T. E. MURRAY.

SHEET METAL RADIATOR.

APPLICATION FILED DEC. 23, 1916.

1,302,201. Patented Apr. 29, 1919.

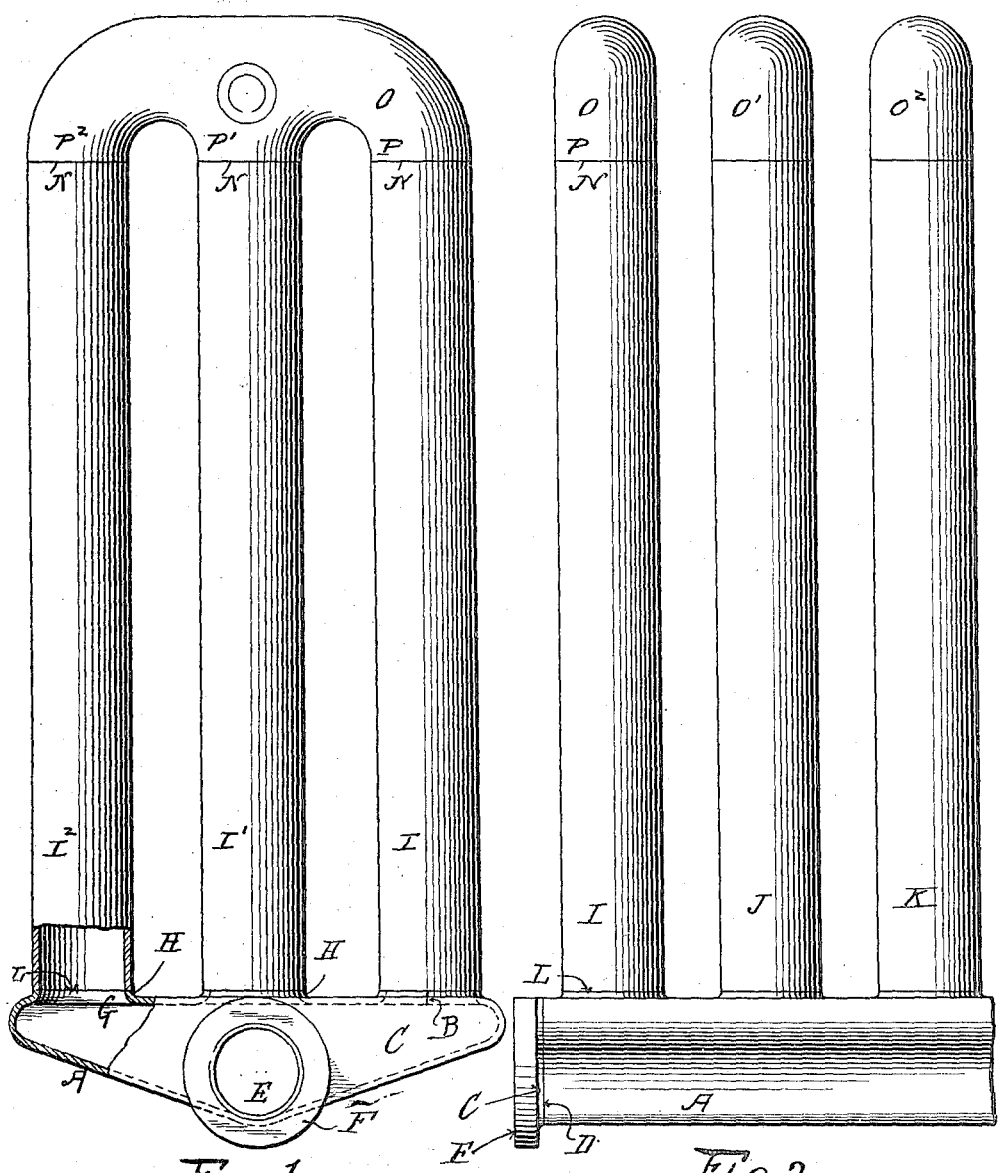

Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE.

THOMAS E. MURRAY, OF NEW YORK, N. Y.

SHEET-METAL RADIATOR.

1,302,201. Specification of Letters Patent. Patented Apr. 29, 1919.

Application filed December 23, 1916. Serial No. 138,599.

To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Sheet-Metal Radiators, of which the following is a specification.

The invention is a radiator integrally formed of sheet metal. A unitary and homogeneous structure is produced, which comprises tubes, a bottom member and a cap for said tubes, to which bottom member and cap said tubes are electrically welded at their opposite ends. The cap and the bottom member are formed by striking up, pressing or stamping the sheet metal. The parts being united by electrical welding become jointless, and the integral structure consequently produced is intended, as a unit, as a separate article of manufacture and sale.

In the accompanying drawings—

Figure 1 is an end elevation of my radiator, showing the lower end of one of the tubes and the adjacent part of the bottom connecting member in section. Fig. 2 is a side elevation of the radiator, showing three sections thereof.

Similar letters of reference indicate like parts.

The radiator is to be made wholly of sheet metal, struck up, stamped or pressed into shape.

The bottom member A is tubular in form and preferably substantially triangular in cross section. Said member is to be formed of a plate of sheet metal suitably bent or pressed, with its edges electrically welded, as, for example, at B. The ends of the member A are closed by heads C electrically welded at D to the edges of said member. In each head is an opening E having a flange F to which the inlet and outlet connections are to be attached. In the upper flat wall of member A are openings G, each opening being surrounded by an upwardly turned flange H. The radiator tubes I, J, K are electrically butt-welded at their lower ends at L to said flanges H. As here shown, said tubes are disposed in groups of three—as I, I′, I^2—and to the tubes of each group is electrically welded at N one of the hollow cap pieces O, O′, O^2. Each cap piece has three downward projections, P, P′, P^2 which register with and are electrically welded to the upper ends of the tubes.

This construction involves, besides the tubes, very few parts, each of which is cheaply and quickly produced by simply striking up, stamping or pressing the sheet metal. All portions of the radiator being united by electrically welded joints, the entire structure becomes practically one piece.

I claim:

As a new article of manufacture and sale, a radiator of sheet metal, comprising integrally a bottom member formed by bending a sheet of metal in tubular form and electrically welding the meeting edges, end closures for said bottom member having fluid inlet and outlet openings, and a plurality of separate tubes, the said bottom member having a flat upper surface with openings and upwardly extending flanges surrounding said openings, and the said tubes being electrically welded at their corresponding ends to said flanges.

In testimony whereof I have affixed my signature in presence of two witnesses.

THOMAS E. MURRAY.

Witnesses:

GERTRUDE T. PORTER,

MAY T. MCGARRY.