

1,348,360.

Patented Aug. 3, 1920.

Fig. 1.

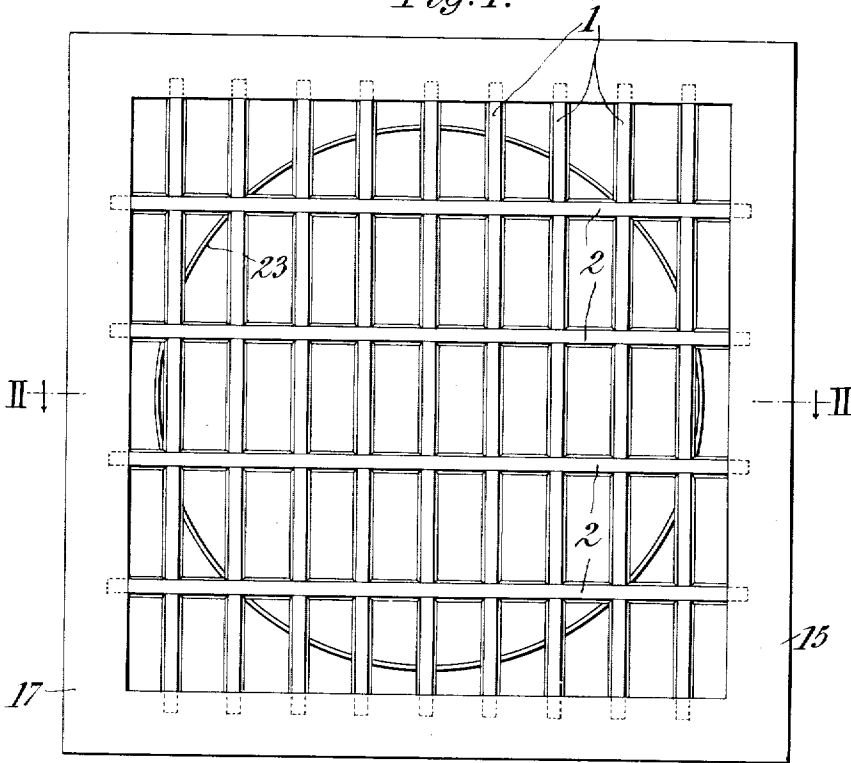


Fig. 2.

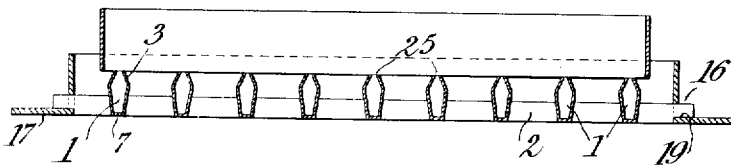
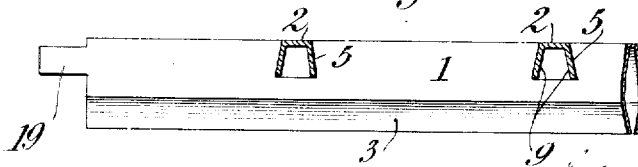


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD DAWSON HOWELL, OF SPRINGFIELD, NEW YORK, ASSIGNOR TO TUTTLE
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REGISTER OR GRILL.

1,348,360.

Specification of Letters Patent.

Patented Aug. 3, 1920.

Application filed December 10, 1919. Serial No. 343,863.

To all whom it may concern:

Be it known that I, EDWARD DAWSON HOWELL, a citizen of the United States of America, residing in Springfield, Long Island, in the county of Queens and State of New York, have invented certain new and useful Improvements in Registers or Grills, of which the following is a specification.

This invention relates to improvements in registers or grills, or the like, and aims to provide improvements therein.

The present invention provides a register or grill which may be to a large extent formed of relatively light sheet metal, and which at the same time will have relatively great strength, enabling the register or grill to bear considerable weights or loads when placed in floor openings.

This feature of strength provided by the present invention is of primary importance in registers or grills for large floor openings, such for example, as the openings used in conjunction with the so-called "pipeless" hot air furnace.

The invention further provides a grill or register structure which is of simple construction and readily and cheaply manufactured.

The invention further provides a grill structure made in large part of sheet metal, which has the appearance of cast metal and the appearance of strength.

The invention further provides a register or grill formed in large part of sheet metal, wherein much of the waste incidental to previous registers formed in part of sheet metal is eliminated.

The invention further provides a register or grill work combining a maximum of strength with a maximum percentage of outlet space or opening.

The invention further provides a construction formed in large part of sheet metal, wherein the necessity for reinforcement is to a large extent eliminated.

Other features of improvement will be hereinafter set forth.

An embodiment of the invention is illustrated in the accompanying drawings.

Figure 1 shows a top plan view of a grill or register, embodying the invention, in the form in which it is used as a cover for a floor opening of relatively large size used in conjunction with the air pipe of a so-called "pipeless" furnace.

Fig. 2 is a sectional projection shown in Fig. 1, the section being on the line 2—2.

Fig. 3 is a detailed view illustrating the joint between the cross bars.

In said drawings, numeral 1 designates a series of hollow strips; numeral 2 designates a series of cross strips, which are also preferably hollow.

The strips 1 are preferably in the form of channel bars which are elongated in cross section, and in which the edges of the strips are bent inward toward one another, as indicated at 3. The strips 1 are most conveniently formed by rolling or bending from strips of sheet metal. The thickness of the sheet metal may be relatively small, sheet metal of No. 20 gage being satisfactorily employed for registers for floor openings up to a relatively large size.

For receiving the cross strips 2, the strips 1 are provided with a series of notches 5, preferably dove-tailed, and preferably extending inward from the closed side 7 of the strips 1. The strips 1 are made of considerable height, and the depth of the notches may be, within the limits of good design, from one-third to one-half of the height of the strips 1.

The cross strips 2 are preferably formed of sheet metal, and are in the form of channel bars, the strips 2 being inserted within the notches 5 of the strips 1, having their sides 9 spread to fill out the notches 5. Pressure upon the notched side of the strips 1 causes the strips 2 to be gripped in the notches, the strips 1 and the cross strips 2 being by the construction described well interlocked.

The channel bars or cross strips 2 are preferably of a height corresponding to the depth of the notches 5, being thereby readily formed by rolling or bending a long narrow strip of sheet metal. The cross strips 2, if desired, may be made of lighter metal than the strips 1.

The closed sides or faces of the strips 1 and 2 are preferably flush upon the upper or outer side of the grill or register, so that the said face of the register may be level. The flush upper sides of the strips also facilitate certain manufacturing operations, such as the polishing of the face of the grill when the strips have been coated or electroplated.

The grill may be fitted within a frame 15,

this frame being preferably formed of angle iron. A series of holes 16 may be provided in one of the webs of the angle iron, and the ends of the strips 1 and 2 fitted within these holes 16. In order that the strips 1 and 2 may be flush with the upper or outer face 17 of the frame, the said ends of the strips are conveniently notched, as indicated by the numeral 19. The ends of the strips 1 and 2, after passing through the holes 16, may be upset or spread so as to fasten them to the angle iron frame.

On the under side or inner side of the grill, where the grill is to be employed in conjunction with a pipeless furnace or the like, there is provided a collar 23 for making a slip joint with the air tube of the furnace. The collar 23 is preferably soldered to the strips 1 as indicated by numeral 25, and the collar 23, thus connected to the strips 1, serves as a reinforcement for the grill.

The grill is of relatively great strength, owing to the elongated shape or cross section of the strips 1. Moreover, by reason of the fitting of the cross strips 2 in the dove-tailed notches, a secure joint is made, which joint becomes tighter the greater the load upon the grill.

The strips 1 and 2 of the grill, having considerable depth, present the appearance of strength and of cast metal. The strips 1 and 2, being narrow, provide, with a minimum weight of metal, a maximum outlet or opening therethrough.

As compared with grills or registers stamped out of a single sheet of sheet metal, the present grill may be made of very much thinner sheet metal, may be much stronger, and does away with much waste due to the cutting out of the openings from the sheet metal. Moreover, the reinforcement of sheet metal registers or grills is avoided by the present construction, except in the case of extremely large registers or grills.

The inventive ideas herein set forth may receive other embodiments than that herein specifically illustrated and described.

What I claim is:—

1. A register or grill for covering openings, comprising a series of hollow strips having notches therein, and a series of cross strips seated in the notches in said first named series of strips.

2. A register or grill for covering openings, comprising a series of hollow strips having notches therein, and a series of hollow cross strips seated in the notches in said first named series of strips.

3. A register or grill for covering openings, comprising a series of hollow strips having notches therein, and a series of cross strips seated in the notches in said first named series of strips, both said series of strips being flush upon one face of said register.

4. A register or grill for covering openings, comprising a series of hollow strips having notches therein, and a series of cross strips seated in the notches in said first named series of strips, said cross strips being of a height corresponding to the depth of said notches.

5. A register or grill for covering openings, comprising a series of hollow strips having notches therein, and a series of hollow cross strips seated in the notches in said first named series of strips, said cross strips being of a height corresponding to the depth of said notches, and both said series of strips being flush upon one face of said register.

6. A register or grill for covering openings, comprising a series of channel bars elongated in cross section, and having a series of notches therein, and a series of cross channel bars seated in the notches in said first named series of channel bars.

7. A register or grill for covering openings, comprising a series of channel bars, elongated in cross section and having a series of dove-tailed notches therein, and a series of cross channel bars seated in the notches in said first named series of channel bars.

8. A register or grill for covering openings, comprising a series of channel bars, elongated in cross section, and having a series of notches therein, and a series of cross channel bars seated in the notches in said first named series of channel bars, said bars crossing at right angles.

9. A register or grill for covering openings, comprising a series of channel bars, elongated in cross section, and having a series of notches therein, and a series of cross channel bars seated in the notches in said first named series of channel bars, both said series of channel bars having their closed side flush upon one face of said register.

10. A register or grill for covering openings, comprising a series of channel bars, elongated in cross section, and having a series of notches therein, a series of cross strips seated in the notches in said first named series of channel bars.

11. A register or grill for covering openings, comprising a series of hollow strips having notches therein, and a series of cross strips seated in the notches in said first named series of strips, and a collar soldered to the under side of said cross bars and reinforcing the register.

12. A register or grill for covering openings, comprising a series of channel bars, elongated in cross section, and having a series of notches therein, and a series of cross channel bars seated in the notches in said first named series of channel bars, and a collar soldered to the under side of said cross bars and reinforcing the register.

13. A register or grill for covering open-

ings, comprising a series of channel bars, elongated in cross section, having a series of notches therein and having the sides turned inward to form a substantially closed hollow bar, and a series of cross channel bars seated in the notches in said first named series of channel bars. 10

5 14. A register or grill for covering openings, comprising a series of channel bars,

In witness whereof I have hereunto signed my name. 15

EDWARD DAWSON HOWELL.

It is hereby certified that the assignee in Letters Patent No. 1,348,360, granted August 3, 1920, upon the application of Edward Dawson Howell, of Springfield, New York, for an improvement in "Registers or Grills," was erroneously described and specified as "Tuttle Bailey Mfg. Co.," whereas said assignee should have been described and specified as *Tuttle & Bailey Mfg. Co.*, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 31st day of August, A. D., 1920.

[SEAL.]

M. H. COULSTON,
Acting Commissioner of Patents.