

No. 677,764.

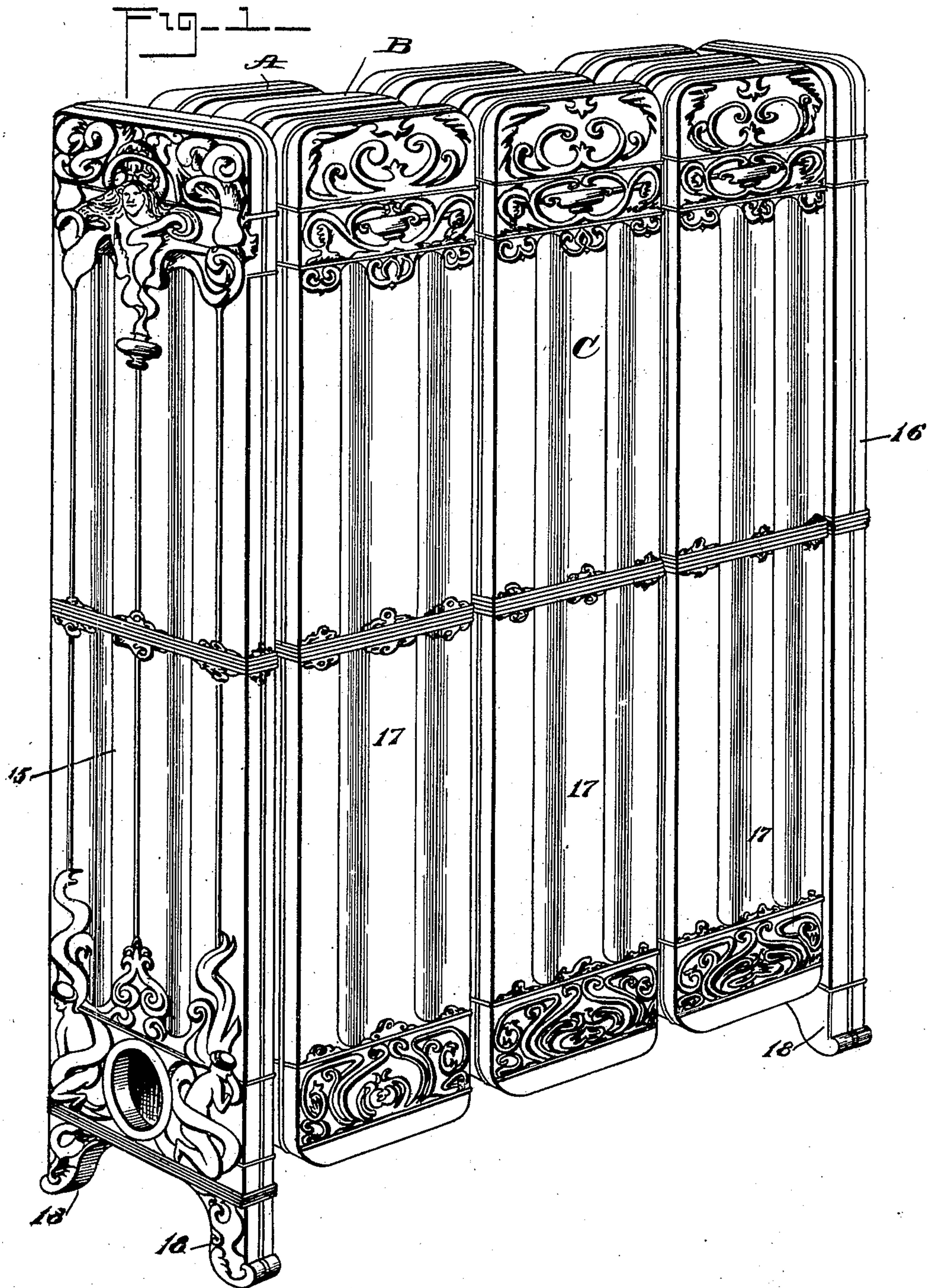
Patented July 2, 1901.

A. M. HEWLETT.
HEATING APPARATUS.

(No Model.)

(Application filed Oct. 13, 1900.)

3 Sheets—Sheet 1.



Witnesses

J. B. Weir
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Inventor

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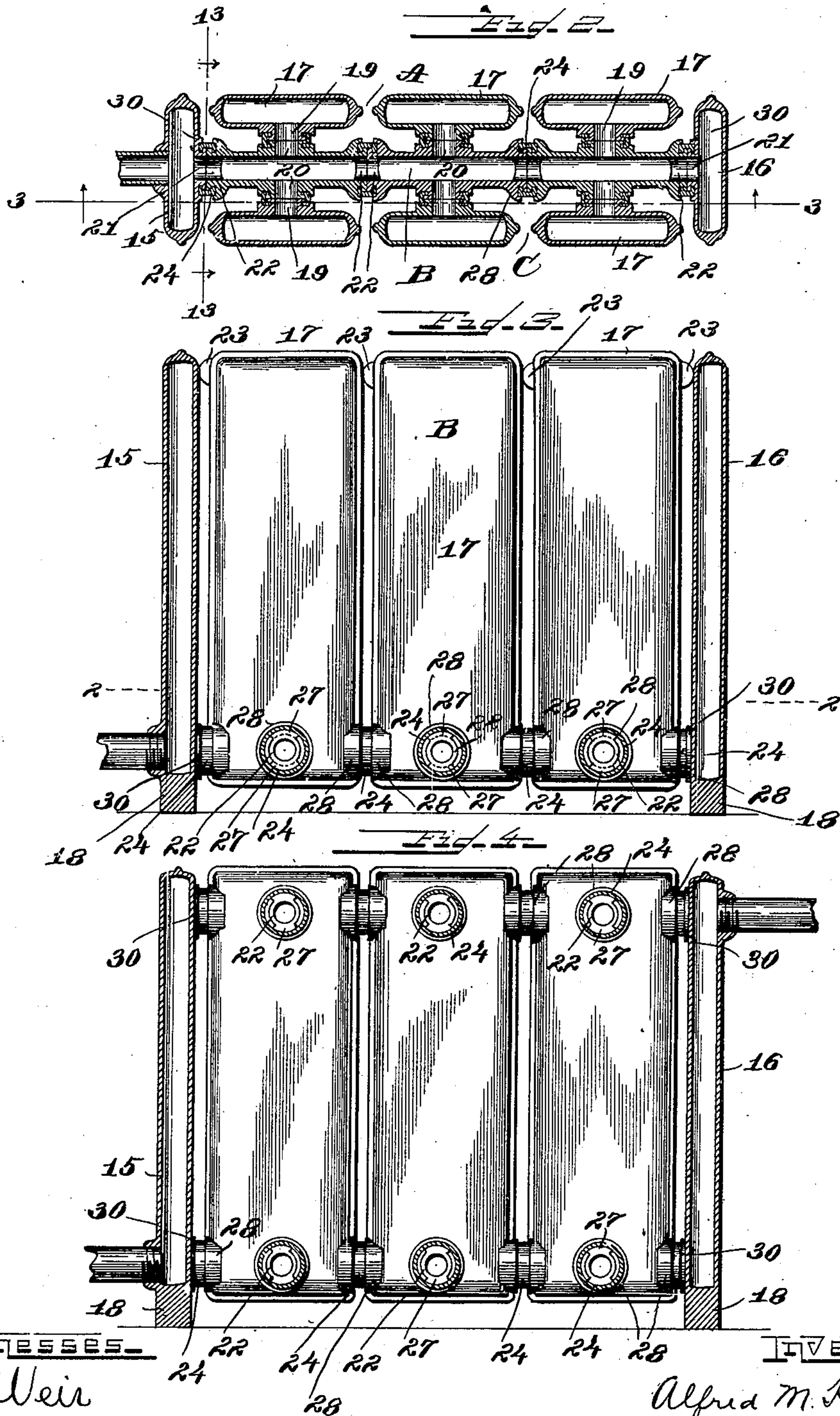
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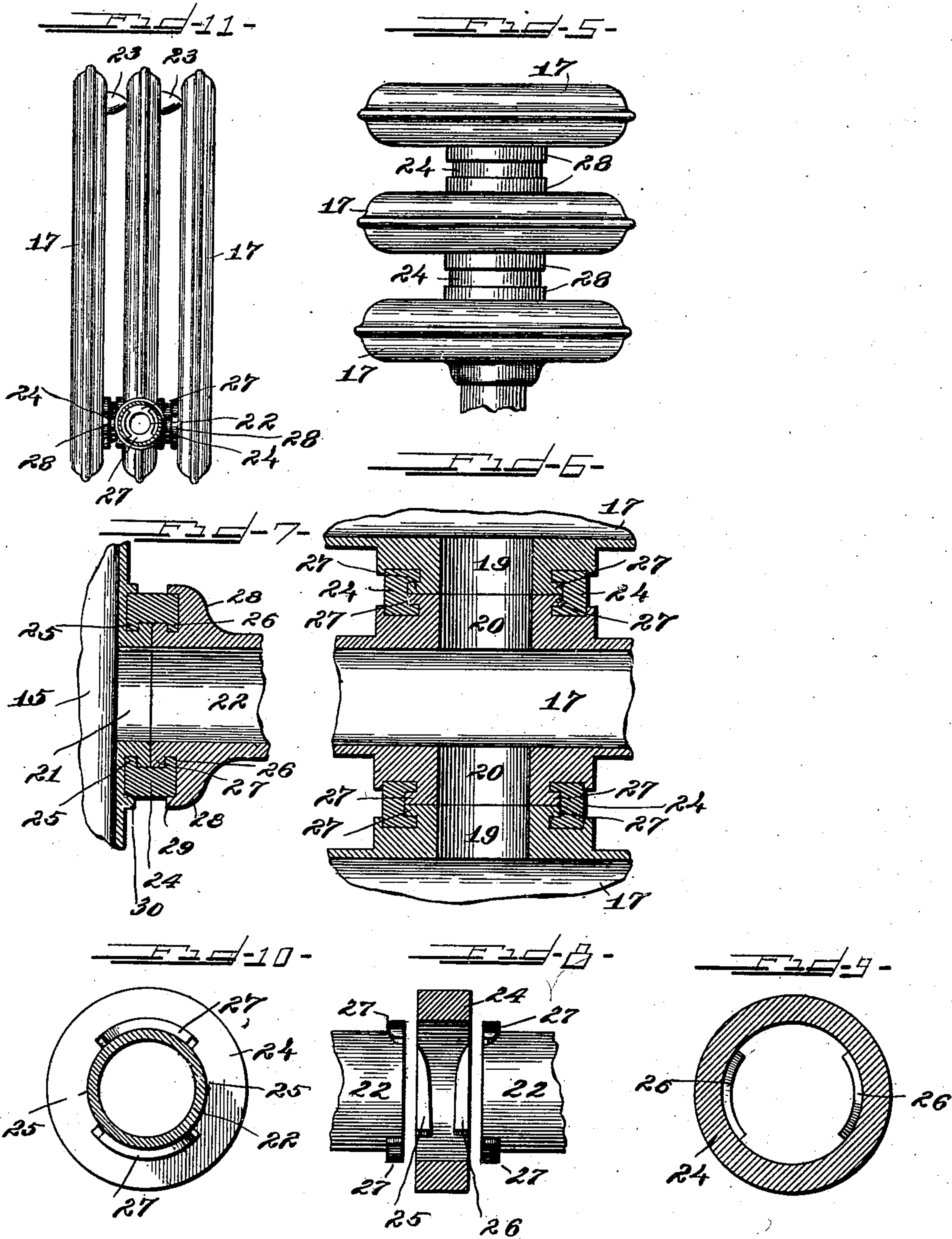
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UNITED STATES PATENT OFFICE.

ALFRED M. HEWLETT, OF KEWANEE, ILLINOIS.

HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 677,764, dated July 2, 1901.

Application filed October 13, 1900. Serial No. 32,955. (No model.)

To all whom it may concern:

Be it known that I, ALFRED M. HEWLETT, a citizen of the United States, residing at Kewanee, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Heating Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to heating apparatus, and has reference particularly to appliances used in steam and hot-water heating systems. In such systems it is customary to employ radiators made up of a number of separate
15 sections fixedly united together to form a radiator, through which the steam or water is conducted. The sections are usually oblong or elliptical in cross-section and are afterward secured together in order to provide for
20 varying the area of different radiators; but ordinarily each of the sections is made of a standard size. In practice heretofore it has been customary to form a radiator from such sections by taking the desired number of sec-
25 tions and securing them together between two end sections provided with legs or standards which support the entire radiator when completed, and such sections have been se-
30 cured together and to the end sections in such manner that the different sections were all in parallel planes with their narrow edges ex-
posed, making it impossible to decorate them to any considerable extent, as well as retard-
ing radiation.

35 The object of my invention is to provide an improved radiator the sections of which are coupled together in such manner as to present their broad surfaces outermost, making it possible to secure better decorative effects
40 as well as improved radiation; also, to provide a radiator composed of sections oblong in cross-section, certain sections being angularly arranged with reference to other sections and all being united by external coupling devices placed between each pair of sec-
45 tions.

In the accompanying drawings, Figure 1 is a perspective view of one of my improved radiators. Fig. 2 is a horizontal section on line
50 2 2 of Fig. 3. Fig. 3 is a longitudinal vertical section of a steam-radiator. Fig. 4 is a longitudinal vertical section of a hot-water

radiator. Fig. 5 is a plan view of an end section and several intermediate sections, showing the coupling devices. Fig. 6 is an
55 enlarged horizontal section of several radiator-sections, showing the coupling devices. Fig. 7 is an enlarged sectional view showing the coupling uniting one of the end sections with the hot-water or steam pipe. Figs. 8
60 and 9 are sectional views showing details of the coupling devices. Fig. 10 is an elevation of the same, and Fig. 11 is a section on line 13 13 of Fig. 2.

Referring to the drawings, 15 16 indicate
65 the end sections of a radiator, of which 17 indicates the intermediate sections. In the radiator illustrated in Fig. 1 the end sections are parallel with each other, the intermediate sections being arranged at right angles to the
70 end sections and parallel with the other intermediate sections. Each of the sections is in the form of an oblong square, and by the arrangement illustrated a radiator is formed the sides and ends of which present broad
75 surfaces, so that they afford ample opportunity for decorative effects and also are more exposed, so that radiation is facilitated. The end sections are provided with legs 18, which
80 support the radiator as a whole. The arrangement of the connecting devices by which the sections are united is best illustrated in Fig. 2, from an inspection of which it will be noted that the intermediate sections are con-
85 nected together and to the end sections by a series of projecting stubs or pipes, the stubs of adjacent sections abutting and being firmly clamped together, so that free communication
90 is afforded between the different sections composing the radiator.

In the radiator illustrated in Figs. 1 and 3 there are three rows of intermediate sections, each extending longitudinally of the radiator and each row being composed of three sec-
95 tions. For convenience of reference the sections will be indicated by reference-letters A B C, respectively. Transverse rows are formed by the sections in each of the longitudinal rows A B C, and the connecting de-
100 vices which connect the different rows are arranged transversely of the radiator, as shown in Fig. 2. For example, each section 17 in the row A is provided with a projecting stub 19 on its inner side near its lower end, which

is arranged to abut against a similar stub 20, projecting from the face of the opposite section in row B, and said stubs are closely clamped together by a binding device, which
5 will be hereinafter described. The same arrangement is found at the opposite side of the radiator, and the sections in each of the transverse rows are similarly connected together.

The end sections 15 16 are connected with
10 all the other sections by means of the intermediate row B, and the sections of the row B are connected in a series in a similar manner—that is to say, each of the end sections 15 16 is provided with a projecting stub 21,
15 which abuts against a stub 22, which projects from one edge of one of the sections in the intermediate row B, as shown in Fig. 2, said stubs being clamped together by appropriate clamping devices, as will be hereinafter de-
20 scribed. Where two sections of the intermediate row B are clamped together, their stubs 22 abut, as also shown in Fig. 2, and are similarly clamped together. It will be seen, therefore, that by the construction described
25 the hot water or steam in the end section 15 may pass into the section of the intermediate row B, which is connected thereto, and may thence flow into the remaining sections of the intermediate row, as well as into the sections
30 in the rows A and C.

Where the radiator is designed for steam heating, the sections are not connected at their upper ends, but are provided with the usual lugs 23 to hold them apart, as shown in Fig.
35 3. Where the radiator is intended for hot-water heating, connecting-stubs similar to those already described are provided at the upper ends of the sections, as illustrated in Fig. 4. The clamping devices by which the
40 stubs are connected are best shown in Figs. 5 to 11. They consist of a collar 24, adapted to fit upon the abutting ends of the stubs carried by the sections, said collar being provided on its inner face with lugs 25 26, two
45 pairs of said lugs being preferably provided. The lugs 25 are placed near one end of the collar 24, while the lugs 26 are placed near the opposite end, and both of said lugs are slightly tapered on their surfaces which lie
50 farthest from the ends of the collar, as shown in Fig. 8. The lugs 25 26 are oppositely inclined, so that they operate alike on their respective stubs. Each stub is provided near its end on its outer surface with a lug 27, as
55 shown in Fig. 8. The collar 24 when turned to bring its lugs 25 26 between the lugs 27 of one of the stubs 22 may be slipped upon said stub and may then be turned to carry its lug 25 or 26 back of the lug 27 of the stub, as
60 illustrated in Fig. 6, and when the stubs of two sections are brought together within the collar 24 by turning the collar to carry its lugs 25 26 back of the lugs 27, carried by the stubs, the inclined surfaces of said lugs 25 26
65 act as wedges to force the abutting faces of the stubs tightly into contact with each other

and bind them firmly in such position. The inclination of the lugs 25 26 is slight to increase their power and prevent liability to slip. The collars 24, which unite the differ-
70 ent sections, being mounted externally upon the stubs, are exposed and are readily accessible, so that the parts of the radiator may be readily assembled or separated. In assembling the parts all that it is necessary to do
75 is to bring the stubs of the sections to be united together within one of the collars 24, the collar being turned to proper position to permit such assembling, when by turning the collar about ninety degrees the stubs are
80 tightly forced together and a continuous coupling provided. Inasmuch as to separate the sections it is not necessary to insert a tool into the sections, the stubs may be located
85 at any desired points on the sections and couplings may be made at such points, and it is therefore possible to build up radiators of any desired shape or style.

In practice the inner portions of the stubs 22 are enlarged, as shown at 28 in Fig. 7, and
90 are provided with a projecting rim 29, which projects over the adjacent end of the collar 24, thus inclosing the end of the collar and providing a neater as well as a more secure construction. The enlargement 28 is usually
95 provided where the stubs project from the edges of a radiator-section, as illustrated in Fig. 7. Where they project from one of the side faces, a rim or flange 30 only is provided, as shown at the left in Fig. 7, the effect being
100 the same, as the surface of the radiator-sections serves in lieu of the enlargement 28.

It will be understood that the transverse rows of radiator-sections may be composed of two or more sections.
105

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. A radiator consisting of a plurality of separable end and intermediate sections having one dimension in cross-section longer
110 than the other, the intermediate sections being arranged in transverse rows and disposed angularly with reference to the end sections so that the side portions of the radiator are formed by the broad outer surfaces of the
115 sections at the ends of the transverse rows, and couplings connecting said sections, substantially as described.

2. A radiator consisting of a plurality of communicating end and intermediate radiator-sections, the intermediate sections being
120 arranged in transverse rows, the length of said rows being substantially equal to the width of said end sections and coupling devices connecting said sections, substantially
125 as described.

3. A radiator consisting of a plurality of communicating end and intermediate radiator-sections having one dimension in cross-section longer than the other, the interme-
130 diate sections being arranged in transverse rows, the side portions of the radiator being

formed by the broad outer surfaces of the sections at the ends of the transverse rows, the length of said rows being substantially equal to the width of the end sections, and
5 coupling devices connecting said sections, substantially as described.

4. A radiator consisting of a plurality of separable end and intermediate sections, the intermediate sections being arranged in trans-
10 verse rows, the length of said rows being substantially equal to the width of said end sections, each of said sections having a projecting stub or stubs, the stubs of the different sections being arranged to abut to form pipes
15 between adjacent sections, and an external rotatable collar fitting over the abutting ends of each pair of stubs, said collars having lugs adapted to engage corresponding lugs carried

by the stubs to bind the stubs together, substantially as described. 20

5. A radiator consisting of a plurality of separate radiator-sections, each having a projecting stub or stubs, the adjacent stubs being arranged to abut to form a pipe between the sections, an external collar adapted to fit
25 over the abutting ends of said stubs, said collar having lugs adapted to engage corresponding lugs carried by the stubs to bind said stubs together, and annular flanges carried by said sections and overlapping the
30 ends of said collar, substantially as described.

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Witnesses:

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