(No Model.)

H. & C. A. McLAUGHLIN.

BOILER FOR STEAM HEATING.

No. 377,322. Patented Jan. 31, 1888.

Fig. 3.

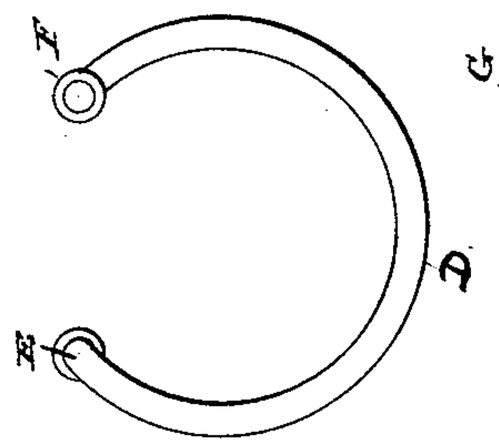


Fig. 4.

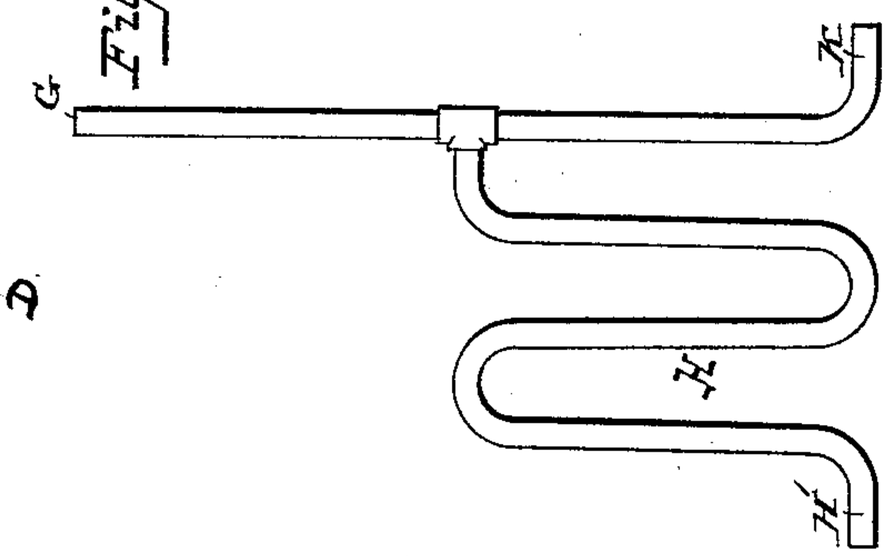


Fig. 2.

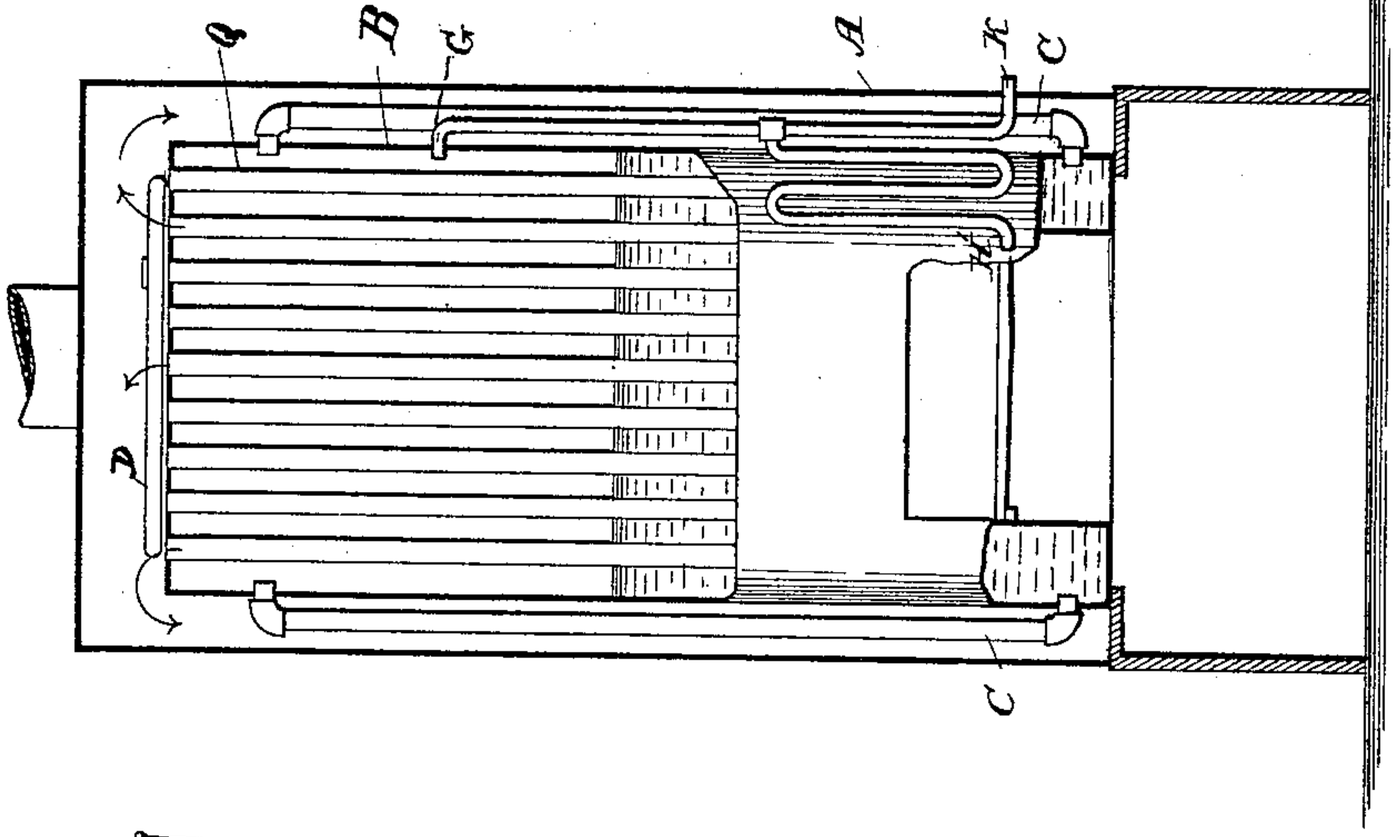
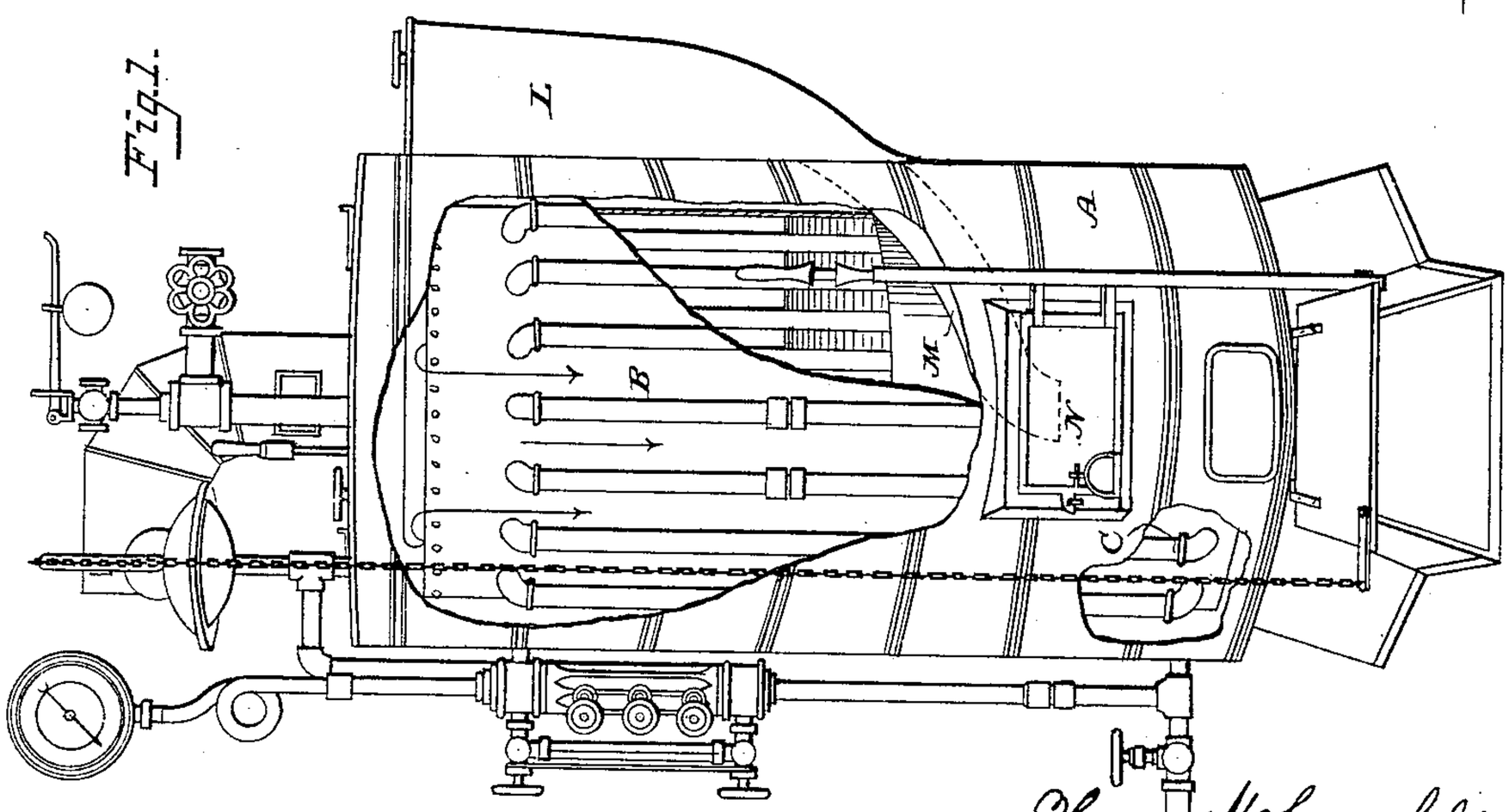


Fig. 1.



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UNITED STATES PATENT OFFICE.

HENRY McLAUGHLIN AND CHARLES A. McLAUGHLIN, OF LEBANON, PENNSYLVANIA.

BOILER FOR STEAM-HEATING.

SPECIFICATION forming part of Letters Patent No. 377,322, dated January 31, 1888.

Application filed September 4, 1886. Serial No. 212,755. (No model.)

To all whom it may concern:

Be it known that we, HENRY McLAUGHLIN and CHARLES A. McLAUGHLIN, citizens of the United States, residing at Lebanon, in the county of Lebanon, State of Pennsylvania, have invented a new and useful Improvement in Boilers for Steam-Heating, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a view of a steam-boiler, the outer casing partly broken away, showing the interior thereof. Fig. 2 represents a vertical section of a boiler, showing the coil-pipe H embodied in our invention. Fig. 3 represents the curved pipe leading from the boiler and between the same and outer casing. Fig. 4 represents the coil-pipe shown in Fig. 2 on an enlarged scale.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention relates to improvements in steam-boilers; and it consists in constructing the same with a coil of pipe placed between the inner boiler and outer casing and leading into the return-pipe from the condenser before its entrance into the boiler, whereby the water of condensation is partially heated before its return to the boiler.

It also consists of the combination of parts, as hereinafter described and claimed.

Referring to the drawings, A represents the outer casing, and B the steam-boiler within the same, the lower portion of the said boiler surrounding the fire-pot thereof.

C represents pipes leading from the upper to the lower portions of the boiler and located between the outer casing, A, and the boiler B. These pipes aid in increasing the generation of the steam by being subjected to the heat in the space between the casing and the boiler. On the boiler, and connected thereto at E, is a curved pipe, D, through which the steam, as it leaves the boiler, passes to the distributing-pipe at F, being superheated by the products of combustion passing through the flues Q of the boiler, said flues aiding in generating the steam. Outside of the boiler and within the casing is a coil of pipe, H, which at one end, H′, is connected with the boiler and at the other with the return-pipe K from the radiator, whereby the return-water is heated before it passes into the boiler at G.

Instead of the well-known central magazine for fuel, we employ an outer hopper, L, which is connected with the fire-pot M of the boiler by the funnel-shaped passage-way N, thus utilizing the space within the upper portion of the boiler and permitting the use of a greater number of combustion-flues in the boiler, thereby exposing a greater surface of water to the direct action of the heat. The apparatus is provided with the usual inlet and outlet pipes, safety-valves, and gages, all of which may be of any well-known form of construction.

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

1. A steam-heating apparatus having an outer casing, an inner boiler, a circular pipe within the outer casing leading from top of boiler to steam-supply pipe, the pipes C, leading from upper to lower part of boiler outside of the same, but within the casing, the coil H, communicating with the boiler and the return-pipe, and a fire-pot, all substantially as and for the purpose set forth.

2. In a steam-heating apparatus, a boiler with outer casing, in combination with a return-pipe, and a coil of pipe communicating with said return-pipe and boiler and located between said boiler and casing, all substantially as described.

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Witnesses:
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