Jan. 10, 1961 W. R. HEDRICK 2,967,337

LOUVER CONSTRUCTION

Filed Nov. 25, 1959

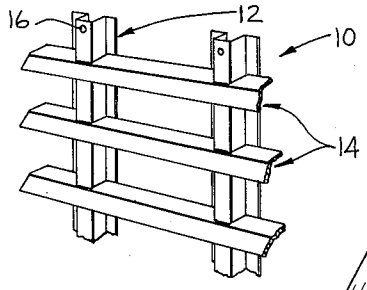


FIG. 1.

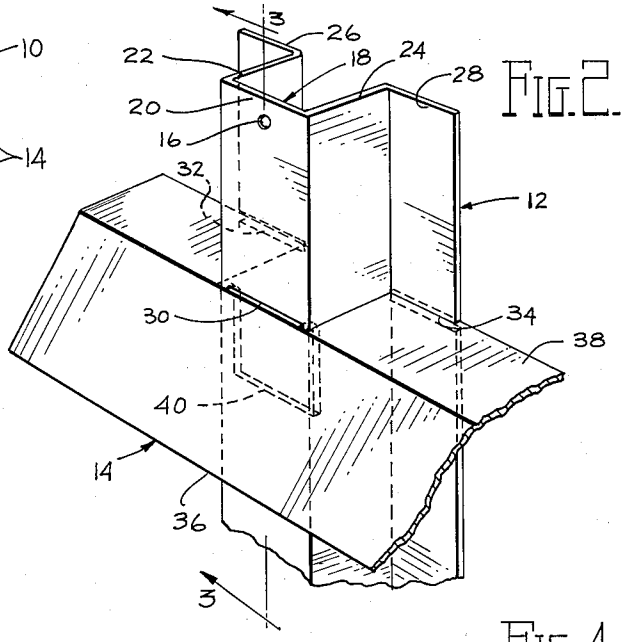


FIG. 2.

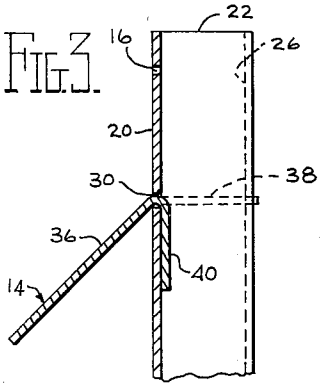


FIG. 3.

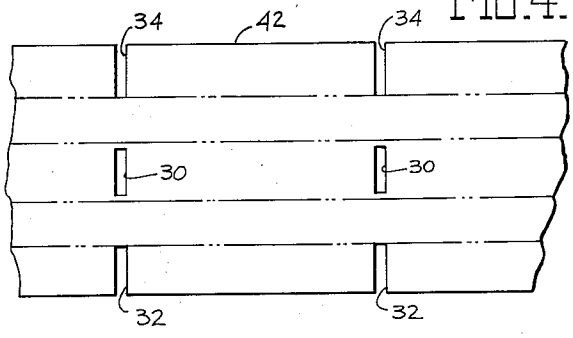


FIG. 4.

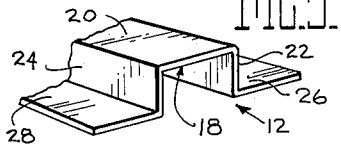


FIG. 5.

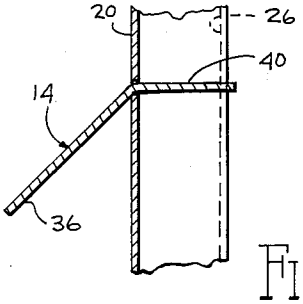


FIG. 7.

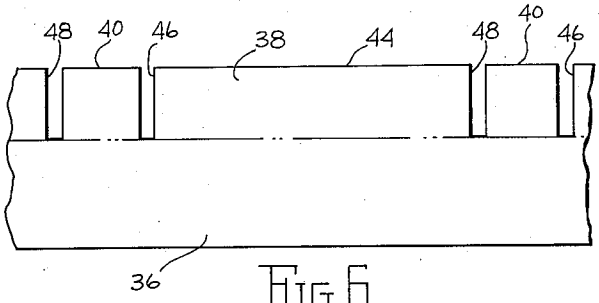


FIG. 6.

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United States Patent Office 2,967,337
Patented Jan. 10, 1961

2,967,337

LOUVER CONSTRUCTION

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Filed Nov. 25, 1959, Ser. No. 855,368

7 Claims. (Cl. 20—63)

This invention relates to an improved louver and more particularly to a louver assembled without the use of any welds or special fasteners.

The present invention is based upon the discovery of an improved, inexpensive louver and an economical method of manufacturing it. Louver blades and upright supports of the new louver are held together without the use of welds or separate fasteners of any sort and in a manner to provide considerable strength and to prevent rattling or vibration between the blades and members, as often occurs with conventional louver construction.

It is, therefore, a principal object of the invention to provide an improved louver which can be manufactured at lower cost and will not rattle or vibrate.

Another object of the invention is to provide an improved louver in which louver blades are assembled securely with respect to their supports without the use of any additional fasteners or welds.

Other objects and advantages of the invention will be apparent from the following detailed description of a preferred embodiment thereof, reference being made to the accompanying drawings, in which:

Fig. 1 is an overall view in perspective of a louver according to the invention;

Fig. 2 is a detailed, enlarged view in perspective of a portion of a louver blade and a portion of a louver blade support of the louver of Fig. 1;

Fig. 3 is a view in cross section taken along the line 3—3 of Fig. 2;

Fig. 4 is a plan view of a metal strip from which a louver blade support is formed;

Fig. 5 is a fragmentary view in perspective of a louver blade support formed from the strip shown in Fig. 4;

Fig. 6 is a plan view of a metal strip from which the louver blade shown in Figs. 1–3 is formed; and

Fig. 7 is a view in vertical cross section of a louver blade formed from the strip shown in Fig. 6 and inserted in the support of Fig. 4.

Referring to Fig. 1, a louver according to the invention, indicated generally at **10**, includes a plurality of upright supports **12** and louver blades **14**. The supports **12** have holes **16** at their upper and lower ends by means of which they can be screwed or otherwise suitably fastened to a frame of an opening in which the louver is to be located.

Each of the supports **12** includes a generally U-shaped channel member **18** (see Fig. 2) formed by a back **20** and two legs **22** and **24**. Flanges **26** and **28** extend outwardly from the outer edges of the legs **22** and **24** and are spaced from and parallel to the back **20**. A plurality of slots **30**, one of which is shown in Fig. 2, extend across a substantial portion of the width of the back **20**, and are vertically aligned, and coplanar with elongate openings or notches **32** and **34** in the flanges **26** and **28**.

Each louver blade **14** (see Fig. 3) includes a main blade portion **36** and a blade flange portion **38** extending therealong with tabs **40** formed in the flange portions **38** at predetermined intervals. The vertical spacing of the

blades **14** with respect to the supports **12** is determined by the spacing of the openings **30**, **32** and **34** along the supports **12**, and the horizontal spacing of the supports **12** relative to the blades **14** is determined by the spacing of the tabs **40** along the flange portions **38**.

When the supports **12** and the blades **14** are assembled, outer edges of the blade flange portions **38** are inserted in the notches **32** and **34** as shown in Fig. 2. To this end, the widths of the flange portions **38** are slightly greater than the widths of the legs **22** and **24**. At the same time, the tabs **40** are inserted through the slots **30** in the backs **20** of the channel members **18**. Such assembly establishes areas of engagement between the supports **12** and the outer edges of the flange portions **38**, and also between the supports **12** and the inner edges of the flange portions **38** adjacent the blade portions **36**. These areas are widely spaced relative to the widths of the blades **14** and thus establish effective cantilever supports therefor. The tabs **40** are then bent downwardly against the backs **20** to prevent separation of the blades **14** and the supports **12** and to prevent possible vibration between the blades **14** and the supports **12**.

Not only is the louver **10** easily constructed but the elements thereof are easily and inexpensively made. A support **12** is made from a single strip **42** of suitable sheet material shown in Fig. 4 with the slots **30** formed at the desired spacings along the center of the strip **42** and the notches **32** and **34** formed at the same time at the edges thereof. The lateral spacing between the end of the slots **30** and the inner ends of the notches **32** and **34** equals the width of the legs **22** and **24**. The flanges **26** and **28** are then formed by bending the outer portions of the strip **42** toward one another along imaginary lines, represented by dotted lines, parallel to the edges of the strip **42** and passing substantially through the inner ends of the notches **32** and **34**. The back **20** of the channel member **18** is similarly formed by bending outer portions of the strip **42** toward one another in a direction opposite to that of the first bends along two other imaginary lines, represented by dotted lines, parallel to the edges of the strip **42** and spaced outwardly from the ends of the slots **30**. These bends establish the back portion **20**, the legs **22** and **24**, and the flanges **26** and **28**, as shown in Fig. 5.

A blade **14** is formed from a strip **44** (Fig. 6) in which spaced pairs of elongate openings or notches **46** and **48** are made to produce the tabs **40**. The notched strip **44** is then bent at an acute angle along an imaginary line, indicated by a dotted line, parallel to the edges of the strip **44** and passing through the ends of the notches **46** and **48** to establish the flange portion **38** and the blade portion **36**. The resulting blade **14** is assembled with the support **12** (see Fig. 7) by inserting the tab **40** through the slot **30** and the flange portion **38** in the slots **32** and **34**, the legs **22** and **24** being inserted in the notches **46** and **48**. When all of the blades **14** are assembled in this manner, several metal wheels are rolled down the channel member **18** to force the tabs **40** against the backs **20** in order to prevent removal of the blades **14** and to prevent vibration or rattling thereof with respect to the supports **12**.

In its basic form, a louver according to the invention comprises an upright support having a channel member and at least one flange extending outwardly therefrom, the channel member and the flange having an elongate opening and a notch lying in a common plane, and a louver blade having a flange portion received in the notch in the flange of the upright member and a tab received in the slot in the channel member. In a preferred form of the invention, the tab is bent against a portion of the channel member to prevent vibration between the support and the blade.

Numerous modifications of the above-described preferred embodiment of the invention will be apparent to those skilled in the art and it is to be understood that such modifications can be employed without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A louver comprising a support including a channel member, and a flange extending outwardly from an edge of said member, said channel member having first openings spaced therealong, said flange having second openings spaced therealong, each of said second openings being in a common plane with one of said first openings, a plurality of louver blades each having a flange portion, an edge of which is inserted in one of said second openings, and a tab inserted through one of said first openings, said blades being held by said support through the coaction of said second openings and said flange portions and through the coaction of said first openings and said tabs.

2. A louver according to claim 1 wherein said tabs are bent against said channel member.

3. A louver comprising a support including a generally U-shaped channel member having a back wall and two legs, a pair of flanges extending outwardly from the outer edges of said legs, said back wall having a slot therein, and said flanges having openings in a common plane with said slot, and a louver blade having a flange portion, the width of which portion is at least as great as the width of said legs, said flange portion including a tab between two lateral flange portion slots, an edge of said flange portion being inserted in said openings, and said tab being inserted through said slot, said blade being held by said support through cooperation of said tab and said slot, and through the cooperation of said flange portion and said openings.

4. A louver according to claim 3 wherein said tab is bent downwardly against said back wall.

5. A louver comprising a support including a generally U-shaped channel member having a back wall and two legs, a pair of flanges extending outwardly from said legs, said back wall having a slot therein, and said flanges having openings in a common plane with said slot, and a louver blade having a flange portion including a tab, said flange portion being inserted in said openings, and said tab being inserted through said slot, said blade being held by said support through cooperation of said tab and said slot, and through the cooperation of said flange portion and said openings.

6. A louver comprising a plurality of supports, each of which includes a generally U-shaped channel member having a back wall and two legs and a pair of flanges extending outwardly from the outer edges of said legs, said back wall having a plurality of slots therein spaced therealong, each of said flanges having a plurality of openings therein spaced therealong, each of said openings being in a common plane with one of said slots, a plurality of louver blades, each having a flange portion and a blade portion, the width of said flange portion being at least as great as the width of said legs, an edge of each of said flange portions being inserted in corresponding openings in each of said pair of flanges, and tabs spaced along each of said flange portions, each of which extends through one of said slots in each of said supports, said blades being held by said supports through cooperation of said tabs and said slots and through the cooperation of said flange portions and said openings.

7. A method of making a louver having an upright supporting member and a louver blade, said method comprising forming a plurality of slots laterally in a strip of sheet material and spaced therealong, said slots being substantially shorter than the width of the strip and being located centrally thereof, forming a plurality of elongate openings spaced along the edges of the strip in alignment with and on each side of said slots, bending outer portions of the strips one toward the other along imaginary lines extending through the inner ends of said openings and parallel to the edges of said strip, bending outer portions of said strip in directions opposite to the directions of the first bends along imaginary lines spaced outwardly from the ends of said slots and parallel to the edges of said strip, forming pairs of second openings spaced along an edge of a second strip, bending portions of said strip between said pairs of second openings in a common direction along a line passing through the inner ends of said second openings and parallel to the edges of said second strip, inserting the latter bent portions in said slots in said first strip, inserting edges of said second strip into said first openings in said first strip, and bending said latter bent portions against a part of said first strip adjacent the slot into which said latter bent portion is inserted.

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