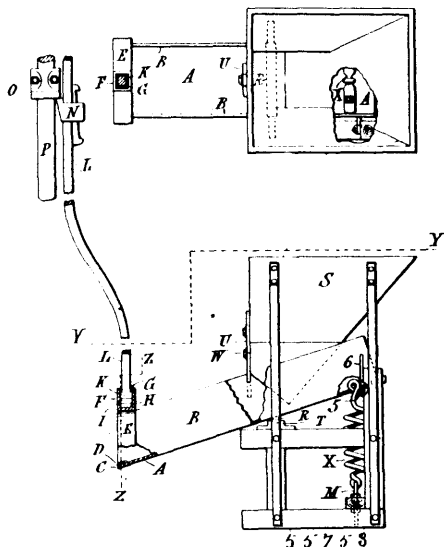
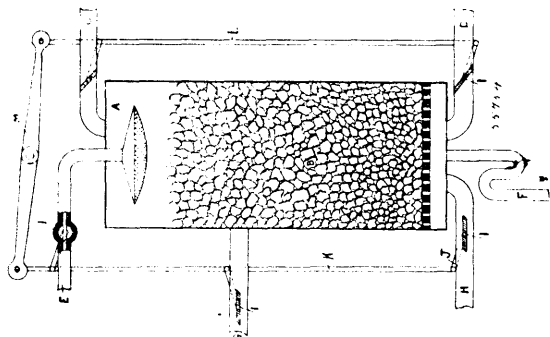


hereinbefore set forth. 3rd. The combination with the parts claimed in the first claim, of a spring as X and an adjustable plate



as 5 having slotted upright arms as 6 substantially as and for the purposes set forth. 4th. The combination with an inclined ore shoot, of a fork as E having a shank as F having a recess as G, and (in order) an elastic block H, non-elastic block I, and foot K of a jogger inserted in such recess all substantially as set forth. 5th. In combination with the frame of a shoot, an adjustable plate having a horizontal base and upright arms for regulating the angle of inclination of the shoot when the rebound of said shoot has been effected by a spring, substantially as set forth.

**No. 55,754. Air and Water Vapour for Gas.**  
(*Vapeur à eau et air pour le gaz.*)

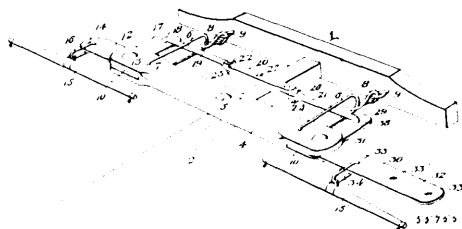


Ludwig Mond, Wrimington Hall, Norwich, Chester, England, 1st May, 1897; 6 years. (Filed 12th January, 1897.)

*Claim.*—1st. In combination with the process of obtaining ammonia by the partial combustion of fuel containing nitrogen with a mixture of air and steam and of using the heat of combustion to generate a part of that steam, obtaining motive power with the gas from which the ammonia tar and steam have been separated by means of gas engines and utilizing the waste heat of the exhaust gases of these gas engines to further heat and load with water vapour the air to be used for the partial combustion of the fuel. 2nd. The process of producing steam in the manufacture of gas in gas producers, which consists in gasifying fuel by partial combustion with a mixture of hot air and steam, separating the ammonia, using the heat of the partial combustion to produce a moist and warm air, utilizing the gas by explosion or combustion for motive power by means of gas engines and passing the hot exhaust gases of these gas engines alternately with water and the aforesaid moist and warm air through a regenerator, whereby the mixture is sufficiently heated and loaded with water vapour to serve the purpose of gasifying the fuel in gas producers under the most favourable conditions for obtaining ammonia as a by-product. 3rd. The process of utilizing the heat of hot gases, which consists in passing the said hot gases and water alternately in the same direction over a large surface of refractory material and passing air in the reverse direction while the water is passing. 4th. The improvement in the process of utilizing the heat in the hot exhaust gases of a gas engine, or in other hot gases, which consists in passing the said gases and water alternately over a large surface of refractory material and leading off the steam formed for use in gas producers. 5th. The improvement in the process of utilizing the heat in the hot exhaust

gases of a gas engine or in other hot gases, which consists in passing the said gases alternately with air, which may already contain a certain amount of moisture, in opposite directions through a chamber or chambers filled with refractory materials and subsequently bringing the hot air leaving these chambers into contact with water, preferably hot water, so as to obtain a suitable mixture of air and water vapour for use in gas producers. 6th. A chamber loosely stacked with refractory materials in combination with the exhaust pipe from a gas motor entering above, exit pipe for said gases escaping below, a water supply entering also above, an escape pipe for surplus water below, and escape for steam near the top, and a valve mechanism whereby the water and the exhaust gases are (alternately with each other) passed through the chamber and cut off and the steam escape is opened during the passage of the water and cut off therewith. 7th. A chamber loosely stacked with refractory material provided with an entrance at the top and exit below for hot gases, an entrance above and an exit below for the passage of water, an entrance below and an exit near the top for the passage of air or a mixture of air and steam and means for alternating the passage of the hot gases with the simultaneous passage of the air and water aforesaid, substantially as and for the purposes described.

**No. 55,755. Draft Equalizer.** (*Régulateur de tirage.*)



Lorenzo Dow Whitten, Beverly, Illinois, U.S.A., 1st May, 1897; 6 years. (Filed 9th March, 1897.)

*Claim.*—1st. A draft equalizer, comprising the axle 1, tongue 2, and the double tree centrally secured to the tongue 2 by a bolt 5, and having its outer ends connected to the axle by stay links 6-6', provided with snap hooks 8 engaging the eyebolts 9 secured to said axle, in combination with the adjustable connecting rod 20, the outer ends of which are secured to the angle levers 12-30, fulcrumed in horizontal slots in the outer ends of the double tree 3, substantially as shown and described. 2nd. A draft equalizer, comprising the axle, the tongue and the double tree 3, the outer ends of which are provided with horizontal slots 10-10', the angle levers 12-30 fulcrumed therein, the lever 12 having arms of equal length and the lever 30 arms of unequal length, in combination with the adjustable connecting rod 20 connecting the rear arms of said levers and comprising the member 19 having a plane portion provided with vertical holes 27 and a depending arm 26 provided with a nut 24, the corresponding member 21 having the plane portion provided with adjusting holes 55, and a vertical arm 23 provided with a nut 22, substantially as shown and described. 3rd. A draft equalizer, comprising the axle, the tongue, and the double tree provided with a horizontal slot 10, in which is fulcrumed the angle lever 12, having arms of equal length, and a horizontal slot 10' in which is fulcrumed the angle lever 30 having a shorter arm 35, and a longer arm 32 provided with a series of adjusting holes 33, 33', 33'', in combination with the adjustable rod 20 connecting said angle levers, and comprising the members 19 and 21, detachably and adjustably secured together, substantially as shown and described.

**No. 55,756. Logging Jack.** (*Cric pour billots.*)

John E. Gilchrist, South Bend, Washington, U.S.A., 1st May, 1897; 6 years. (Filed 8th March, 1897.)

*Claim.*—1st. A logging-jack, or the like, comprising a casing, a lifting-rack fitted to slide in the casing, a shaft extending transversely of the casing, a pinion on the shaft engaging the rack, a ratchet wheel on said shaft, a pawl engaging the ratchet wheel and adapted to hold the rack in an elevated position, a working lever having a hooked end adapted to be hung on said shaft, and a pawl carried on said working lever and arranged to engage said ratchet wheel, whereby when the said lever is operated said ratchet wheel is turned, substantially as set forth. 2nd. A logging jack or the like comprising a casing, a lifting-rack fitted to slide therein, a shaft extending transversely of the casing, a pinion on the shaft meshing with the rack, a ratchet wheel on the shaft, a pawl engaging said ratchet-wheel to hold the rack in an elevated position, a working lever, a spring pawl carried on said working lever, in position to engage the ratchet wheel to turn the same when the lever is manipulated, a slotted hand lever having one end loosely coupled to said pawl and its outer end in position to be engaged by the hand of the operator, and a fulcrum pin for said hand lever mounted on the working lever and engaging the slot in the hand lever, substantially as set forth. 3rd. The logging jack having the lifting bar provided with a head and with a lateral claw at its lower por