

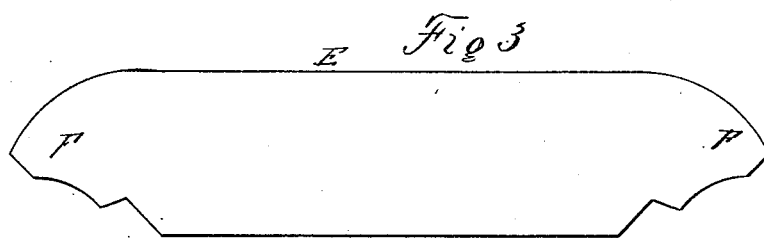
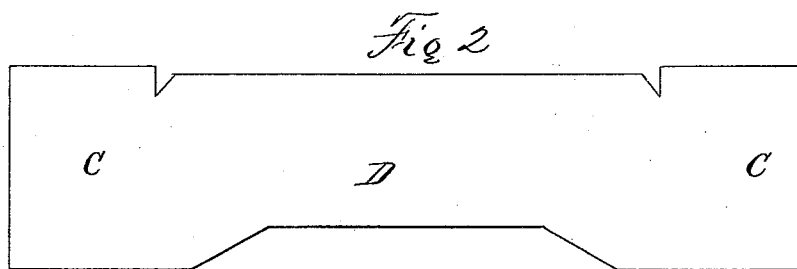
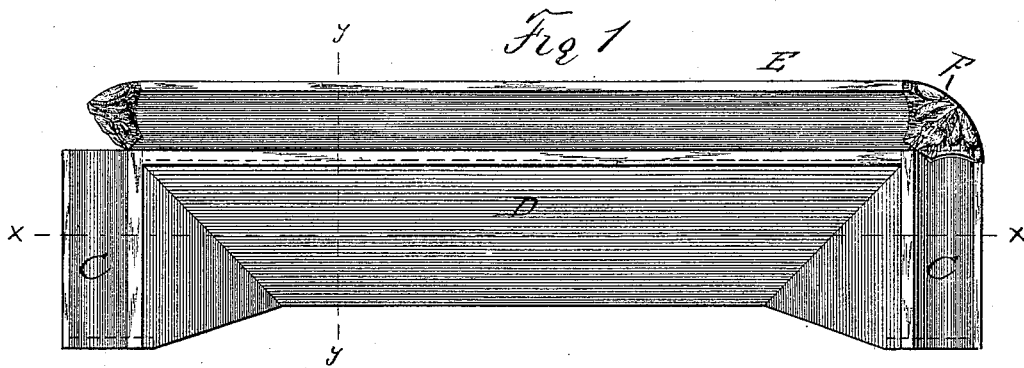
(No Model.)

2 Sheets—Sheet 1.

H. ADLER.
FENDER.

No. 420,853.

Patented Feb. 4, 1890.



WITNESSES.

C. S. Johnston

Geo H. Hawley

INVENTOR

Henry Adler
By *A. C. Johnston*
att'y

(No Model.)

2 Sheets—Sheet 2.

H. ADLER.
FENDER.

No. 420,853.

Patented Feb. 4, 1890.

Fig 4



Fig 5

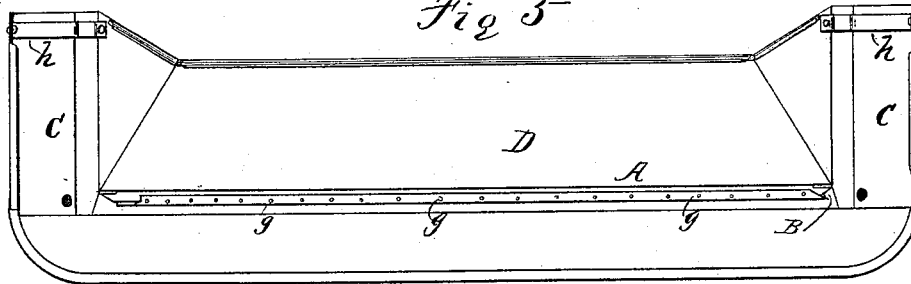


Fig. 7.

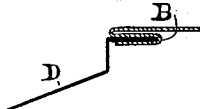
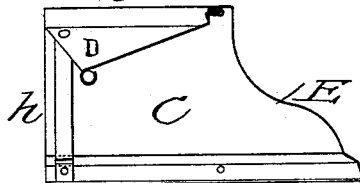


Fig 6



Witnesses
C. S. Johnston
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UNITED STATES PATENT OFFICE.

HENRY ADLER, OF ALLEGHENY, PENNSYLVANIA.

FENDER.

SPECIFICATION forming part of Letters Patent No. 420,853, dated February 4, 1890.

Application filed November 5, 1888. Serial No. 290,051. (No model.)

To all whom it may concern:

Be it known that I, HENRY ADLER, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Fenders; and I do hereby declare the following to be full, clear, and exact description thereof.

My invention relates to an improvement in sheet-metal fenders; and it consists in the fender made of two pieces formed and united together, as hereinafter described and claimed.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction.

In the accompanying drawings, which form part of my specification, Figure 1 is a top view or plan of a fender with one corner broken away. Fig. 2 represents the blank sheet from which the apron is formed prior to being swaged into shape. Fig. 3 represents the blank sheet from which the front and corners are formed prior to being swaged into form. Fig. 4 is a section through line *x* of Fig. 1. Fig. 5 is a view looking at the under side of the fender. Fig. 6 is a cross-section at line *y* of Fig. 1. Fig. 7 shows the manner of securing the apron and front together.

The ends C and apron D are made of a single piece of sheet metal of the form shown in Fig. 2. The front E and corners F are also constructed of a single piece of sheet metal, as shown in Fig. 3. The inner edge A is provided with a slide or double fold, the form of which is shown in Fig. 7 and at B in Fig. 5. The piece shown in Fig. 2 is, by means of suitable dies, bent into the proper form and its inner edge wired. The piece shown in Fig. 3 is also swaged into proper shape by means of dies. The piece forming the apron and ends and the piece forming the front and corners are then brought into juxtaposition, as shown in Fig. 7 and at B in Fig. 5, and secured by indentations *g*, and the inner parts of the ends of the apron riveted

to the front corners and the ends provided with a brace *h*, which is riveted thereto, said braces conforming to the form of the under side of the ends.

A fender constructed as hereinbefore described will be strong and durable, very neat and light, and can be manufactured and sold cheaply.

Having thus described my improvement, what I claim is—

1. As a new article of manufacture, a fender composed of two pieces of sheet metal, one of which pieces is bent to form the apron D and the two ends C C, and the other piece of which is bent to form the front E and the corners F F, the contiguous edges of the front and apron being united together by a double-lapped seam and the meeting edges of the corners and ends being united, as by rivets, substantially as and for the purpose described.

2. As a new article of manufacture, a fender composed of two pieces of sheet metal, one piece being bent to form the front and the two corners and the other piece the apron and two ends, the ends of one piece of metal being riveted to the corners of the other piece, and the edges of the front and apron being bent to form a double-lapped seam, which seam has a series of transverse indentations *g* extending its entire length, substantially as and for the purpose described.

3. As a new article of manufacture, a fender made of two pieces of sheet metal, one piece being bent to form the front and corners and the other piece bent into the apron and ends, which are united to the front and corners, respectively, and the vertical braces *h*, fixed to the rear edges of the ends C C and the extremities of the apron, substantially as described.

In testimony whereof I have hereunto set my hand this 18th day of October, A. D. 1888.

HENRY ADLER.

Witnesses:

A. C. JOHNSTON,
C. S. JOHNSTON.