

H. C. DARBY.

Locomotive Fire-Box Crowns.

No. 140,251.

Patented June 24, 1873.

Fig 1.
Sectional Side View.

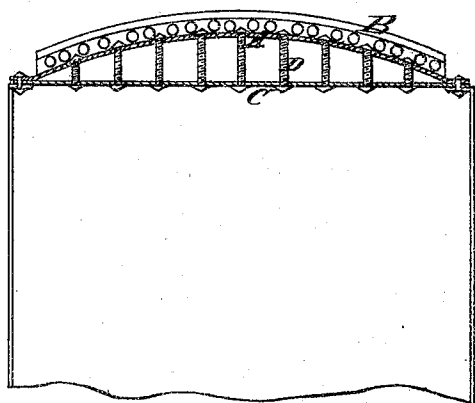


Fig 2.
Sectional End View.

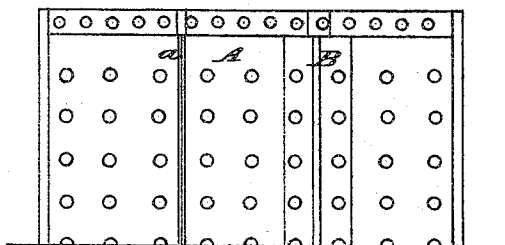
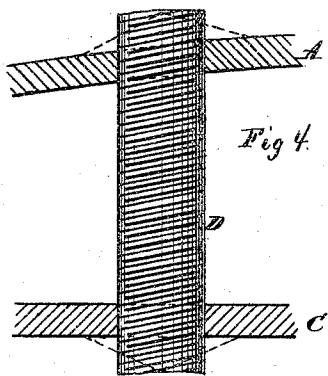
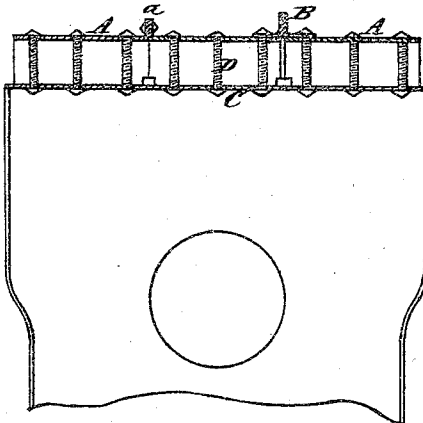


Fig 3.
Half Plan.

Witnesses.

James A. Cruise
W. H. Beach

Inventor.

Henry C. Darby

UNITED STATES PATENT OFFICE.

HENRY C. DARBY, OF WYANDOTTE, KANSAS.

IMPROVEMENT IN LOCOMOTIVE FIRE-BOX CROWNS.

Specification forming part of Letters Patent No. **140,251**, dated June 24, 1873; application filed April 4, 1873.

To all whom it may concern:

Be it known that I, H. C. DARBY, of the city of Wyandotte, in the county of Wyandotte and State of Kansas, have invented certain Improvements in Locomotive Fire-Box Crowns, of which the following is a specification:

My invention relates to the construction of the crown or top portion of the fire-box by means of an arch and bolts in such a manner as to supersede the necessity of crown bars and washers, securing the same amount of strength by the use of a much less weight of metal and at the same time greatly increasing the radiation of heat through the crown-plate to the water in the boiler.

The object of the invention is to dispense with the necessity of the crown bars and washers, and thus secure a greater heating-surface upon the crown-plate and increase the radiation of heat through the crown-plate to the water in the boiler.

Figure 1 is a sectional side view of crown as attached to the crown-plate and fire-box. Fig. 2 is a half-sectional end view of fire-box, showing section through center of crown, with the connecting-bolts in proper position. Fig. 3 is a plan, showing top view of crown as complete, with the heads of the connecting-bolts and rivets, with flange or T-iron bar at intersections of arch. Fig. 4 is a view of the connecting-bolt passing through the arch and crown-plate, showing position of the bolt in crown-plate and arch.

The crown is composed of an arch, A, constructed of three-eighths-inch boiler-iron, in three sections. These sections are joined or connected by means of a flange, *a*, made by turning up either edge of each section and closely riveting the two together above the arch; or a T-iron bar, B, may be used instead

of the flange and riveted upon the arch over the joints, thus affording an opportunity to attach braces from the top of the arch to the wagon-top of the boiler. This arch is confined at each end by rivets to the crown-plate C and through the flue-sheet and back sheet of the fire-box, as shown by Fig. 1. Where the sections of the arch are joined a three-inch opening is cut, thereby affording an opportunity for confining the crown-sheet temporarily to the fire-box before fitting the arch, also affording an opportunity for cleaning the crown-sheet by washing or otherwise. The arch is supported and connected to the crown-sheet by ordinary stay-bolts D tapped through the arch and crown-plate and riveted at both ends, beneath the crown-plate and on top of the arch, as shown by Figs. 2 and 4 of drawing.

My invention dispenses with the crown-bars, as above set forth, thus securing four inches more space between the crown-plate and the arch than is allowed with the crown-bars now in use, and at the same time not diminishing the distance between the top of arch and the boiler, and is of equal strength; and also greatly reduces the expense in labor and material necessary in the construction of locomotive-crowns.

The arch being constructed in three sections, either section may be easily removed for purposes of repairs without interfering with the remaining sections.

I claim as my invention—

The fire-box crown herein described, constructed with an arch, A, placed above the crown-plate C, substantially as explained.

HENRY C. DARBY.

Witnesses:

JAMES A. CRUISE,
M. W. BEACH.