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(54) **A type of binding structure between tank and header of automotive radiator**

(57) The invention involves positive contact to create a binding structure between tank and header of an automotive radiator, specifically the upper tank(3), with the upper header(4), and the bottom tank(9) with the bottom header(11).

There is a lip of outward extension metal I(3.1) from the lower edge of the upper tank (3), corresponding to the lip of outward extension metal I, there is a lip of vertically downward material bending I(4.1) from the outer edge of the upper header(4). Said lip of outward extension metal I (3.1) from the lower edge of the upper tank (3) tightly encloses the lip of vertically downward bending I (4.1), thereby allowing a complete and positive bound by brazing.

There is a Lip of outward extension metal II (9.1) from the upper edge of the bottom tank (9), corresponding to the lip of outward extension metal II (9.1), there is a lip of vertically upward bending II(11.1) from the outer edge of the bottom header (11). Said lip of outward extension metal II(9.1) from the upper edge of the bottom tank (9) tightly encloses the said lip of upward bending II (11.1) from the outer edge of the bottom header, thereby allowing a complete and positive bound by brazing.

This structure of tank enclosing header ensures the integrated structure of the radiator and the firm binding between tank and header.

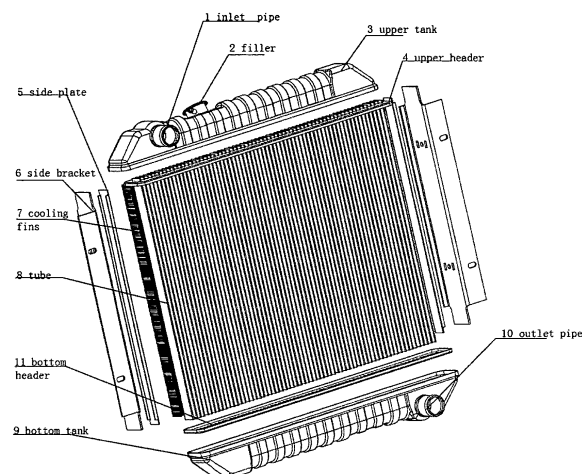


Fig. 1

Description**Technical field**

[0001] The invention involves an automotive radiator, particularly a type of binding structure between tank and header of an automotive radiator, which belongs to the field of auto parts technology.

Background art

[0002] Automotive radiator is an auto part dissipating heat using the cooling water from the automotive engine, it includes 10 parts: inlet pipe, outlet pipe, filler, upper tank, bottom tank, header, tube, cooling fins, side plate and side bracket. The biggest problem encountered during the manufacturing process is that the brazing between the tank and header is not firm enough thus will cause leak and failure of the radiator.

Summary of invention

[0003] The purpose of this invention is to overcome the above shortages, and to provide a type of structure to strengthen the binding between tank and header of the automotive radiator.

[0004] Said purpose is achieved through the binding structure between tank and header of automotive radiator, including the upper tank, bottom tank and header,

[0005] There is a lip of outward extension metal I(3.1) from the lower edge of the upper tank (3), corresponding to the lip of outward extension metal I, there is a lip of vertically downward bending I(4.1) from the outer edge of the upper header(4). Said lip of outward extension metal I (3.1) from the lower edge of the upper tank(3) tightly encloses the said lip of downward bending I (4.1) from the outer edge of the upper header, allowing complete and positive bond by brazing.

[0006] There is a lip of outward extension metal II (9.1) from the upper edge of the bottom tank (9), corresponding to the lip of outward extension metal II (9.1), there is a lip of vertically upward bending II(11.1) from the outer edge of the bottom header (11). Said lip of outward extension metal II(9.1) from the upper edge of the bottom tank (9) tightly encloses the said lip of upward bending II (11.1) from the outer edge of the bottom header, thereby allowing complete and positive bond by brazing.

[0007] This structure of tank enclosing header ensures the integrated structure of the radiator and the firm binding between tank and header, it not only reduces the cost of production, but also ensures the good appearance of the radiator by one-shot brazing.

Brief description of the attached drawings:

[0008]

Fig. 1 is the overall view of the structure of an auto-

motive radiator involved in this invention

Fig. 2 is the breakdown of the binding between the upper tank and the upper header of the automotive radiator before binding

Fig.3 is the assembly drawing of the binding between the upper tank and the upper header of the automotive radiator after binding

Fig. 4 is the breakdown of the binding between the bottom tank and the bottom header of the automotive radiator before binding

Fig. 5 is the assembly drawing of the binding between the bottom tank and the bottom header of the automotive radiator after binding

[0009] In the drawings: inlet pipe 1, filler 2, upper tank 3, upper header 4, side plate 5, side bracket 6, cooling fins 7, tube 8, bottom tank 9, outlet pipe 10, bottom header 11, outward extension metal I 3.1, downward bending I 4.1, outward extension metal II 9.1, upward bending II 11.1.

Implementation methods

[0010] In reference to Fig. 1, the automotive radiator involved in this invention consists of the inlet pipe 1, filler 2, upper tank 3, upper header 4, side plate 5, side bracket 6, cooling fins 7, tube 8, bottom tank 9, outlet pipe 10, bottom header 11.

[0011] In reference to Fig. 2, there is a lip of outward extension metal I(3.1) from the lower edge of the upper tank (3), corresponding to the lip of outward extension metal I, there is a lip of vertically downward bending I (4.1) from the outer edge of the upper header(4). Said lip of outward extension metal I (3.1) from the lower edge of the upper tank(3) tightly encloses the said lip of downward bending I (4.1) from the outer edge of the upper header, thereby allowing a complete and positive bond by brazing as shown in Fig. 3.

[0012] In reference to Fig. 4, there is a lip of outward extension metal II (9.1) from the upper edge of the bottom tank (9), corresponding to the lip of outward extension metal II (9.1), there is a lip of vertically upward bending II(11.1) from the outer edge of the bottom header (11). Said lip of outward extension II(9.1) from the upper edge of the bottom tank (9) tightly encloses the said lip of upward bending II (11.1) from the outer edge of the bottom header, thereby allowing a complete and positive bond by brazing as shown in Fig. 5.

Claims

1. specific and precise type of binding structure between tank and header of an automotive radiator,

including upper tank(3), upper header(4), bottom tank(9) and bottom header(11).

Characteristics are:

There is a lip of metal which creates outward extension I(3.1) from the lower edge of the upper tank (3), corresponding to the lip of outward extension I, there is a continuity of vertically downward bending I(4.1) from the outer edge of the upper header(4) . Said lip of outward extension metal I (3.1) from the lower edge of the upper tank(3) tightly encloses the said lip of downward bending I (4.1) from the outer edge of the upper header, due to this close tolerance and continuous positive contact of all surface they are completely bonded by brazing.

There is a lip of outward extension metal II (9.1) from the upper edge of the bottom tank (9), corresponding to the lip of outward extension metal II (9.1), there is a lip of vertically upward bending II(11.1) from the outer edge of the bottom header (11). Said lip of outward metal extension II(9.1) from the upper edge of the bottom tank (9) tightly encloses the said lip of upward bending II (11.1) from the outer edge of the bottom header, due to this close tolerance and continuous positive contact of all surface they are completely bonded by brazing.

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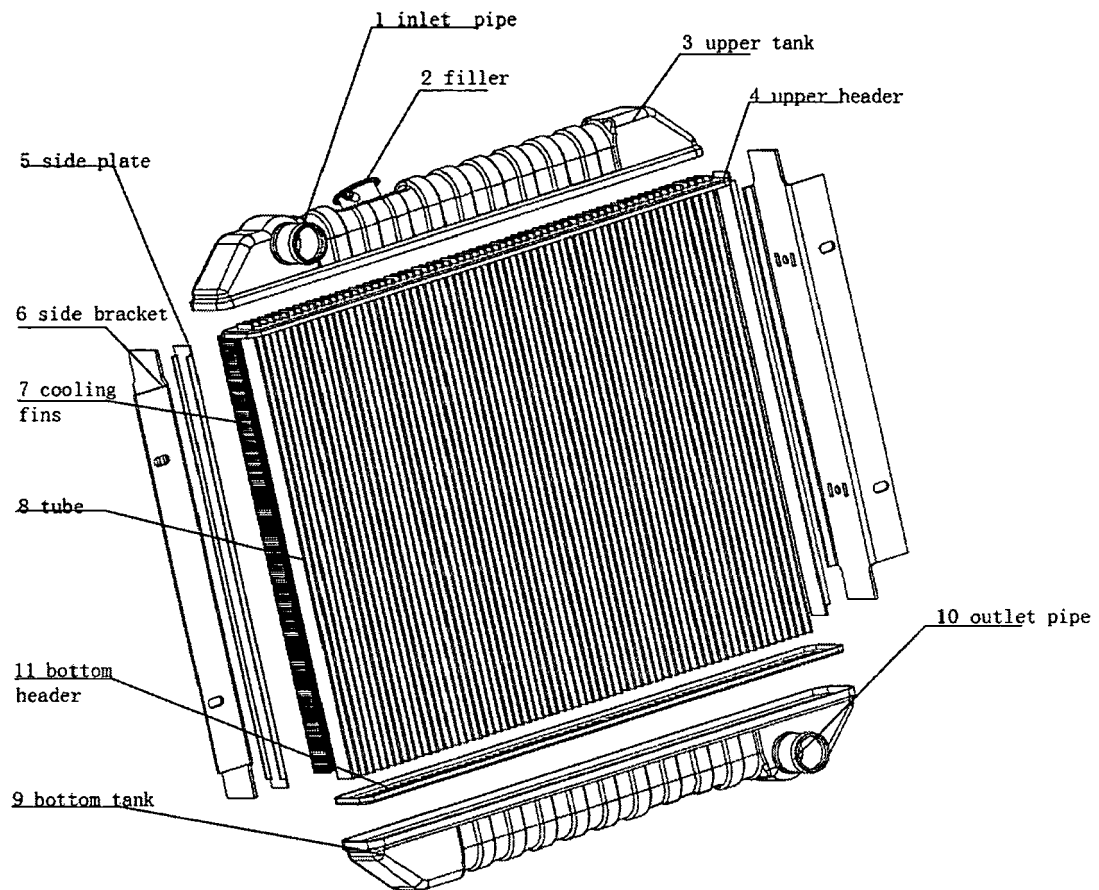


Fig. 1

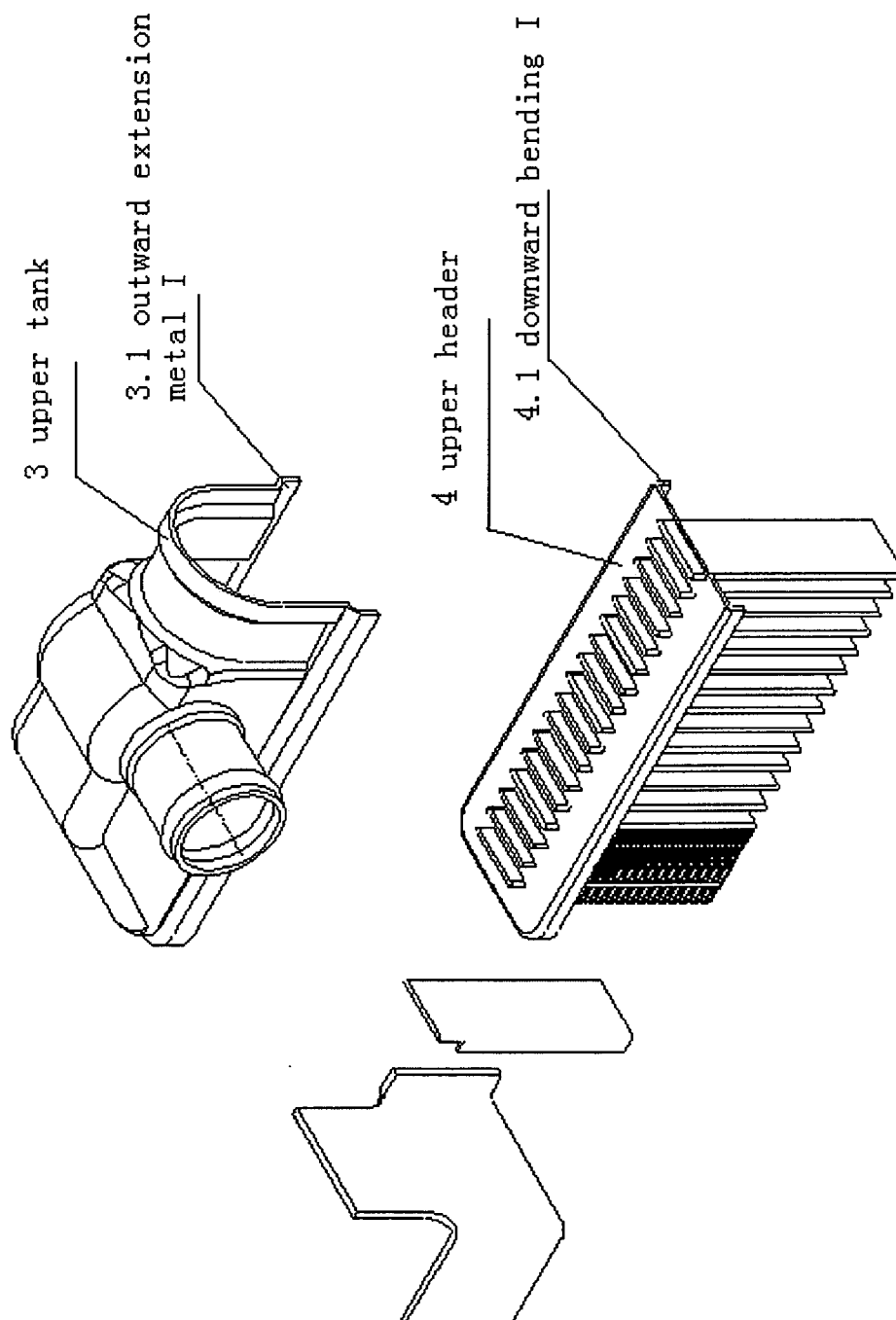
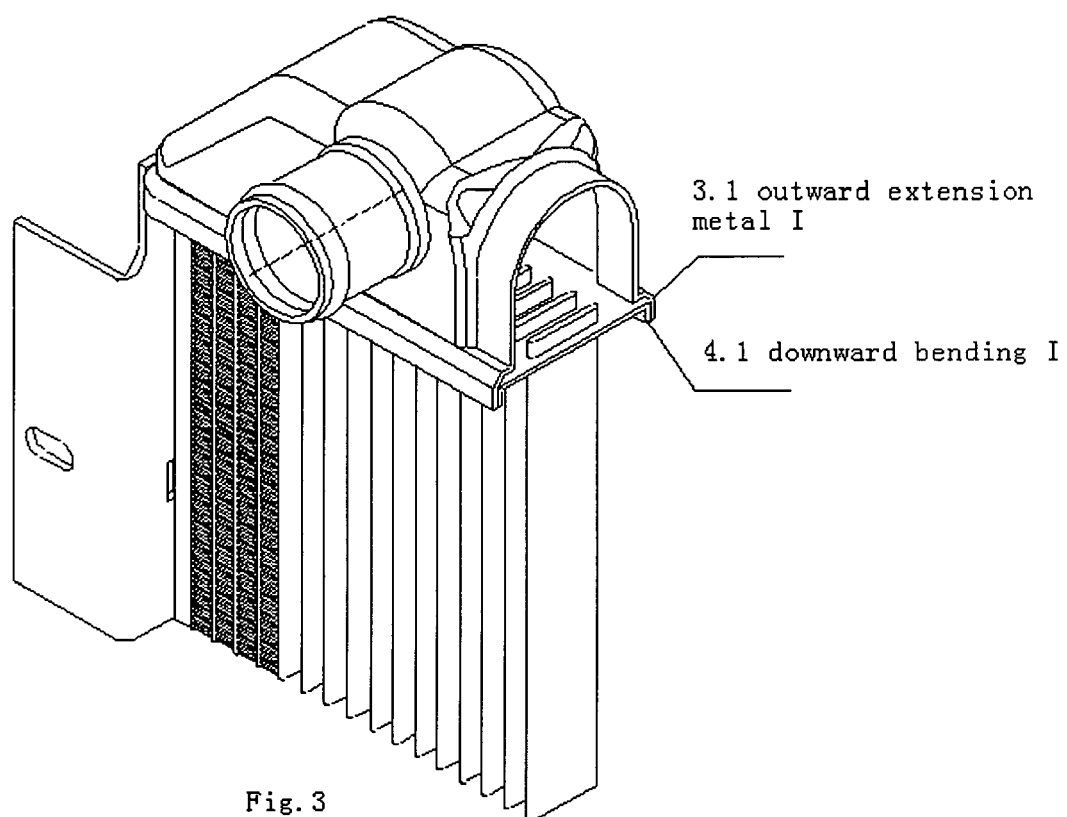


Fig. 2



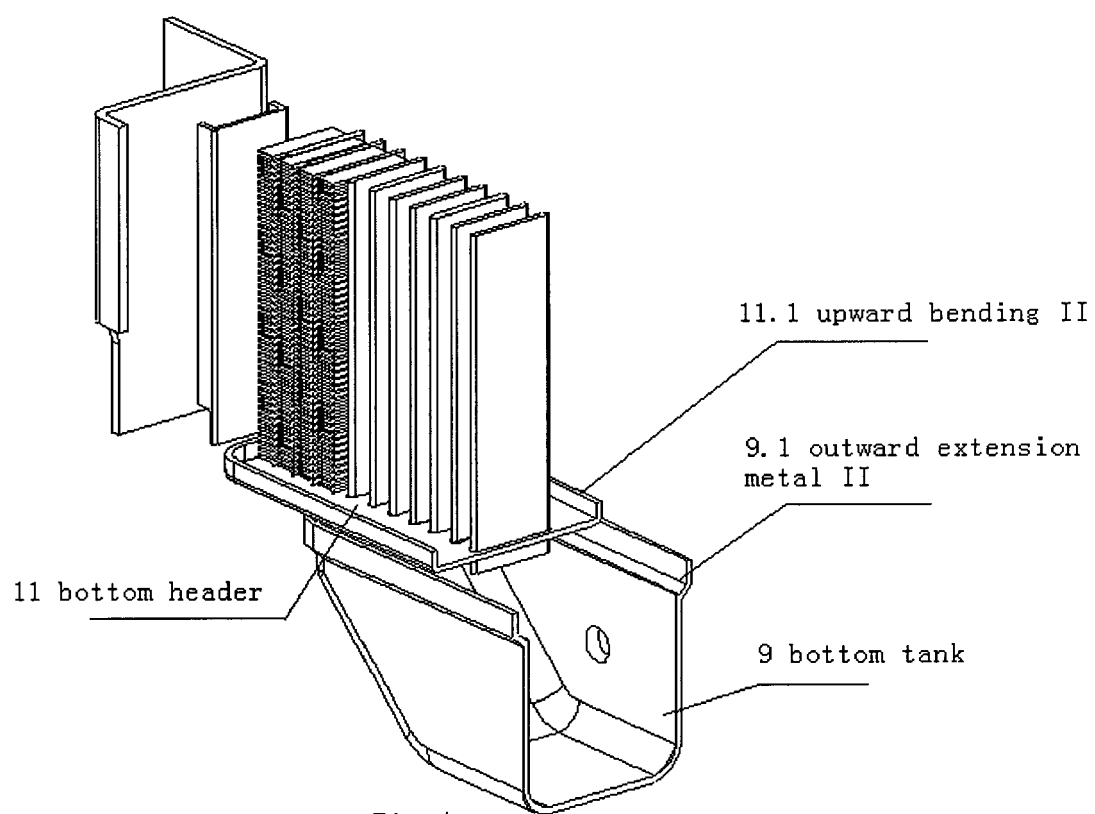


Fig. 4

