March 15, 1949. W. C. DE ROO 2,464,442

REGISTER CONSTRUCTION

Filed April 15, 1946 2 Sheets-Sheet 1

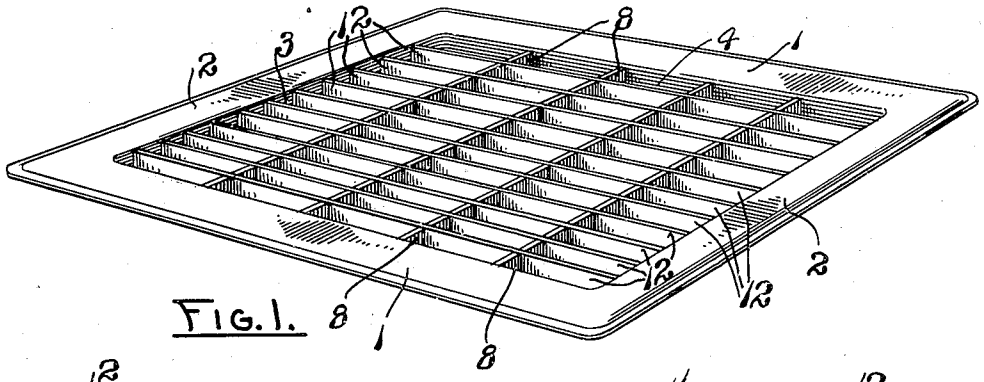


FIG. 1.

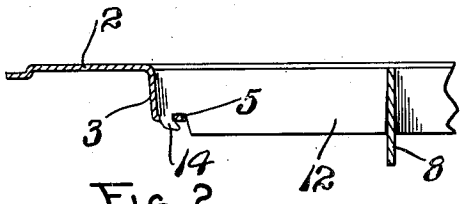


FIG. 2.

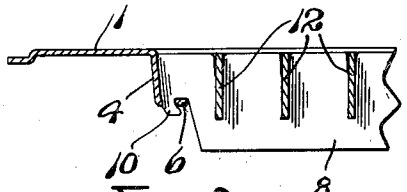


FIG. 3.

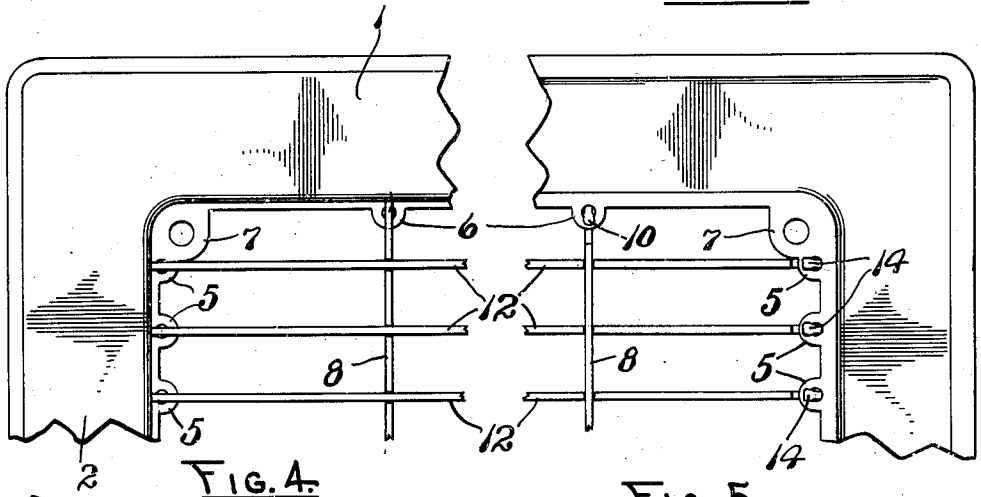


FIG. 4.

FIG. 5.

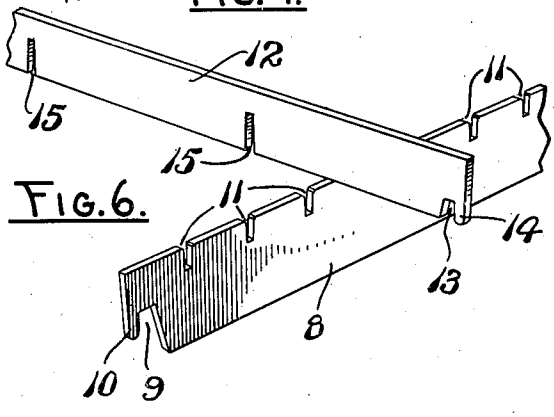


FIG. 6.

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REGISTER CONSTRUCTION

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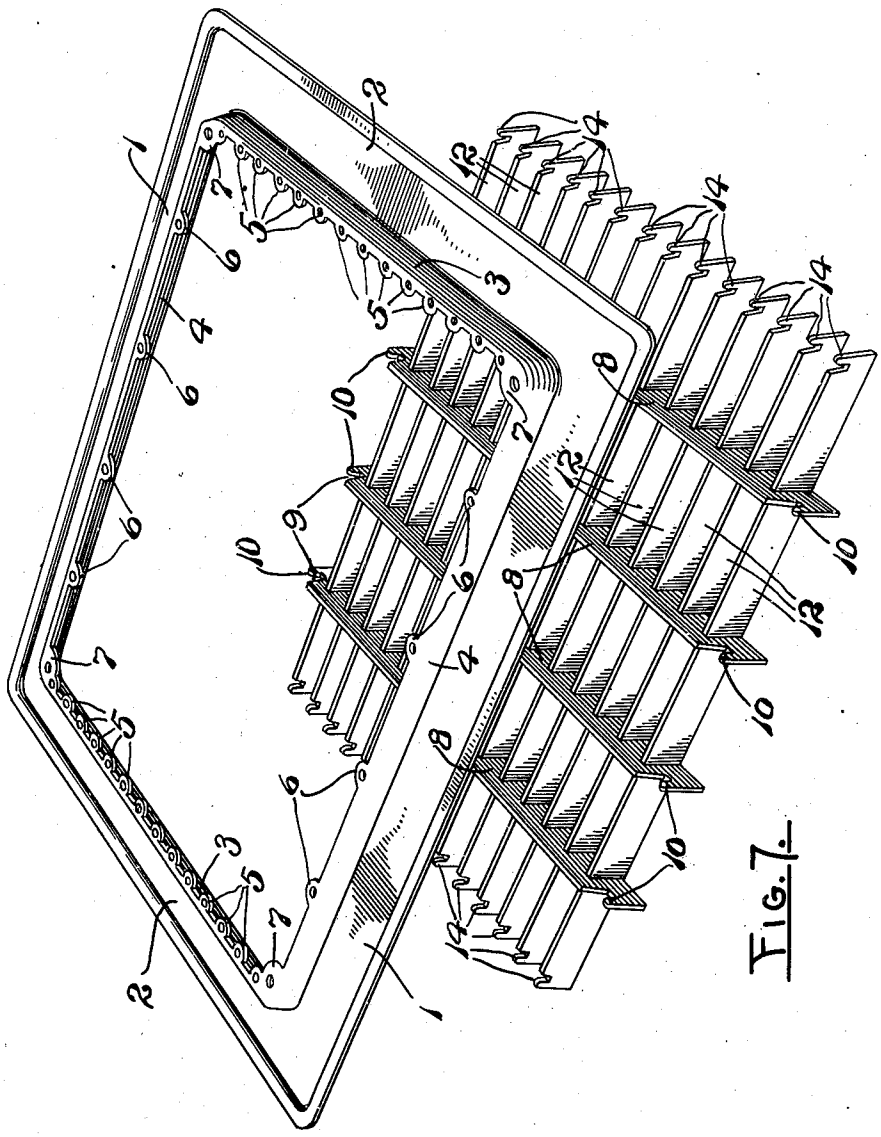


FIG. 7.

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Patented Mar. 15, 1949 2,464,442

UNITED STATES PATENT OFFICE

2,464,442

REGISTER CONSTRUCTION

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Application April 15, 1946, Serial No. 662,295

1 Claim. (Cl. 189—84)

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This invention relates to a register used in connection with openings through which air passes to or from a room, there being suitable conduits for conducting the air; for example, the register may be used at the outlets or inlets for hot or cold air passing from or to a furnace. There are other places of use of the register in addition to the one stated, and the invention is in no sense restricted to one place of use.

It is a primary object and purpose of the present invention to produce a register of the simplest,, most easily manufactured, and most economical character, one which is sturdy and durable and capable of withstanding years of service. Many registers for the same general purpose have been previously made, but it is an object of the present invention to build a better register of metal parts, all of which may be rapidly produced in a large quantity production, and assembled with a minimum of trouble and expense.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of the complete register made in accordance with my invention..

Fig. 2 is a fragmentary enlarged vertical section at one end of the register.

Fig. 3 is a similar section at a side thereof.

Fig. 4 is a fragmentary plan view at one corner of the register.

Fig. 5 is a similar under plan view.

Fig. 6 is a fragmentary perspective of end portions of the two types of cross bars used, and

Fig. 7 is an enlarged inverted perspective of the register frame and the assembled bar unit to be secured within the frame in the completed register.

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

The register frame is made from a single piece of sheet metal rectangular in form, having the interior portion thereof removed to make an open open frame having parallel spaced sides 1 integrally connected by parallel ends 2, the sides and ends lying substantially in the same plane and with their outer edge portions off-set as shown for reinforcement and better appearance. All of the sides and ends have flanges pressed in the same direction at an angle slightly greater than a right angle and at the inner edges of said sides and ends of the frame, as shown in Fig. 2, each of the ends 2 has a downwardly extending flange 3 and as in Fig. 3, each of the sides 1 a similar flange 4. Each of the flanges 3 at its free edge is provided with inwardly turned spaced ears 5,

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each having an opening through it and, similarly the flanges 4 have like ears 6 being of a less number than the number of ears 5. At the corners, relatively large ears 7 with larger openings through them are provided for the passage of screws or other securing means to connect the register to a conduit or retaining box or other support at an air inlet or outlet in which the register is located.

The open frame thus made has the interior, substantially rectangular opening filled with a register bar structure including flat metal bars extending across between the sides 1 and others extending between the ends 2 of the frame. The bars extending between the sides 1 of the frames are indicated at 8. Each of the bars 8 at each end, and at its lower corner has a portion cut away and an upwardly extending recess 9 provided, outwardly of which is a downwardly extending vertical finger 10. In the upper edges of the bars 8 narrow notches or slots 11 are cut, one for each of the bars which will extend between the ends 2 of the frame.

The bars extending between the ends 2, indicated at 12, are narrower in width than the bars 8 and at each end and at the lower side an upwardly extending notch or recess 13 is cut leaving a downwardly extending end finger 14. Each of the bars 12 at its under side at spaced distances is notched or slotted upwardly as at 15, each of the bars 12 having as many of the slots 15 as there are bars 8 disposed at right angles to them.

The several bars 8 and 12, there being more of the bars 12 than of the bars 8, are placed together at the notches or slots 11 and 15 in the usual manner to make an assembled bar unit, best shown in Fig. 7. When thus assembled, the depth of the slots 11 and 15 and the notches or recesses made at 9 and 13 bring all of the upper edges of said bars 8 and 12 flush with each other in the same plane, and all of the free ends of the fingers 10 and 14 likewise in a common plane. The ears 5 and 6 are in the same plane.

The assembled bar unit shown at the lower part of Fig. 7 is merely inserted in the open frame with the fingers 10 passing through the openings of ears 6 and the fingers 14 passing through the openings in the ears 5. Then by striking the projecting ends of the several fingers 10 and 14, smashing them down and upsetting the metal, a permanent, secure and rigid connection is made, all of which may be accompanied at one stroke of a punch press.

It is apparent that the frames may be produced in large numbers from flat sheet metal by punch

press operations, the bars 8 and 12 in the same way, the bars assembled into a register unit and all connected simultaneously with the frame, as described. If desired the plurality of ears 5 which support the ends of the grill bars may be made in the form of continuous flanges for the same purpose. This makes an especially economical, sturdy and dependable register; one very simple in structure, very easily and economically processed.

The invention is defined in the appended claim and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

A register comprising a single piece sheet metal frame having a face, inner depending side walls and flanges extending inwardly from the lower edges of said side walls, said flanges having a plurality of spaced openings, and a grille composed of a plurality of crossed, spaced bars located within said frame, the ends of said bars resting on said flanges and provided with fingers extending through the openings in the flanges, the fingers being clinched against the undersides of said flanges.

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