

(No Model.)

J. F. CANNEY & D. F. TOUCEY.

STEAM BOILER.

No. 259,288.

Patented June 13, 1882.

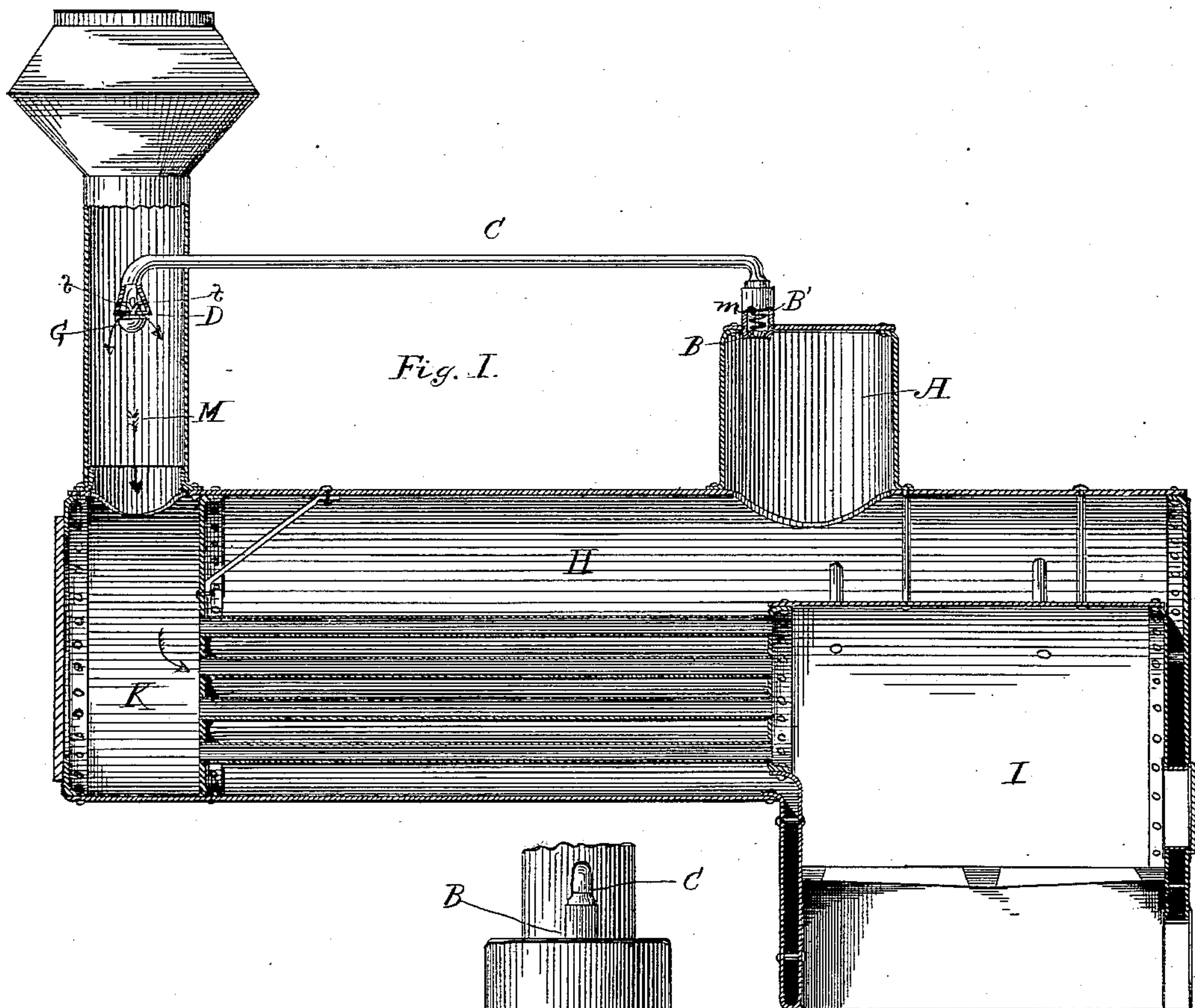


Fig. 2.

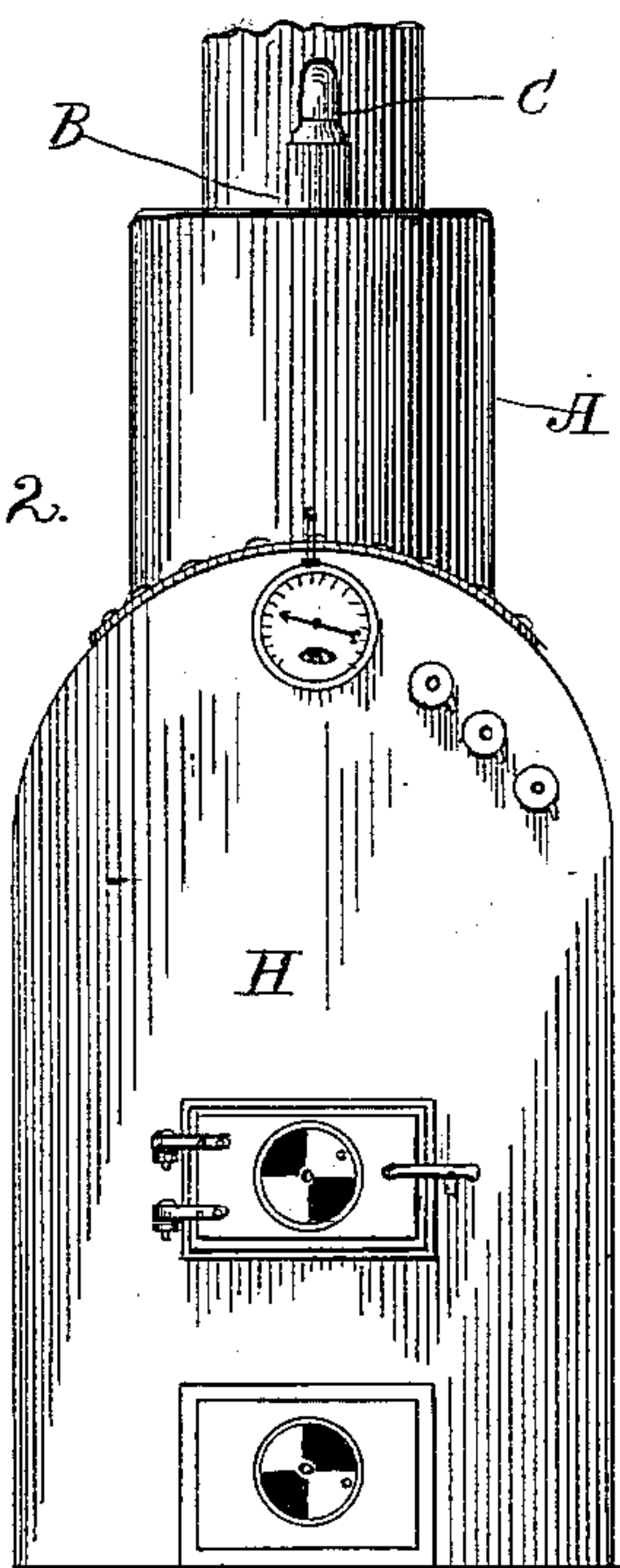
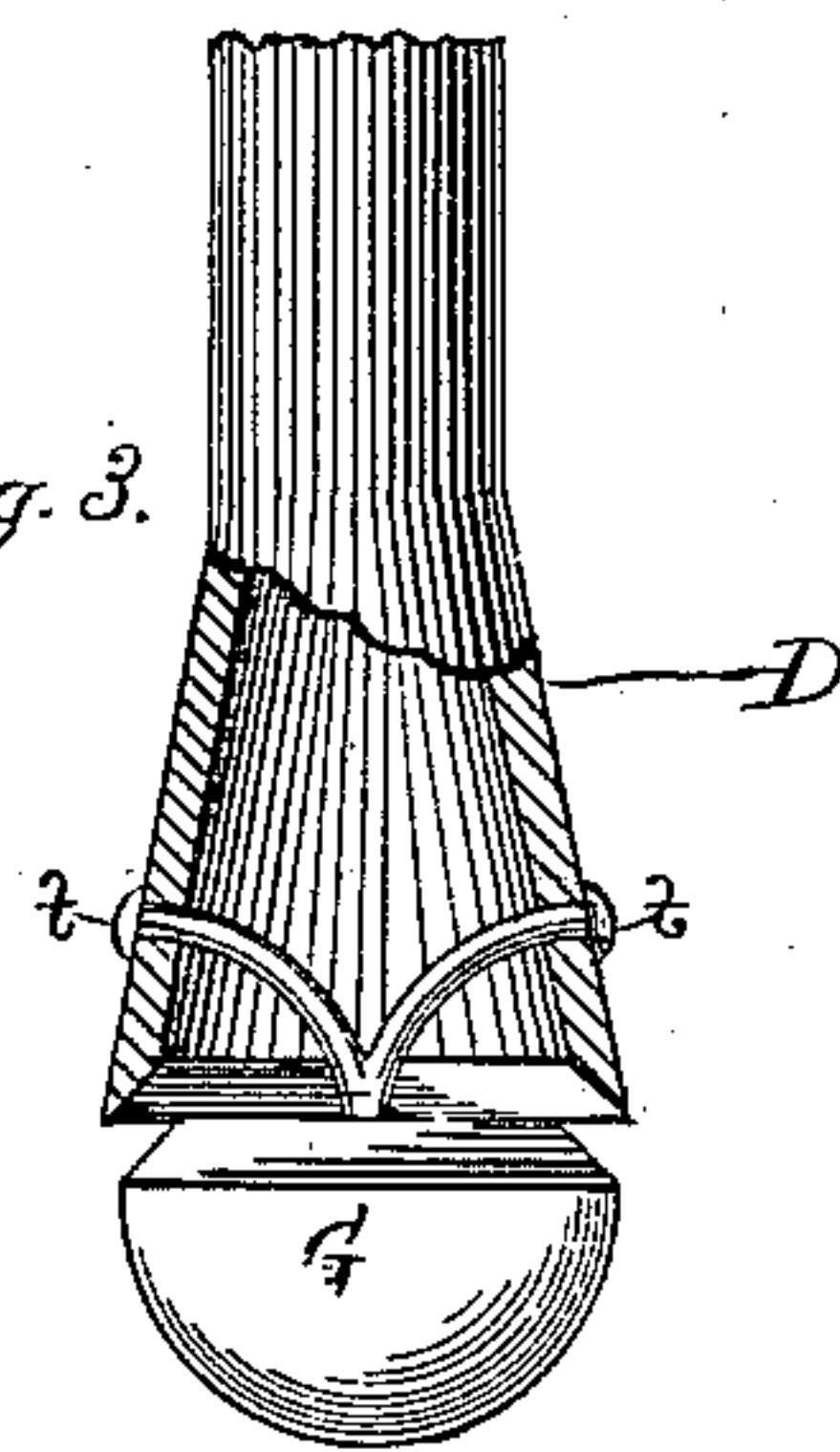


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN F. CANNEY AND DONALD F. TOUCEY, OF MINNEAPOLIS, MINN.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 259,288, dated June 13, 1882.

Application filed March 13, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. CANNEY and DONALD F. TOUCEY, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Steam - Boilers; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to steam-boilers; and it consists in automatically regulating the pressure of steam on the boiler by permitting the same to escape through a pipe running from the dome to the smoke-stack, for the purposes hereinafter set forth.

We desire to term our invention an "automatic steam - blast damper," from the fact that the steam discharged in the stack when the valve is open passes downward and arrests the upward draft, the one neutralizing the effect of the other. The valve, acting automatically, will close when a sufficient amount of steam has escaped, thus shutting off the downward discharge of steam in the stack and permitting the draft to resume its function. Assuming the valve to be set to open at one hundred and thirty pounds pressure to the square inch, the natural draft on the fire-box and through the flues and up the stack would continue until that pressure has been attained on the boiler. The valve would then open and permit the steam to rush through the pipe leading to the stack and pass downward, immediately checking draft and arresting further pressure on the boiler. By thus automatically permitting the steam to escape at a fixed point and simultaneously checking the draft the liability of boiler explosion is lessened in a manifold degree.

We attain the foregoing results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal section, showing a steam-boiler provided with our improvement. Fig. 2 is a rear elevation of the

same. Fig. 3 is a nozzle and its attachment, partly in section.

The letter A represents the dome of the boiler. B' is a cage with valve - seat and thread to screw into the dome. B is the valve, held in its seat by the spiral spring *m*. C is a pipe running from the dome to the stack. D is a nozzle on the end of pipe C. G is a semi-spherical plug, having its upper side beveled, which fits into the end of nozzle D. *ff* are the braces, riveted to the nozzle and securing the plug G. H represents the boiler; I, the fire-box; K, the smoke-box, and M the stack.

We are aware that it is not new to conduct steam from the dome to the smoke-box and discharge the same therein. This has been done to "get rid of the objectionable noise produced by steam as it escapes from the safety-valve." We not only attain this result, but we produce a damper working automatically by means of a steam-blast. We desire particularly to call attention to the peculiar construction of the nozzle we employ to accomplish these purposes. It projects downward in the stack, and flares outward to receive the beveled side of the semi-spherical plug held therein by means of riveted braces. The object of said plug in the nozzle is to partially check the discharge of steam in the smoke-box. It causes the steam to flare outward conically and downward into the stack. This obviates the rush that would occur through an open or perforated nozzle. The damper is not to take the place of the safety-valve, but is to be used in connection with it, so that if one gives out the other can be used.

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

The steam-pipe C, leading from the safety-valve to and through and opening in the stack, and being bent downward therein, the end or nozzle of said pipe flaring outward, and having an inner beveled-edge surface, in combination with a semi-spherical plug having a flat top with beveled edge, said edge being equidistant from the beveled edge of the nozzle, the plug being suspended in the mouth

of the nozzle by braces riveted through the
nozzle and projecting inward and downward
to the center of the flat surface of the plug,
at which point they meet and are united and
5 secured to said plug, all arranged in the man-
ner and for the purpose specified.

In testimony that we claim the foregoing

as our own we have hereto affixed our signa-
tures in presence of two witnesses.

JOHN FRANKLIN CANNEY.

DONALD FERRIS TOUCEY.

Witnesses:

S. B. CHASE,

A. B. CHASE.