Feb. 2, 1932. J. C. NICHOLS 1,843,295

HEATER ASSEMBLY

Filed May 25, 1931

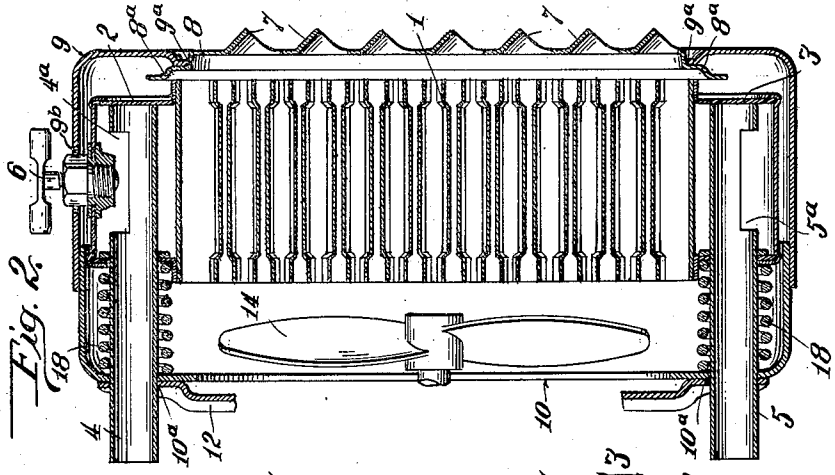


Fig. 2.

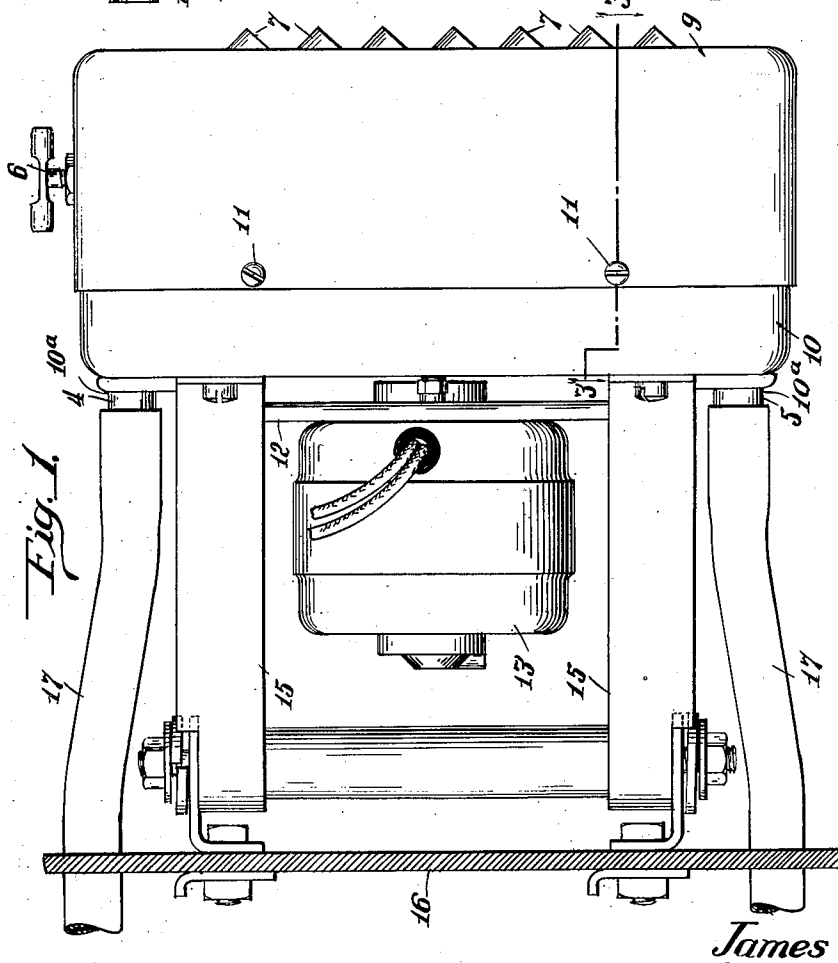


Fig. 1.

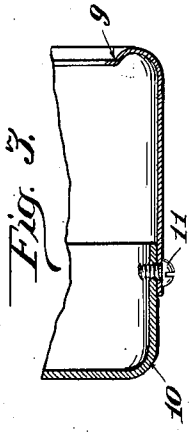


Fig. 3.

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Patented Feb. 2, 1932 1,843,295

UNITED STATES PATENT OFFICE

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HEATER ASSEMBLY

Application filed May 25, 1931. Serial No. 539,770.

My invention relates to new and useful improvements in heater assembly. More particularly my invention is directed to the hot water type of automobile heater which comprises a radiator core adapted to receive water from and return it to the cooling system of the automobile engine, and a fan or blower mounted behind it to force air from the car through the radiator core so that it becomes heated.

My invention relates to new and useful improvements in the assembly of the elements necessary for the construction of such a heater.

The principal object of the invention is to provide such a heater which may be easily assembled and taken apart.

Another object is to provide a novel combination of the necessary elements for such a heater that will be positively and firmly held in relative position when assembled, but are individually easily accessible for replacement or repair.

Another object is to provide such a combination that permits the radiator core to be securely held in position without subjecting the delicate parts thereof to undue pressure or stress.

Another object is to provide means for holding elements of the heater in assembled relationship cushioned against shock.

Numerous other objects and advantages of my invention will be apparent from the detailed description of the embodiment shown in the accompanying drawings.

Fig. 1 is a side elevation of such an assembled heater mounted in an automobile.

Fig. 2 is a central vertical section of the heater shown in Fig. 1.

Fig. 3 is a partial sectional view along line 3—3 in Fig. 1.

Referring now more particularly to the drawings, wherein like and corresponding parts are designated by similar reference characters throughout, 1 is the radiator core having headers 2 and 3, with inlet and outlet pipes 4 and 5, respectively extending therefrom, each supported by two walls of its header and having cut-away portions 4*a* and 5*a*, respectively, within the headers for supplying and discharging the water to and from the core. An air vent valve 6 is located in the top header 2. Air deflectors 7 are mounted on a rectangular frame 8 having a rectangular seat 8*a* adapted to receive the edges of one side of the core. A rectangular shell for partially encasing the core is composed of two parts 9 and 10, adapted to snugly fit one within the other and be held together by screws 11. Part 9 has a rectangular opening 9*a* in its face in which the frame 8 fits and through which the air deflectors 7 project, and a circular opening 9*b* in its top which allows the air vent valve 6 to extend therethrough. Part 10 has two circular openings 10*a* in its rear wall through which inlet and outlet pipes 4 and 5 respectively project when the unit is assembled. On part 10 of the shell is mounted a bracket 12 which supports the motor 13 which drives the fan 14. There are also mounted on 10 rearwardly extending brackets 15 for mounting the unit on the dashboard 16 in any desired manner. Flexible hose sections 17 connect the inlet 4 and the outlet 5 with the cooling system of the automobile engine. Coil springs 18 are positioned around inlet pipe 4 and outlet pipe 5 and are adapted to be compressed when parts 9 and 10 of the shell are fitted together, thus bearing against the headers 2 and 3 of the core 1 and holding the core securely in position against the frame 8, and the frame 8 securely in position within the edges of the rectangular opening 9*a*. The screws 11 are adapted to fit within holes in part 9 and to be threaded through corresponding holes in part 10. In this manner the unit is held in assembled position with the springs 18 compressed.

I claim:

1. A heater of the type described comprising a radiator core, a two part shell for partially encasing said radiator core, means for fastening said two parts together and spring means adapted to abut against one of said parts and one side of said core for holding the other side of said core in contact with said other part.

2. A heater of the type described comprising a radiator core having an upper and

lower header, an inlet pipe extending from said upper header, an outlet pipe extending from said lower header, a two part shell for partially enclosing said radiator core, means for fastening said two parts together, and spring means mounted on said pipes for holding said core in position.

3. A heater of the type described comprising a radiator core having an upper and lower header, an inlet pipe extending from said upper header, an outlet pipe extending from said lower header, a two part shell for partially enclosing said radiator core, means for fastening said two parts together and coiled springs mounted on and surrounding said pipes adapted to abut against the headers and one of said parts for holding said radiator core in position in contact with said other part.

4. A heater of the type described comprising a radiator core having an upper and lower header, an inlet pipe extending from and supported by two walls of the upper header, an outlet pipe extending from and supported by two walls of the lower header, a casing having a rectangular opening for partially enclosing said core, a closure for said casing, a rectangular frame adapted to fit within and extend without said rectangular opening, air deflectors mounted on said frame, means for fastening said closure and said casing together, and coiled springs mounted on and surrounding said pipes between said headers and said closure adapted to hold said frame in position against said casing and said core in position against said frame.

5. A heater of the type described comprising a radiator core, a two part shell for partially encasing said radiator core, means for fastening said two parts together, a frame, air deflectors mounted on said frame, and coiled springs mounted between said radiator core and one side of said shell for holding said frame against the other side of said shell and said radiator core against said frame.

6. A heater of the type described comprising a radiator core, a two part shell for partially encasing said radiator core, a rectangular opening in one side of said shell, a rectangular frame adapted to fit within said opening, air deflectors mounted on said frame, a seat within said frame adapted to receive the edges of one side of said radiator core, means for fastening said two parts together and coiled springs mounted between said core and the opposite side of said shell adapted to hold said frame in position in said opening and said core in the seat in said frame.

7. A heater of the type described comprising a radiator core having an upper and lower header, an inlet pipe extending from the upper header, an outlet pipe extending from the lower header, a casing having a rectangular opening, a closure for said casing, a rectangular frame adapted to fit within and extend without said opening, air deflectors mounted on said frame, a fan adjacent said core, a motor mounted on said closure for driving said fan, brackets secured to said closure for mounting said heater, means for fastening together said closure and said casing and coiled springs mounted on and surrounding said pipes between said headers and said closure adapted to be compressed when said closure is fastened to said casing so as to hold said frame in position within said rectangular opening and said core in position against said frame.

8. A heater of the type described comprising a radiator core having an upper and lower header, an inlet pipe extending from the upper header, an outlet pipe extending from the lower header, a casing having a rectangular opening, a closure for said casing, a rectangular frame adapted to fit within and extend without said opening, air deflectors mounted on said frame, a seat within said frame adapted to receive the edges of one side of said core, means for fastening together said closure and said casing and coiled springs mounted on and surrounding said pipes between said headers and said closure adapted to be compressed when said closure is fastened to said casing so as to hold said frame in position within said rectangular opening and said core in said seat in said frame.

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