

(No Model.)

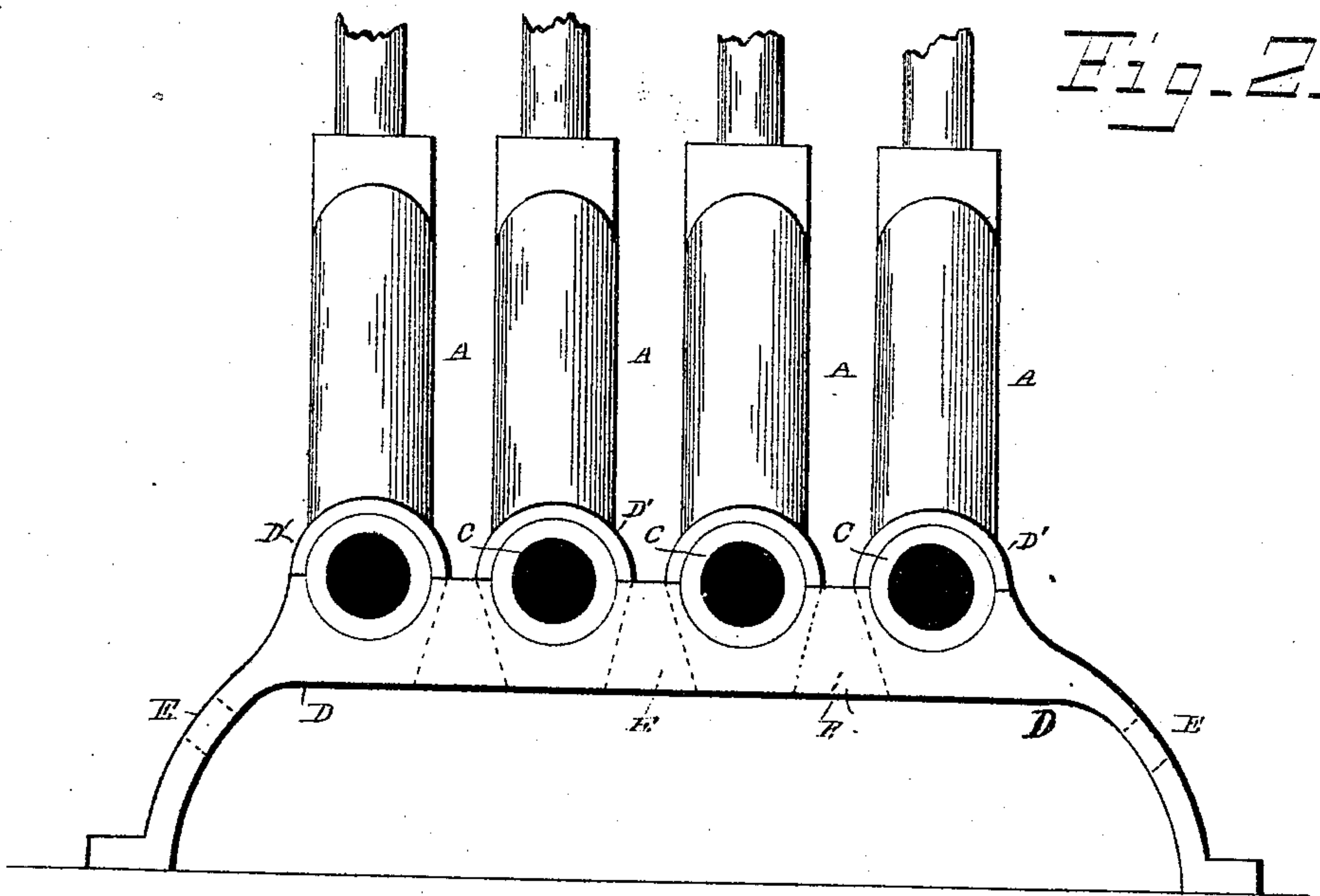
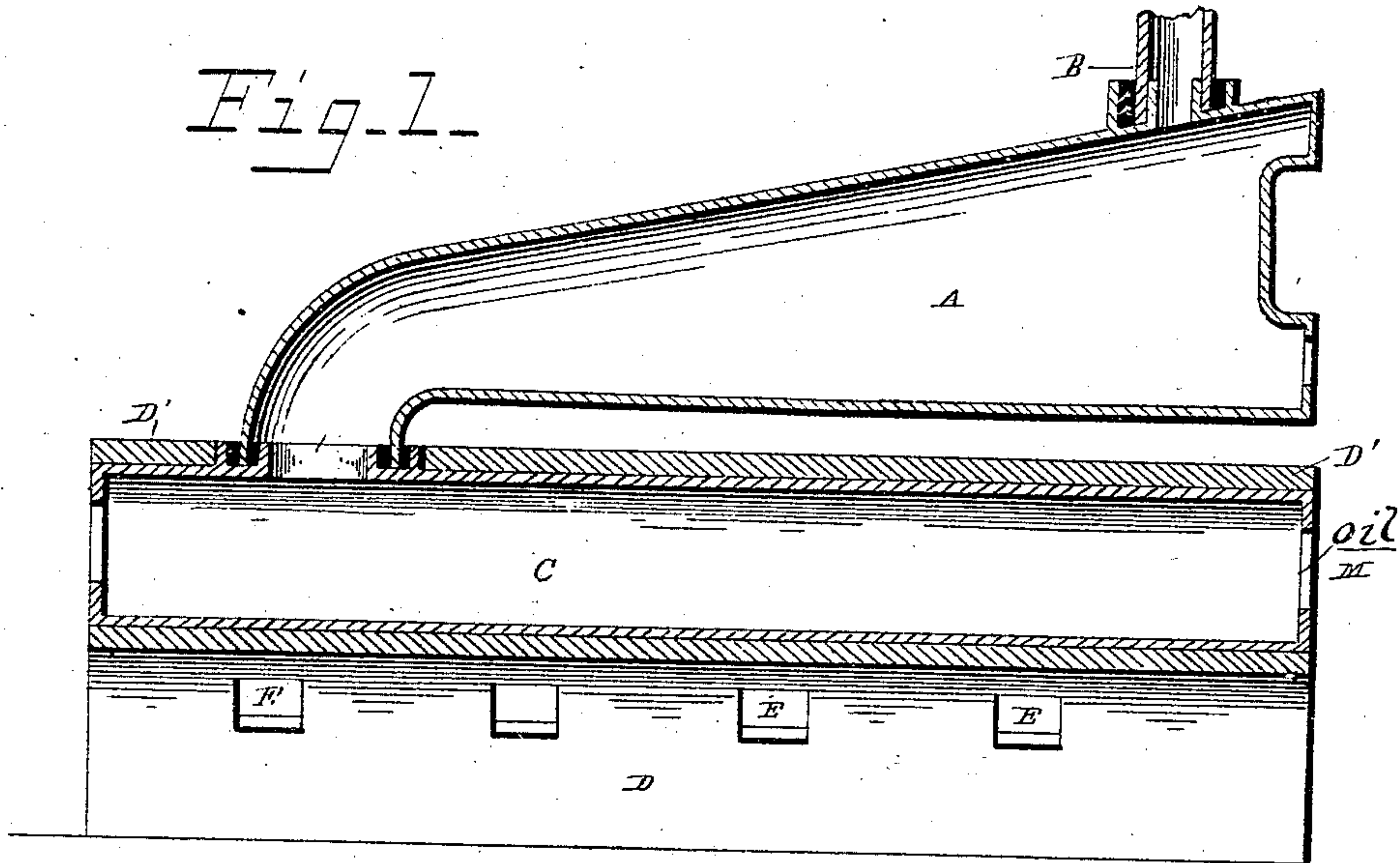
2 Sheets—Sheet 1.

R. H. SMITH.

GAS GENERATING RETORT FURNACE.

No. 321,770.

Patented July 7, 1885.



WITNESSES

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INVENTOR

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(No Model.)

2 Sheets—Sheet 2.

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Fig-3-

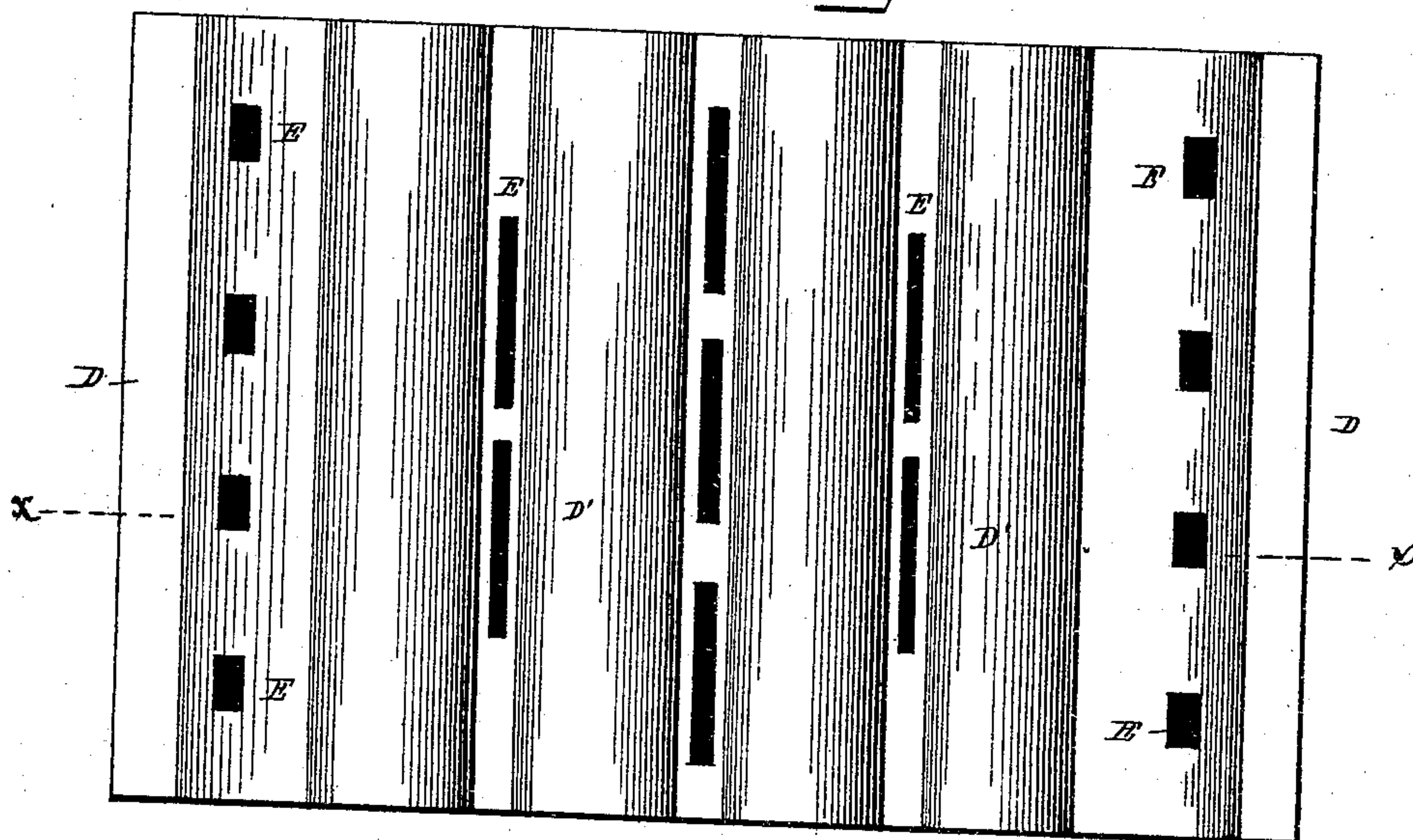


Fig-4-

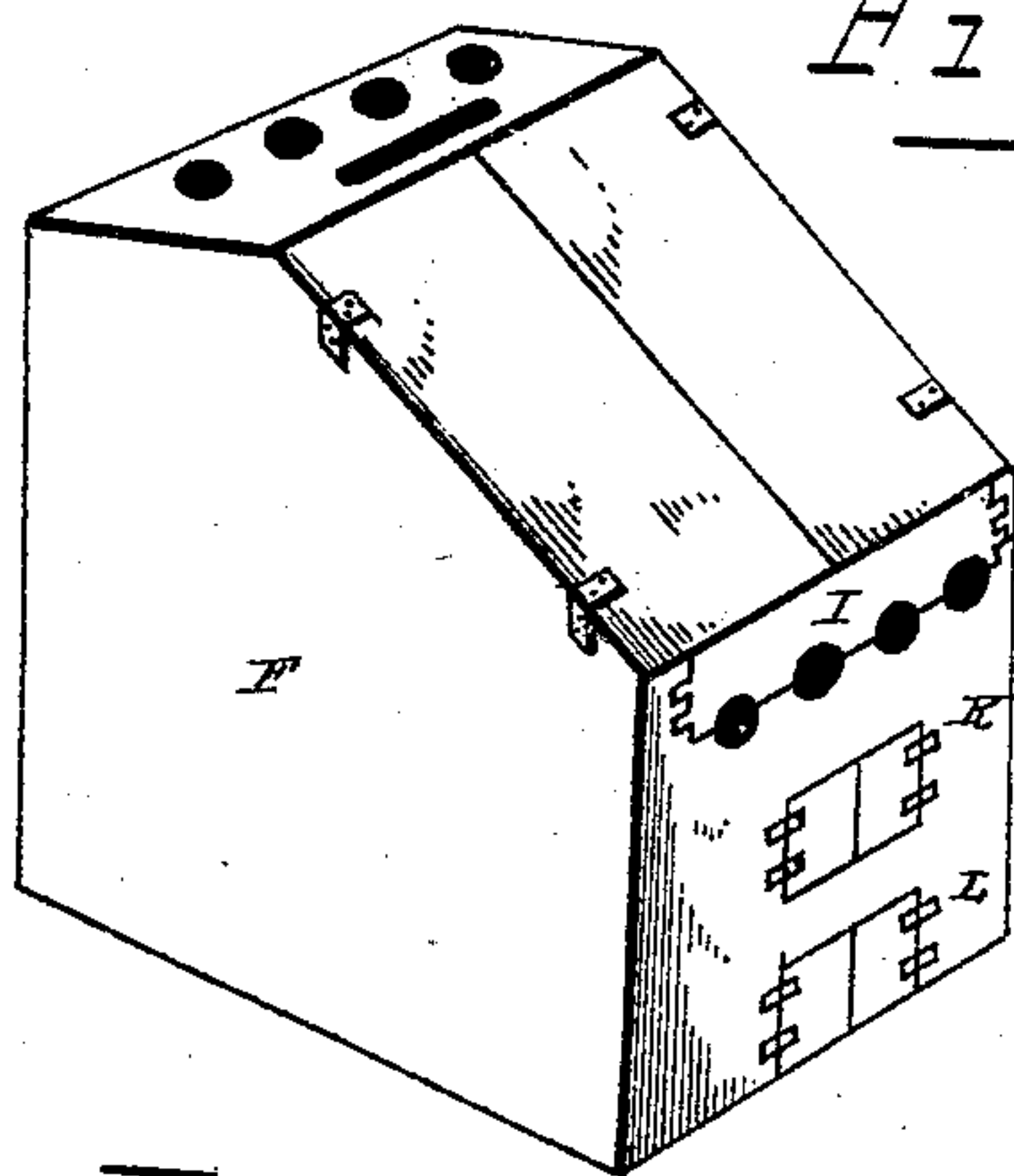


Fig-7-

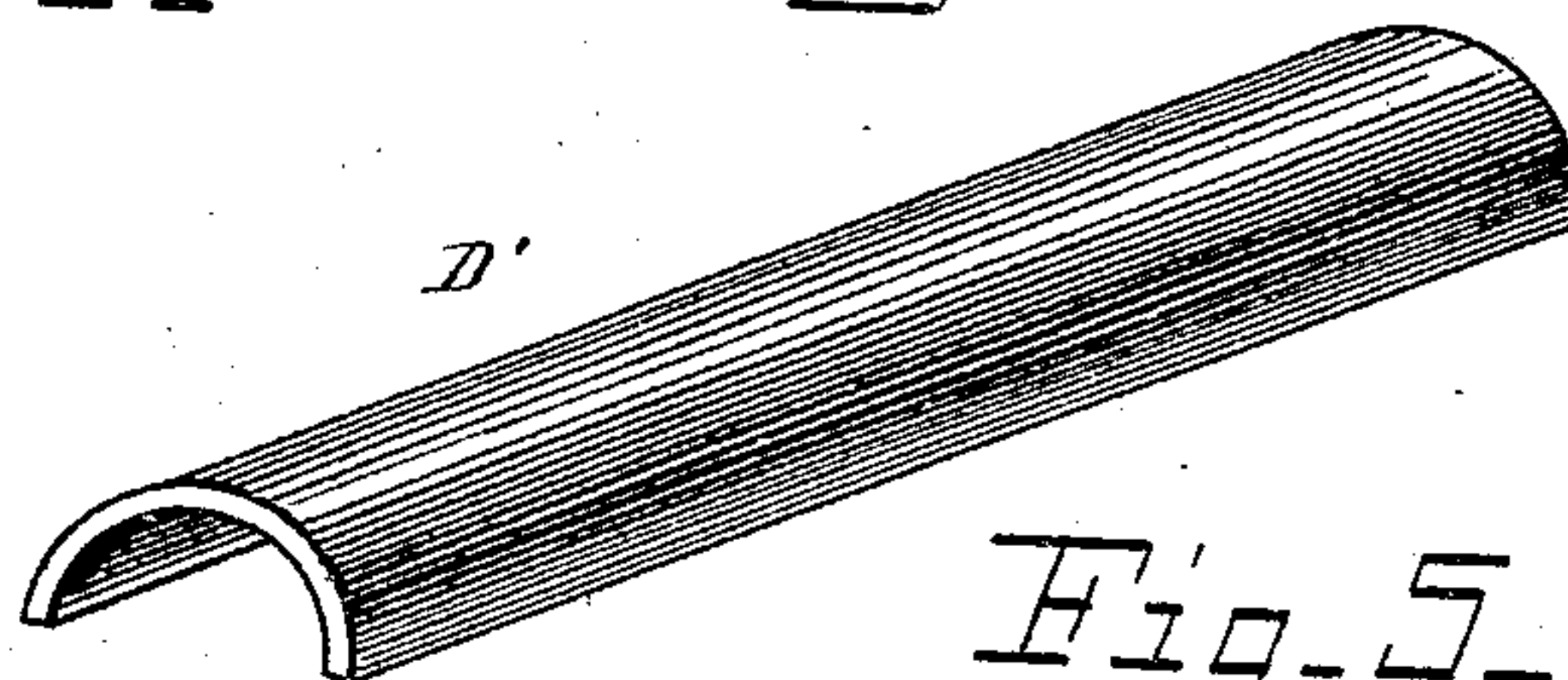


Fig-5-

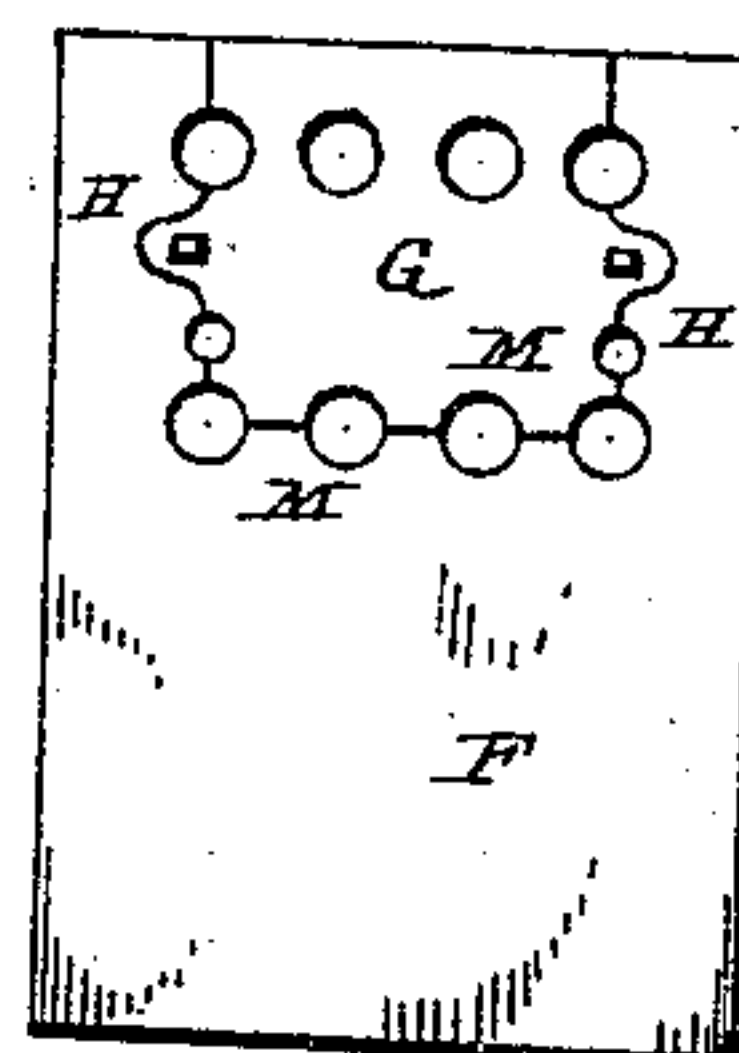
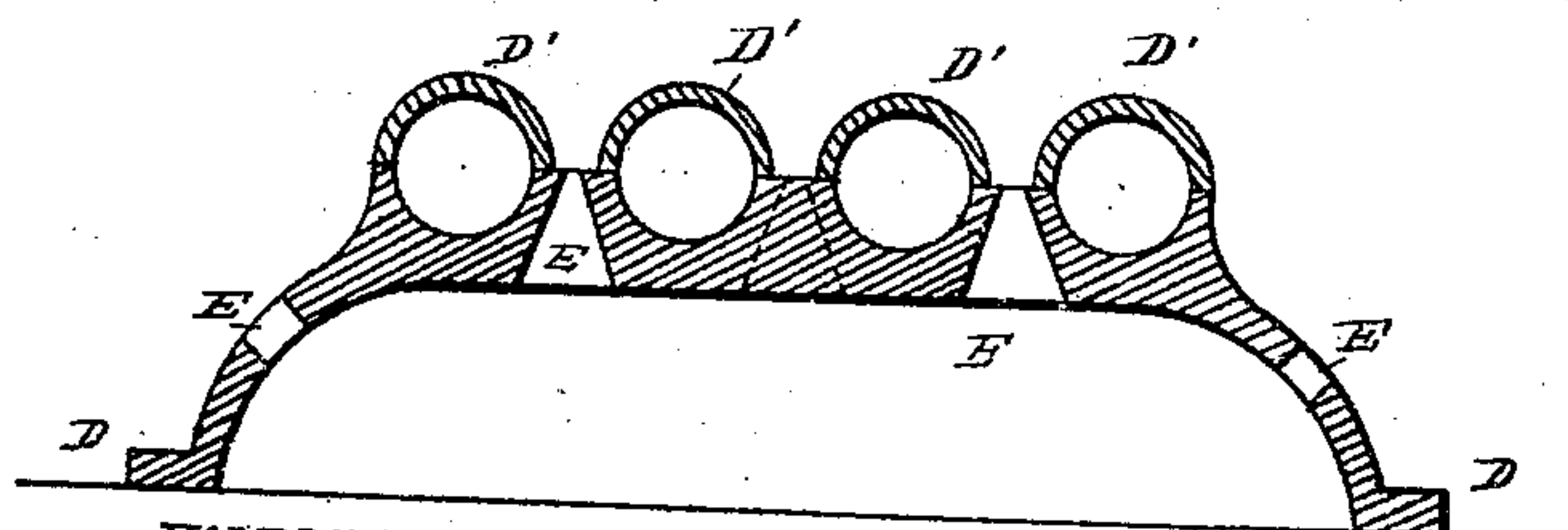


Fig-6



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UNITED STATES PATENT OFFICE.

ROLAND H. SMITH, OF PITTSBURG, PENNSYLVANIA.

GAS-GENERATING RETORT-FURNACE.

SPECIFICATION forming part of Letters Patent No. 321,770, dated July 7, 1885.

Application filed April 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROLAND H. SMITH, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Generating Retort-Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to furnaces for the generation of gas, more particularly that from petroleum or other gas-producing oil, and has for its object to provide means whereby the retorts may be fully protected in their connections, and thus prevent the leakage of gas and also a means whereby they may be easily and readily removed. The retort is also protected from the action of the fire.

In the drawings, Figure 1 represents a longitudinal section through the retorts and supporting-arch; Fig. 2, an end view of the retorts and arch; Fig. 3, a detail view of the supporting-arch; Fig. 4, a perspective view of the casing of the furnace, showing a loose plate for allowing the removal of the retorts, and Fig. 5, a view of the back of the furnace, showing a loose plate for the same purpose; Fig. 6, a cross-section of the arch, and Fig. 7, a perspective view of one of the semi-cylindrical plates.

A represents a retort of the shape shown, having an outlet-pipe, B, arranged with a flange and groove around it for the purpose of sealing with lead, preferably. One end projects downward and is sealed in a suitable flanged groove around an opening in the tube C which forms a portion of the retort. This tube is open at both ends and is supported on an arch of fire-clay or suitable material. This arch D is of suitable shape, as shown in the drawings, and has semicircular grooves on top for the reception of the tubes, and also is provided with openings E between and on each side of the grooves mentioned. On top of the tubes are placed arched plates D, semi-circular in cross-section, thus completely cov-

ering the said tubes and protecting them from the direct action of the fire. The holes E allow the heat to ascend and reach the upper part of the retorts A.

F represents the casing surrounding a series of retorts and containing the fire-box, &c.

G represents a loose plate secured in the back of the retort by means of the lugs H, and is so placed that when removed the retorts may be taken out from the casing.

I represents a similar plate placed in front of the casing, and for the same purpose as the plate G.

K and L represent, respectively, the fire and ash doors.

The oil is received in the tubes through the openings M, and is converted into gas by heat and then ascends into the upper retort, from whence it is conveyed through the usual and proper channels to the gas-receiver. The openings all have proper pipe-connections.

Having described the invention, what I claim is—

1. The grooved arch provided with draft-openings for the passage of heat and the semi-cylindrical plates, adapted to cover the tubes of the retort, all operating as and for the purpose specified.

2. The combination, with a grooved arch provided with draft-openings for the passage of heat and semi-cylindrical plates, of retort-tubes resting on the arch and covered by the plates and retorts placed above the said tubes and connected to them, substantially as and for the purpose specified.

3. The combination of the retorts, the supporting perforated arch and coverings, the removable plates and the casing, all arranged as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

ROLAND H. SMITH.

Witnesses:

ED. H. STRAUB,
WILLIAM HERB.