2 Sheets--Sheet 1.

HENRY J. FENNER & F. VERSMANN.

Improvement in Apparatus for Preparing Anthracene.

No. 126,277. Patented April 30, 1872.

Fig: 1.

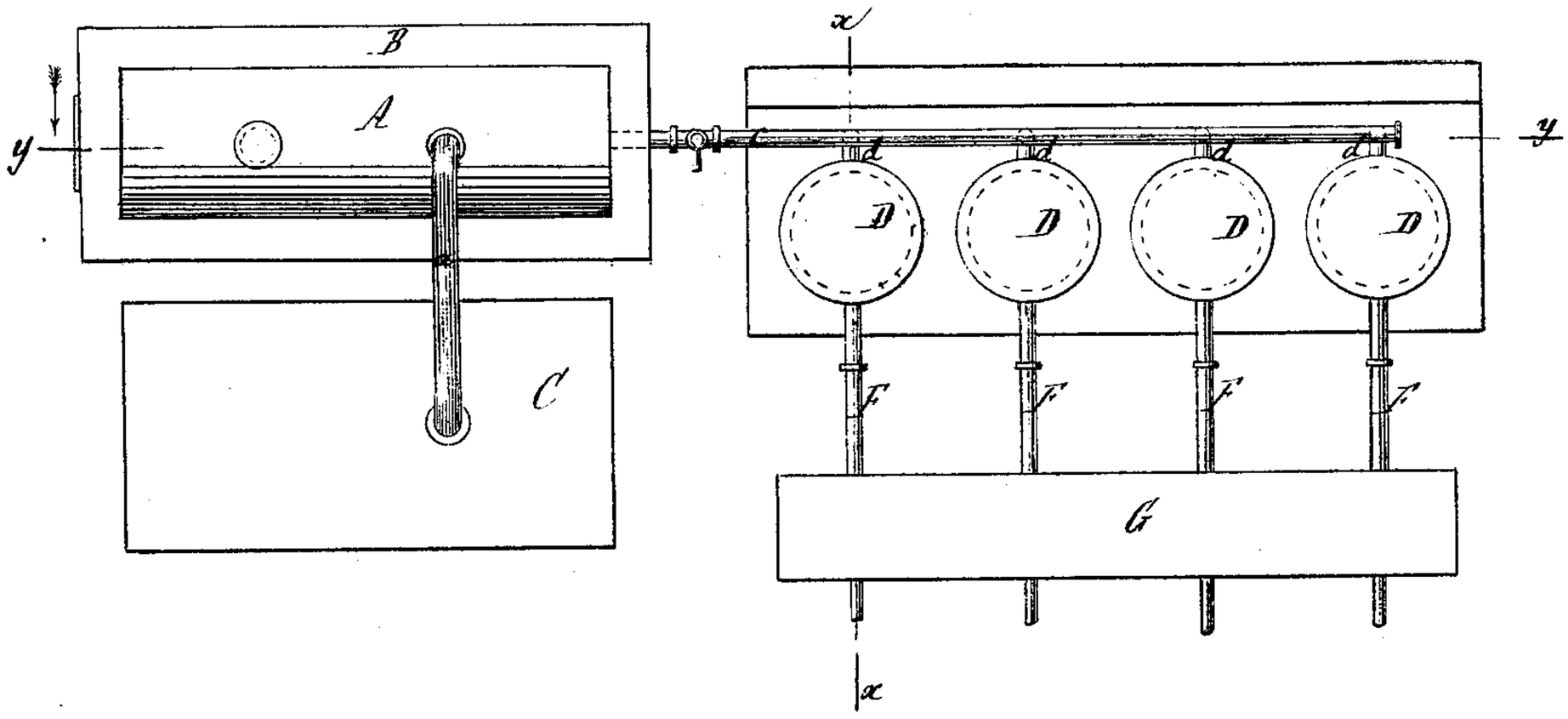
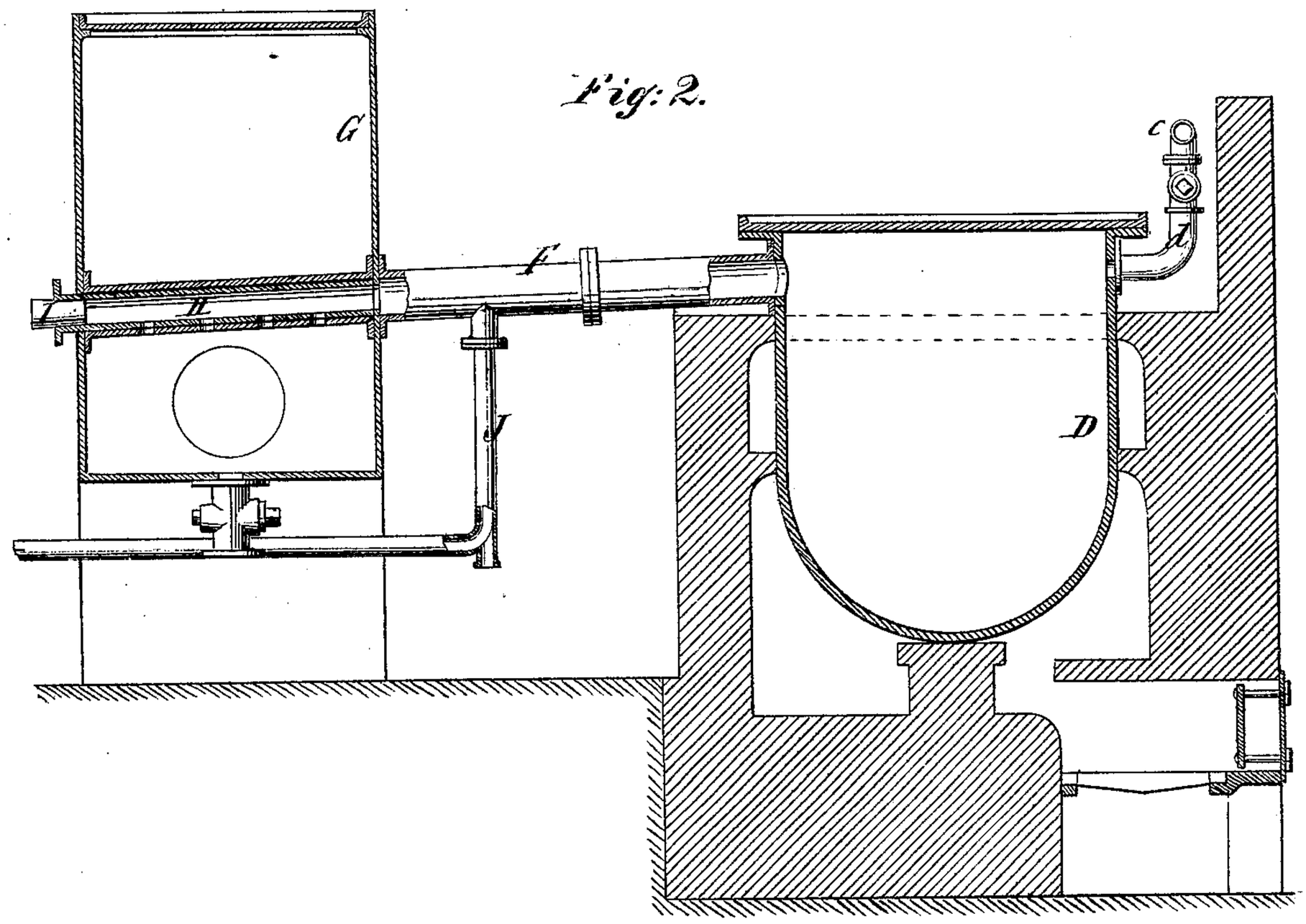


Fig: 2.



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2 Sheets--Sheet 2.

HENRY J. FENNER & F. VERSMANN.

Improvement in Apparatus for Preparing Anthracene.

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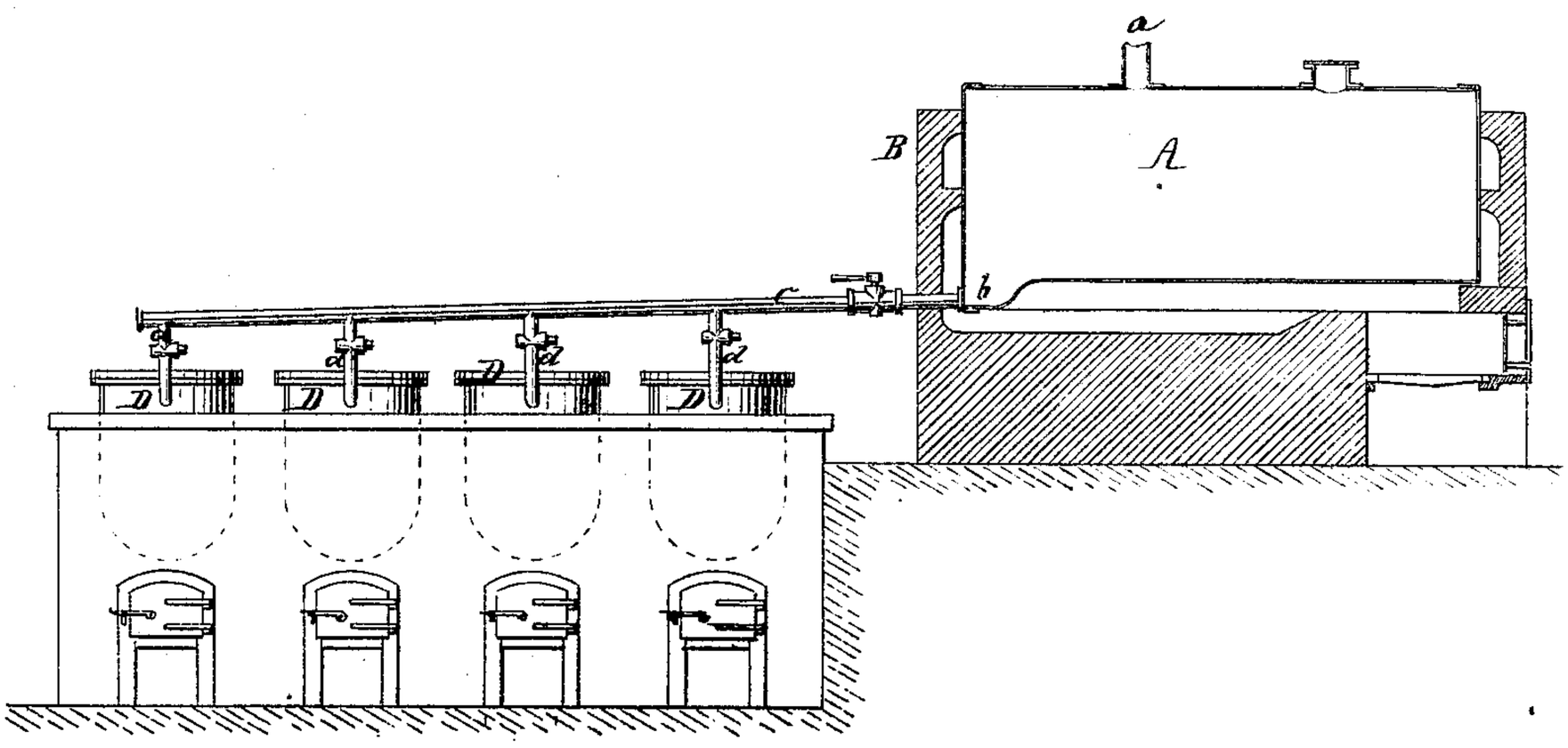
Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY J. FENNER, OF GREENWICH, AND FREDERICK VERSMANN, OF LONDON, ENGLAND.

IMPROVEMENT IN APPARATUS FOR PREPARING ANTHRACENE.

Specification forming part of Letters Patent No. 126,277, dated April 30, 1872.

To all whom it may concern:

Be it known that we, HENRY JAMES FENNER, of Greenwich, England, and FREDERICK VERSMANN, of London, England, have invented a new and Improved Apparatus for Obtaining Anthracene; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a plan or top view of our invention. Fig. 2 is a transverse vertical section of the same in the plane *x x*, Fig. 1, in a larger scale than the previous figure. Fig. 3 is a longitudinal vertical section of the same in the plane *y y*, Fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the combination of a tar-still with a series of pitch-retorts and with an anthracene-receiver, the still and the retorts being placed over furnaces, and the connection between the retorts and the receiver being effected by means of pipes provided with branch pipes and with a register in such a manner that, by heating coal-tar in the still, the light constituents thereof can be driven out, while the pitch, which collects in the lowest part of the still, is run into the retorts and heated, and as the vapors pass to the receiver the heavy oils, still mixed with the anthracene, condense and pass off through the branch pipes, while the anthracene, mixed with a small portion of oil, collects in the receiver.

In the drawing, the letter A designates a still, which is set over a furnace, B, so that it can be heated with convenience. From this still extends a goose-neck, *a*, which connects with a coil situated in a water-tank, C, for the purpose of condensing the vapors passing off through the goose-neck. Said still is provided at one end with a depression, *b*, from which extends a pipe, *c*, that connects, by branch pipes *d*, with a series of retorts, D. The pipe *c*, as well as its branch pipes *d*, are provided with stop-cocks, so that the flow of the vapors or liquids through them can be regulated. The retorts are placed over furnaces E, so that the steam can be heated at will, and from each of said retorts extends a pipe, F, to and through the receiver G, (best seen in Fig. 2.) That portion of said pipe which is situated in the receiver is perforated in its under side with a large number of small holes, and through its outer end extends a pipe, H, fitting nicely into the pipe G, and provided with a plug, I, which serves to close up its end. In the pipe H are also a number of small holes, and if said pipe is turned so that its holes communicate with those of the pipe F the vapors and liquids escaping from the retorts, or either of them, can pass into the receiver; but by turning the pipe H the communication between the retort and receiver is stopped. From that portion of each of the pipes F which is situated between the retort and receiver extends a branch pipe, J.

In using our apparatus for the purpose of separating anthracene from coal-tar we proceed as follows: We place the tar in the still A and heat it so as to drive out the light constituents thereof through the goose-neck *a* into the condenser C. The pitch which remains in the still is run off through the pipe *c* and distributed in the retorts D, and by heating the pitch in the retorts the anthracene is vaporized, together with some other constituents still heavier than anthracene. These last-named constituents condense in the pipe F and pass off through the branch pipes J, while the anthracene, mixed with a small percentage of oil, passes through the holes in the pipe F into the receiver G. If, from some cause, the pitch should rise in one of the retorts so as to pass over into the pipe F, then the register-pipe H is turned and the plug I is withdrawn so as to allow the pitch to escape and prevent it from mixing with the anthracene already collected in the receiver. The anthracene which collects in the receiver is finally separated in the form of crystals, from the oil still mixed with it, by a filtering-press or by any other suitable means.

What we claim as new, and desire to secure by Letters Patent, is—

The combination of a tar-still with a series of pitch-retorts and with an anthracene-receiver, said retorts being connected to the receiver by means of pipes F, provided with registering-pipes H and with branch pipes J, all constructed and operating substantially in the manner herein shown and described.

This specification signed by us this 14th day of February, 1872.

HENRY JAMES FENNER.
FREDK. VERSMANN.

Witnesses:
EVAN LEWIS,
THO. WISE.