No. 869,577. PATENTED OCT. 29, 1907.

V. LACING.

RADIATOR.

APPLICATION FILED FEB. 19, 1907.

Fig. 2.

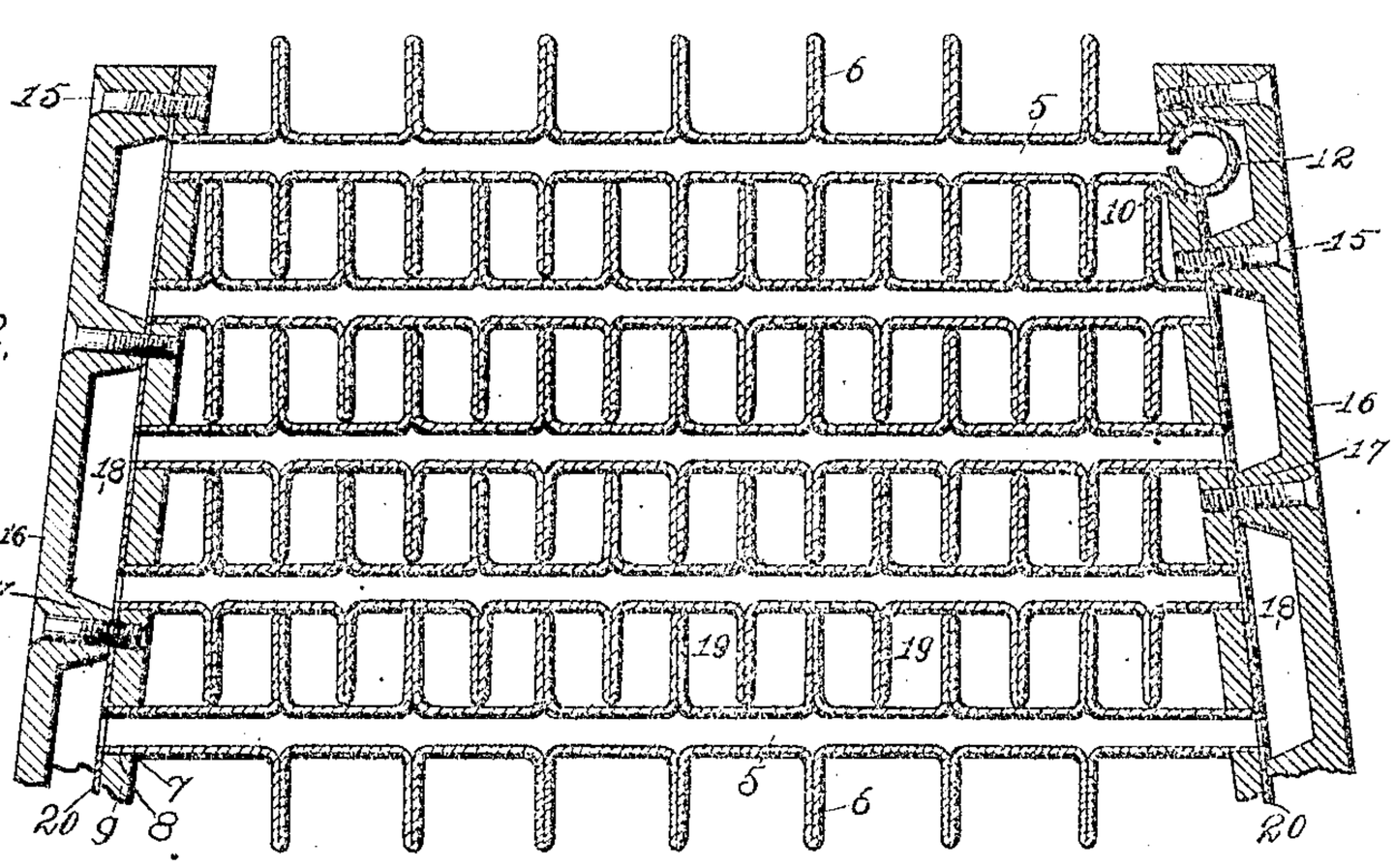


Fig. 1

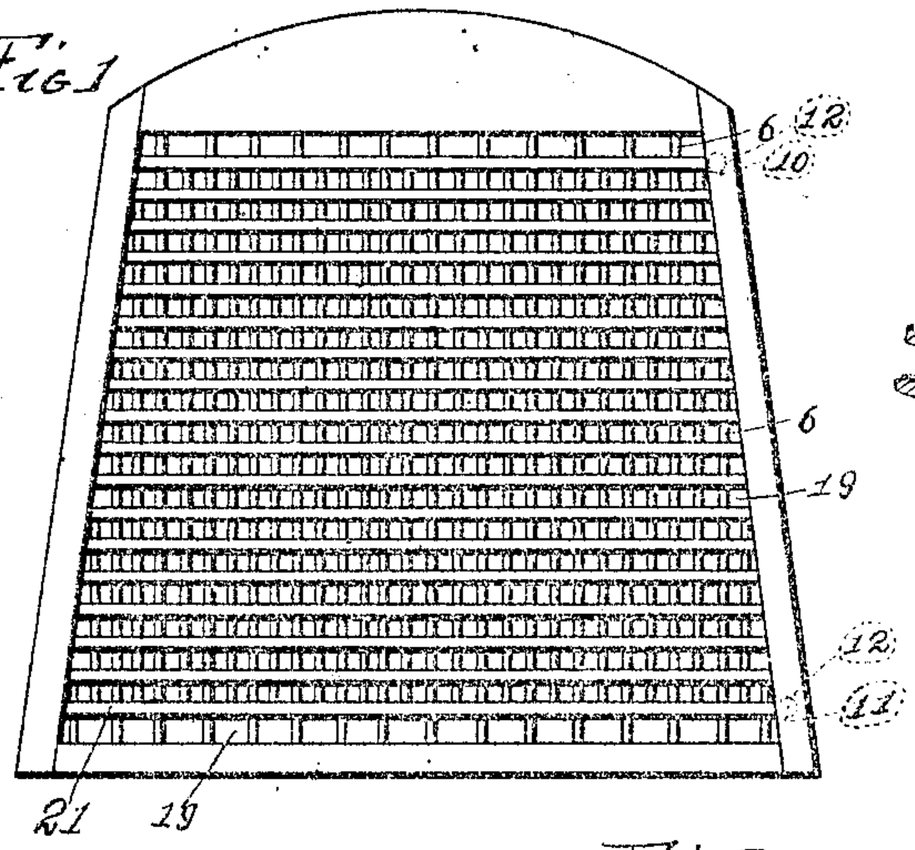


Fig. 4

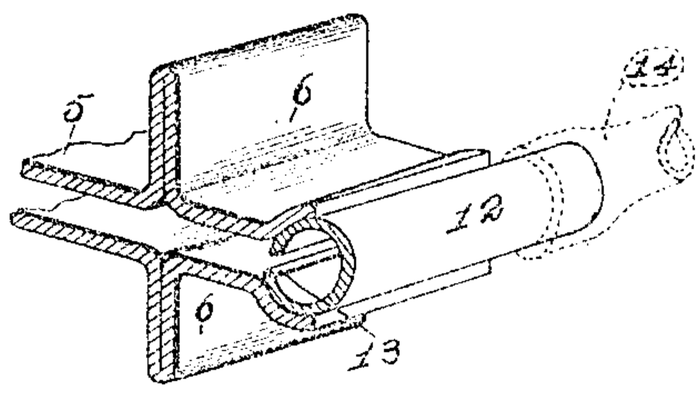
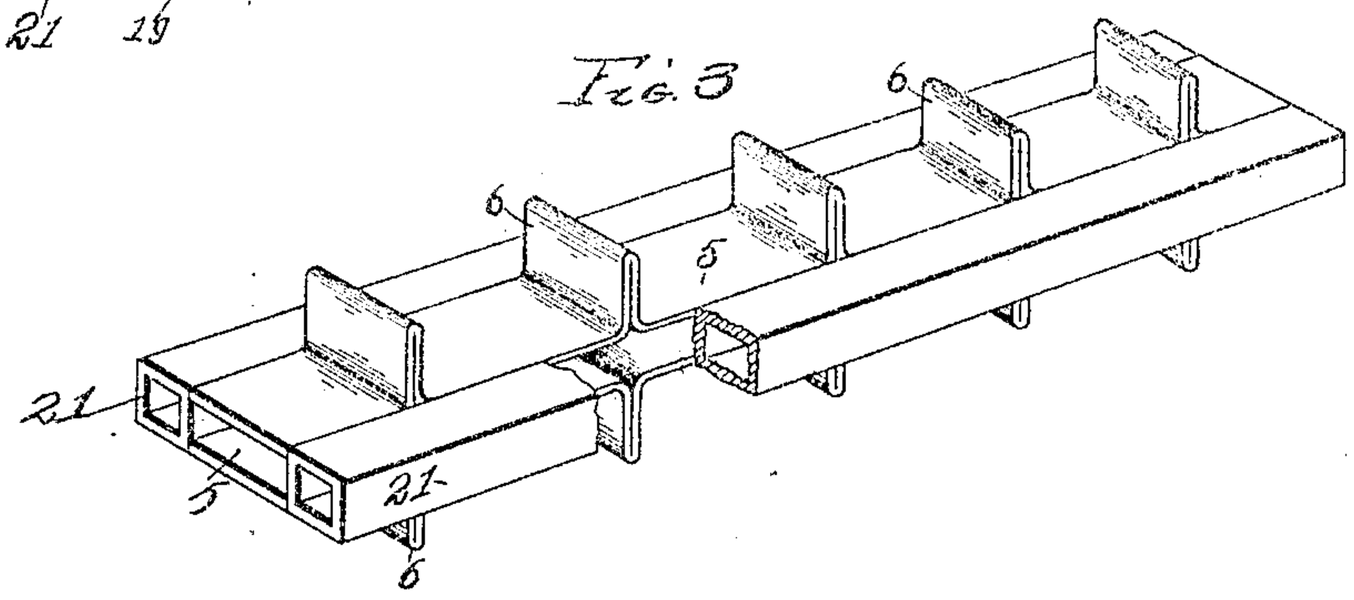


Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

VICTOR LACING, OF ST. LOUIS, MISSOURI.

RADIATOR.

No. 869,577. Specification of Letters Patent. Patented Oct. 29, 1907.

Application filed February 19, 1907. Serial No. 358,303.

To all whom it may concern:

Be it known that I, VICTOR LACING, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Radiators for Automobiles, of which the following is a specification.

This invention relates to improvements in radiators for automobiles, and consists in the novel arrangement, construction and combination of parts as will be fully hereinafter described and claimed.

The object of my invention is to construct a radiator of extremely thin sheets of metal, and so folded as to provide strengthening ribs and arranged to support one another.

A further object of my invention is to provide a radiator in the front end of an automobile body providing a large cooling area for the water used in the water jacket of the automobile motor.

In the drawings: Figure 1 is a front view of my complete invention, showing it in position in the front end of an automobile body. Fig. 2 is an enlarged detail sectional view of a portion of my radiator showing its construction. Fig. 3 is an enlarged detail perspective view of one of the coils of the radiator. Fig. 4 is an enlarged detail perspective view of the one end of the lower or upper coil showing the supply or discharge pipe connected.

In the construction of my invention I provide a plurality of coils 5 composed of thin sheets of material so bent and folded as to provide strengthening ribs 6, the ends 7 of said sheets being securely fastened in an elongated opening 8 formed in the walls 9, the ends 10 and 11 of the lower and upper coils are connected to a pipe 12 in any desirable manner, and the said pipes 12 are provided with an elongated aperture 13 through which the water circulates into and out of the radiator. To the ends of said pipes may be attached the supply pipes or tubing as indicated by the numeral 14 in Fig. 4, communicating with the tank and water jacket of the motor.

Against the walls 9 is attached by means of screws 15 a casing 16, being provided with a plurality of ribs 17 through which the screws 15 are passed and secured to the walls 9, and in said casing between said ribs are formed recesses 18 which act as elbows or passages for the water to pass from one coil to the other entering through the pipe in the lower coil and passing alternately through the coils and emptying into the pipe at the end of the upper coil.

The coils when placed together are so arranged as to have the strengthening ribs 6 so arranged as to form air passages or channels 19 and yet permit the ends of said strengthening ribs to contact with the under surface of the walls supporting the same.

In order to prevent leakage between the walls 9 and casing 16 I provide suitable packing material 20. The casing 16 is so arranged that when it is desired to clean the coils the same may be detached by removing the screws 15 and a swab inserted through the channels of each coil.

The edges of the sheets forming the coils are attached to stiffening frames 21 consisting of elongated metal boxes extending from wall to wall and the adjoining edges of the sheets and frame being hermetically sealed to prevent the leakage of the passing water. By constructing a radiator of thin sheets of material and in this form it will dispense with the use of pipes and thick metal and will provide a larger cooling surface and permit the cooling qualities to better penetrate.

Having fully described my invention, what I claim is:

1. A device of the class described comprising a plurality of coils formed of bent sheets, the bends acting as strengthening ribs, walls supporting the ends of said coils, a casing located on each end and secured to the walls, said casings provided with passages for directing the circulation of the water, and stiffening frames connected to the edges of the coils and supported by the walls, substantially as specified.

2. A radiator for automobiles, comprising a plurality of coils formed of thin sheeting material, the sheets so bent as to provide strengthening ribs whereby each coil supports the other, walls supporting the ends of said coils, a detachable casing secured to each wall for directing the circulation of the water through the coils, and a stiffening frame forming the edges of the coils, substantially as specified.

3. A radiator for automobiles, comprising coils, end walls, casings, and stiffening frames, said coils constructed of thin sheets, strengthening ribs formed by folding the sheets and arranged to form air channels when the coils are placed together, substantially as specified.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

VICTOR LACING.

Witnesses:
ALFRED A. EICKS,
WALTER C. STEIN.