

G. Mann, Jr.,
Steam-Boiler Indicator.

No 43,320.

Patented June 28, 1864.

Fig. 2.

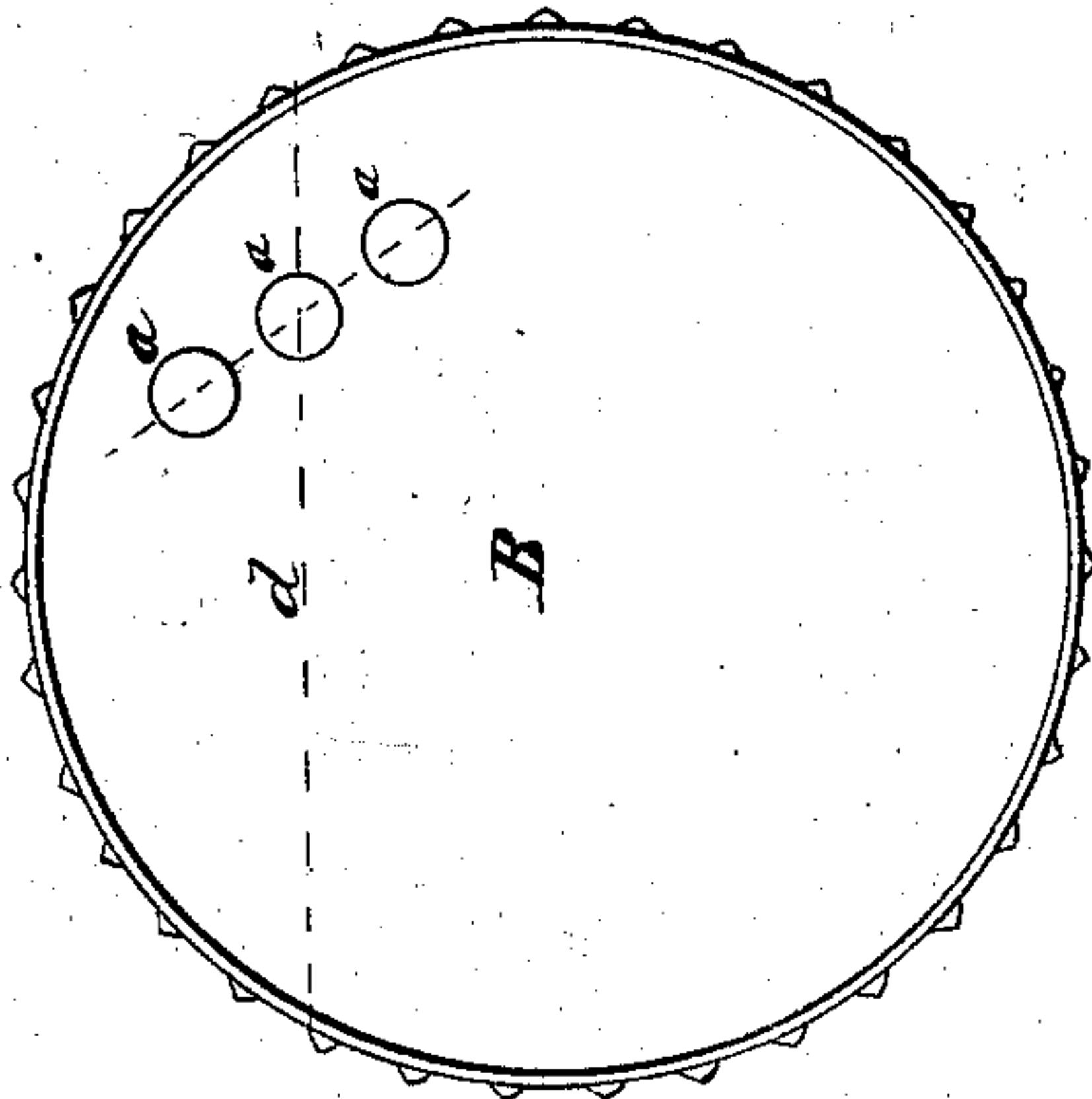


Fig. 1.

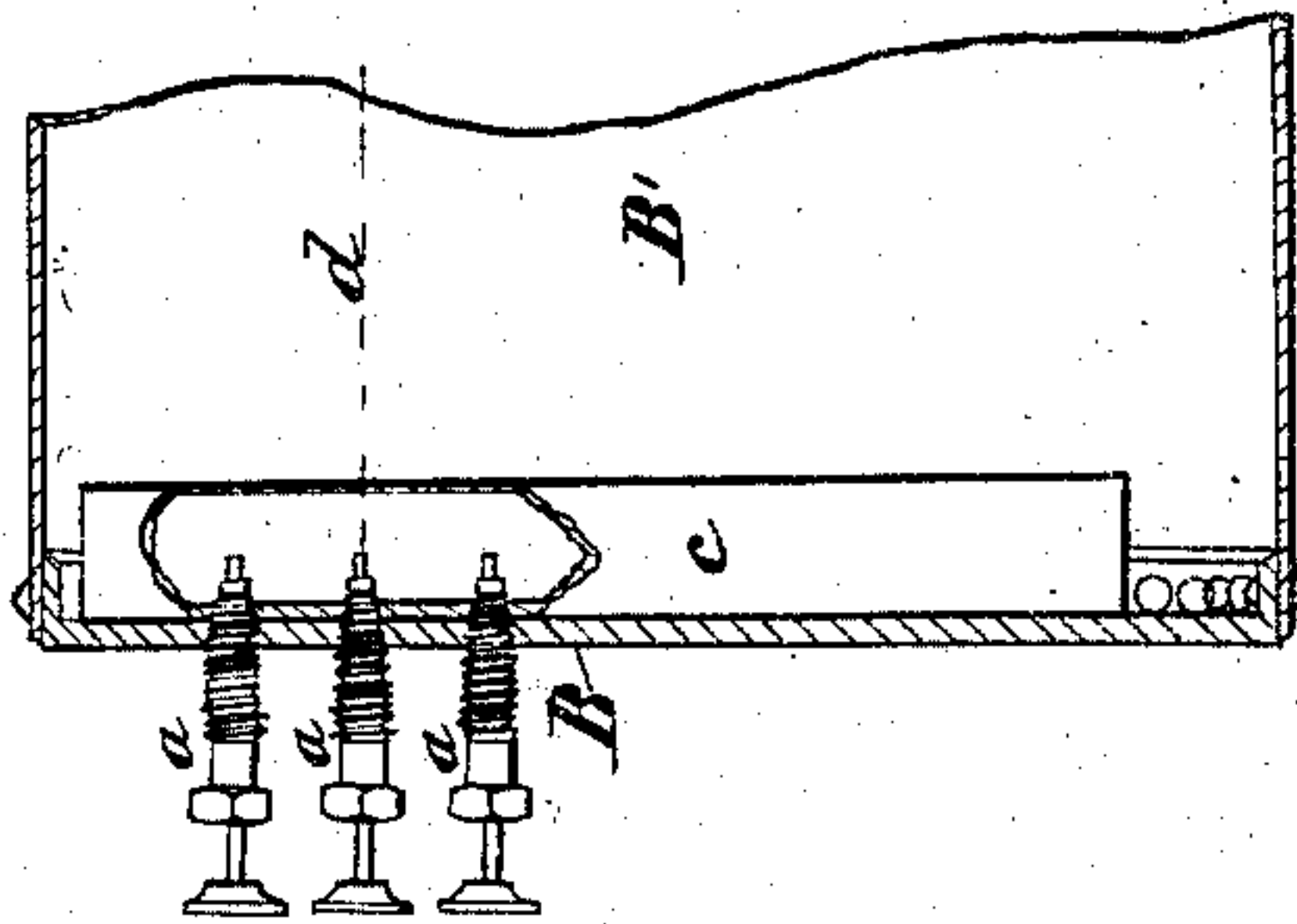
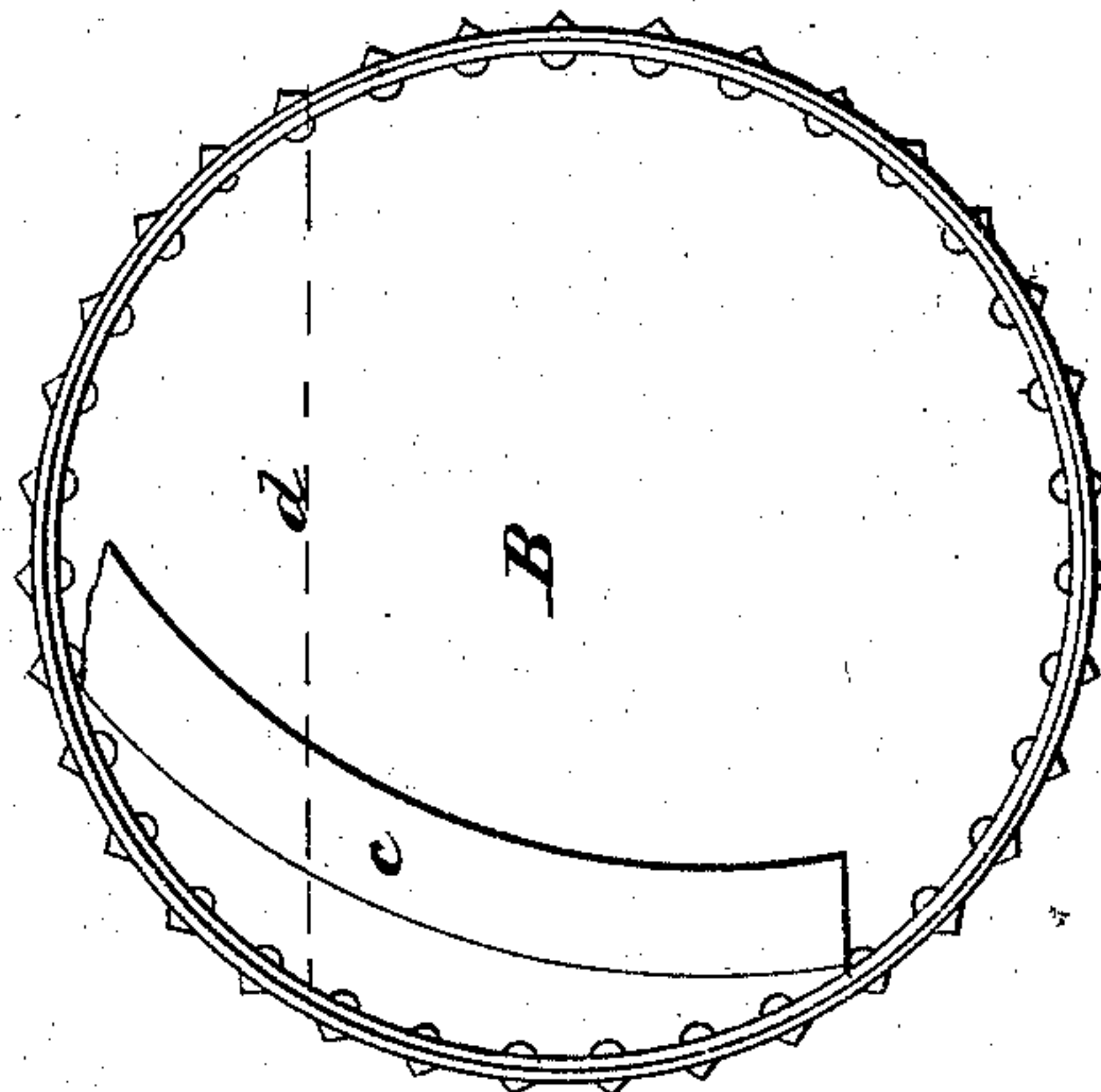


Fig. 3.



Witnesses:

Bleaton
W. L. Campbell

Inventor:

Geo Mann Jr

UNITED STATES PATENT OFFICE.

GEORGE MANN, JR., OF OTTAWA, ILLINOIS.

IMPROVEMENT IN STEAM-BOILERS.

Specification forming part of Letters Patent No. 43,320, dated June 28, 1864.

To all whom it may concern:

Be it known that I, GEORGE MANN, Jr., of Ottawa, county of La Salle, and State of Illinois, have invented a new and useful improvement for the purpose of accurately testing the height of water in steam-boilers, and for preventing foam and scum from entering water-gages of steam-boilers; and I do hereby declare that the following is a full, clear, and exact description.

Figure 1 is a vertical plan of my invention, representing the front end of a steam-boiler with the three gages *a a a*. Fig. 2 is a vertical section of the same, representing a curved pipe open at both ends, attached upon the inside of the front end of the boiler, the curvature of said pipe being for the purpose of allowing the water-gages to be attached to the same by screwing the ends of the respective gages, as they are now used upon steam-boilers, a little farther through the front end, or head of the boiler, sufficiently so as to screw the ends of said gages into the sides of the curved open ended pipe that is placed behind, so as to receive their ends. Said curved pipe is shown clearly in Figs. 1 and 2.

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

The length and diameter of said open ended pipe will of course be governed altogether by the size of the steam boiler upon which it is being used. For all ordinary locomotive-boilers using four water-gages, I would recommend a diameter of two and a half inches, the curvature to conform nearly to the inside curvature of the boiler, the upper end of said pipe, about one-third its length, to be extended quite into the crown of the boiler into the steam-space, so as to entirely prevent the water of the boiler from possibly flowing into it. The lower end of said pipe is extended far down and within two or three inches of the bottom of the boiler, so that about two-thirds of its lower end is immersed in the water, allowing the water of the boiler to enter the pipe at its lower end only, to rise to its respective height.

The advantages of my method of supplying water to the gages of steam-boilers over the old way, and for which I pray for Letters Patent of the United States to be granted, is that while the water of the boiler is in a foaming condition, as I contend all water is while in a

state of ebullition, more or less agitated in its boiling process, and at some times violently so, inasmuch as it breaks and dashes about in a boiler with great impetuosity, when such is the case, the water-gages are quite unreliable, but by drawing or trying for the water supplied to the gages by my method of tapping the boiler from my curved pipe the water is nearly in a quiescent state, and never is allowed to break and loose its solidity, but will always insure the supply to the gages of the water in a solid unbroken column, guaranteeing a positive and always reliable gage of water or steam, as the case may be; also, that it is well known to all persons using steam that a heavy coat of scum is floating and tumbling about in greater or less quantities, but by my method it cannot enter the water-gages, it having to remain upon the large area of the water in the boiler surrounding the curved pipe, while the water inside my curved pipe is not constantly changing, as is the case with the water outside the pipe.

In the accompanying drawings, Figure 1 is a vertical section representing the three gages *a c a*, which are screwed through the boiler-head B into the pipe *c* in such a manner that the continuation of the screw holding the gages *a a a* in the boiler-head B also holds the pipe *c* fast against the inside of the boiler-head B. An opening in the side of the pipe *c* is supposed, in order to show the mode of fastening the same and the working of the gages *a a a* therein. Fig. 2 is a vertical plan representing the front end of the boiler B', and also the three gages *a a a* in their respective places. Fig. 3 is a vertical plan representing the inside of the boiler B, and showing the exact form and curvature of the pipe *c*, also its extension above and below the water-line *d*, said pipe *c* to be open at both ends.

What I claim as new in the above specification, and for which I desire Letters Patent, is—

The pipe open at each end and attached to the front part of the steam-boiler, and connected with the water-gages of the boiler, as shown in the above specification.

GEO. MANN, JR.

Witnesses:

B. C. COOK,

C. C. CAMPBELL.