

(No Model.)

J. ROWE.

BASE BURNING STEAM BOILER.

No. 286,076.

Patented Oct. 2, 1883.

Fig. 1.

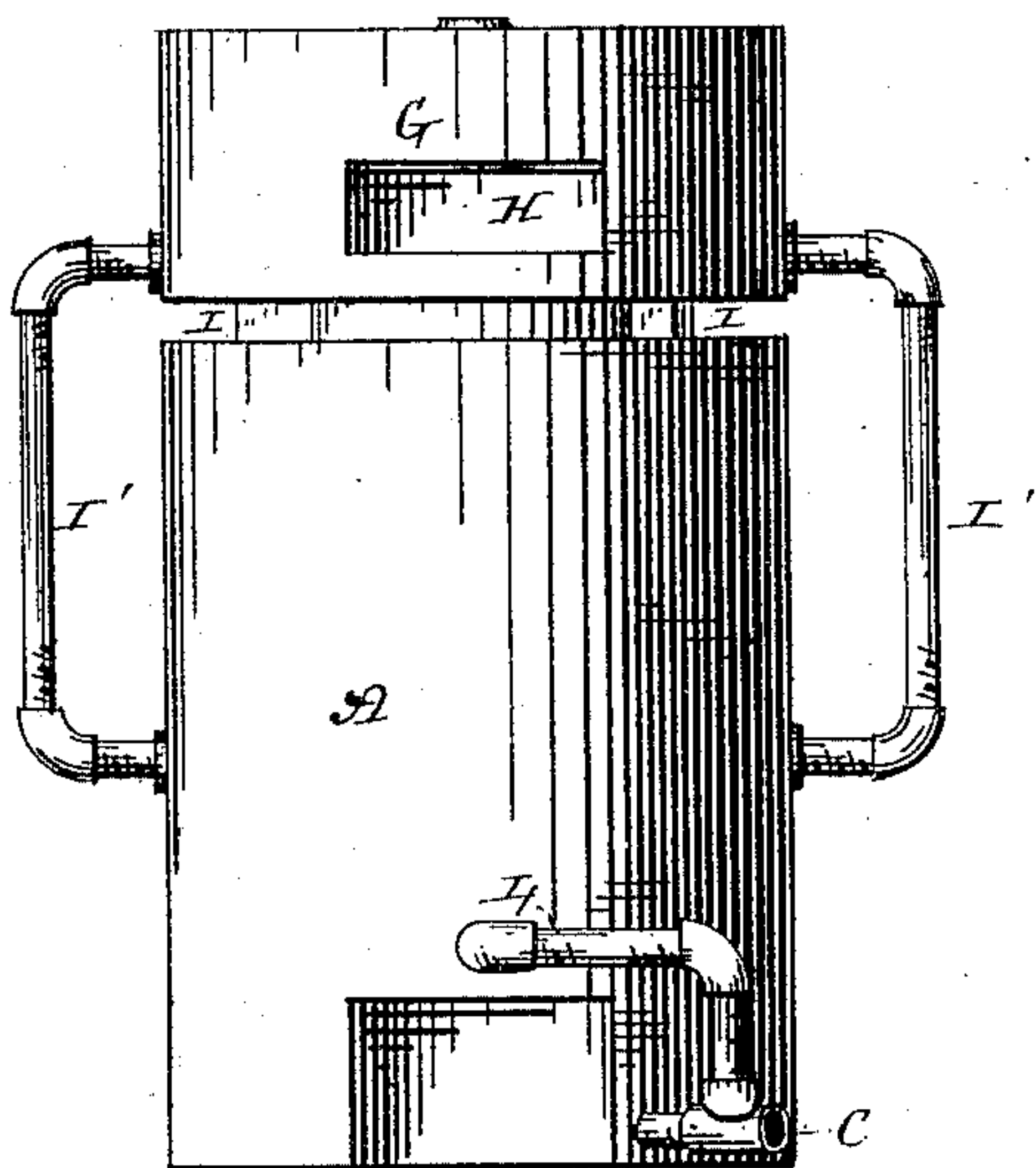
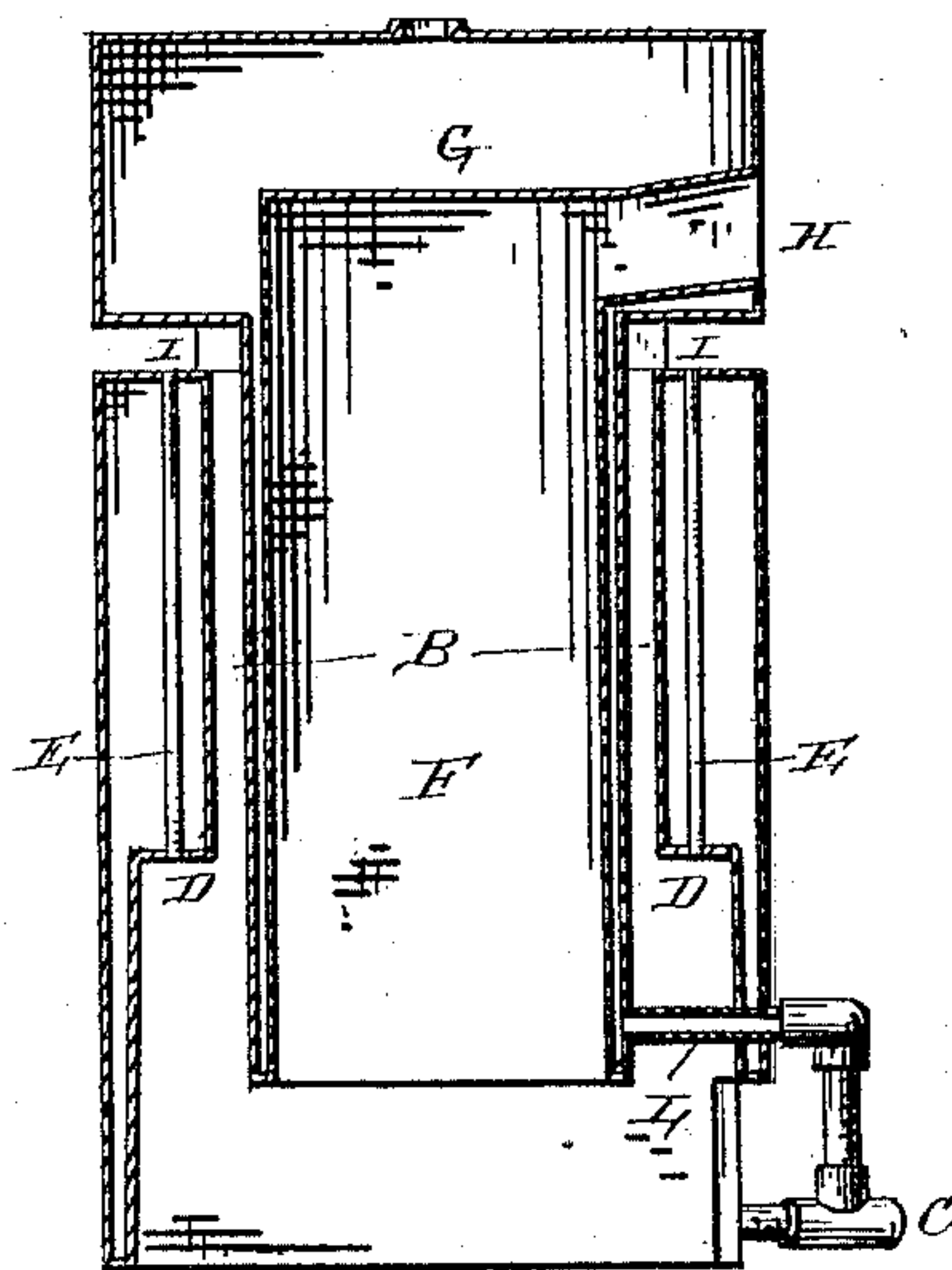


Fig. 2.



— Witnesses. —

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UNITED STATES PATENT OFFICE.

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BASE-BURNING STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 286,076, dated October 2, 1883.

Application filed May 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN ROWE, of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Base-Burning Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in base-burner steam-boilers; and it consists, first, in the combination of the steam-dome with the magazine which is connected thereto, and which has an opening at its top through one side of the dome, the magazine being formed of a double thickness, so as to form a water-leg, and being passed down into the center of the boiler; second, in the main boiler having a series of tubes formed through its upper portion, and having the steam-dome raised a suitable distance above the upper ends of these tubes, so that the products of combustion which pass through them will strike against the under side of the dome, and then pass up around its outer sides; third, in the arrangement and combination of parts which will be more fully described hereinafter.

Figure 1 is a front elevation of my invention. Fig. 2 is a vertical section of the same.

A represents the boiler, which is preferably cylindrical, and which has the large space B formed through the center of its upper portion, for the products of combustion to pass through. The lower portion of this boiler A is made comparatively thin, and is kept filled with water, and to which lower portion the supply-tube C is connected. Above the fire-chamber, at any suitable point, the thickness of the boiler is increased, so as to form the shoulder D, and through this thickened portion are passed a number of tubes, E, through which a portion of the products of combustion pass. These tubes are entirely surrounded by water, and hence add materially to the heating capacity of the boiler. Down into the large space B in the boiler A is passed the magazine F which is made to taper from its upper end toward its lower one, so that there will be no possibility of the coal sticking or

clogging in the magazine. This magazine is made of double thickness, so as to form, as it were, a water-leg, and between the outer surfaces of this magazine and the inner surfaces of the boiler is a passage for the products of combustion. This magazine is formed as a part of the steam-dome G, and has its entrance H formed through one side of the dome, as shown. Any suitable supports, I, will be attached to the under side of the dome or the outer side of the magazine, so as to catch over the top of the boiler A, and thus support the dome in position. The products of combustion, in rising up between the magazine and the boiler, strike against the under side of the dome, and then pass up around its outer sides. The dome and the boiler are connected together by the pipes J, which serve to keep up a free circulation, and the lower end of the magazine is connected to the lower portion of the boiler by the pipe L. As there is a very large space formed in the bottom of the boiler A for the fire-chamber, this boiler is specially adapted for burning soft coal. The direct upward draft, both through the center of the boiler A and through the fire-tubes, makes it impossible for the boiler to become clogged in any way. The largest space for combustion is made between the mouth of the magazine and the entrance of the tubes, and every part which is exposed to the action of the heat is filled with water, so as to increase the heating capacity of the boiler.

When it is desired to take the boiler apart either for cleaning or for any other purpose, it is only necessary to disconnect the water-pipes, when the dome and the magazine can be instantly removed, and thus give access to the whole interior of the boiler A. Every part of the boiler is thus made easy of access, either for cleaning or repairs. The pipe which conveys away the steam may either extend from the top of the dome or from any other desired point.

Having thus described my invention, I claim—

1. The combination of the boiler A and steam-dome, G, made separately therefrom, with the magazine F, projecting into the steam-dome, and having its opening made through the side of the dome, the dome being raised above the

top of the boiler, so that all the products of combustion will strike against its under side, substantially as shown.

2. The combination of the boiler, the dome, and the magazine, the boiler having the opening B through its center and the tubes passed through its upper portion, the dome being secured above the boiler, so that the products of combustion from both the central portion,

B, and the tubes will strike directly against the under side of the dome, substantially as set forth.

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

JOHN ROWE.

Witnesses:

GEORGE L. OSBORN,
F. L. DODGE.