R. REES.

METHOD OF AND MEANS FOR BLOCKING SADDLES FOR STEAM BOILERS.

APPLICATION FILED SEPT. 2, 1921.

1,431,041. Patented Oct. 3, 1922.

2 SHEETS—SHEET 1.

FIG. 1.

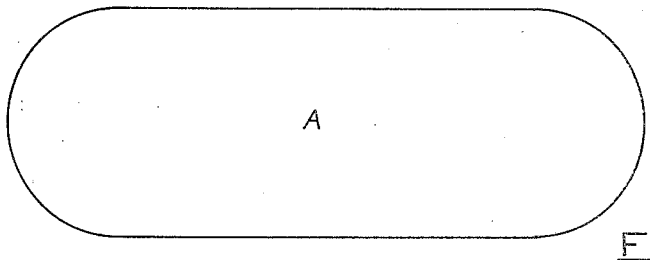


FIG. 2.

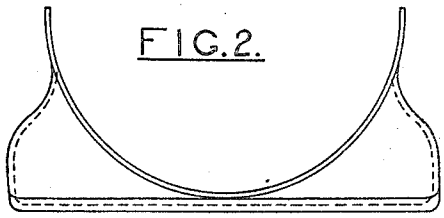


FIG. 3.

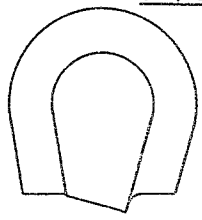


FIG. 4.

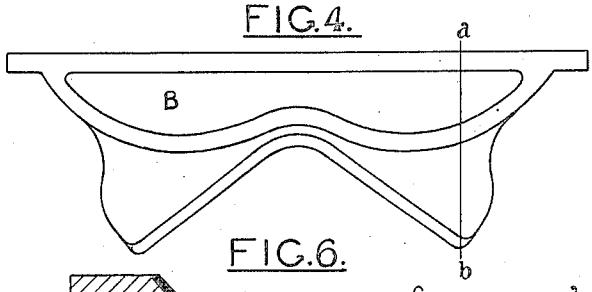


FIG. 5.

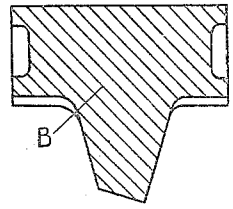


FIG. 6.

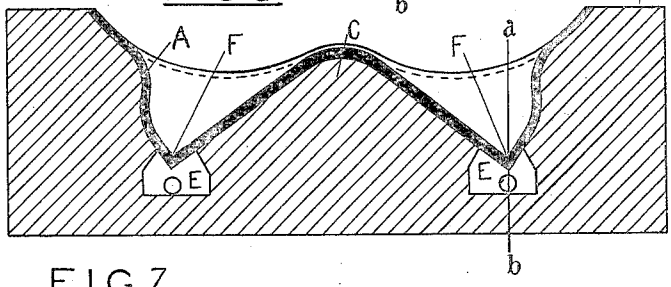


FIG. 7.

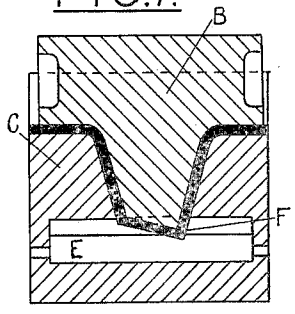
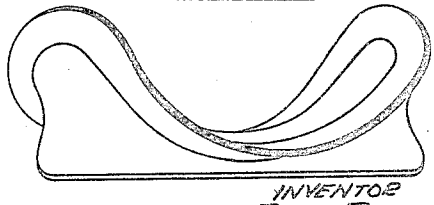


FIG. 3A.



INVENTOR
REES REES
BY Munn & Co
ATTORNEYS

R. REES.

METHOD OF AND MEANS FOR BLOCKING SADDLES FOR STEAM BOILERS.

APPLICATION FILED SEPT. 2, 1921.

1,431,041.

Patented Oct. 3, 1922.

2 SHEETS—SHEET 2.

FIG. 8.

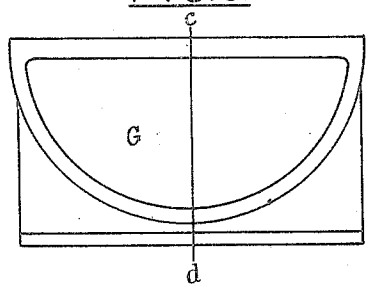


FIG. 9.

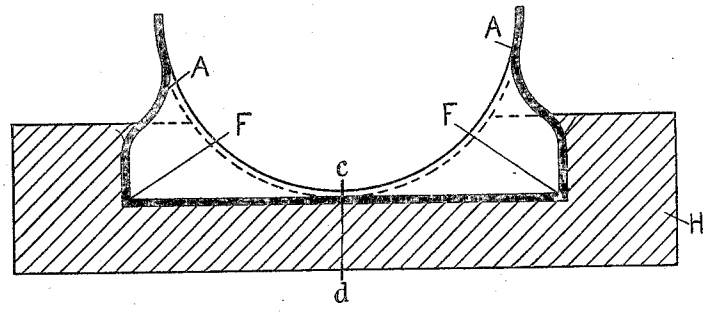
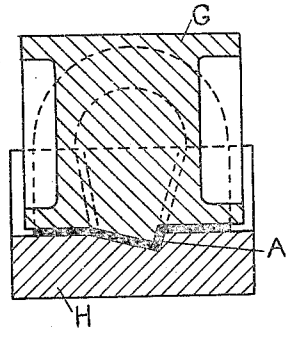


FIG. 10.



INVENTOR
REES REES
BY Munn & Co
ATTORNEYS

Patented Oct. 3, 1922. 1,431,041

UNITED STATES PATENT OFFICE.

REES REES, OF KAPUNDA, SOUTH AUSTRALIA, AUSTRALIA.

METHOD OF AND MEANS FOR BLOCKING SADDLES FOR STEAM BOILERS.

Application filed September 2, 1921. Serial No. 498,060.

To all whom it may concern:

Be it known that I, REES REES, a subject of the King of Great Britain and Ireland, residing at Smedley Street, Kapunda, State of South Australia, Commonwealth of Australia, have invented a certain new and useful Improved Method of and Means for Blocking Saddles for Steam Boilers, (Case A), of which the following is a specification.

This invention relates to the blocking from pieces of plate of saddles for steam boilers. In particular it relates to the use of two sets of specially shaped top and bottom dies whereby the flat plate is bent to shape in two operations.

In order that my invention may be clearly understood I will describe the same with reference to the accompanying drawings in which.

Fig. 1 represents a blank of flat plate from which the saddle is to be pressed.

Figs. 2, 3 and 3A represent front, end and perspective views respectively and of the finished saddle.

Fig. 4 represents a front view of the top die of the first set of dies.

Fig. 5 represents a cross section of same on line *a b* of Fig. 4.

Fig. 6 represents a central section of the bottom die of the first set of dies with the partially shaped saddle in position therein.

Fig. 7 represents a cross section on lines *a b* of Fig. 4 and Fig. 6 of the top and bottom dies of the first set of dies with the partially shaped saddle between them.

Fig. 8 represents a front view of the top die of the second set of dies.

Fig. 9 represents a central section of the bottom die of the second set of dies with the finished saddle in position therein.

Fig. 10 represents a cross section on lines *c d* of Figs. 8 and 9 of the top and bottom dies of the second set of dies with the finished saddle between them.

A blank A of the shape shown in Fig. 1 is first cut from flat plate. It is then heated and placed on top of the die C and then pressed between the dies B and C to the shape shown in section in Figs. 6 and 7. The dies B and C are so shaped that the base of the saddle A instead of being pressed to a straight line is pressed to an angular shape having a raised center thereby permitting the corners at the ends of the base and the lower portions of the sides to be pressed to the desired finished shape, at the same time permitting the upper die B to be raised freely therefrom. The lower die C is formed with cross passages E through which water is caused to flow for cooling purposes to prevent the plate tearing at the corners F when being pressed to shape.

The partly pressed saddle A is then taken from the die C and reheated and placed in the lower die H of the second set of dies G and H and pressed between them to its finished shape.

It will be noticed that the width of the base of the top die G is less than the width of the recess in the lower die H and consequently shorter than the base of the saddle, but as the die G is pressed into the die H its central portion meets the upwardly curved center of the partially pressed saddle and straightens out the tube seating or base and brings inward the upper portion of the sides as shown in Fig. 9. As with the first pair of dies the shape of the upper die permits it to be raised freely from the saddle.

The dies are operated in the usual manner by means of an hydraulic press or by means of a steam press of the usual construction.

What I claim is:—

1. The method herein described for forming saddles for steam boilers consisting in subjecting a plate to pressure between dies to form a pan-like article with an inwardly bulged bottom and outwardly flared and curved sides, simultaneously cooling the corners at the ends of the base of such article by the injection of a cooling fluid against said corners and then subjecting the pan-like article to pressure between straight-bottom dies to flatten out the bottom and thereby bend the upper ends of the sides inwardly.

2. In means for blocking a saddle for a steam boiler a pair of dies so shaped that the corners or ends of the base of the saddle and the lower portions of the sides are pressed to finished shape and the base pressed to an angular shape having a raised center, and the bottom die being formed with cross passages through which water is caused to flow to prevent the plate tearing at the said corners.

3. In means for blocking a saddle for a steam boiler, a die member having outwardly flared and curved sides and a central

raised portion extending to the sides, said die member being provided with transverse passages below the junction of the sides and raised portion for circulating a cooling fluid therethrough.

In testimony that I claim the foregoing as my invention I have signed my name in the presence of two subscribing witnesses this 25th day of July, 1921.

REES REES.

Witnesses:
KATHLEEN GOSTWYCKE SAUNDERS,
ARTHUR GORE COLLISON.