

combination of a car, a vertically movable coupler head having a recess in its lower face adapted to engage a headed link, the bottom plate arranged beneath the coupler head, the rock shaft arranged to engage the coupler head and having its outer end bent at an angle and forming an arm, the lever fulcrumed on the side of the car and provided with a flanged segment, a chain connecting the lever and the arm of the rock shaft and adapted to be wound on the segment, and the ratchet, substantially as described.

### No. 37,753. Mechanical Movement.

(*Transmission du mouvement.*)

Sigismund B. Wortmann, New York, State of New York, U.S.A., 9th November, 1891; 5 years.

*Claim.*—1st. The combination with an axle, a spring drum, and differential gearing, of an automatic clutch adapted to free the differential gearing from the spring axle, substantially as described. 2nd. The combination with an axle, a spring and drum, of differential gearing having its wheels rigid with the drum and loose on the axle, of an automatic clutch normally engaged with the loose wheel and adapted to be released therefrom when the spring reaches its limit in unwinding, substantially as described. 3rd. The combination with an axle, a spring and drum, of differential gearing having one of its wheels rigid with the drum and another wheel loose on said axle, and clutch mechanism rigid with the axle and normally engaged with the loose wheel, substantially as described, for the purpose. 4th. The combination with an axle and a spring and drum of differential gearing having a counter shaft provided with wheels which are engaged by two wheels loose on the spring axle, one of said loose wheels being rigid with the drum, and an automatic clutch keyed to the axle and adapted to engage with the loose wheel, substantially as described. 5th. The combination with an axle and a spring and drum, of differential gearing, substantially as described, having its loose wheel provided with a toothed or serrated hub, and a spring controlled clutch keyed to the shaft and engaging with the serrated hub of the loose wheel, substantially as described. 6th. The combination with a spring axle or shaft, of the differential gearing constructed and operating to transmit the force of the spring to a loose wheel on the spring axle or shaft, and clutch mechanism carried by said axle and adapted to engage with the loose wheel, substantially as described.

### No. 37,754. Knife. (*Couteau.*)

Niels P. Nielson, Terre Haute, Indiana, U.S.A., 9th November, 1891; 5 years.

*Claim.*—1st. The combination, with the handle 4, provided with the integral bolster 5, having the ears 13, and a recess 6, which is open on one side and which is wider at its bottom or closed side than at its open side, of a knife-blade having a beveled tang 2 wider at one side than at the other to fit the said recess, and a notch 3, and the spring-pressed locking piece or lever 10, pivoted to the said ears and having the shouldered projection 14, substantially as set forth. 2nd. A knife-blade having a tang inclined toward its outer end, one of the sides thereof being wider than the other, and the front thereof being thicker than the back. 3rd. The combination, with a knife-blade having a tang inclined toward its outer end, one of the sides of the tang being wider than the other, and the front of said tang being thicker than the back, of a handle having a bolster with a recess corresponding to the shape of the tang, so that in use the strain is equalized and is taken up by the solid metal of the bolster. 4th. A knife-blade having a tang inclined toward its outer end and having a notch 3, in combination with a handle having an integral bolster provided with ears 13, and a recess 6 shaped to correspond with said tang, and a spring actuated locking piece having recesses 12 to receive the ears to which said locking piece is pivoted, and having at its forward end a shouldered projection which is adapted to engage the notch in the tang.

### No. 37,755. Apparatus for Manufacturing Gas. (*Appareil pour la fabrication du gaz.*)

George Miles Stuart Wilson, Toronto, Ontario, Canada, 9th November, 1891; 5 years.

*Claim.*—1st. A gas apparatus provided with a series of retorts forming a fire bed, and having a fire chamber below said retorts, substantially as described. 2nd. In a gas apparatus, a furnace having a series of retorts arranged side by side and extending from one side of the furnace to the other, a boiler over said retorts, and a fireplace on said retorts beneath the boiler, substantially as described. 3rd. In a gas apparatus, a series of retorts arranged side by side horizontally between the sides of the furnace, two separate retorts beneath said series on opposite sides of the furnace, elbows at the front from the upper side retorts to those immediately below, and elbows at the rear of the furnace from said lower retorts to the middle upper retort, and an inside return pipe or tube in the said middle retort from which the gas is discharged, substantially as described. 4th. In a gas apparatus, the furnace having removable front and rear plates, and a series of retort tubes supported in said furnace and separable and removable, substantially as described. 5th. In a gas apparatus, the series of retorts having communication one to the other, removable plugs in the ends of said retorts, and a steam pipe discharging into said retorts, whereby the retorts are cleansed, substantially as described. 6th. In a gas apparatus, a series of retorts 1, 2, and 3, arranged side by side, and the lower retorts 5 and 6 communicating with the retorts 1 and 3 at one end with the middle retort 2 at the other end, in combination with air, oil and steam supply pipes feeding into the ends of the retorts 1 and 3, and a return pipe for the gas centrally within the middle pipe 2, substantially as described.

### No. 37,756. Hot Air Furnace.

(*Calorifère à air.*)

William W. Sweetland, Edwardsburg, Michigan, U.S.A., 9th November, 1891; 5 years.

*Claim.*—1st. In a furnace, the herein-described base, consisting of an annular radiating chamber, the inner wall of which is provided with inwardly extending lugs or brackets to support the ash box, substantially as set forth. 2nd. In a furnace, the herein-described base, consisting of an annular radiating chamber sub-divided by transverse partitions into a series of compartments, in combination with the top plate or cover for each of said compartments, having annularly flanged openings adapted to be connected with the radiating flues or pipes, substantially as set forth. 3rd. In a furnace, the base consisting of an annular radiating chamber, the inner wall of which is provided with inwardly extending lugs or brackets, in combination with the ash-box provided with outwardly extending ears, by means of which it is supported upon said lugs or brackets, substantially as herein set forth. 4th. In a furnace, the combination, with the base consisting of an annular radiating chamber, the inner wall of which is provided with inwardly extending lugs or brackets, of the ash box supported upon said lugs or brackets, and having draft openings at diametrically opposite sides, and a rod or shaft extending transversely through said ash box, and having valves or dampers adapted to close the said draft openings simultaneously, substantially as herein set forth. 5th. In a furnace, the herein-described ash box, comprising a ring or casting having draft openings in diametrically opposite sides, and provided at its lower edge with an inwardly extending flange, an ash pit or drum extending downwardly from said flange and having a bottom provided with radial openings, and a centrally pivoted valve adapted to cover said openings, substantially as herein set forth. 6th. In a furnace, the combination of the base consisting of an annular radiating chamber having inwardly extending lugs or brackets, the ash box having lugs or ears resting upon said brackets, the fire pot mounted upon the upper edge of the ash box, and provided at its lower edge with an inwardly extending flange supporting the grate, the combustion chamber, the radiator, the connecting flues, and flues for carrying away the products of combustion, substantially as herein set forth. 7th. In a furnace, the combination of the base consisting of an annular radiating chamber, the top plates or cover for the same having annularly flanged openings, the ash box supported upon brackets extending inwardly from the inner wall of the base, the fire pot mounted upon the ash box, and the flue ring supported upon the upper edge of the fire pot, and having flanged openings connected by suitable elbow pipes with certain openings in the top plate of the base, substantially as herein described and for the purpose set forth. 8th. In a furnace, the combination, with the base consisting of an annular radiating chamber having lugs or brackets projecting inwardly from its inner walls, of the ash box mounted upon said lugs or brackets, the fire pot supported upon the ash box, the flue ring resting upon the upper edge of the fire box, the annular casing or combustion chamber mounted upon the upper edge of the flue ring, the dome or top having the centrally located upwardly extending smoke pipe, the radiator, and the connecting flue, substantially as and for the purpose herein set forth. 9th. In a furnace, the combination of the base consisting of an annular radiating chamber having inwardly extending brackets, the top plates or covers for the same having annularly flanged openings, the furnace casing comprising the ash box, having ears or lugs supporting it upon the brackets of the base, the fire pot, the flue ring, the annular casing or combustion chamber, and the dome having centrally located upwardly extending smoke pipe, the annular radiating chamber composed of pipe sections suitably connected and surrounding the smoke pipe or flue, vertical flues connecting said radiating chamber with certain of the openings in the top plate of the base, elbow pipes connecting the remaining openings in the top plate of the base with the openings in the flue ring, elbow pipes connecting the upper side of the radiating chamber with the exit flue, and a damper arranged in the latter below said elbow pipes, substantially as and for the purpose herein shown and specified. 10th. In a furnace, the combination of the base consisting of an annular radiating chamber, the furnace casing supported upon lugs or brackets extending inwardly from the inner wall of said base, and having the flue ring constructed and arranged as herein described, and the top or dome provided with a centrally located upwardly extending smoke pipe or exit flue, the annular radiating chamber surrounding said flue, vertical pipes connecting said radiating chamber with the top of the radiating base, elbow pipes connecting the latter with the flue ring of the furnace casing, elbow pipes connecting the upper radiator with the exit flue, a damper arranged in the latter below said elbow pipes, and transverse partitions arranged, respectively, in the base and in the upper radiator, and sub-dividing them into compartments, each of the compartments in the base being connected with the flue ring of the furnace casing, and also with the upper radiator, substantially as and for the purpose herein set forth. 11th. In a furnace, the herein-described annular radiator, composed of a series of pipe sections suitably joined or connected together, each of said pipe sections having one end closed and the other end open for the admission of the closed end of the next adjoining pipe-section, substantially as and for the purpose herein shown and specified. 12th. The annular radiator composed of pipe-sections suitably connected or joined together, each of said sections having one end closed and the other end open for the admission of the closed end of the next adjoining section, and each section being further provided with a door through which soot and obstructions may be removed, substantially as set forth. 13th. In a furnace, the combination of an annular radiating chamber or base divided into independent compartments, so as to leave an open space for the passage of air between the inner wall of said base and the furnace casing, an annular radiating chamber surrounding the exit flue, vertical pipes connecting said annular radiator with the compartments of the radiating base, pipes connecting the compartments of the latter with the furnace casing, pipes connecting the upper annular radiator with the exit flue, and a damper arranged in the latter below said pipes, all combined and arranged substantially as and for the purpose herein set forth.