Dec. 16, 1930. H. K. HARWICK 1,785,626

LOCOMOTIVE BOILER SUPPORT

Filed Nov. 9, 1929 2 Sheets-Sheet 1

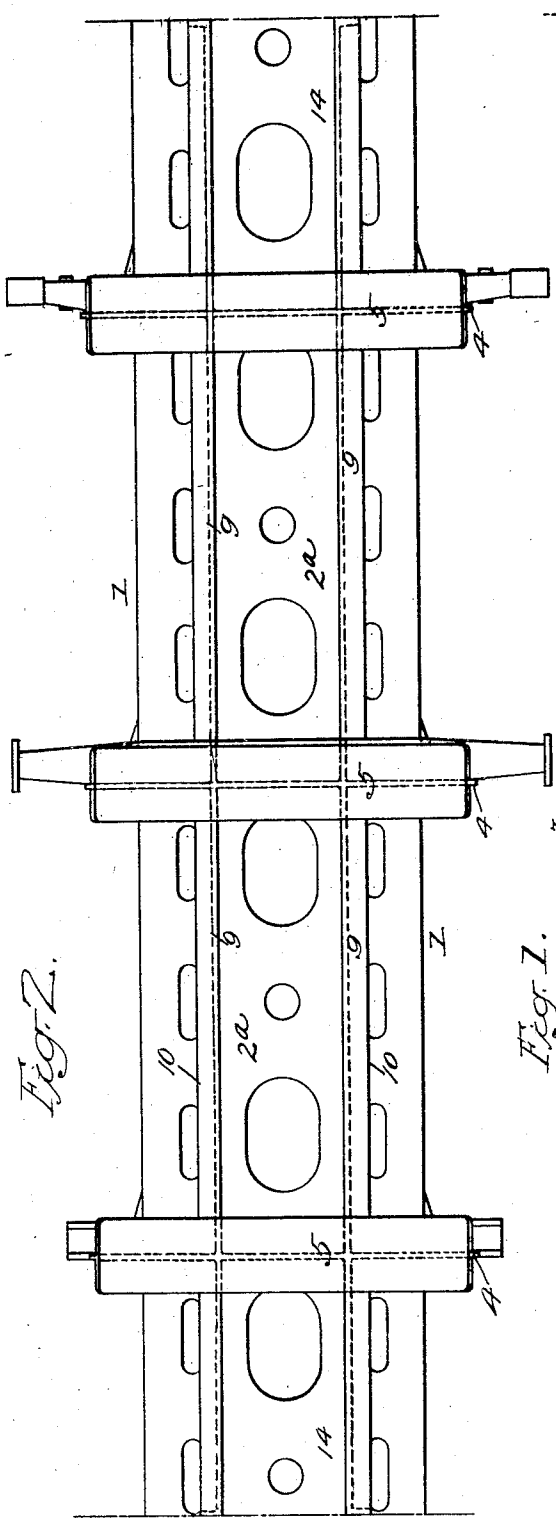


Fig. 2.

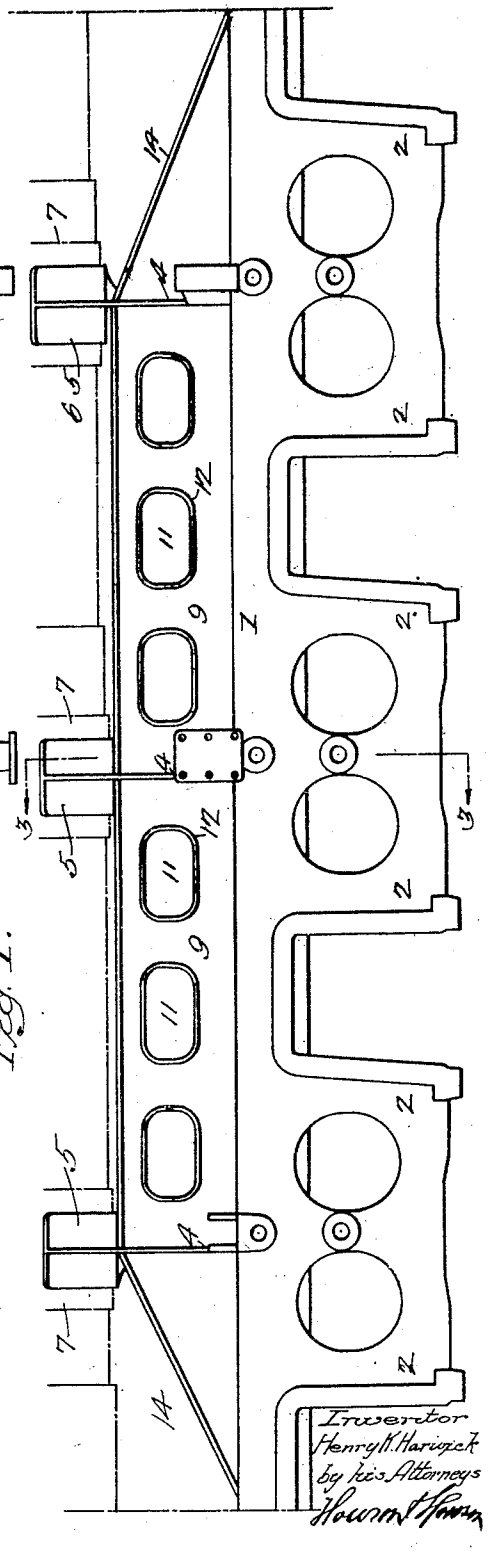


Fig. 1.

Inventor
Henry K. Harwick
by his Attorneys
Howson & Howson

Dec. 16, 1930. H. K. HARWICK 1,785,626

LOCOMOTIVE BOILER SUPPORT

Filed Nov. 9, 1929 2 Sheets-Sheet 2

Fig. 3.

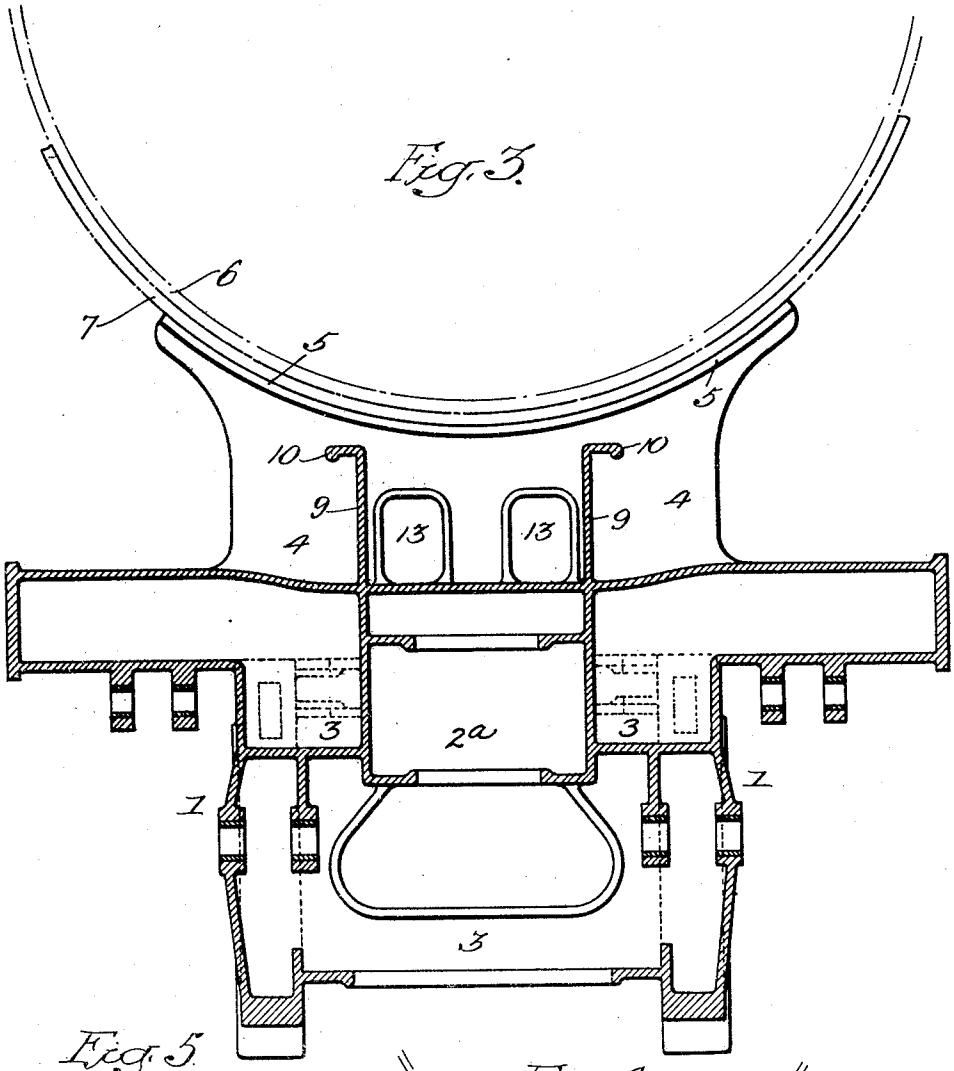


Fig. 5

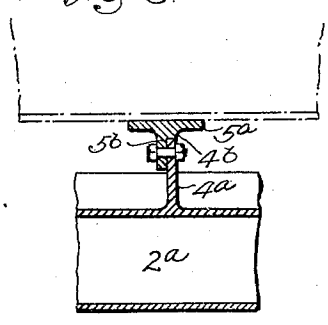
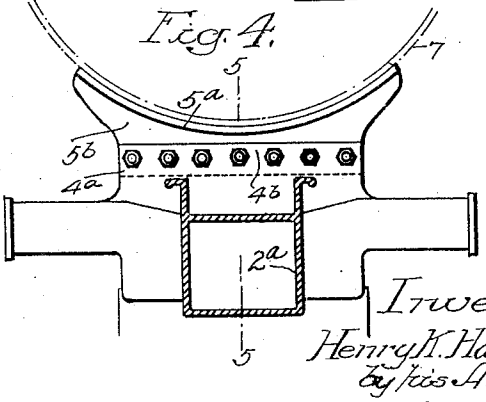


Fig. 4.



Inventor:
Henry K. Harwick
by his Attorneys
Howson & Howson

Patented Dec. 16, 1930 1,785,626

UNITED STATES PATENT OFFICE

HENRY K. HARWICK, OF DARBY, PENNSYLVANIA

LOCOMOTIVE-BOILER SUPPORT

Application filed November 9, 1929. Serial No. 405,994.

One object of this invention is to form the supports for the boiler of a locomotive integral with the main frame of the locomotive.

A further object of the invention is to materially increase the strength and rigidity of the cast metal frame by increasing its vertical depth.

And a still further object of the invention is to so construct the frame that a lighter construction is obtainable owing to the increased depth of the frame over the pedestals.

In the acompanying drawings:

Fig. 1 is a side view of a frame of a locomotive sufficient to illustrate my improved boiler supports forming an integral part of the frame;

Fig. 2 is a plan view;

Fig. 3 is a transverse sectional view;

Fig. 4 is a sectional view illustrating a modification of the invention; and

Fig. 5 is a section on the line 5—5, Fig. 4.

Referring to the drawings, 1—1 are the side frames of the locomotive, having the usual pedestals 2 which are cast integral with the frame and 2*a* is a hollow longitudinal trunk. The frame has transverse members 3—3 which tie the two side frames together and to the trunk at intervals. The side frames may be of any type desired and the cross-members arranged in any manner without departing from the essential features of the invention.

Cast integral with the frame structure is the boiler support which in the present instance consists of three transverse members 4 and two longitudinal webs 9. The number of transverse members 4 may vary with the type of boiler. The support members 4 which are spaced apart at intervals have saddles 5 which are made integral with the frame in the present instance, as shown in Fig. 1, and on the boiler 6 are pads 7 which rest on the saddles 5 as shown.

The three boiler supports 4, in the present instance, are spaced apart and are connected by longitudinal webs 9 also made integral with the main frame and are in the present instance continuations of the sides of the trunk 2*a*. Each web is preferably provided with a flange 10 at the top to give it strength, and in the webs are openings 11 to reduce the weight of the structure, and these openings are preferably flanged as at 12. The boiler supports 4 are perforated at 13, also to reduce the weight.

The boiler supports may terminate abruptly at one or both ends of the structure, or may gradually merge into the main frame as shown at 14. In some instances the saddle 5 may be separate from the boiler support. One construction is shown in Fig. 4 and Fig. 5, in which 4*a* is the boiler-supporting member which forms an abutment 4*b*, on which rests the offset portion of the vertical member 5*b* of the saddle 5*a*. The two parts can be attached by bolts or rivets. In this instance the saddles are directly attached to the boiler and the pads 7 omitted.

It will be seen by the above description that the vertical depth of the frame is materially increased and considerably strengthened, and by making the saddle support integral with the main frame of the locomotive the depth over the pedestals is increased by the saddle support, permitting lighter construction, and this construction reduces the possibility of failure of the casting.

Furthermore, the construction reduces the number of loose parts which were heretofore necessary in the making of the boiler supports. By making the saddle separate from the boiler supports as shown in Fig. 4, it allows this piece to be fitted in the shops and adjustably mounted on the boiler supports.

I claim:

1. The combination in a locomotive, of a main frame; and a series of boiler-supporting members made integral with the main frame; and webs connecting the several boiler-supporting members, said webs being made integral with the frame and the supporting members.

2. The combination in a locomotive, of an integral main frame, consisting of longitudinal side members; a longitudinal trunk located between the side members; and longitudinal webs extending above the trunk and side members, said webs reinforcing the integral frame.

3. An integral frame for a locomotive, con-

sisting of longitudinal side members; a longitudinal trunk located between the side members; and longitudinal webs extending above the side members and trunk, each web being provided with a flange at its upper edge.

4. The combination in a locomotive, of a main frame, consisting of side members and longitudinal webs extending above the side members but spaced a less distance apart than the side members; transverse boiler supports made integral with the side members and the webs; a saddle shaped to fit the boiler and arranged to rest on the supports; and means for securing the two parts together.

HENRY K. HARWICK.