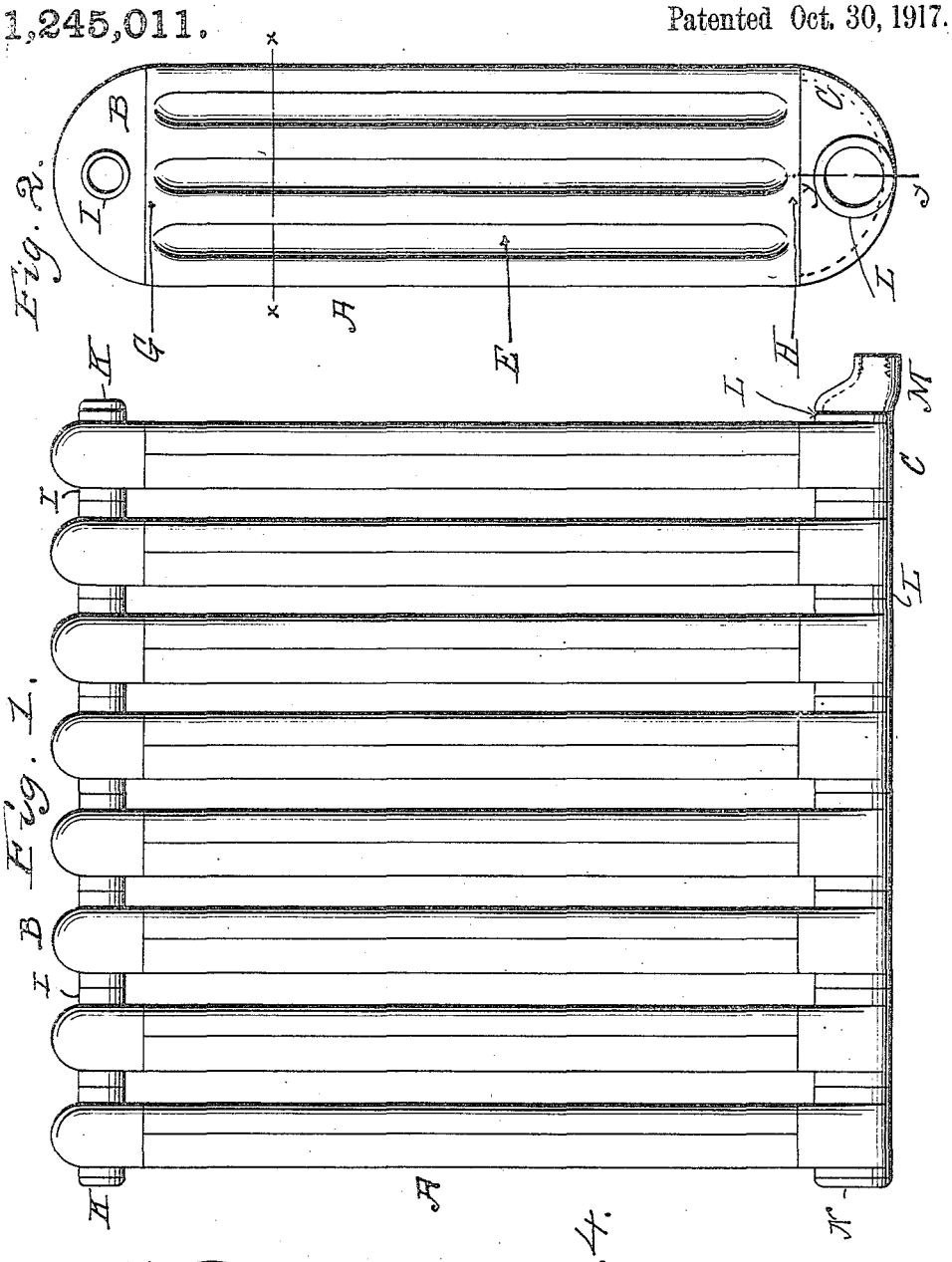
T. E. MURRAY.

SHEET METAL RADIATOR.

APPLICATION FILED JUNE 17, 1916.

1,245,011. Patented Oct. 30, 1917.



UNITED STATES PATENT OFFICE.

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

SHEET-METAL RADIATOR.

1,245,011. Specification of Letters Patent. Patented Oct. 30, 1917.

Application filed June 17, 1916. Serial No. 104,172.

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 formed of sheet metal, preferably steel, with its parts electrically welded together. The construction comprises a body or middle portion having parallel opposite walls, in which are made, by striking up the metal of said walls, internal elongated projections—the projections of one wall being electrically welded to the projections of the opposite wall to form internal ducts for fluid circulation. The ends of said middle portion extend beyond the ends of said ducts so as to form chambers in said middle portion, with which chambers said ducts communicate. Caps of cup-shaped form register at their edges with the end edges of said chambers and are electrically butt-welded thereto. On opposite sides of said caps are flanges surrounding openings in said caps.

In the accompanying drawings—

Figure 1 is a front elevation of a multiple radiator formed of a plurality of my radiators united as sections. Fig. 2 is an elevation of one of my radiators. Fig. 3 is a section on the line x, x of Fig. 2. Fig. 4 is a section of the lower end portion of my radiator on the line y, y of Fig. 2.

Similar letters of reference indicate like parts.

My radiator, as here illustrated, comprises a closed casing of sheet metal made in three parts—namely, a middle portion A and two end portions B, C. The portion A has opposite parallel walls, and may be formed by folding over the sheet and uniting its meeting edges at D by electric welding. In said opposite walls are made, by stamping or striking up, a number of inward projections E, and the projections on one wall are welded to the projections of the opposite wall, so that circulating ducts or passages F for fluid are thus formed within said middle portion. The projections E do not reach to the upper and lower edges of the middle portion A, so that chambers G, H are formed in the ends of said middle portion. With said edges register and to said edges are butt-welded the edges of the cup-shaped caps B and C. On opposite sides of cap B are integral flanges I, and on opposite sides of cap C are integral flanges L—said flanges surrounding openings in said caps. When a multiple radiator of several sections is assembled, as shown in Fig. 1, the flanges between the caps are butt-welded together. The outer flanges of the end sections may be covered by suitable caps K, which may be welded in place. Welded to the outer flange of an end section is a short tube M which is turned downwardly, and may be threaded to receive the usual valve connection. The outer flange of the other end section may be closed by a welded cap N.

I claim:

1. A radiator of sheet metal, comprising a body portion having in its opposite walls parallel registering projections electrically welded together to form ducts, the ends of said body portion extending beyond the ends of said projections, and cup-shaped caps registering at their edges with the end edges of said body portion and electrically butt-welded thereto.

2. A radiator of sheet metal, comprising a body portion formed of a single sheet of corrugated metal bent upon itself in flat tubular form and electrically welded at its meeting edges, the opposite walls of said body portion having parallel registering projections electrically welded together to form ducts, the ends of said body portion extending beyond the ends of said projections, and cup-shaped caps registering at their edges with the end edges of said body portion and electrically butt-welded thereto.

3. A radiator of sheet metal, comprising a plurality of parallel sections, each section comprising a body portion having in its opposite walls parallel registering projections electrically welded together to form ducts, the ends of said body portion extending beyond the ends of said projections, cup-

shaped caps registering at their edges with the end edges of said body portion and electrically butt-welded thereto, and flanges on opposite sides of said caps surrounding openings in said caps; the flanges of adjacent sections being electrically butt-welded together.

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

THOMAS E. MURRAY.

Witnesses:
GERTRUDE T. PORTER,
MAY T. MCGARRY.