

JOHN M^C CONN

STEAM RADIATOR

117310

PATENTED JUL 25 1871

Fig. 1

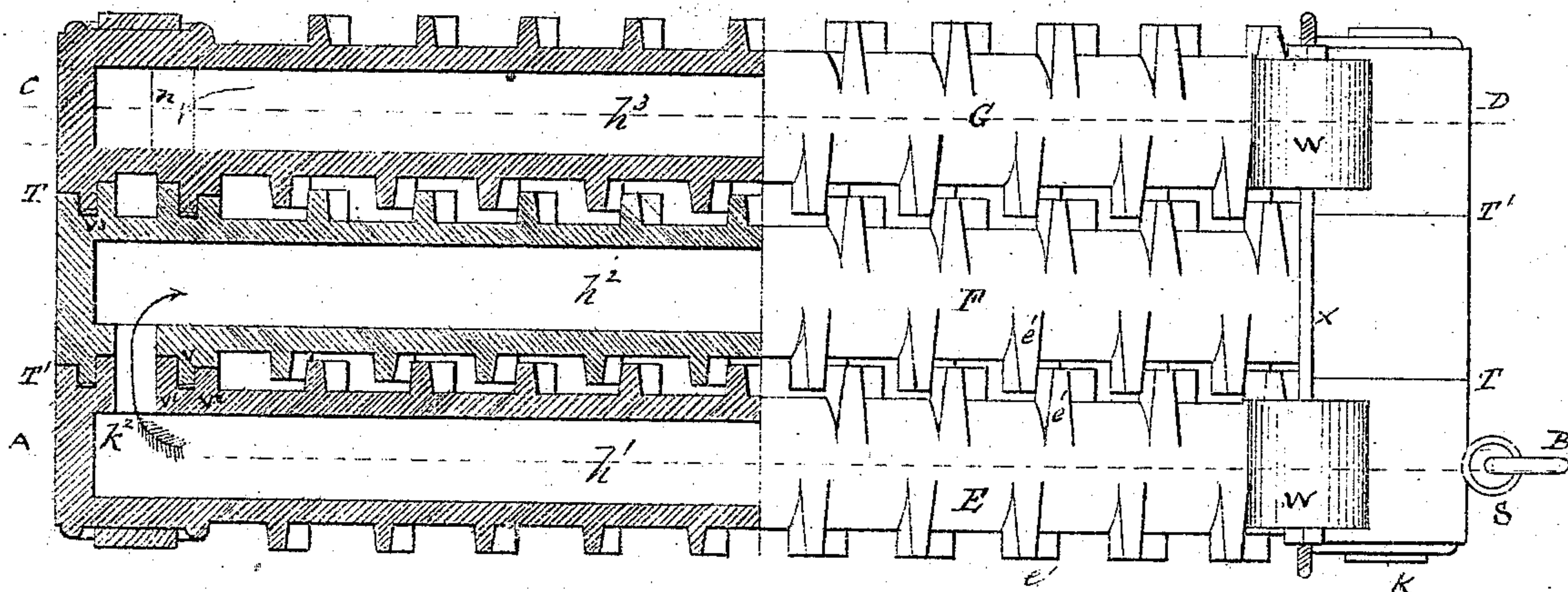


Fig. 2

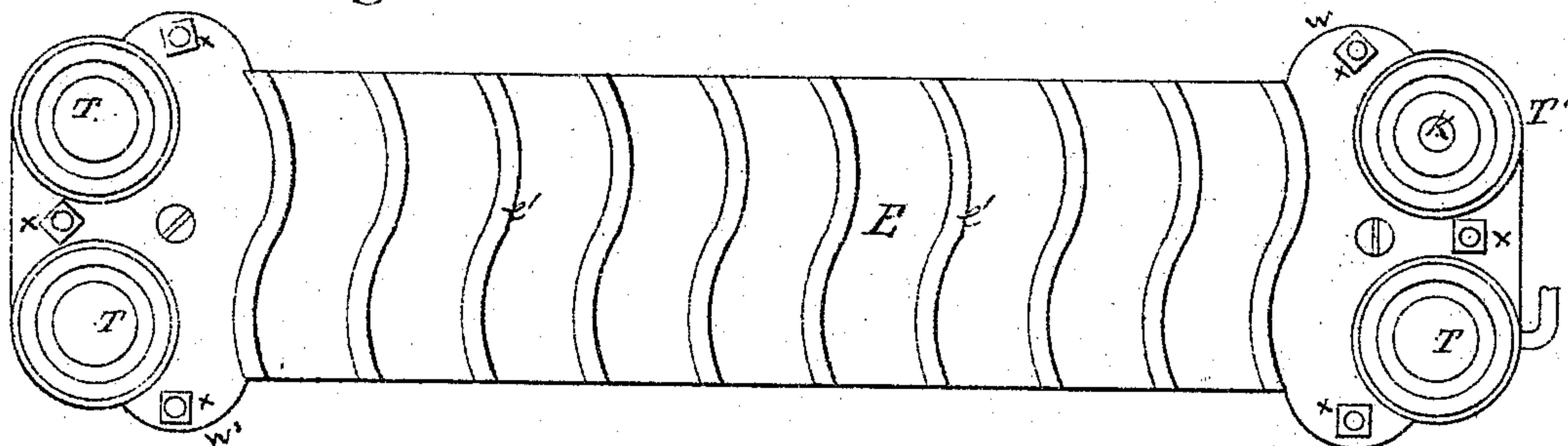
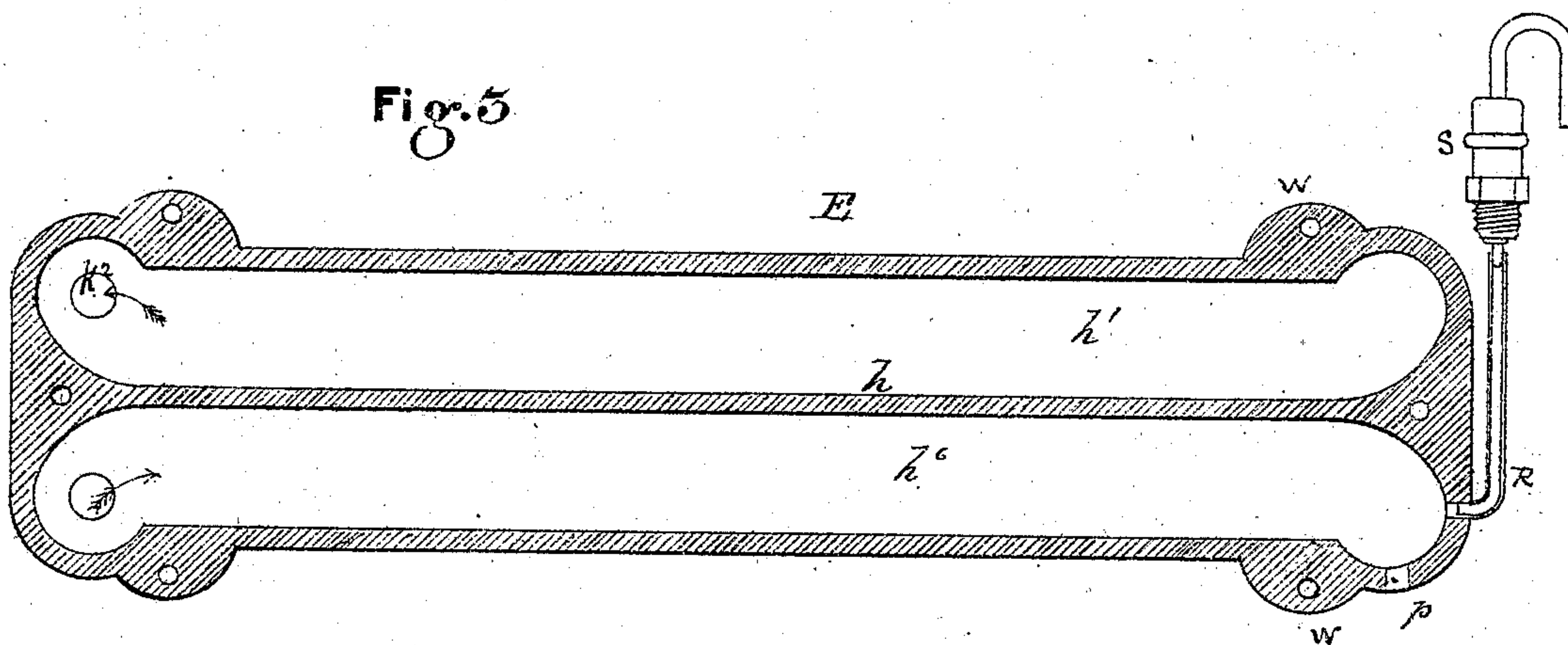


Fig. 5



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Witnesses { Edw. Brown
John T. Grant

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Fig. 4

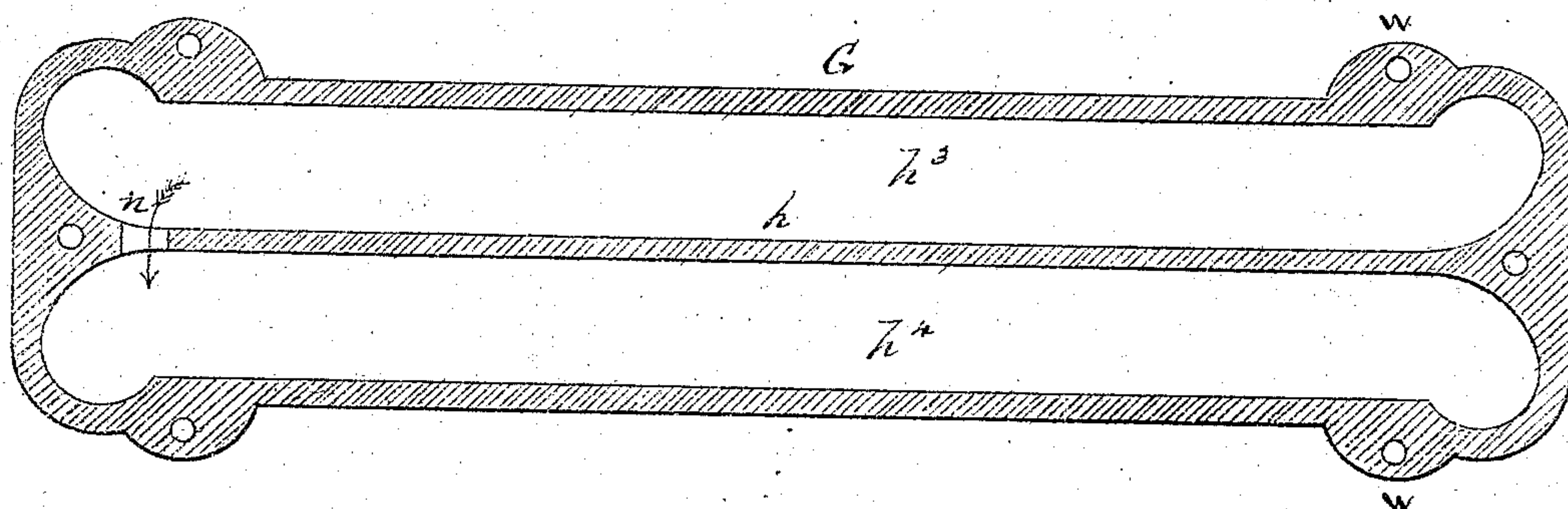


Fig. 5

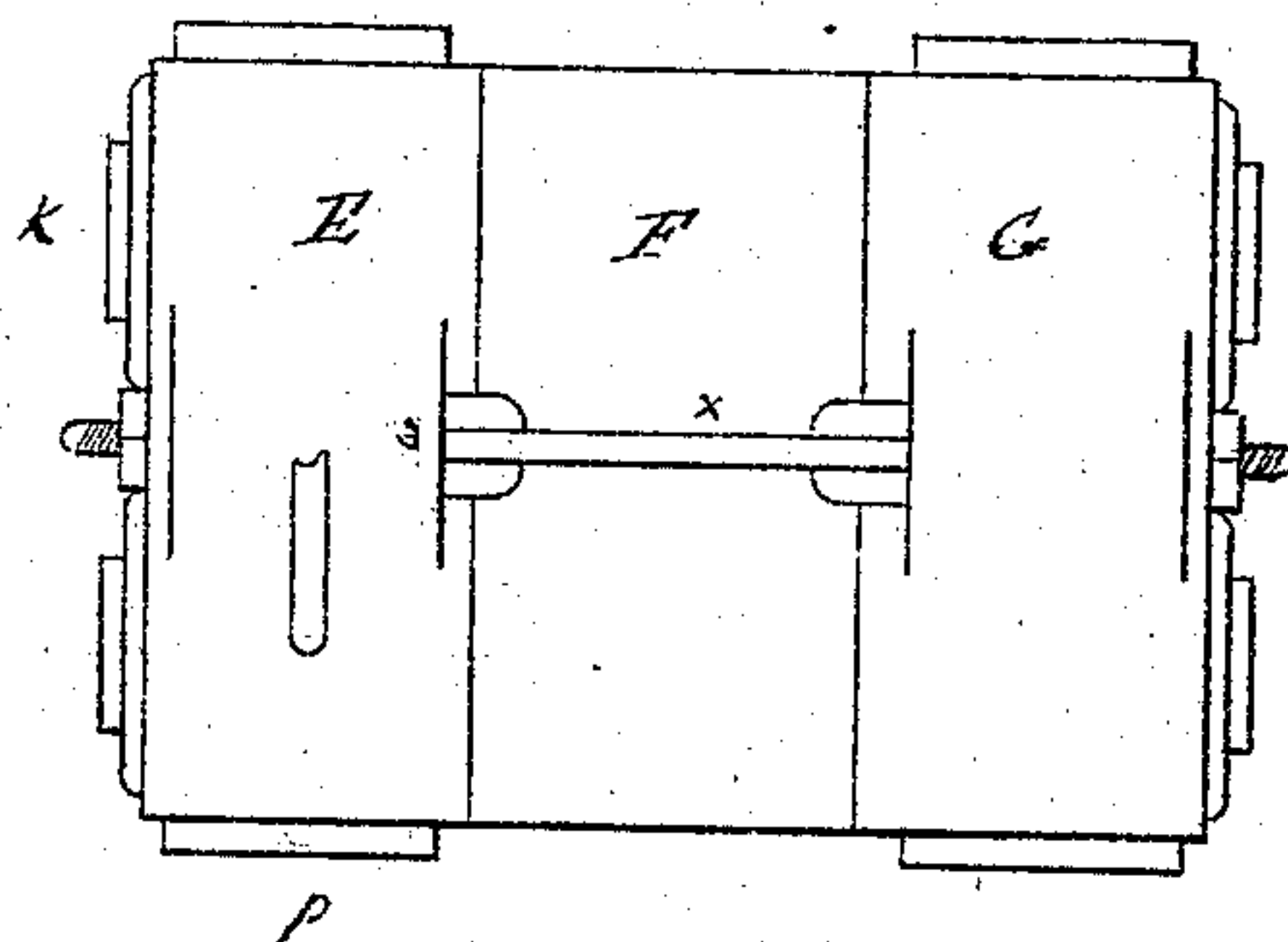
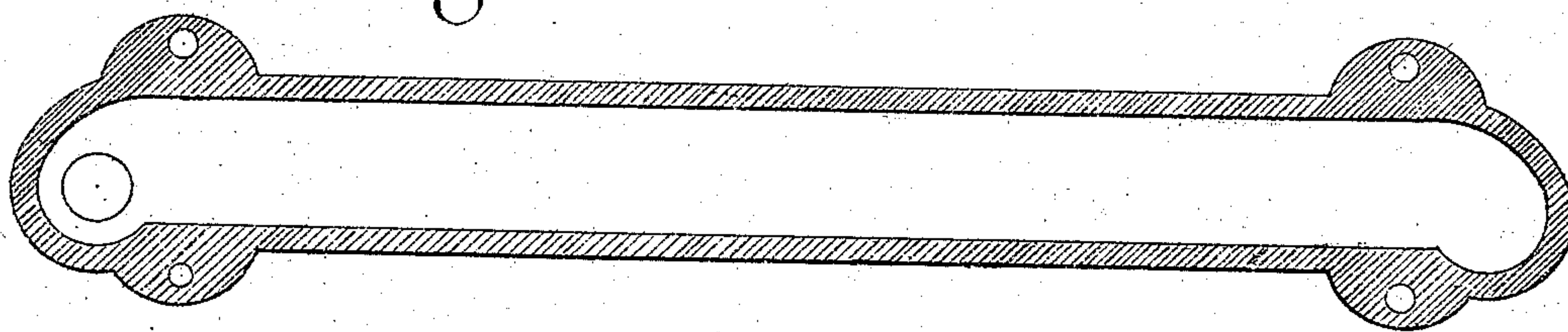


Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN McCONN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEAM-HEATERS.

Specification forming part of Letters Patent No. 117,310, dated July 25, 1871.

To all whom it may concern:

Be it known that I, JOHN McCONN, of Philadelphia, Pennsylvania, have made certain Improvements in Steam-Radiators, of which the following is a specification:

The radiator is made of cast-iron sections, set up edgewise, and bolted together side by side. My invention consists in making the sections with a horizontal dividing-plate down the center of each section, and so connecting the sections together side by side that the steam is forced through all the sections equally, heating all of them alike; also, in the form of the joints by which they are connected.

Referring to the drawing accompanying this specification, Figure 1 is a plan of the radiator. Fig. 2 is a side elevation. Fig. 3 is a section on line A B. Fig. 4 is a section on line C D. Fig. 5 is an end view. Fig. 6 is another modification of this invention.

The radiator is composed of cast-iron sections E F G, having projecting wings or flanges e' cast on, and so spaced that the flanges on one side of the section interlock with the flanges of the section immediately next it. Each section is divided lengthwise by a plate, h , cast in it, making two separate chambers one above the other. The first section, E, has an inlet, k , for the entrance of the steam, which passes along the top chamber h^1 , and out at k^2 (see Fig. 3) through one of the joints, into the upper chamber of section F, as shown by the arrow. The steam returning along to the opposite end passes through the top joint and into the upper chamber h^3 of section G, and out at passage n (see Figs. 1 and 4) into the lower series of chambers h^4 h^5 h^6 , and out at p to the boiler again, along with any condensed water which may have collected. It will be seen from this that the steam is forced through the upper chambers of the sections one after the other, and then through the lower series of chambers in the same manner, and the radiator heated uniformly throughout, which is not the case when the sections are connected by a manifold at each end, and the steam permitted to pass through whichever one the current may accidentally take it. A small pipe, R, leads from the last section, h^6 , at the point just above the exit for the steam.

At the top of this pipe is an air-valve, S, so made that when the steam is first let on the air rushes out through the valve until the pressure of the steam closes it. On each side of the sections are four joints, (two at each end;) some of them are cast blank, as at T, and some have a passage cast through, as at T', according to the direction which the steam is required to take. These joints are turned with a ring, v , on one side, fitting into a rabbet on the other side, with a raised ring, v^1 , on the inside, and a similar ring, v^2 , on the outside. The red lead or gum which is placed in the rabbet is thus prevented from squeezing out. There are lugs W on the outside sections, through which pass the bolts X, securing the sections together and making the joints all tight. One or two small holes in the web h will permit the condensation to flow away without interfering with the current of the steam. The steam inlet and outlets to the lower chambers are sufficiently low to permit the condensed water to pass through them to the outlet p .

It is evident that the feature herein described, of connecting the cast-iron sections so that the steam shall pass in one continuous flow through them all equally, could be partially carried out if the sections were made in small single chambers, as shown in Fig. 6. Also, several webs, h , might be cast in each section so as to make three or more chambers where the sections are deeper. I prefer, however, to employ this duplicate plan described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The construction of the sections E F G so that when placed edgewise the diaphragm h divides the sections into upper and lower chambers, in combination with the lateral joints T for the passage of the steam, as herein shown and described.

2. The construction of the joints T T' by the ring v on one face fitting into the rabbet formed between the rings v^1 and v^2 upon the opposite face, for the purpose herein described.

JOHN McCONN.

Witnesses:

EDWD. BROWN,
JOHN F. GRANT.