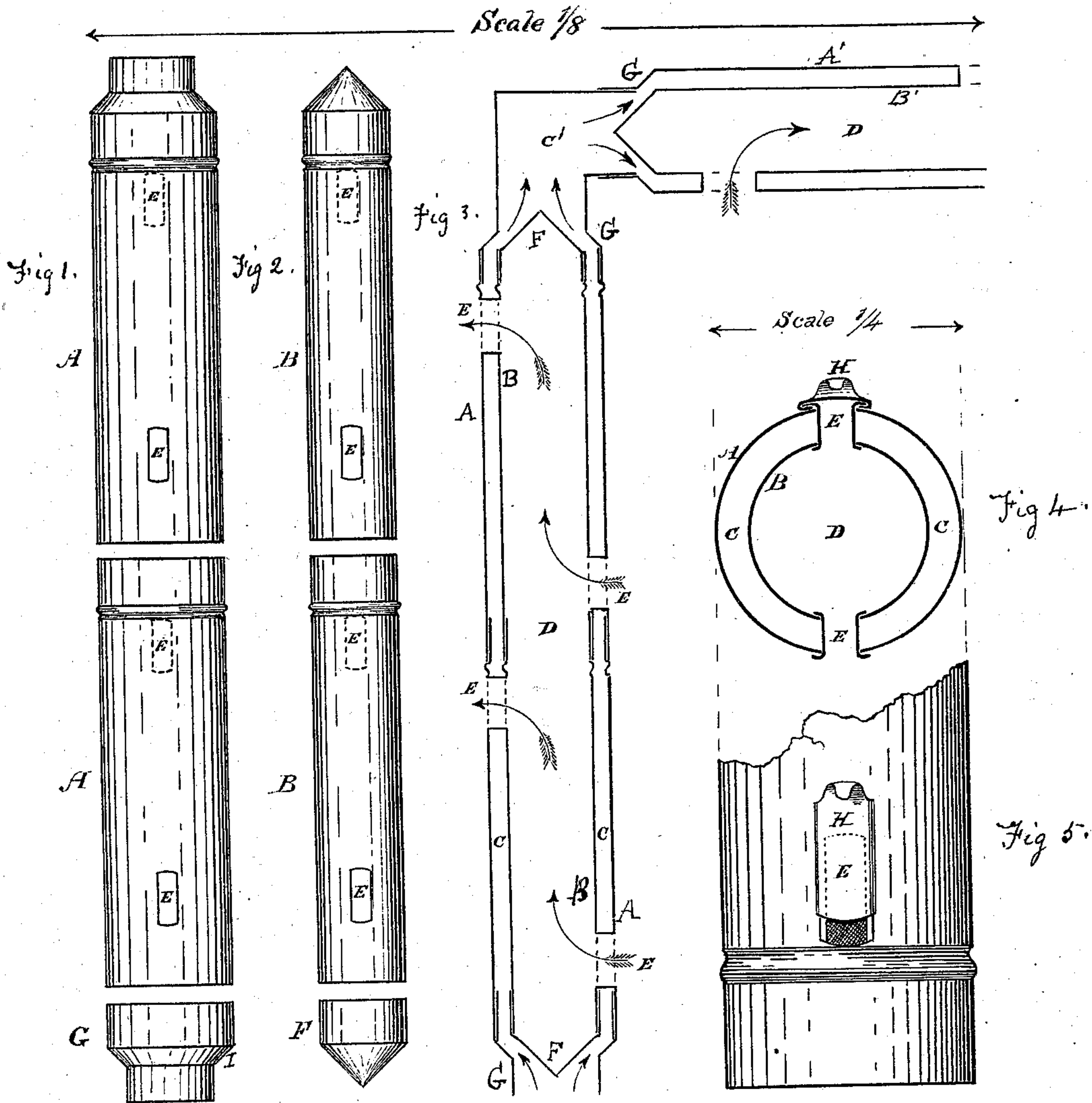


D. BOYD.
Stove-Pipes.

No. 149,914.

Patented April 21, 1874.



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID BOYD, OF NEW YORK, N. Y.

IMPROVEMENT IN STOVE-PIPES.

Specification forming part of Letters Patent No. **149,914**, dated April 21, 1874; application filed March 7, 1874.

To all whom it may concern:

Be it known that I, Dr. DAVID BOYD, of New York city, in the county and State of New York, have invented a new and useful Improvement in Smoke-Pipes, of which the following is a specification:

The invention relates to a novel mode of constructing attachments for smoke-pipes, as hereinafter fully described, and subsequently embodied in the means pointed out in claim.

Figure 1 is a side view of the outer pipe. Fig. 2 is a side view of the inner pipe. Fig. 3 is a longitudinal section, showing the pipes combined. Fig. 4 is a cross-section of the improved smoke pipe, showing the air-apertures, with one of the closing slides. Fig. 5 is a view showing a side view of one of the slides.

Similar letters of reference indicate corresponding parts.

A A' represent the outer pipes, and B B' the inner pipes, the latter being of less diameter, so that an annular flue, C, is left between the two for the passage of the smoke and heated gaseous products of combustion. D is the interior of the inner pipe, being a hot-air chamber. E are tubular openings for the admission and escape of air to and from the inner pipe or air-chamber D. F represents caps for closing the ends of the inner pipe. G is a removable collar for the outer pipe. For heating purposes the caps F are placed on the ends of the inner pipe B, as seen in Fig. 3, and the smoke passes up through the annular flue C. When the pipe makes a turn, this annular flue discharges into an elbow, C', consisting of a single pipe, of the diameter of the inner pipes B B', connected with the outer pipes A A' by means of the collars G, as seen in the drawing. As the air in the inner tubes becomes rarefied, cool air will rush through the lower opening E, and will be discharged through next upper opening E. There may be two or more of these openings for receiving the air, and discharging it when it becomes expanded, as seen in the drawing. When not required for heating, the caps F are removed from the

inner pipe, and the openings E are covered with the slides H. The collar G is pushed on to the bottom of the outer pipe, so that the inclined portion I will close the end of the inner pipe. The pipe being placed upon the collar of the stove or heater, it will be seen that there will be a direct central draft through the inner pipe, leaving the outer pipe comparatively cool. This arrangement is desirable in warm weather, or when it is not necessary to utilize the heat. In cold weather, when it is an object to utilize all the heat generated from the fuel, it will be seen that the whole outer surface of the outer pipe, and the whole inner surface of the inner pipe, become heat-radiating surfaces, the one heating the air in the apartment by direct radiation, and the other heating air to be discharged into the room, thus utilizing a very large percentage, if not the whole, of the heat generated from the fuel.

It is well known that in ordinary pipes and flues ascending currents of heat seek the center, and are repelled by the cooler surface of the flue or pipe. A very large proportion of the heat generated in the ordinary manner is, therefore, not utilized, but discharged into the chimney, and the fuel wasted.

By my improvement this action is prevented. Instead of a central column of ascending heat, the heated gases are spread out into a thin layer or stratum, and are compelled to part with their heat before being discharged.

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

An attachment for smoke-pipes, consisting of pipes A B and A' B', connected by an elbow, C', and provided with dampered openings E; the outer pipes A A', having collars G, and the inner pipes B B', having caps F, all as and for the purpose specified.

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Witnesses:

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