middle of the power cylinder, and uncontrolled by an exhaust valve, substantially as described. 8th. The combination, with the power cylinder and stationary permanent and igniting burners, of a single charging and firing valve, provided with means for admitting the charges to the cylinder, confining them therein and for establishing communication between the permanent and igniting burners, and establishing communication between the latter and the charges to fire them, substantially as described. 9th. The combination, with a stationary igniting burner located in a recess in the valve chest, of a firing valve having a firing chamber which is filled with an explosive mixture, and communicates with the power cylinder through a check valve, and is provided with a port through which it is brought into communication with the igniting burner, by the movement of the valve at the proper time to fire the charge, substantially as described. 10th. The combination, with the power cylinder and an igniting burner for firing the charges in the cylinder, of a valve having a firing chamber through which the explosive mixture passes in entering the cylinder, and in which a portion of the mixture is confined when the induction port is closed, a part controlled by a check valve which communicates with the chamber and cylinder, and a port which is brought into communication with the igniting burner by the movement of the valve, substantially as described. 11th. The combination, with the power cylinder and an igniting burner for firing the charges in the cylinder, of a valve having a firing chamber through which the explosive mixture passes in entering the cylinder, and in which a portion of the mixture is confined when the induction port is closed, a port controlled by a check valve, which communicates with the chamber and cylinder, a port which is brought into communication with the igniting burner by the movement of the valve, and means by which the igniting burner is fed from the mixture confined in the chamber until the firing takes place, substantially as described. 12th. The combination, with the power cylinder and stationary permanent and igniting burners, of a firing valve constructed and operated to establish communication between the permanent and igniting burners to light the latter, and to then establish communication between the igniting burner and the charge to

fire it, and a check valve for closing the firing port as soon as the charge is fired, substantially as described. 13th. The combination, with a stationary igniting burner, fed by a mixture of gas and air, and a stationary master light, of a valve, having a channel 77, by which the igniting burner is brought into communication with the master-light as the valve is moved, substantially as described. 14th. The combination, with a stationary igniting burner, fed by a mixture of gas and air, and a stationary master-light, of a valve by which the igniting burner is brought into communication with the charge in the cylinder to explode it, and by which the burner is also brought into communication with the master-light, to be re-lit after each explosion, substantially as described. 15th. The method or process of hastening the combustion of the charges in a gas engine, which consists in admitting or introducing a quantity of air into the cylinder of the engine after the charge has been fired and before the exhaust is opened, substantially as described. 16th. The combination, with the power cylinder and piston, of an air opening or port, through which a quantity of air is admitted or introduced into the cylinder after the charge has been fired and before the exhaust is opened, substantially as described. 17th. The combination, with the power cylinder and piston, of an air opening or port through which a quantity of air is admitted or introduced into the cylinder after the charge has been fired and before the exhaust is opened, and a valve for controlling said opening or port, substantially as described. 18th. The combination, with the power cylinder and piston, of an air chamber communicating with the cylinder and with the atmosphere, a valve for preventing the escape of the air from the chamber, and a valve arranged to open communication between the chamber and the cylinder after the charge is fired and before the exhaust is opened, substantially as described. 19th. The combination, with the power cylinder and piston, of an air opening or port arranged to be uncovered by the piston after the charge has been fired and before the exhaust is opened, and a valve for controlling said opening or port, substantially as described. 20th. In a gas engine, the combination, with a power cylinder, of means for supplying a quantity of steam to the same, in advance of the charge of the explosive mixture, substantially as described. 21st. In a gas engine, the combination, with the power cylinder, of a valve having a duct or chamber through which the explosive mixture passes in charges, the cylinder, and means by which said chamber is filled with air, previous to the passage of each charge of the explosive mixture through the same, substantially as described. 22nd. The combination, with the power piston, having the circumferential groove or recess 79, of a port or ports formed in the cylinder, through which water is admitted to said groove, as the piston reciprocates, substantially as described. 23rd. In a gas engine, an igniting burner provided a cup-shaped body 19, arranged to surround and protect the flame, substantially as described. 24th. The combination, with the chamber 89 containing a body of water, and provided with connections by which a flow of water is maintained through the chamber of the exhaust pipe 90 opening downward, so as to deliver the exhaust products directly onto the surface of the body of the water in the chamber, substantially as described. 25th. The combination, with the power cylinder, of a pump for supplying the explosive mixture to said cylinder, a tank, and connections by which the explosive mixture may be allowed to pass from the pump, either directly to the power cylinder or to said tank, and by which the cylinder may be supplied, either from the pump or from said tank, substantially as described. 26th. In a gas engine, the combination with the power and pump cylinders and their piston rods, of the open receptacle 38 for containing a quantity of water to surround the rods and keep them properly cooled, each rod passing through two stuffing boxes, substantially as described. 27th. In a gas engine, the oil chamber 47, having the positively actuated valve 28, and ducts communicating with the parts to be oiled, substantially as described. 28th. In a gas engine, the combination with a cock or valve for controlling the quantity or richness of the explosive mixture supplied to the power cylinder of the plunger 63, valve 118 and connections, substantially as described. 29th. The combination with the cock or valve for controlling the quantity or richness of the explosive mixture supplied to the power cylinder of the plunger 63 upon the valve-rod 109, the valve 118 and connections, substantially as described.

No. 27,910. Manufacture of Explosives.*(Fabrication des mélanges explosibles.)*

Carl Roth, Berlin, Germany, 2nd November, 1887; 5 years.

Claim.—1st. The process of producing explosives by the mixture with oxygen-yielding substances, of compounds obtained from coal tar or other tar, or from fractional products of the same, by incorporating into the tar or the said fractional products, both chlorine and nitro-groups, substantially as hereinbefore specified. 2nd. As an article of manufacture, an explosive composed of oxygen-yielding substances, and of a compound or compounds obtained from coal tar or other tar, or from fractional products of the same by the incorporation thereof of both chlorine and nitro-groups, substantially as described.

No. 27,911. Felt Boot. (Botte de feutre.)

Morris E. Taber, Buffalo, N. Y., U. S., 2nd November, 1887; 5 years.

Claim.—The combination, with an overshoe, of a felt boot provided with a protecting band or strip C secured to the outer side of the felt boot, and composed of a lower portion c extending into the overshoe and an upper portion c' overlapping the top of the overshoe, substantially as set forth.

No. 27,912. Milk Gauge. (Jauge à lait.)

John S. Elliott, Bombay, N. Y., U. S., 2nd November, 1887; 5 years.

Claim.—1st. A milk gauge, consisting of jointed bars or rods adapted to be adjusted upon one another and held in clamped position, substantially as described. 2nd. A milk gauge, consisting of jointed bars or rods adapted to slide upon one another, and having an adjustable clamping connection and squared ends or rests, substantially as described. 3rd. A milk gauge, consisting of jointed bars or