No. 689,673. Patented Dec. 24, 1901.

H. HYATT.

GAS PRODUCER.

(Application filed Oct. 19, 1900.)

(No Model.)

Fig. 2.

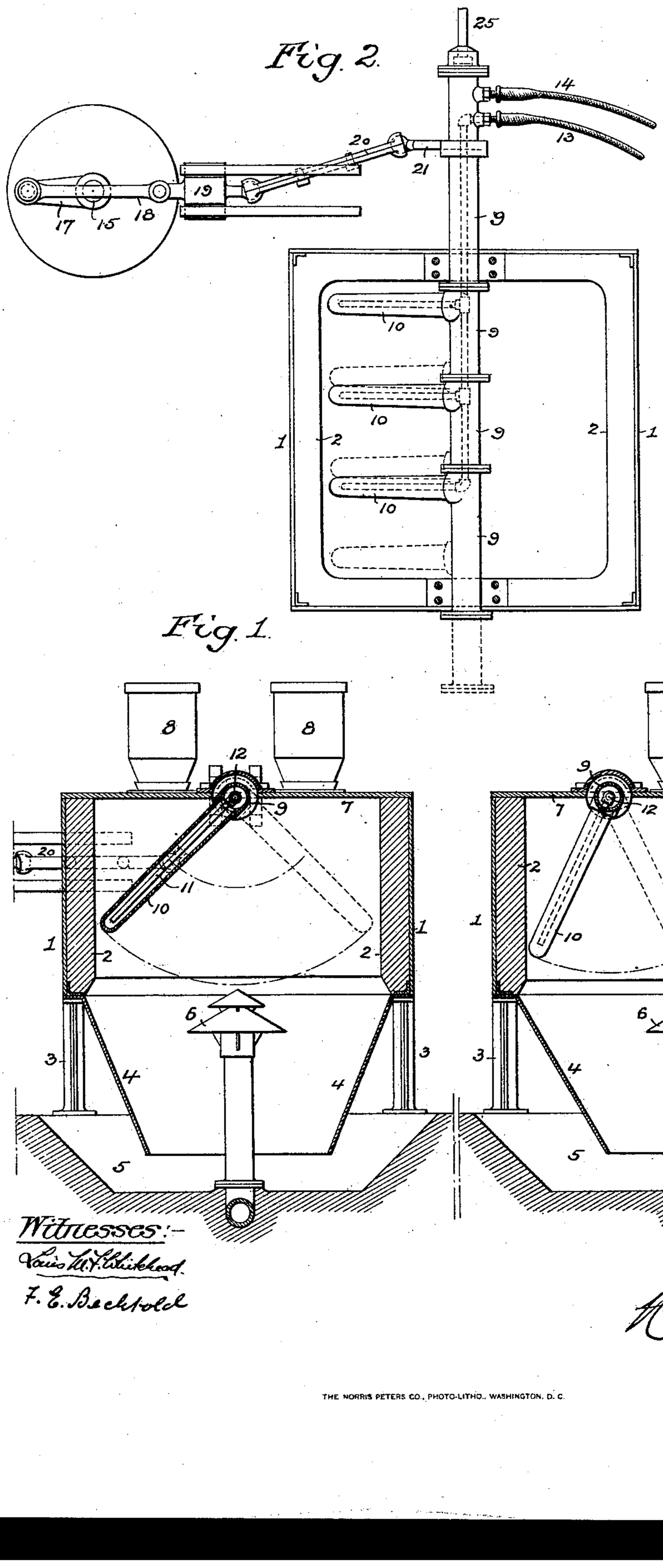

Fig. 2a.

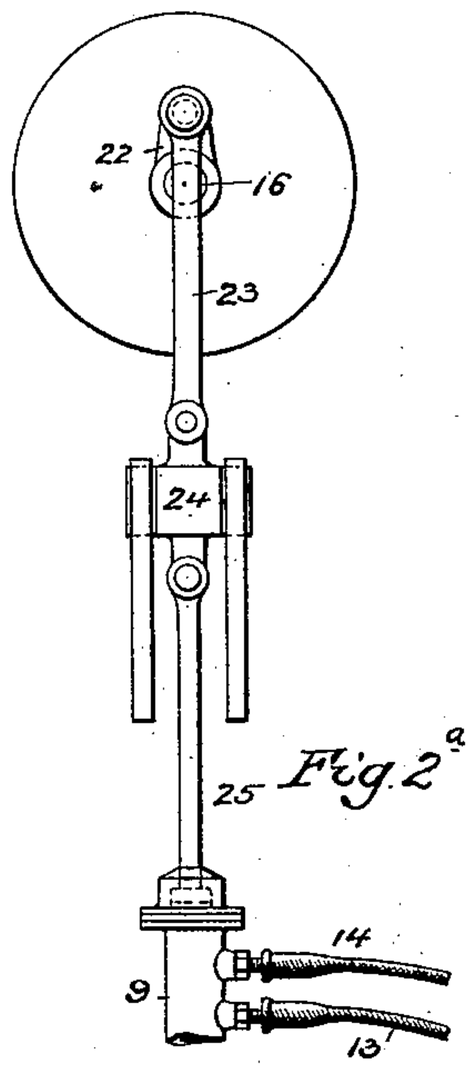

Fig. 1.

Fig. 3.

Witnesses:-
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UNITED STATES PATENT OFFICE.

HARRY HYATT, OF CLEVELAND, OHIO, ASSIGNOR TO THE WELLMAN SEAVER ENGINEERING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 689,673, dated December 24, 1901.

Application filed October 19, 1900. Serial No. 33,623. (No model.)

To all whom it may concern:

Be it known that I, HARRY HYATT, a citizen of the United States, and a resident of Cleveland, Ohio, have invented certain Improvements in Gas-Producers, of which the following is a specification.

The object of my invention is to provide for the effective agitation or stirring up of all portions of the mass of incandescent fuel in a gas-producer, so as to prevent the formation of clinkers and insure a uniform flow of air throughout all portions of the mass. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a gas-producer provided with a fuel-stirrer in accordance with my invention. Fig. 2 is a plan or top view of the same with the cover-plate removed. Fig. 2ª is a plan view of a part not shown in Fig. 2; and Fig. 3 is a view similar to Fig. 1, but illustrating a duplex stirrer.

The body of the producer may be constructed in any suitable manner, since the construction of the producer itself forms no essential part of my invention.

In the present instance the producer consists of a rectangular sheet-metal casing 1, with fire-brick lining 2, mounted upon legs or columns 3, and having a depending and tapering ash-hopper 4, which extends down into a sealing-pit 5, the producer having a central air-distributer 6 and a cover-plate 7, with feed-hoppers 8 thereon.

Extending across the upper part of the producer, above the normal level of the fuel therein, is a hollow rock-shaft 9, mounted in suitable bearings in the side walls and cover of the producer, so that it is free both to rock and to slide transversely in said bearings. From this rock-shaft project a series of pokers 10 of sufficient length to reach through the mass of incandescent fuel in the producer down to the point at which combustion practically ceases and the fuel is reduced to ash. Each of these pokers 10 is hollow and communicates with the hollow rock-shaft 9, and each poker contains a pipe 11, open at its lower end and communicating at its upper end with a pipe 12 in the hollow rock-shaft 9, both said pipe 12 and rock-shaft 9 having at a point outside of the casing of the producer branches connected respectively to water supply and discharge pipes 13 and 14, so that cold water may be fed to the point of each poker and may flow backwardly through the same and thence through the hollow shaft 9 to the outlet, thereby keeping the pokers cool and preventing the rapid destruction of the same by the heat to which they are subjected. A rocking motion on its axis and a transverse reciprocating motion in line with said axis are imparted to the rock-shaft 9 by suitable means, so that each poker will swing across the producer from one side to the other and will also have movement to a certain extent in a direction at right angles to the line of swing, whereby every portion of the mass of incandescent fuel within the producer will periodically be subjected to the stirring and disintegrating action of one or other of the pokers, so as to keep the mass of fuel constantly broken up, and thus prevent the formation of clinkers and insure the proper descent of the mass of fuel in the producer and provide for the free flow of air uniformly throughout all portions of the incandescent mass.

As before stated, various means may be employed for imparting the combined rocking and reciprocating motion to the shaft 9, my invention not being restricted in this respect. As shown in the drawings, I have employed for the purpose two vertical shafts 15 and 16, one having a crank 17, connected by a rod 18 to a sliding cross-head 19, which is connected by a rod 20 to an arm 21 on the rock-shaft 9, ball-and-socket joints being provided between the rod 20 and the cross-head 19 and arm 21 in order to permit of the reciprocating movement of the shaft 9. This movement is effected by means of a crank 22 on the shaft 16, said crank being connected by a rod 23 to a cross-head 24, which is likewise connected by a rod 25 to the end of the shaft 9. The shaft 9 is preferably composed of flanged sections bolted together, each poker being carried by a section of the shaft, so that any one of the pokers can be readily removed or replaced without necessitating the removal or disturbance of the others.

In the construction shown in Fig. 3 two rock-shafts 9 are employed, and the swing of the pokers is correspondingly limited.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of a gas-producer with a rock-shaft extending across the same and composed of a series of sections connected together, a series of projecting pokers each carried by one of the sections of the rock-shaft, and means for rocking said shaft, substantially as specified.

2. The combination of a gas-producer with a rock-shaft extending across the same and composed of a series of sections connected together, a series of projecting pokers each carried by one of the sections of the rock-shaft, and means for rocking said shaft and for laterally reciprocating the same, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY HYATT.

Witnesses:
C. W. COMSTOCK,
HERBERT P. GLIDDEN.