

Sept. 18, 1928.

1,684,512

T. OLINGER
FURNACE REGISTER

Filed July 20, 1925

2 Sheets-Sheet 1

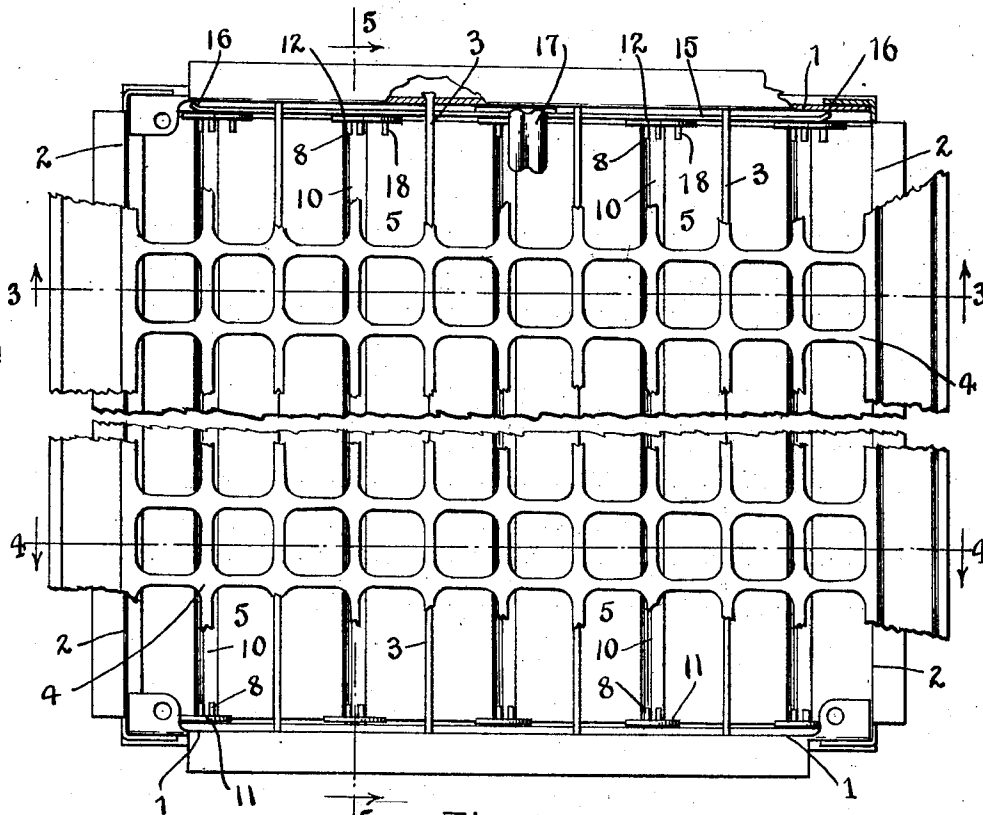


Fig. 1.

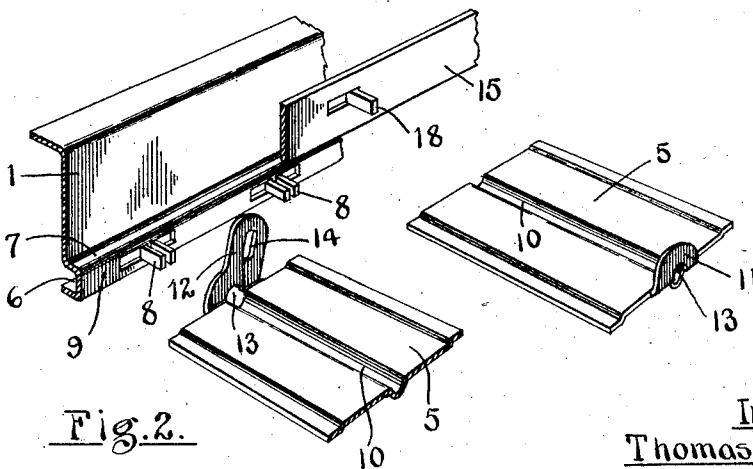


Fig. 2.

Inventor
Thomas Olinger
By Frank C. Linnane, Jr.
Attorney.

Sept. 18, 1928.

1,684,512

T. OLINGER

FURNACE REGISTER

Filed July 20, 1925

2 Sheets-Sheet 2

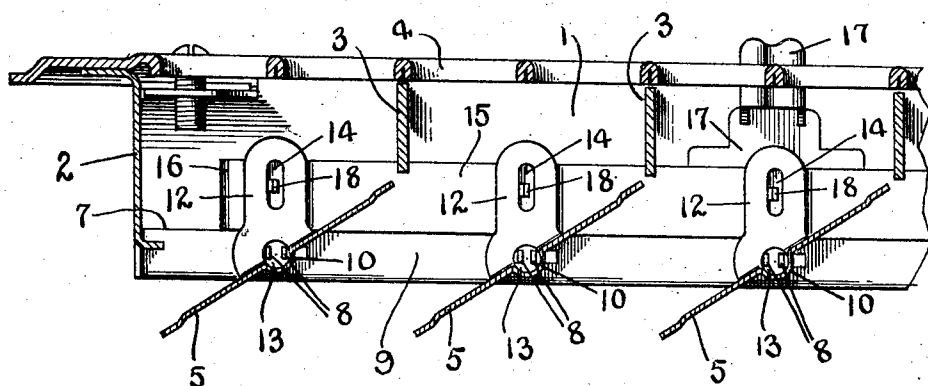


Fig. 3.

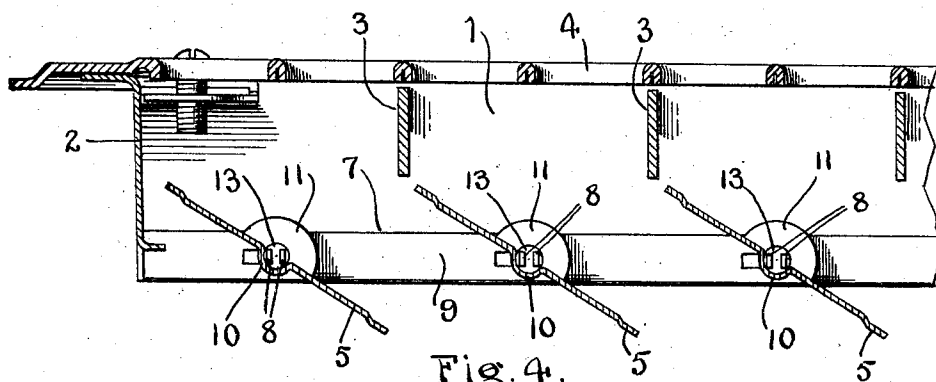


Fig. 4.

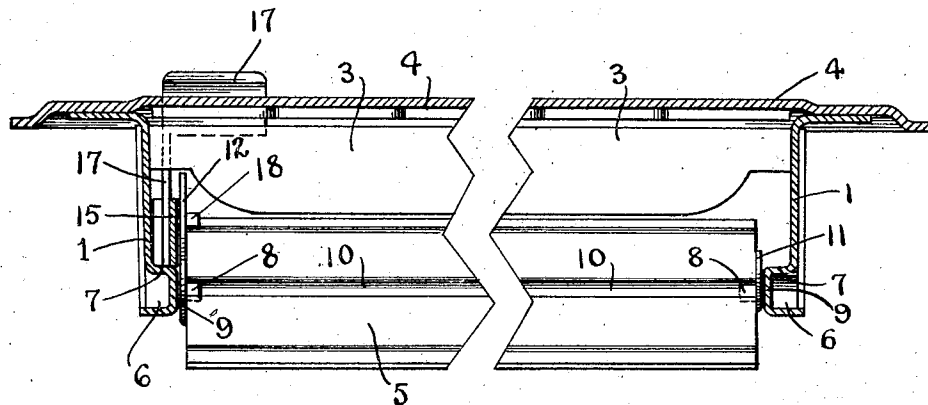


Fig. 5.

Inventor
Thomas Olinger
By Frank E. Livrance, Jr.
Attorney.

UNITED STATES PATENT OFFICE.

THOMAS OLINGER, OF HOLLAND, MICHIGAN, ASSIGNOR TO FEDERAL MANUFACTURING COMPANY, OF HOLLAND, MICHIGAN, A CORPORATION OF MICHIGAN.

FURNACE REGISTER.

Application filed July 20, 1925. Serial No. 44,657.

This invention relates to improvements in furnace register construction and more particularly to the mounting and operation of the shutters of the register.

5 The furnace register to which this invention applies is constructed entirely of sheet metal parts and the invention provides novel means for pivotally mounting the shutters of the register without using separate pivot
10 pins but by forming the pivots from the metal of the frame. The operating bar by which the shutters are actuated is also provided with novel features of construction by which it is connected with the shutters.
15 Various other novel features of construction and arrangement are also provided as hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which,
20

Fig. 1 is a plan view of a furnace register embodying this invention with parts removed and portions cut away.

25 Fig. 2 is a group of fragmentary perspectives showing various parts of the structure.

Fig. 3 is a fragmentary sectional elevation of one end of the device on the line 3—3 of Fig. 1.

30 Fig. 4 is a fragmentary sectional elevation of the opposite end of the device on the line 4—4 of Fig. 1, and

Fig. 5 is a sectional elevation with a part broken out on the line 5—5 of Fig. 1 substantially through the axis of one of the
35 shutters.

Like numbers refer to like parts in the different figures of the drawings.

The furnace register has the substantially rectangular frame comprising the end members 1 and the side members 2, preferably
40 joined at the corners by electric welding. Tie bars 3 extend between the end members 1 at spaced apart intervals to strengthen the frame and also to form supports for
45 the grating 4 which covers the frame.

The shutters 5, a plurality of which are located near the bottom of the frame, are pivotally mounted so that they may be moved from one position to another to open
50 or close the register. Each end member 1 is provided at its lower horizontal edge with an inwardly extending channel portion 6, the upper side 7 of which forms a horizontal

ledge. Pairs of lugs 8 are struck outward from the metal of the vertical face 9 of the channel portion at intervals coinciding with
55 the axis of each shutter 5, these pairs of lugs being arranged closely together to approximate the shape of pivot pins. Each shutter 5 has a corrugation or depression 10 extending
60 longitudinally at its axis and an ear 11 and lever 12 bent upward at right angles at each of its respective ends. A hole 13 is provided at the base of each ear 11 and lever 12 of proper size to receive a pair of
65 lugs 8, a part of the hole coinciding with the said corrugation, and each lever 12 is provided with a slot 14, this slot preferably extending angularly relative to the face of the shutters.
70

The operating bar 15, by which the shutters are simultaneously actuated to rotate upon their axes, is located at one end of the register slidably supported upon a ledge 7
75 between the end 1 and the levers 12. The respective ends 16 of the bar 15 are preferably bent toward the end 1 to space the main body of the bar 2 from the said end 1 which causes less friction in operation and also allows room for the pedal member 17
80 to extend between the bar 15 and the end 1 where it is attached to the bar. Lugs 18 are stamped at spaced apart intervals from the metal of the operating bar and extend through the slots 14 in the levers 12.
85

It will be seen that the pivotal mounting of the shutters by constructing the device in this way is extremely cheap and simple. The necessity of providing and attaching separate pivot pins is eliminated by forming
90 substitutes for such pins by the pairs of lugs 8 which are struck from the metal of the ends of the frame during the same operation by which the end of the frame itself is formed. Likewise the lugs 18 struck from
95 the metal of the operating bar 15 eliminate the necessity of separate pins or members for this purpose. The operating bar 15 needs no separate retaining means to hold it in place as it is supported upon the ledge
100 7 which is a part of the end member 1 and is kept in place between the said end member and the levers 12 of the shutters. The shutters themselves are simply formed from sheet metal by a stamping process and the
105 longitudinal corrugation 10 acts as a stiffen-

ing rib and also has a proper curvature at the respective ends to conform with the openings 13 through which the lugs 8 extend.

5 I claim:

1. A furnace register comprising, a sheet metal frame, pairs of lugs stamped from the metal of the frame and projecting therefrom, and shutters having openings each to receive one of said pairs of lugs and to be pivotally mounted thereon.

2. A furnace register comprising, a sheet metal frame having pairs of lugs stamped from the metal of the frame and extending inward from its respective ends, and shutters each having an ear at each of its respective ends, each of said ears being provided with an opening to receive a pair of lugs upon which the shutter is pivotally mounted.

3. A furnace register comprising, a sheet metal frame having pairs of lugs stamped from the metal of the frame and extending inwardly from its respective ends, and shutters each having a longitudinal corrugation at its axis, and an ear at each end turned upwardly from the depression of the corrugation and each ear having an opening at its base partly coinciding with said corrugation to receive one of said pairs of lugs upon which the shutter is pivoted.

4. A furnace register comprising, a sheet metal frame having pairs of lugs stamped from the metal of the frame and extending inwardly from its respective ends, shutters located between the ends of the frame and each having an ear at one end, and a lever at the opposite end, said ear and lever having an opening to receive one of said pairs of lugs upon which the shutter is pivoted, said lever also having a slot, and an operating bar having a plurality of lugs stamped from the metal of the bar and extending into the slots of the levers of the respective shutters.

5. A furnace register comprising, a sheet

metal frame having end members formed with inwardly extending horizontal ledges, pairs of lugs stamped from the metal of the frame at spaced apart intervals on the ends below the ledges and projecting inwardly, shutters, each having an ear at one end and a lever at the other end, each ear and lever having an opening to receive one of said pairs of lugs upon which the shutter is pivoted and each lever also having a slot above said opening, an operating bar located between one of said ends of the frame and the levers of the shutters and slidably supported upon one of said ledges, and lugs stamped from the metal of the operating bar and extending into the slots of the levers of the respective shutters.

6. A furnace register comprising, a sheet metal frame having pairs of lugs stamped from the metal of the frame and extending inwardly from its respective ends, an operating bar slidably operated, parallel with and adjacent one of said frame ends and having a plurality of lugs stamped from the metal of said operating bar, shutters formed from a single piece of metal having ears turned on each end with holes therein to receive said pairs of lugs on which the shutter is pivoted, one ear having an extended portion with a slot therein to receive one of the lugs of the operating bar, by which the several shutters are opened and closed simultaneously.

7. A furnace register comprising, a sheet metal frame having lugs extending inward from its respective ends and shutters each having a longitudinal corrugation at its axis and an ear at each end turned upwardly from the depression of the corrugation, and each ear having an opening at its base partly coinciding with said corrugation to receive one of said lugs upon which the shutter is pivoted.

In testimony whereof I affix my signature.
THOMAS OLINGER.