

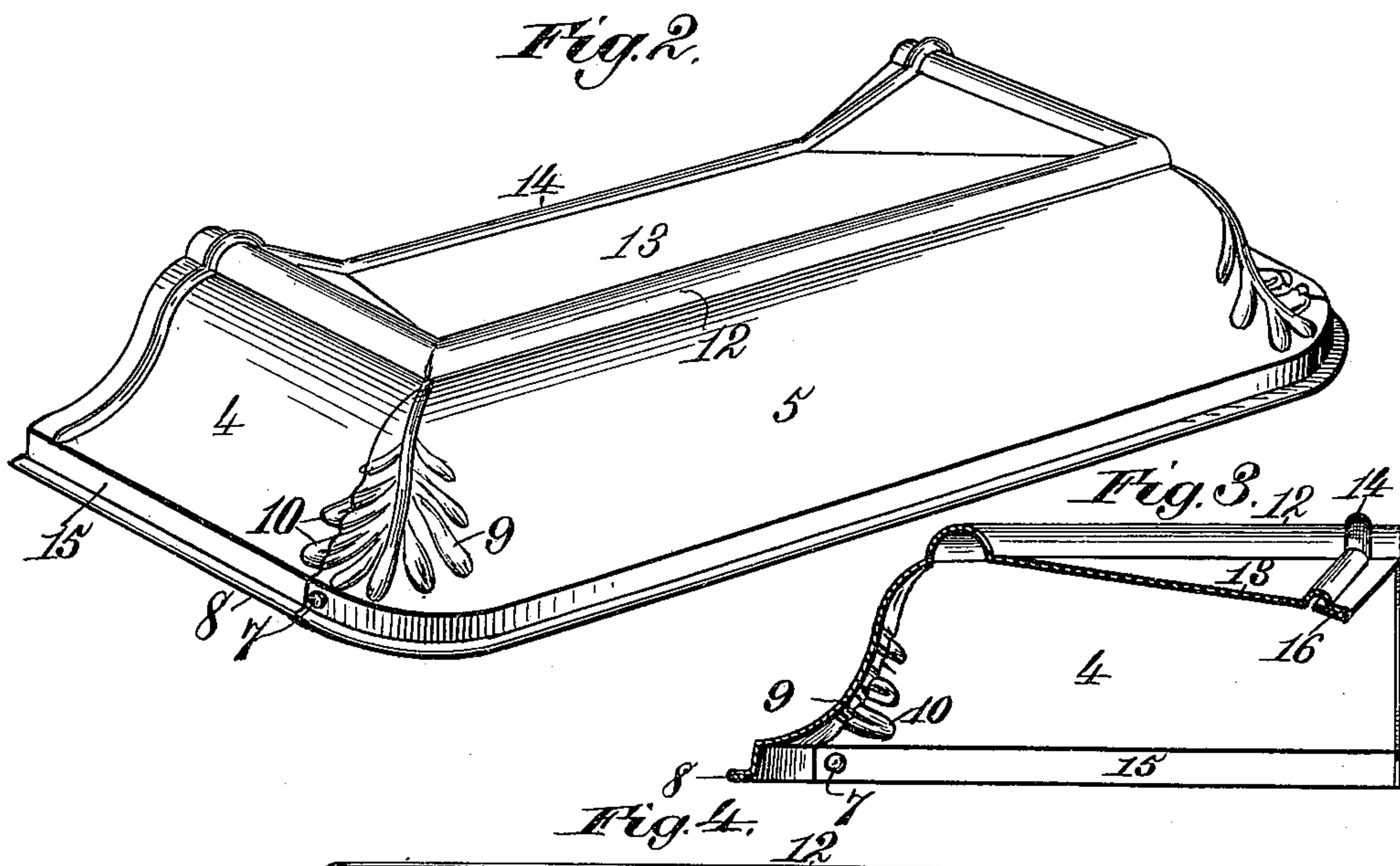
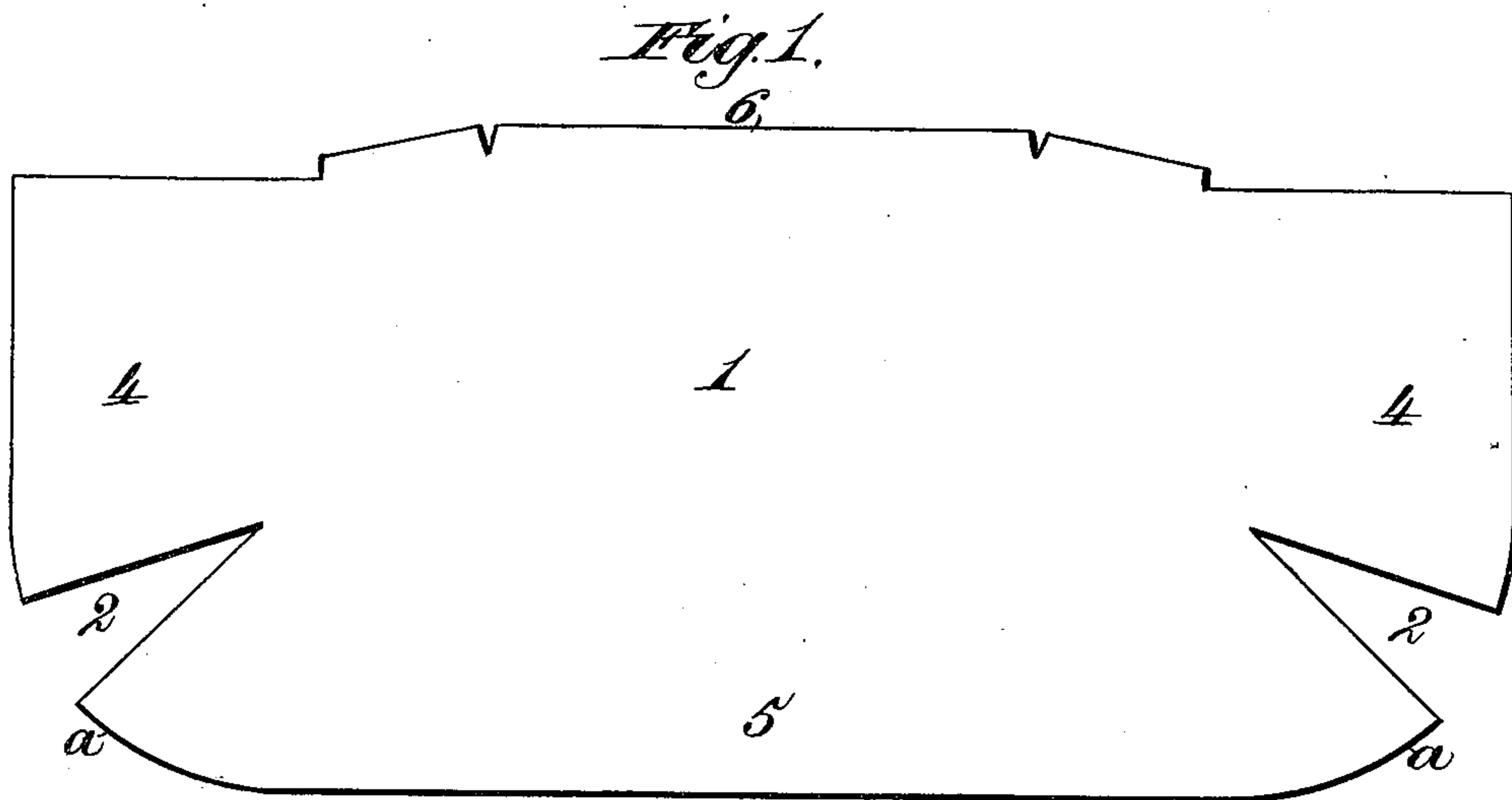
No. 627,388.

Patented June 20, 1899.

F. G. CALDWELL.  
SHEET METAL FENDER FOR HEARTHES.

(Application filed July 29, 1898.)

(No Model.)



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## SHEET-METAL FENDER FOR HEARTHES.

SPECIFICATION forming part of Letters Patent No. 627,388, dated June 20, 1899.

Application filed July 29, 1898. Serial No. 687,205. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK G. CALDWELL, a citizen of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented new and useful Improvements in Sheet-Metal Fenders for Hearths, of which the following is a specification.

My invention relates to sheet-metal fenders for hearths.

It is the object of my said invention to provide such a fender having a novel, simple, and inexpensive construction, whereby such additional strength is imparted to the apron that I am enabled to dispense with all extraneous means for bracing or strengthening the sheet-metal structure, thereby simplifying and improving the construction, reducing the weight of the fender, and diminishing the expense of producing the finished article.

It is a further purpose of my said invention to provide a fender for open fireplaces, grates, hearths, &c., made from a single piece of sheet metal and constructed in such manner that any number of the same can be nested one within another and thus arranged for transportation within one-quarter of the space that has heretofore been required in the transportation of a like number of fenders having braces underneath the apron or any other strengthening or stiffening devices which would prevent or obstruct the close nesting of the fender. It is my object, therefore, to provide a novel construction of the latter whereby the apron shall be strengthened along the edge, adjacent to the open back of the fender, by a bead stamped therein parallel with the edge and continued over the top ridge of the fender and down the end wall to the lower edge of the same, further additional strength or stiffness being obtained by turning a narrow flange along the entire lower edge of the fender at an angle to the wall. The diminished cost of transportation, which is one of the results obtained from this improvement, is a material factor in the reduction of cost to the consumers, since not only four times as many fenders can be packed in the same space when they are closely nested together, but the railroad corporations in those parts of the country to which these fenders have been freighted have indicated their ap-

preciation of the advantages of this construction by lowering the classification of these articles from first class to third class.

To enable others to fully understand and to make and use my invention, I will now proceed to describe the same in detail and will then particularly point out and define the novel features thereof in the claims at the close of this specification.

For the purposes of the following description reference is had to the accompanying drawings, in which—

Figure 1 is a plan view showing the sheet-metal blank from which the fender is formed. Fig. 2 is a perspective view of the completed fender, the point of view being such as to show one end and the front or open side of the fender. Fig. 3 is a similar section showing a further or additional feature to impart an additional strength to the apron when desired. Fig. 4 is a front view showing several fenders having the construction provided by this invention nested together in the relative positions they occupy when packed for transportation or storage.

The reference-numeral 1 in said drawings indicates the sheet-metal blank from which the fender is produced. It is cut in a single piece from sheet metal of any preferred kind, its general form approaching a rectangular parallelogram, save that two of the angles are rounded, as shown at *a*. A notch 2 is cut into each rounded edge 3, its depth being substantially equal to the width of the end wall 4 or of the front wall 5 or nearly so. The general direction of each notch is toward the center of the edge 6 of the blank or thereabout. These notches permit the corners of the fender to be rounded, as seen in Fig. 2, this being done by lapping one of the diverging edges of said notch upon the other after the blank has been shaped. A single rivet 7 is then inserted near the lower or outer edge 8 of the fender to secure the overlapped parts. Any suitable ornamental design, such as a spray of leaves 9, is embossed in the metal forming the rounded corner. In order to bring the overlapped edges closely together at the corners and to conceal the joints formed at those points, the whole figure constituting the ornamental design is not embossed upon either of the overlapped parts; but a part,



preferably the greater portion of the design, is formed upon the outer or overlapped part of metal, and a fractional portion of said figure is repeated or duplicated upon the inner or  
 5 underlapped portion of the sheet metal. This duplicated part of the design includes as much of the ornamental figure embossed upon the outer portion of sheet metal as overlaps upon the inner portion, with as much more as may  
 10 be required in order to complete the figure or design. The latter, preferably the smaller part of the ornamental figure, will be exposed, since it extends beyond the edge of the outer overlap. The edge of the latter lies close  
 15 against the face of the underlapped portion, this being made possible by embossing on the inner sheet-metal part a duplicate of a portion of the figure on the outer sheet-metal part, having such relative dimensions, however,  
 20 that the inner duplicate shall nest or seat closely within the latter. This construction not only provides a neat and almost imperceptible point, but the nesting together of the two overlapped duplicate portions of the  
 25 design adds so largely to the strength of the joint that the single rivet is an ample fastening. Moreover, the completion of the embossed figure by the small portion 10, which is formed upon the underlapped part, aids in  
 30 concealing the joint.

The shaping of the several parts of the fender to produce the top ridge or molding 12, the curvature of the panels of the end walls 4 and front wall 5, and the other parts,  
 35 including the ornamental embossed figure 9, is done in dies in a manner familiar to all sheet-metal workers. This work is preferably done after the blank 1 has been notched at its two front angles and the edges of each  
 40 notch lapped and secured by the rivet 7.

One of the most important objects of my present invention is to provide a construction whereby all interior bracing or devices for strengthening the angles or stiffening the  
 45 metal is avoided. As the fender is open upon the rearward side, the apron 13 is evidently the part which is most likely to be distorted or sprung, and to impart the necessary strength I form a band 14 in the metal near to and  
 50 parallel with the rear unsupported edge 6. This bead is continued over the top ridge or molding 12 and across or down the end walls 4 to the vertical strip 15. I may, if necessary, use more than one of these beads side  
 55 by side or in suitable proximity; but if additional strength is required the hemmed edge 6 is turned downward to form a narrow flange 16, lying as nearly as may be at a right angle to the body of the fender and fol-  
 60 lowing all the mold-lines of the latter. This construction entirely removes all necessity for the interior braces and stays heretofore used and imparts ample strength and rigidity to the sheet metal without any increase of

weight, without involving any additional ex- 65  
 pense for increased consumption of metal or additional work in manufacture, and with an actual reduction in first cost.

My invention secures in this respect an advantage of great value, since it enables the  
 70 fenders to be nested together when packed for transportation. Fenders heretofore made of light sheet metal in which bracing or staying has been employed could not be packed in this manner and a small shipment required  
 75 a very large cubic space, comparatively speaking, for their accommodation. As they are very light, the railways have, according to their established custom, rated such fenders as first-class freight, in which the space oc-  
 80 cupied instead of the weight is the basis of the tariff.

Fenders constructed in accordance with my invention can be packed almost as closely as the flat sheet metal of which they are made.  
 85 The railway companies have promptly appreciated the benefit of the improvement and have rated my fenders as third-class freight instead of first class, a reduction in rates which is a substantially economical factor. 90

What I claim is—

1. A sheet-metal fender for hearths formed with a top apron and integral front and end walls, and having a continuous molded top ridge 12, and a continuous strengthening-  
 95 bead 14, formed longitudinally in the fender on a line parallel with the unsupported rear edge thereof, said strengthening-bead intersecting the molded top ridge and extending down the said end walls to near the base of  
 100 the fender.

2. A sheet-metal fender for hearths having a bead formed in its apron parallel with the unsupported edge of the latter and extended over the end walls transversely to the latter,  
 105 and a flange formed from the metal of the apron and extending along the edge of the same at, or nearly at a right angle to the body portion and following the conformation of the molding, substantially as described. 110

3. A sheet-metal fender for hearths, having a continuous bead stamped in its apron parallel with and near the edge of the latter, said bead being extended over both ends, transversely thereto, and said apron being  
 115 provided with a flange formed of its hemmed edge and lying at or nearly at a right angle to the body portion of the fender, said flange being extended along the edges of both end walls, following the mold-lines of the same, 120  
 substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK G. CALDWELL.

Witnesses:

PLATOFF ZANE,  
 W. H. STELLE.