(No Model.) 2 Sheets—Sheet 1.

S. M. VAUCLAIN.

STEAM DOME.

No. 590,867. Patented Sept. 28, 1897.

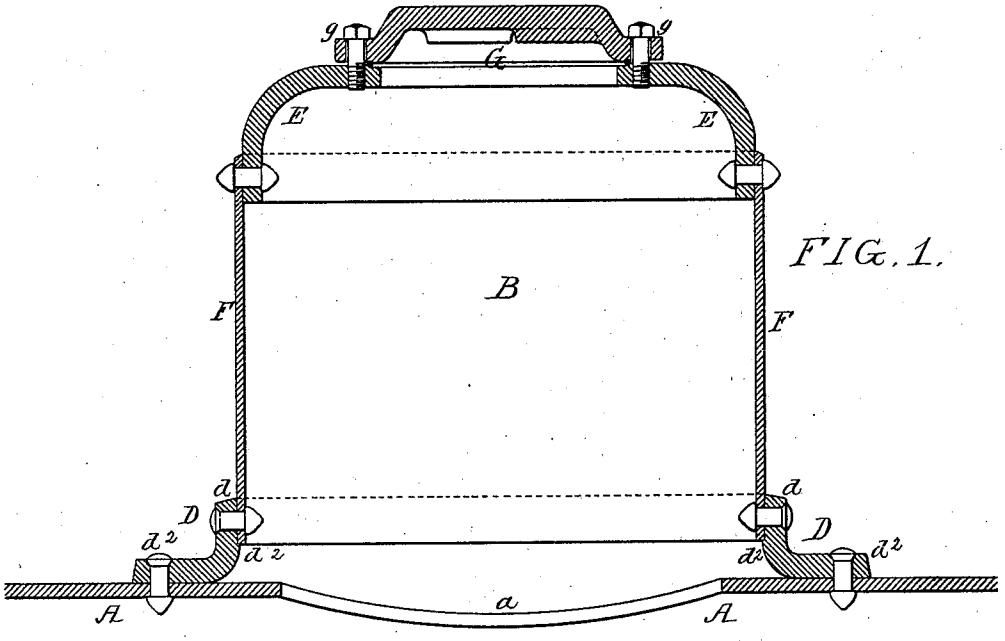
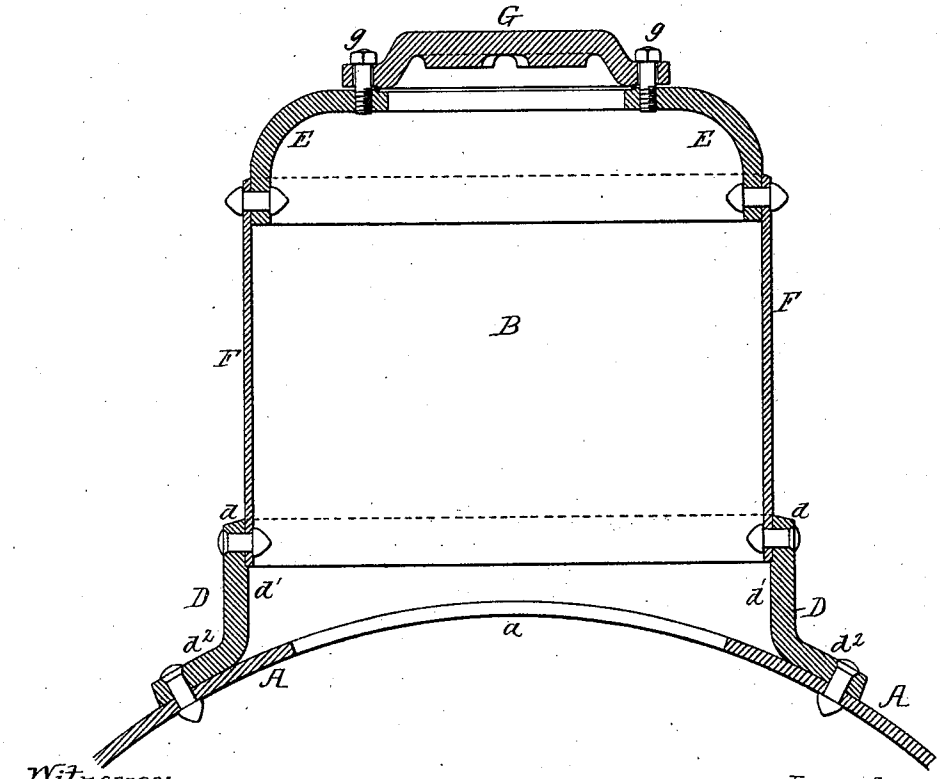


FIG. 1.

FIG. 2.



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Hamilton D. Turner

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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FIG. 3.

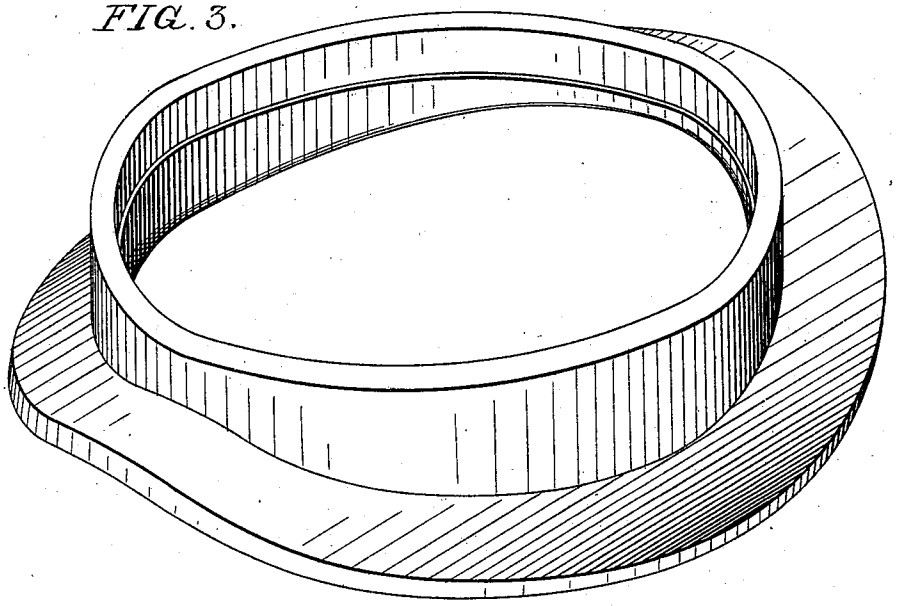
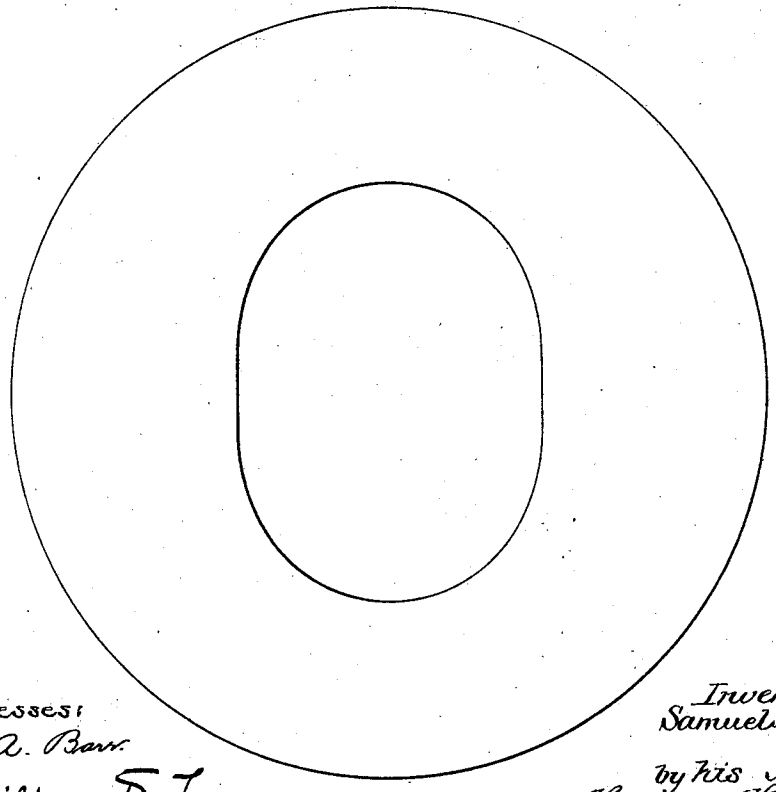


FIG. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL M. VAUCLAIN, OF PHILADELPHIA, PENNSYLVANIA.

STEAM-DOME.

SPECIFICATION forming part of Letters Patent No. 590,867, dated September 28, 1897.

Application filed March 8, 1897. Serial No. 626,487. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. VAUCLAIN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Steam-Domes, of which the following is a specification.

The object of my invention is to improve the construction of the steam-domes of locomotive-boilers by making the parts of pressed steel in such a manner that the cylindrical section can be riveted to the ring-sections by a straight line of rivets and in which the base-flange will more accurately fit the shell of the boiler, as fully described hereinafter.

In the accompanying drawings, Figure 1 is a longitudinal sectional view through the steam-dome of a locomotive-boiler constructed in accordance with my invention. Fig. 2 is a transverse sectional view. Fig. 3 is a perspective view of the base-ring. Fig. 4 is a plan view of the blank of the base-ring before being bent into shape.

A is the main shell of the boiler, and B is the steam-dome. This dome is made up of a base-ring D, which is secured to the shell of the boiler, a crown-ring E, and a cylindrical section F, secured to the crown-ring and to the base-ring. The crown-ring E is rounded, as shown, and has a central opening.

G is a cap-plate secured to the ring E—in the present instance by bolts *g g*. Packing is placed between the ring and the cap, so that the joint will be steam-tight. This cap supports the safety-valve of the usual construction.

The cylindrical section F is made of sheet metal with the edges welded in lieu of the usual method of riveting, thus making a complete cylinder free from riveted joints except where it is attached to the ring-sections, as shown.

The ring-section D is made from a blank (shown in Fig. 4) which has a circular periphery, and in the center is an oblong opening, so that when the blank is struck up—preferably in a hydraulic press—to the form shown in Fig. 3 the opening will be circular instead of oblong, and the upper edge *d* of the ring will be straight, so that the central section F can be made from a sheet of even width throughout.

Heretofore when a ring-section has been made its upper edge has conformed to the curve of the boiler, so that it necessitated a neat cutting of the edges of the plate from which the central section was made, and consequently the plate had to be rolled to a greater width than necessary and there was considerable waste, owing to the cutting of the peculiar curve, and, furthermore, each plate had to be laid out and cut to this curve, so as to make a neat joint.

The upper portion of the base-ring D is bored out to receive the lower end of the central section F, so that a snug fit is assured between the ring and the central section when the two are riveted together, as shown in Figs. 1 and 2.

The periphery of the crown-ring E is adapted to be inserted within the outer end of the central section and riveted thereto, as shown. This crown-ring is also made from a flat blank bent up by hydraulic pressure. It will be noticed that the vertical flange *d'* of the ring is higher at the sides than at the ends, owing to the base-flange taking the shape of the boiler.

In making the base-ring D, I form the base-flange d^2 in such a manner that it will approximately fit the average boiler, but I plane the under surface of the flange, so that it will fit snugly on the boiler, and draw the boiler-shell up tightly to this planed surface, so as to make a tight fit.

The opening *a* in the boiler-shell is somewhat less in diameter than the steam-dome, so that there is sufficient room to properly set the steam-dome upon the boiler and to calk the joint.

I claim as my invention—

1. The combination in a steam-dome for locomotive-boilers, of the pressed-steel base-ring having a base-flange and a vertical flange, a pressed-steel crown-ring and a cylindrical central section having a welded joint and of an even height throughout, said central section being secured to the vertical flange of the base-ring and to the flange of the crown-ring, substantially as described.

2. The combination of the base-ring having a flaring base-flange of the contour of the boiler-shell and having a planed under sur-

face and a vertical flange, the upper edge of which is straight, said flange being bored, a central section resting within the bored portion of the base-ring, with a crown secured to the central section, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL M. VAUCLAIN.

Witnesses:
JACOB MCCONNELL,
GEO. H. SIMPKINS.