

(No Model.)

T. J. & T. G. LOVEGROVE.

STEAM BOILER.

No. 245,642.

Patented Aug. 16, 1881.

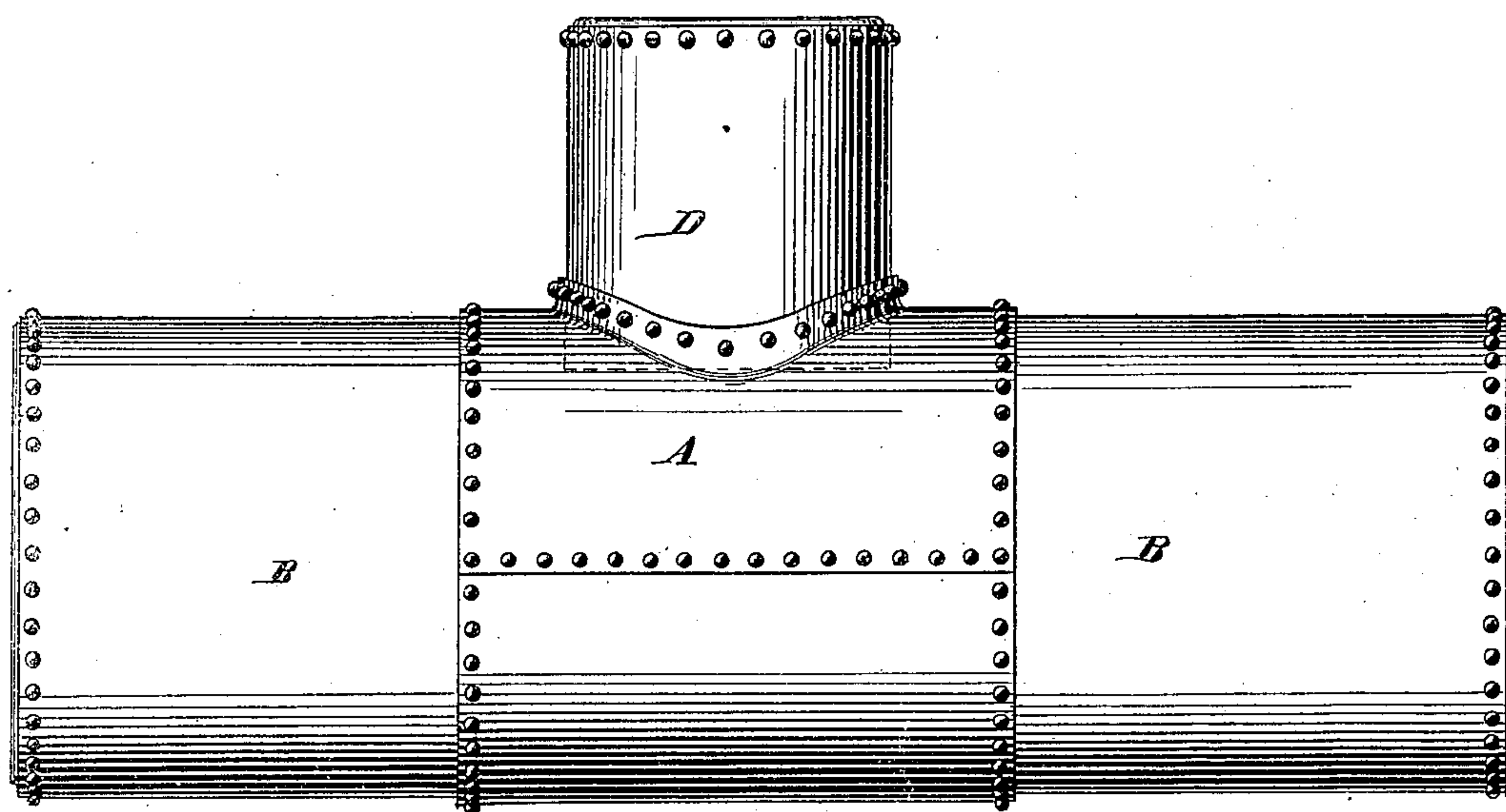


Fig. 1

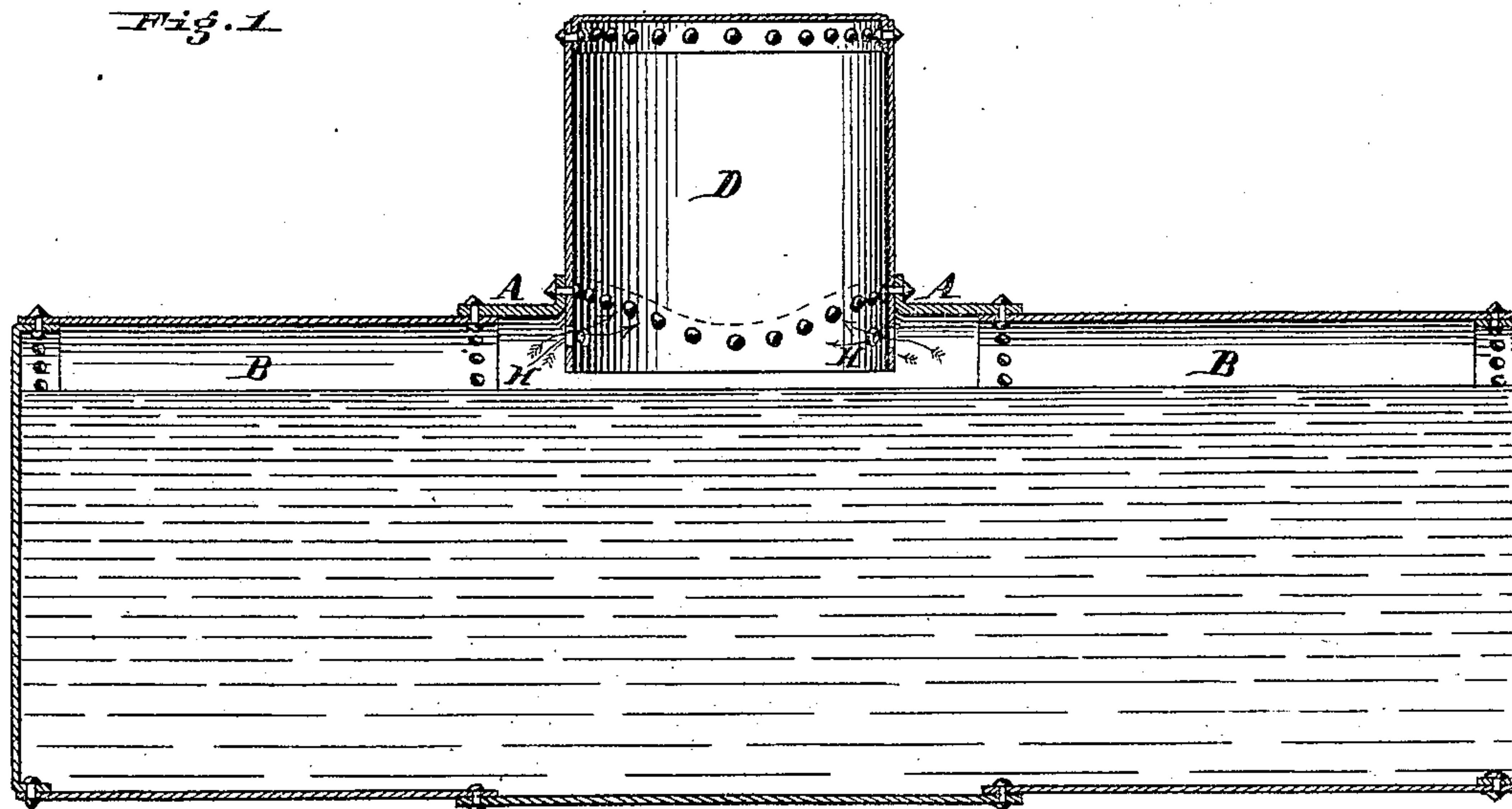


Fig. 2

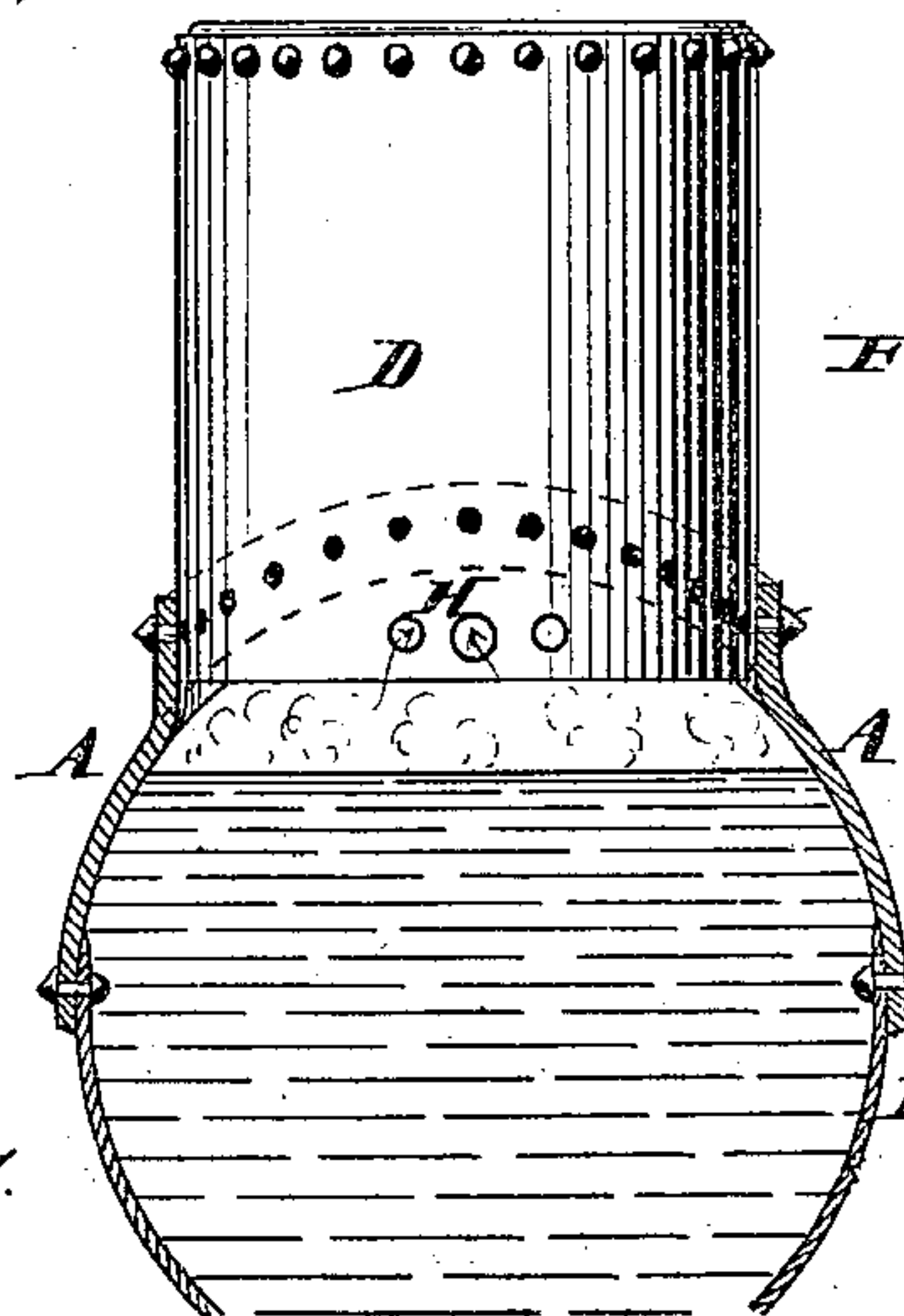


Fig. 3

Attests
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UNITED STATES PATENT OFFICE.

THOMAS J. LOVEGROVE AND THOMAS G. LOVEGROVE, OF PHILADELPHIA,
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STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 245,642, dated August 16, 1881.

Application filed June 3, 1881. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. LOVEGROVE and THOMAS G. LOVEGROVE, both of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Steam-Boilers, of which the following is a specification, reference being had to the accompanying drawings, of which—

Figure 1 is an elevation of a boiler constructed according to our improvement. Fig. 2 is a medial longitudinal section thereof, and Fig. 3 is a transverse section thereof.

Our invention has special reference to an improved construction of domes of boilers and mode of attaching the same to the boilers.

The object of a dome is to allow the steam to ascend to the exit-pipe at a comparatively low velocity, so that the steam may be disengaged from the water in the boiler, a portion of which might otherwise be carried up into the pipe. Now, in a boiler having a contracted opening into the dome, not only is the latter comparatively useless for the purpose intended, but is actually disadvantageous, for the reason that the steam becoming somewhat rarefied after passing up through the opening into the wider dome a greater loss from condensation occurs than would be the case were the said opening not thus contracted.

It is also well known that numerous explosions have been traced directly to a weakness resulting from the usual method of attaching the domes to boilers. Because of this vicious method the steam-pressure permissible for safety must be largely reduced—in some instances as much as fifty per cent. It (such usual method) consists in making a flange upon the dome and riveting the latter to the boiler through the flange. This, in order to secure strength, and so a higher degree of safety under pressure, necessitates the riveting to be made at a considerable distance from the edge of the opening which connects the boiler with the dome, and thus said open-

ing is contracted—that is, considerably less in diameter than the interior of the dome itself, and the usefulness of the latter is thereby impaired in proportion.

The object of our invention is at one and the same time to secure the real advantages of a steam-dome, and avoid the usual weakness above mentioned, by making the boiler fully as strong at the point of connection with the dome as elsewhere, in the manner hereinafter shown. This consists in extending the plain dome D a short distance down into boiler B and riveting the same to the flanged sheet A, as shown in the drawings. In order to secure increased strength we make the said flanged sheet of relatively increased thickness of metal, as seen in Figs. 2 and 3.

In order to permit the ready escape of steam from the upper part of the boiler into the dome we pierce that part of the latter extending below the top of the boiler with a number of small holes, H, as seen in Figs. 2 and 3.

It is obvious that such a connection of the dome with the boiler, as above described, gives much greater strength to the boiler as a whole than as in the old way, and that the opening into the dome, instead of being contracted, as mentioned, is equal in diameter to that of the interior of the latter.

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

1. A steam-boiler having a flangeless dome extending partially into the boiler below the dome-sheet thereof, the said dome being riveted to the flange of the dome-sheet, substantially as and for the purposes specified.

2. In combination with dome D, extending below the dome-sheet A, the openings H, as and for the purpose specified.

THOMAS J. LOVEGROVE.
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Witnesses:

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WM. F. HABICHT.