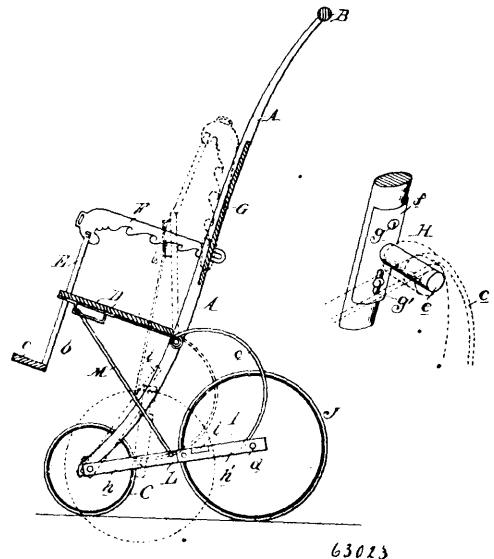


regulated quantities. 3rd. In a vapour engine, the combination with an extension having a vapour forming chamber, a top having an opening, a plunger in said opening, an inlet for the oil, and means actuated by the movement of the engine for automatically regulating the length of the stroke of said plunger. 4th. In a vapour engine, the combination with an extension, having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger, and means actuated by the engine for imparting movement to said rod. 5th. In a vapour engine, the combination with an extension having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger intermittently, and means actuated by the engine, for imparting movement to said rod. 6th. In a vapour engine, the combination with an extension having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger intermittently, means for imparting movement to said rod in one direction, and means for returning said rod to its initial position. 7th. In a vapour engine, the combination with an extension having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger intermittently, a fixed collar on said rod, a sliding collar on said rod, means for making a contact between said fixed and said sliding collars at a predetermined period in the movement of said sliding collar, and means for imparting a movement to said sliding collar. 8th. In a vapour engine, the combination with an extension having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger intermittently, a fixed collar on said rod, a sliding collar on said rod below said fixed collar, means for imparting a movement to said sliding collar, and means for making a contact between said fixed and sliding collars at a predetermined period in the movement of said sliding collar. 9th. In a vapour engine, the combination with an extension having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger intermittently, said rod having a fixed and a sliding collar, means for automatically forming a contact between said fixed and said sliding collars, the point of contact being determined by the movement of the engine. 10th. In a vapour engine, the combination with an extension having a vapour forming chamber, of a top having an opening, a plunger in said opening, an inlet for the oil, a rod adapted to move said plunger intermittently, said rod having a fixed and a sliding collar, a contact roller between said fixed and said sliding collar, an arm connected to said sliding collar and adapted to move the same on said rod, and means for imparting an oscillating movement to said arm. 12th. In a vapour engine, the combination with an extension, having a vapour forming chamber, and mixers located in said chamber, of a top having an opening provided with a contracted lower end, forming a valve seat, a plunger valve located therein and adapted to normally rest on said valve seat, a supplemental chamber formed below said contracted lower end of said opening, means for normally closing said supplemental chamber, and means for lifting said plunger from off its valve seat, whereby oil from said opening will pass into said supplemental chamber. 13th. In a vapour engine, the combination with an extension, having a vapour forming chamber, and mixers located in said chamber, of a top having an opening provided with a contracted lower end, forming a valve seat, a plunger valve located therein and adapted to normally rest on said valve seat, a supplemental chamber formed below said contracted lower end of said opening, the lower end of said chamber having an opening a valve for normally closing upon said valve seat, and means for lifting said plunger from its valve seat, whereby oil from said opening will be passed into said chamber, and be discharged therefrom by the downward movement of said plunger. 14th. In a vapour engine, the combination with an explosion chamber, a piston located therein, said piston being adapted to rotate a balance wheel, horizontal webs formed on the outer side of said chamber, said webs having openings, and a casing surrounding said webbed chamber of a fan adapted to inject cold air into the space around said explosion chamber and within said casing. 15th. A spark former for engines, comprising a shaft mounted to extend into the explosion chamber, a disc having contact points located at the inner end of said shaft, a ratchet-wheel mounted at the outer end of said shaft, a pawl adapted to actuate said ratchet-wheel, means, actuated by the movement of said engine, for imparting motion to said pawl, a finger extending into said chamber and having its front end within the path of movement of said contact points, and means for establishing an electrical circuit when said contact points and said finger are brought into contact. 16th. A spark former for engines, comprising a shaft mounted to extend into the explosion chamber, a disc having contact points located at the inner end of said shaft, a pawl and ratchet-wheel mounted at the outer end of said shaft, a lever, connected to said shaft and to said pawl, an arm pivotally connected to said

lever and adapted to impart a reciprocatory movement to said lever, means for imparting a movement to said arm, a finger extending into said chamber and having its front end within the path of movement of said contact points, and means for establishing an electrical circuit when said contact points and said finger are brought into contact. 17th. In a vapour engine, the combination with an explosion chamber, a vapour forming chamber, and a valve located between said explosion chamber and said vapour forming chamber, said valve being operated by the movement of the piston in said explosion chamber, of means operated by the movement of the engine, for automatically regulating the amount of resistance to the movement of said valve, whereby the movement of the engine will be automatically controlled, substantially as described. 18th. In a vapour engine, the combination with an explosion chamber, a vapour forming chamber, and a spring retained valve located between said explosion chamber and said vapour forming chamber, said valve being operated by the movement of the piston in said explosion chamber, of means, operated by the movement of the engine, for automatically regulating the tension of said spring, whereby the movement of the engine will be automatically controlled, substantially as described.

No. 63,023. Perambulator. (*Voiture*.)



William H. English, Detroit, Michigan, U.S.A., 4th May, 1899; 6 years. (Filed 10th November, 1898.)

Claim.—1st. In a perambulator, the combination of the frame A, having wheels at its lower end, a hinged seat D, the rearwardly extending hinged frame, having wheels at its lower end, the folding link K, connecting the lower end of the arm and the frame, and the connecting rod M from the link to the seat. 2nd. In a perambulator, the combination of the frame A, having small wheels at its lower end, of hinged frame I pivoted to the frame, and having large wheels at the lower end, a folding link P between the axles of the two frames, the frames being adapted to fold into substantial parallel relation to each other, with the large wheels below the small wheels. 3rd. In a perambulator, the combination of the frames A and the frame I hinged thereto, both frames having wheels at their lower end, the folding link L connecting the lower parts of the frame, of an adjustable connection for the frame I on the frame A.

No. 63,024. Gas Engine. (*Machine à gaz*.)

Jessie Burnside Fenner, Buffalo, New York, U.S.A., 4th May, 1899; 6 years. (Filed 13th September, 1898.)

Claim.—1st. In a gas engine, the combination with the cylinder, the gas and exhaust valves and the horizontal main shaft, of a vertical countershaft, intermeshing gear-wheels mounted on the main and countershafts, an eccentric mounted on the countershaft and operating the exhaust valve, a spindle arranged in the countershaft and capable of sliding vertically therein but compelled to turn therewith, a governor mounted on the countershaft and engaging with the spindle, a cam arranged on the spindle, and a rock arm connected with the gas valve and adapted to be operated by said cam, substantially as set forth. 2nd. In an electric igniter for gas engines, the combination with the stationary and movable contacts, of a sliding rod carrying the movable contact, and a rotary cam whereby said rod is shifted for engaging the movable contact with the stationary contact and which is journaled concentric with said rod, substantially as set forth. 2nd. In an electric igniter for gas engines, the combination with the stationary and movable contacts, of a