May 26, 1931 R. F. CARPENTER 1,807,058

BOILER COVER

Filed May 15, 1929

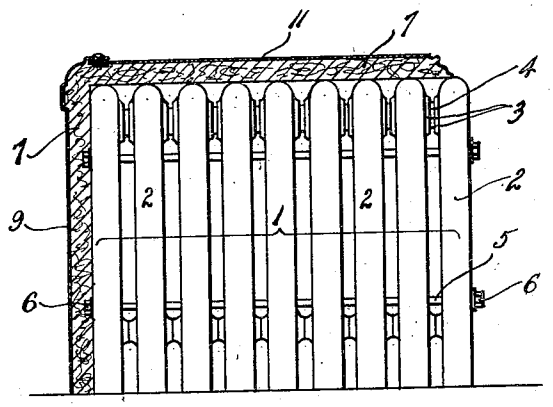


FIG. 1

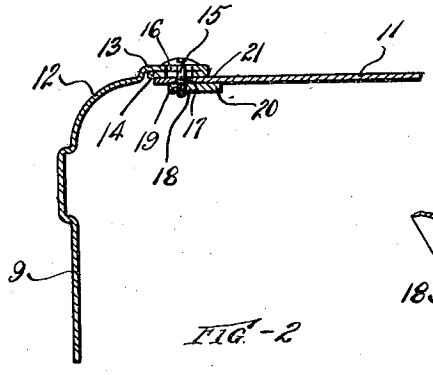


FIG. 2

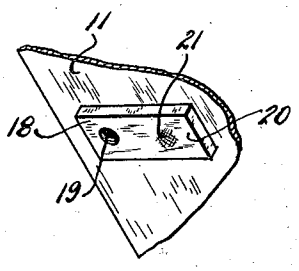


FIG. 3

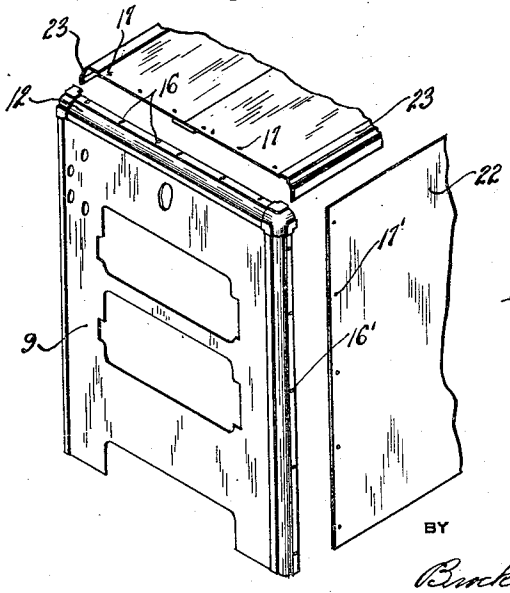


FIG. 4

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UNITED STATES PATENT OFFICE

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BOILER COVER

Application filed May 15, 1929. Serial No. 363,321.

This invention relates to sheet metal covers for sectional boilers such as are employed for domestic heating purposes.

Such a boiler is built up of a number of cast iron sections arranged in parallel relation and secured together by bolts to form the boiler-section assembly. In the assembly water and steam connection is had between the hollows of the sections, as by means of nipples arranged between sections and having threaded or taper fit therewith, whereby seal is had by tightening of the bolts, or of the nipples if threaded. Thus when a number of boiler-section assemblies are completed they may vary considerably in longitudinal dimension due to variations in the connections between their sections.

After assembly of the sections a heat insulating coating or jacket is applied, which is finished off on the outside by a sheet metal cover. The cover supports the jacket and should, therefore, be a tight fit thereover, and considerable difficulty has been had heretofore in obtaining such a fit.

An object of my invention is to provide a sheet metal cover for the purpose described which may be adjusted to perfectly fit the jacket of its boiler-section assembly within the limits of assembly variation as described above.

A further object of the invention is to provide for such adjustment in a manner not apparent in the finished boiler after completion of the fit, so that the boiler will present a most pleasing appearance.

The exact nature of the invention together with further objects and advantages thereof, will be apparent from the following description taken in connection with the accompanying drawings, in which Fig. 1 is a more or less diagrammatic vertical section through a boiler of the class described, completed and with its cover, incorporating my invention, fitted thereover; Fig. 2 is a detail of the cover in section corresponding with that of Fig. 1; Fig. 3 is a detail in perspective taken as from the under side of the top plate appearing in Fig. 2 and showing a bolt as secured therewith; and Fig. 4 is an expanded perspective view showing front, top, and side plates as before assembly.

With reference now to the drawings, 1 is a boiler-section assembly, conventionally shown and comprising a number of hollow sections 2 having connecting portions 3 with nipples 4 interposed therebetween, whereby intercommunication is had between the hollows of the sections 2, the assembly described being maintained by the bolts 5 extending through suitable aligned openings in the sections and tightened thereupon as by nuts 6. It will be understood that the boiler assembly includes the usual firebox formed by aligned openings in the sections 2.

The assembly as described above may vary in longitudinal dimension so that the nuts 6 may be tightened more or less upon the bolts 5 and the sections 2 on opposite extremities of the assembly may vary somewhat in distance apart.

After completion of the assembly the same receives a coating or jacket 7 of heat insulating material such as sheet asbestos fiber; whereupon the whole is ready to receive a sheet metal cover for finish purposes and to protect and maintain the jacket 7.

According to my invention I form the cover with respect to the showing of Fig. 1, of three pieces, comprising opposite end members 9 arranged transversely of the assembly and the top member 11 arranged longitudinally of the assembly. The end members have associated therewith as by forming from a single piece of sheet metal, a mold portion 12 extending into the horizontal plane as at 13. The mold portion is preferably bent under and folded back upon itself as at 14 to form a lip or bead portion presenting a smooth edge and to stiffen the associated parts. This lip portion is perforated at suitable intervals by slots 16 adapted to receive bolts 15, and the elongation of the slots 16 is in the direction of the bolts 5.

The top member 11 of the cover is adapted to assume overlapping relation with the mold portion of the end member, and, in the example illustrated, to underlie the lip portions of the end members 9, and is perforated as at 17 corresponding with the slots through

which the bolts 15 pass. The perforations 17 of the member 11, however, may be circular.

Associated with each perforation 17 is a nut 18. The nuts 18 are provided with threaded openings 19 and are secured with the under side of the top member 11 with their openings 19 aligned each with its perforation 17. To this end nuts 18 are elongated as shown in Fig. 3 each having an end 20 extending from its opening 19 and spot-welded as at 21 with the member 11.

Preferably diameters of the perforations 17 and the corresponding transverse dimensions of the slots 16 are sufficiently greater than that of the openings 19 in the nuts 18 that the threaded shank portions of bolts 15 may freely pass through the slots 16 and perforations 17 and turn into the openings 19 to secure the parts together.

The slots 16 are of sufficient length to accommodate reasonable variations in the length of the boiler-section assemblies. Thus if an assembly is completed and the jacket 7 placed thereover, the cover members may be fitted tightly upon the jacket 7 and thereafter the bolts 15 tightened to maintain the cover parts together tightly fitting upon the jacket. It will be understood, of course, that the exposed heads of the bolts 15 may be rounded as indicated and slotted to receive a screw-driver for the purpose of tightening, and are preferably of sufficient size to entirely overlie and thus conceal their slots 16 to present a neat appearance.

It will be apparent that similarly as described, the side members 22 of the cover will be provided with perforations 17′ backed by nuts 18 corresponding with slots 16′ in the side mouldings of the end members 9, the slots 16′ likewise extending in the direction of the bolts 5.

Preferably the side mouldings 23 which are shown as carried by the top 11 are secured with the top edges of the side members 22 in a manner generally similar to that described except that here perforations in either the mouldings 23 or the side members 22 need not be elongated since no relative adjustment between these parts becomes necessary.

What I claim is:

A boiler cover structure, comprising a cover top member having plain front and rear edge portions and side edge portions curved downwardly as side edge molds and terminating in depending flanges, a cover front end member having its side and top edge portions curved rearwardly as side and top edge molds and terminating in rearwardly extending flanges, a cover rear end member having its side and top edge portions curved forwardly as side and top edge molds and terminating in forwardly extending flanges, cover side members having plain end and top edge portions, and means for securing the cover top, end and side members in assembled relation with the side flanges of the end members overlapping the end edge portions of the side members, with the flanges of the top member overlapping the top edge portions of said side members, and with the top flanges of said end members overlapping the plain end edge portions of said top member, said assembly maintaining means including transverse slots in the flanges of the cover end members and threaded openings registering with said slots in the plain end edge portions of the cover side members and in the plain end edge portions of the cover top member, with bolts extending through said slots and secured in said threaded openings, the arrangement being such that the cover structure is longitudinally adjustable and such that there is an edge mold along the eight edges of the cover structure.

In testimony whereof I hereby affix my signature.

ROBERT F. CARPENTER.