W. WILKINSON.

RADIATOR.

APPLICATION FILED JAN. 30, 1909.

948,083. Patented Feb. 1, 1910.

Fig. 1

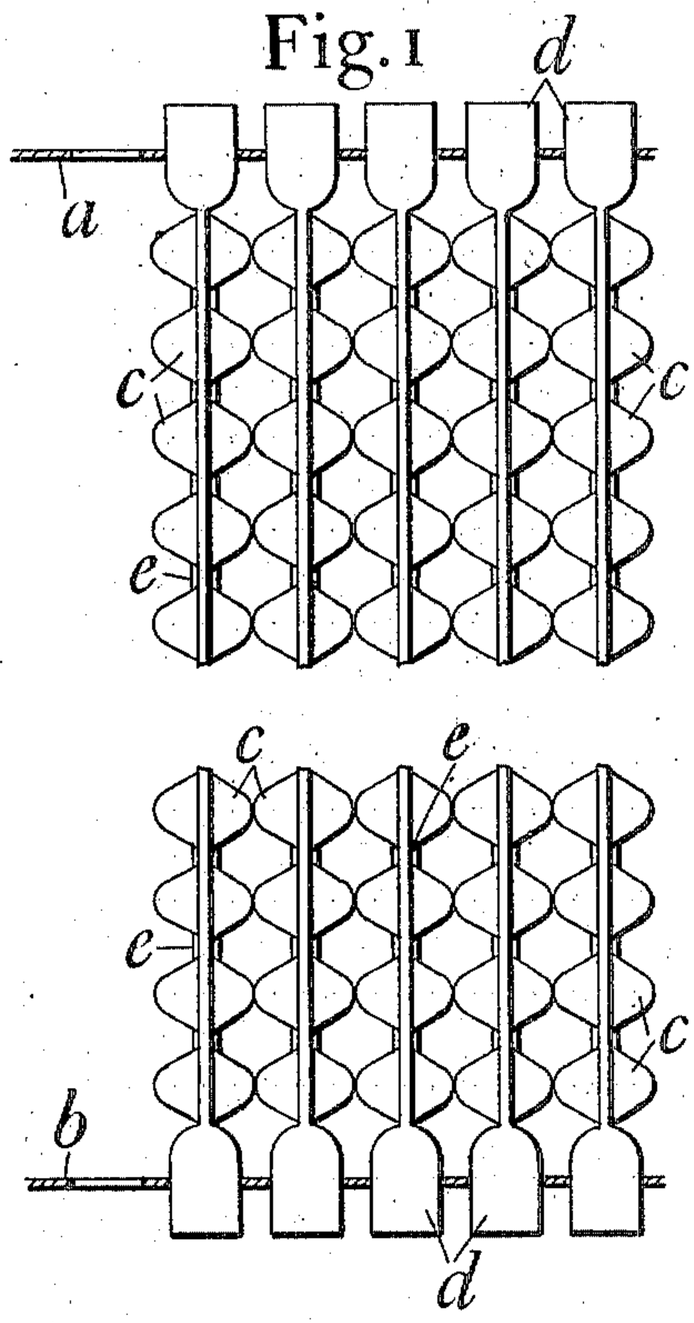


Fig. 2

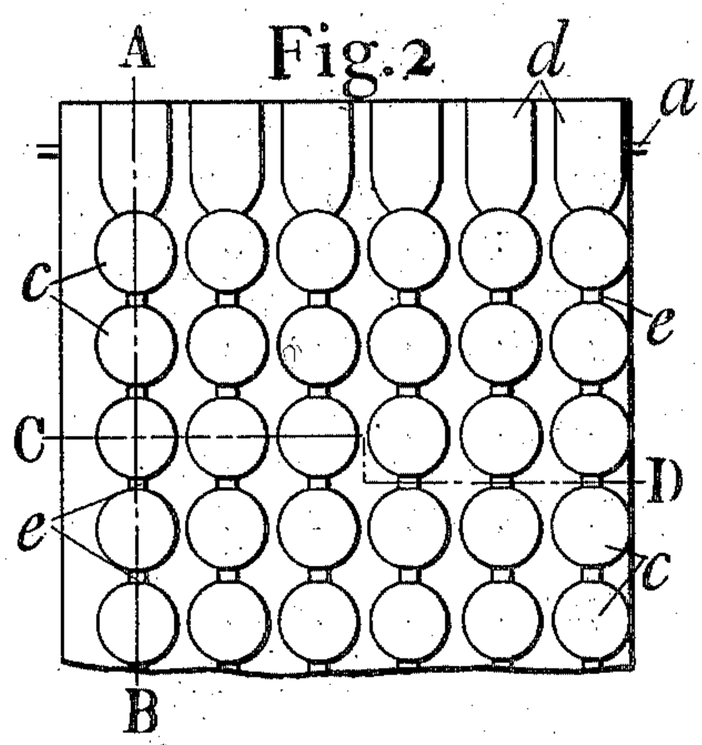
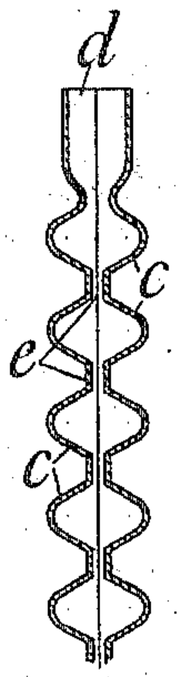


Fig. 3



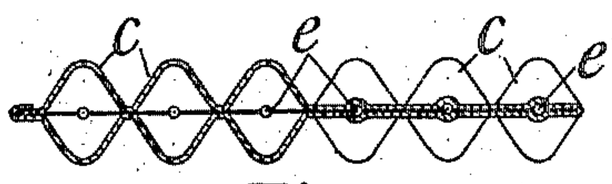


Fig. 4

WITNESSES

W. P. Burke

Wm. G. Smith

INVENTOR

William Wilkinson

BY Wm. G. Smith & Co.

ATTYS

UNITED STATES PATENT OFFICE.

WILLIAM WILKINSON, OF SALTLEY, BIRMINGHAM, ENGLAND.

RADIATOR.

948,083. Specification of Letters Patent. Patented Feb. 1, 1910.

Application filed January 30, 1909. Serial No. 475,202.

To all whom it may concern:

Be it known that I, WILLIAM WILKINSON, subject of Great Britain, residing at Adderley Road Rolling Mills, Adderley Road, Saltley, Birmingham, England, have invented new and useful Improvements Relating to Radiators for Use on Motor Road-Vehicles and Like Purposes, of which the following is a specification.

This invention relates to radiators for cooling the circulating water employed with motor cars to reduce the temperature of the cylinders, and for equivalent services, my object being to construct improved radiators of the type in which flat tubular elements with corrugated or like surfaces are employed.

Referring to the accompanying sheet of explanatory drawings:—Figure 1 illustrates in front elevation a portion of a radiator produced from tubes or elements made in accordance with this invention. Fig. 2 is a side elevation, Fig. 3 a longitudinal section on A. B. Fig. 2, and Fig. 4 a transverse section on C. D. Fig. 2, of a portion of one of my tubes.

The same reference letters in the different views indicate the same parts.

In the application of the invention as illustrated to the construction of a radiator for motor car service, I form each tubular element or water conduit from a rectangular strip of brass or other metal, of a length suitable for fitting between the ordinary upper and lower chambers or like portions of the radiator.

In Fig. 1 *a* and *b* respectively denote the plates of the upper and lower chambers to which the tubes or tubular elements are attached.

In any convenient and known manner and by means of ordinary press or other tools, hollow projections *c* of a teat like form are pressed out from the metal sheet to serve as lateral extensions. At its ends the plate is suitably shaped to provide tubular openings *d* and between the teats *c* short communicating channels *e* are formed.

The strip of metal having the projections as aforesaid is folded or doubled about its longitudinal center, and its edges are thus brought together. The edges are folded over as indicated at Fig. 4 and soldered or otherwise secured, but before such operation, a thin distance piece may be inserted between them, or other convenient means adopted for preventing actual contact of the folded portions other than along the edges as aforesaid. With the provision of the tubular openings *d* and channels *e* actual contact between the folded portions of the sheet does not, however, materially impair the effectiveness of the tube.

A number of tubular elements as aforesaid are grouped together as shown at Fig. 1, and by the abutment of the lateral hollow projections of the one tube against the similar projections of the adjacent tubes, effective external ducts or channels are formed for the passage of air currents.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

A tubular element for use in the radiators of motor road vehicles and like purposes, comprising a metal sheet formed with a single fold and having its edges opposite the fold secured together, hollow teat like projections arranged in horizontal and vertical rows and pressed up from one side of the sheet and situated opposite each other on the outer sides of the element, channels connecting the projections in the vertical rows, and tubular openings at the ends of the element communicating with the projections, substantially as set forth.

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

WILLIAM WILKINSON.

Witnesses:
JOHN MORGAN,
HARRY DAVID.