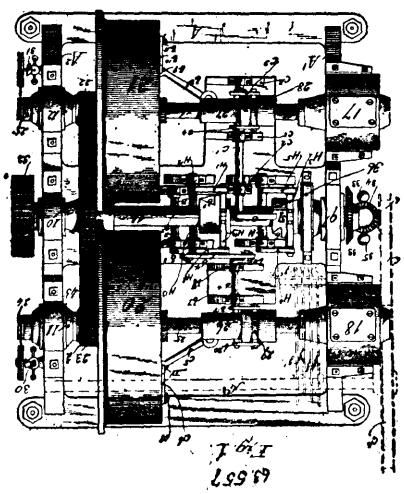
formed with inlets in the rim, the eccentric driving shaft, the disc secured thereto, the links pivotally connected with said disc at diametrically opposite points, and the cranks secured to said shaft and sleeve and pivotally connected with the links, substantially as shown and described. 9th. In an alternating piston engine, the combination with the cylinder, the base formed with an inlet and exhaust chamber, and the rim formed with the exhaust opening, and the cylinder head formed with an inlet opening with a contracted end, and the inlet pipe communicating therewith and with the inlet chamber, of the rotatable shaft, the sleeve, the alternately operating pistons formed with steam chambers and with openings in the rims, the eccentric driving shaft, the disc secured thereto, the links pivotally connected with said disc at diametrically opposite points, and the cranks secured to said shaft and sleeve and pivotally connected with said links, substantially as shown and described. 10th. In an alternating piston rotary engine, the combination with the pistons and the cylinder having inlet openings and exhaust pipes and the turning plugs are valved in the exhaust pipes, of the steam chest, the slide for opening and closing said inlet openings, and the cranks connected with said slide and turning plugs, substantially as shown and described. 11th. In an alternating piston rotary engine, the combination with the cylinder provided with inlet and exhaust openings, the exhaust pipes and the turning plugs in said pipes, the rotatable shaft, the sleeve journalled thereon, and the pistons, of the eccentric driving shaft, the disc secured thereto, the links pivotally secured thereto at diametrically opposite points, and the counterbalance cranks secured to the shaft and sleeve, and located opposite the pistons secured to the sleeve and shaft respectively, and the steam chest, together with a slide and the cranks connected with said slide and turning plugs, substantially as shown and described. 12th. In an alternating piston rotary engine, the combination with the cylinder having inlet openings and exhaust pipes, the steam chest, the slide, the cranks connected therewith and the turning plugs located in the exhaust pipes and connected with said cranks, of the rotatable shaft, the sleeve, the pistons secured thereto, cut away at the peripheries and sides, the apertured web, the packing strips, the counterbalance crank secured to said shaft and sleeve, the links and the eccentric driving wheel, substantially as shown and described.

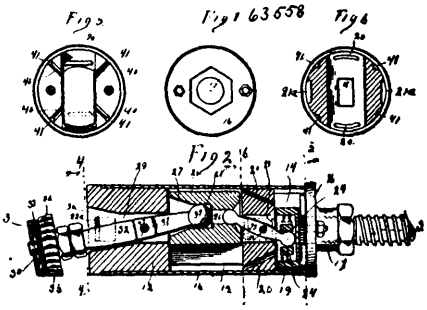
No. 63,557. Steam Engine. (*Machine à vapeur.*)



Benjamin Charles Pole, 4 Gloucester Road, Kensington, London, S. W., England, 7th August, 1899; 6 years. (Filed 29th October, 1899.)

Claim.—1st. A multiple engine consisting of the following elements, separate motors each having a fly wheel suitably and permanently connected thereto, a driven shaft, connections for driving such shaft from each of said fly wheels, and means connected to such driven shaft for automatically making and breaking such connections to and with said driven shaft, substantially as and for the purposes set forth. 2nd. The multiple engine consisting of the following elements, two separate engine motors each having a fly wheel suitably and permanently connected thereto, a driven shaft, connections between each of the fly wheels and said driven shaft, and automatic means for disconnecting from and engaging the driven shaft to and from each fly wheel with its motor, substantially as and for the purposes set forth. 3rd. The multiple engine consisting of the following elements, separate engine motors, fly wheels connected thereto, clutches upon each of said fly wheels, a driven shaft, and devices to automatically and periodically open and close said clutches, substantially as and for the purposes set forth. 4th. The multiple engine consisting of separate engine motors, fly wheels connected thereto, clutches on said fly wheels, escapements, a driven shafts, connections between said motors and fly wheels and said driven shaft, and means for alternately and automatically releasing and engaging an engine motor together with the fly wheel belonging thereto, substantially as and for the purposes set forth. 5th. The multiple engine provided with the following elements, separate motors, each motor provided with a governor, a fly wheel suitably connected to each of said motors, a driven shaft provided with a governor, and automatic means for releasing the fly wheels and to re-engage them alternately with said driven shaft, substantially as and for the purposes set forth. 6th. The multiple engine consisting of the following elements, separate motors each having a fly wheel connected thereto mounted on line shafts, clutches in said fly wheels, escapements in said fly wheels, a driven shaft suitably connected to the fly wheels, means to automatically alternately release and again re-engage each engine motor and its fly wheel, and governors to regulate the speed thereof, substantially as and for the purposes set forth. 7th. The multiple engine, two or more separate motors, fly wheel provided with clutches, escapements, a driven shaft suitably connected to the fly wheels and motors, speed governors to regulate the speed of the multiple engine, automatic and graduated means to release alternately and re-engage alternately an engine motor and its fly wheel, all operating together for the purposes set forth. 8th. In a multiple engine, two or more separate motors each provided with a governor, means to release and re-engage the fly wheels alternately and automatically with said driven shaft, a revoluble shaft G^3 suitably connected, cams on said shaft G^3, levers to operate against said cams, said levers provided with means to open and close the supply of power to the motors for the purposes described. 9th. In a multiple engine, the combination with the driven shaft 14, of the rigidly mounted gear wheel, the non-independently revoluble but sliding discs 37 and 38, the eccentric and its strap 36, the governor 35 suitably connected to said driven shaft, the eccentric strap as a means to operate the levers, sliding discs, and the rock shafts to operate the friction clutches belonging to the alternately and automatically operating clutches, as and for the purposes set forth. 10th. The multiple engine, the driven shaft provided with and carrying friction clutches, escapements, also engine motors and fly wheels connected thereto, and means to alternately and automatically operate the clutches, substantially as and for the purposes set forth. 11th. In the multiple engine motor, the combination therein of separate engine motors, each motor engine provided with a fly wheel, a governor, a friction clutch, escapements. also a driven shaft suitably connected to each engine motor and to a fly wheel, suitable automatic devices to operate the friction clutches alternately and periodically and to supply the electricity or other power supplied to the engine motors, governors to regulate the speed, all combined and working together, substantially as and for the purposes set forth.

No. 63,558. Cleaning Device for Tubular Boilers.
(*Nettoyeur de chaudière.*)



Michael J. Howlett, Bayonne, New Jersey, U.S.A., 7th August, 1899; 6 years. (Filed 1st February, 1899.)

Claim.—1st. In a cleaning device for tubular boilers, a cylindrical head, a piston adapted to move transversely of said head, a knocker connected with said piston, said knocker consisting of a circular head which is larger at the inner end than at the outer, and the larger portion being corrugated longitudinally, passages connecting the steam supply pipe with the chamber 13, exhaust ports or passages whereby the steam is exhausted through the tubes of the boiler and passages through said head whereby the steam is permitted to pass through said head and into the tube of the boiler, substantially as and for the purpose set forth. 2nd. In a cleaning device for tubular boilers, a cylindrical head, a piston adapted to move transversely of said head, a knocker connected with said piston, said knocker consisting of a circular head which is larger at the inner end than at the outer, and the larger portion being corrugated longitudinally, passages connecting the steam supply pipe with the chamber 13, exhaust ports or passages whereby the steam is exhausted through the tubes of the boiler and passages through said head whereby the steam is permitted to pass through said head into the tube of the boiler, and means for revolving said head and for moving the same longitudinally, substantially as and for the purpose set forth. 3rd. In a cleaning device for tubular boilers, a cylindrical head, a piston