

B. DENSMORE.

SECTIONAL STEAM-GENERATOR.

No. 177,223.

Patented May 9. 1876.

Fig. 1.

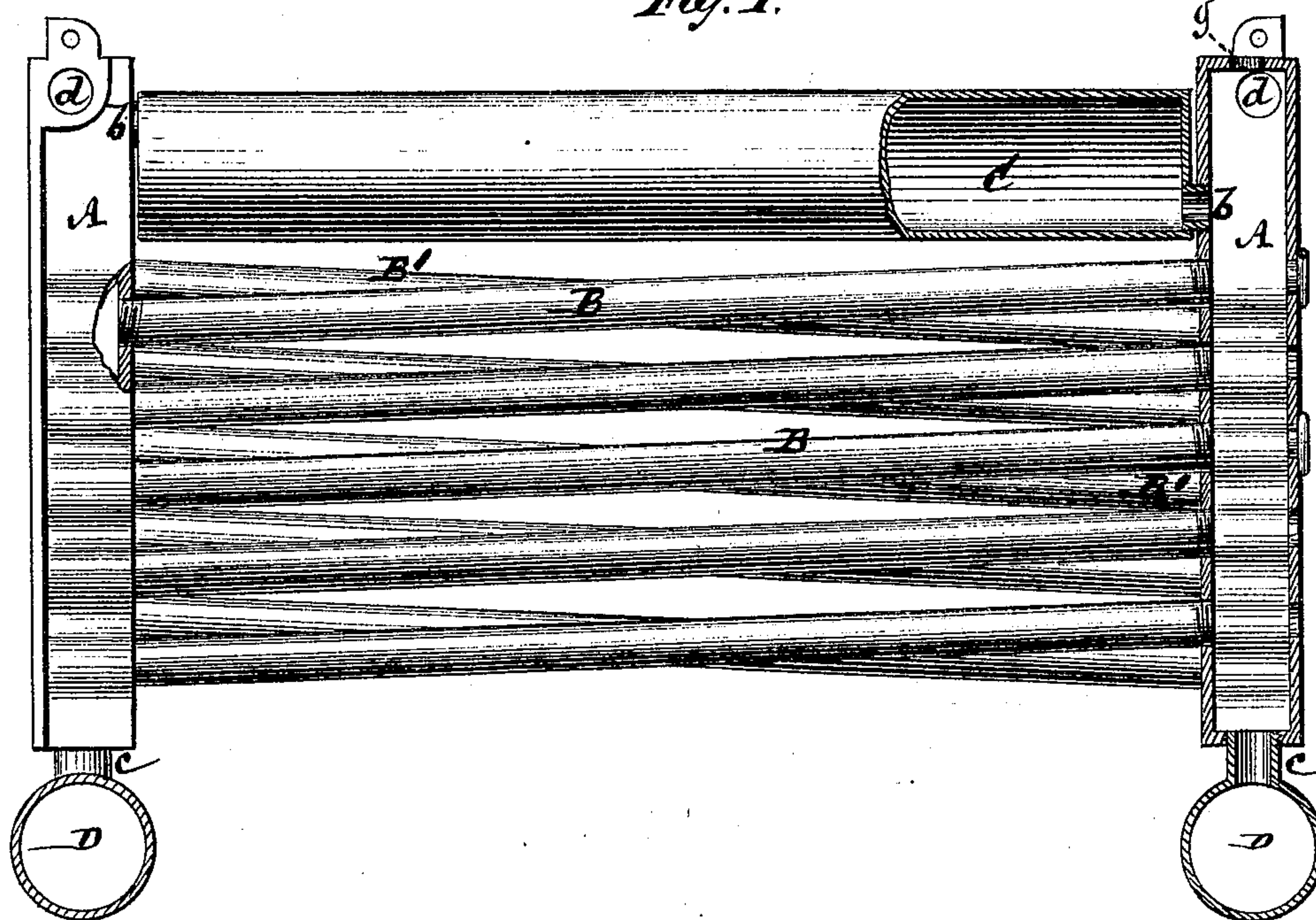
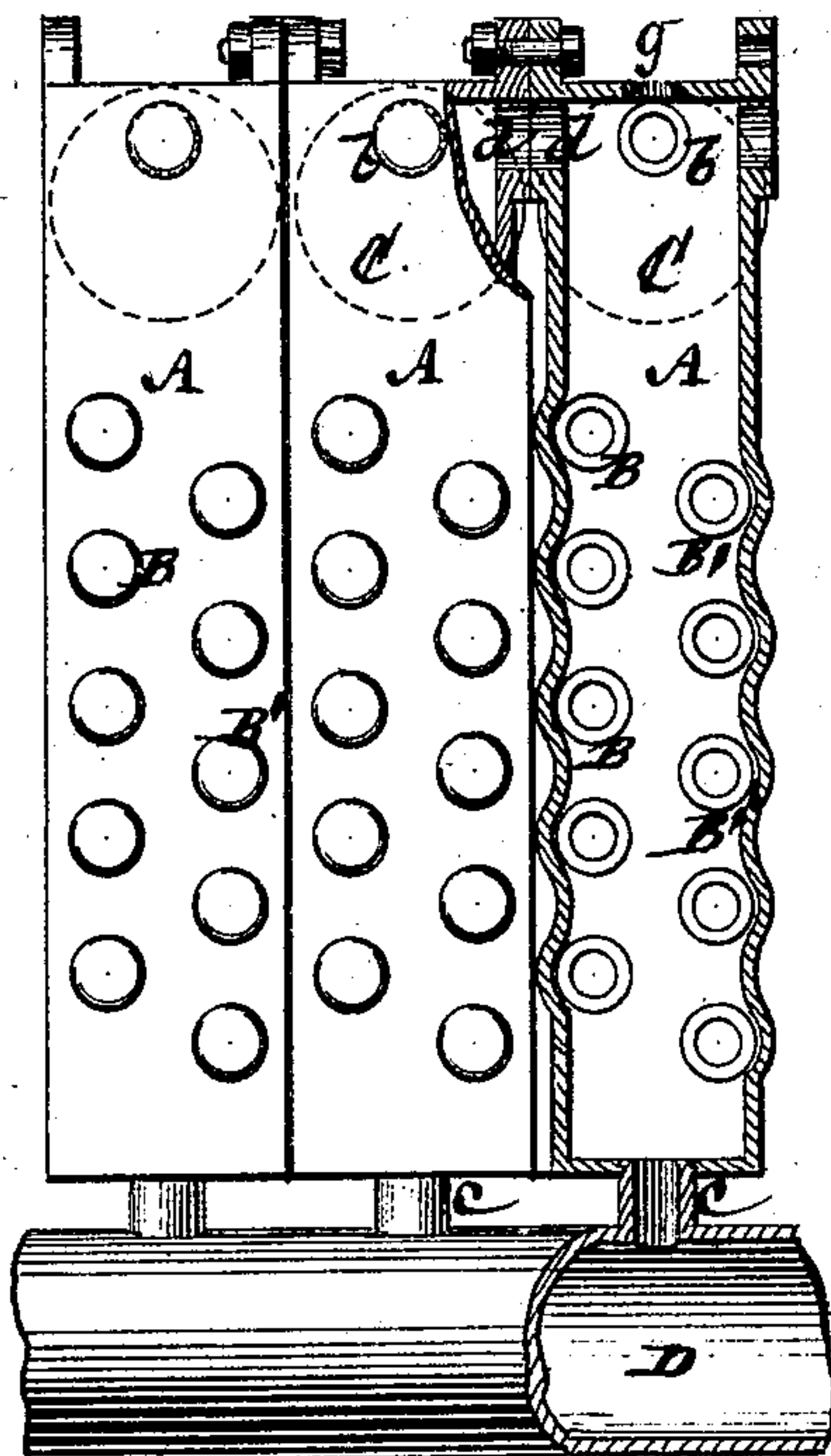


Fig. 2.



Witnesses.

John Becker
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Byron Densmore
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UNITED STATES PATENT OFFICE.

BYRON DENSMORE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SECTIONAL STEAM-GENERATORS.

Specification forming part of Letters Patent No. **177,223**, dated May 9, 1876; application filed December 15, 1875.

To all whom it may concern:

Be it known that I, BYRON DENSMORE, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Sectional Steam-Generators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms a part of this specification.

This invention is designed as an improvement upon the steam-generator for which Letters Patent were issued to me October 18, 1870, and in which a prominent feature of construction was a combination of hollow side walls and transverse connecting-tubes. These side walls it was proposed to construct of independent upright sections, and to connect the latter, by nozzles, with upper and lower longitudinal pipes, the upper ones of which were, in their turn, connected by branch pipes with the steam-drum of the generator. Besides these, there were other pipes used in the construction of the generator; but in this recital of invention no special reference will be made to them, as my improvement in sectional steam-generators, as above referred to, consists in a certain construction whereby a direct communication is established between the adjacent side-wall sections, to promote a free passage of the water and steam, or either, from section to section, without the aid of longitudinal pipes and independent nipples connecting them with the several sections.

Figure 1 represents a partly-sectional front elevation of a steam-generator, in part, having my invention applied; and Fig. 2, a side view, in part, of the same in partial section.

A A are the independent upright sections which constitute the side walls of the boiler. These sections are made with flanges on their front faces, to give a close or flush surface. B B' are the transverse, and preferably reversely-inclined, tubes, which connect the opposite sectional side walls of the boiler, and whereby an active circulation is obtained, and the water is caused to keep at the same level at the opposite ends of the tubes, as described in my former Letters Patent hereinbefore referred to.

It is preferred that there should be at least two up-and-down rows of these tubes B B' in each section, and over these tubes, in each section, are horizontal larger tubes C, connected to the sections by nipples *b b*, the one of which nipples on each tube is on a lower level than the other, to form a water-passage, and the other nipple on a level, to provide for the exit of steam. The boiler is also here represented with lower longitudinal pipes D, connected with the sections by nipples *c*.

This construction, so far, does not essentially differ from that described in my Letters Patent of October 18, 1870; but, instead of connecting the upper ends, for instance, of the sections A A, by independent nipples, with upper longitudinal pipes, which, in their turn, connect by branches with a steam-drum, I connect each adjacent section with the other, at or near their upper ends, by means of perforated or tubular facings *d d*, so that, supposing the water-level to be through the center of the tube C, there will be a free passage for the steam from section to section, on each side of the boiler, through the connecting facings or facing-pieces *d d*. By this provision the steam, as fast as generated, may be transferred from the several sections A A, on either side, by one or more outlets, *g*, in direct connection with a common receiver or steam-drum. The same arrangement of perforated or tubular facings *d d* may be applied to the lower ends or portions of the independent sections A A, and the longitudinal pipes D D and the connecting-nipples *c c* be dispensed with.

I claim—

In a steam-generator having hollow side walls connected by transverse tubes, and composed of independent upright sections, the connection of the adjacent sections in either side wall by means of perforated facings, substantially as specified.

BYRON DENSMORE.

Witnesses:

MICHAEL RYAN,
FRED. HAYNES.