

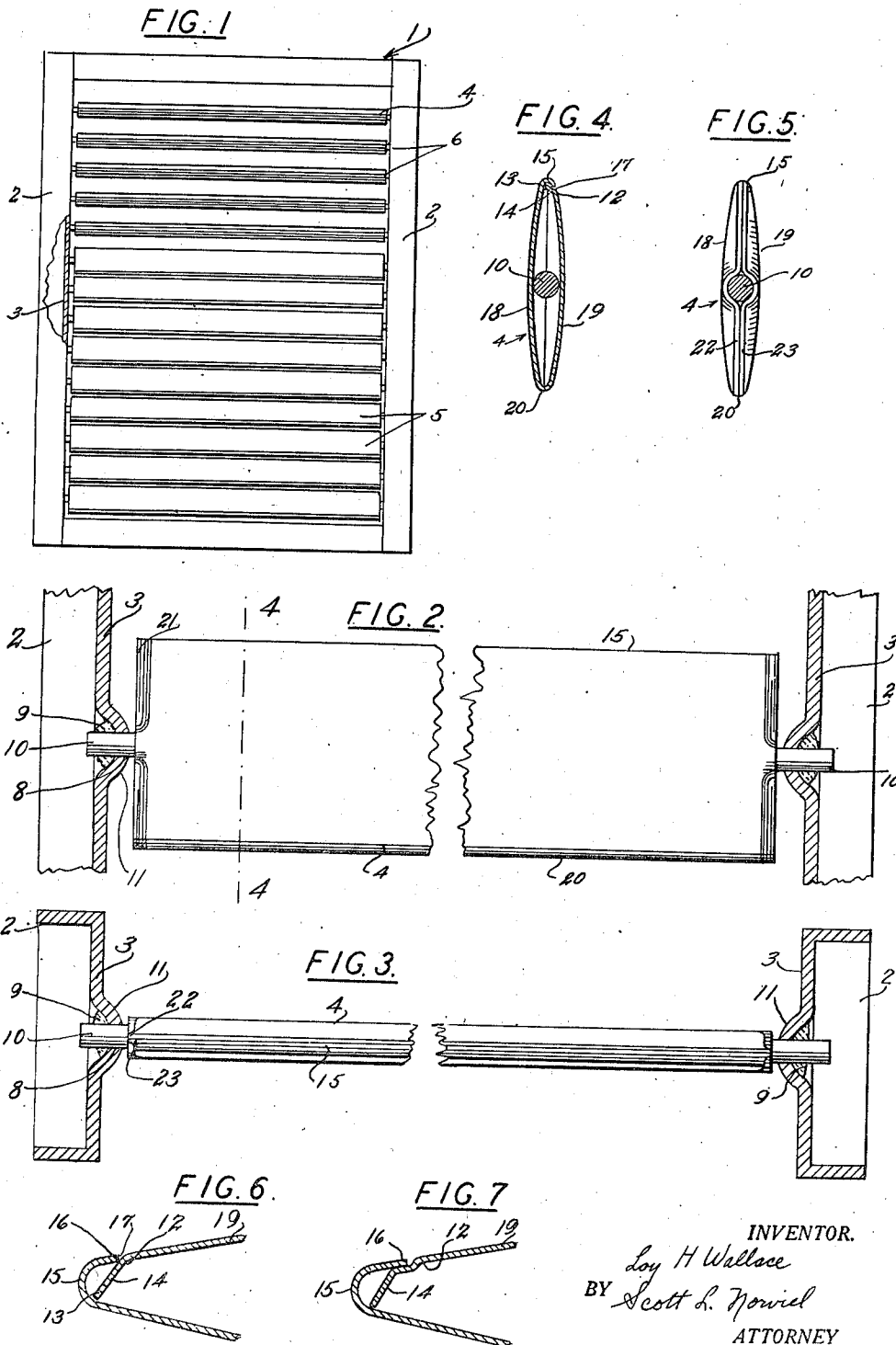
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ADJUSTABLE LOUVER

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ADJUSTABLE LOUVER

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2 Claims. (Cl. 189—62)

My invention relates to adjustable louvers adapted to direct and control the flow of air through a register from a conduit into a room or other habitation, and has for its objects—

First, to provide a louver composed of individually operative louver slats;

Second, to provide louver slats mounted so that they can be individually adjusted and maintained at the desired adjustment by frictional engagement with a supporting means;

Third, to provide louver slats with an improved type of frictional supporting means, whereby their adjusted position is maintained in a current of air without exterior or auxiliary holding mechanism;

A fourth object is to provide a louver slat which may be easily and cheaply constructed entirely of metal and adapted to a streamline construction whereby resistance to a current of air is reduced to a minimum; and

A fifth object is to provide a louver slat construction whereby a metallic louver of streamlined rigid construction not susceptible to flutter, may be adjustably supported in a stream of air to provide a minimum of resistance and noise due to eddy currents.

I attain the foregoing objects by means of the construction and devices illustrated in the accompanying drawing, in which

Figure 1 is a front elevational view of a louver containing a plurality of louver slats made according to my improvements;

Figure 2 shows an individual louver slat and a fragmentary portion of said frame drawn on an enlarged scale;

Figure 3 is a horizontal section of that portion of the device shown in Figure 2;

Figure 4 is a vertical section of the louver slat taken on line 4—4, Figure 2;

Figure 5 is an end view thereof;

Figure 6 is a fragmentary section of a slat drawn on an enlarged scale to show details of the joint thereon; and

Figure 7 is a similar view of a modified form thereof.

Similar numerals refer to similar parts in all views.

The louver frame 1 consists of four metal frame members of channel section welded together at the corners in the usual manner. The vertical members 2 are positioned so as to provide flat plates 3 on each side thereof. These may be termed the supporting plates. Between these supporting plates there are a plurality of louver slats 4 extending horizontally from one sup-

porting plate to the other. These are positioned at proper distances so that when turned vertically, as shown in the lower portion of Figure 1, and indicated by numeral 5, the edges of the slats will meet or slightly overlap so as to shut off the flow of air. On the other hand, when the slats are turned with their flat surfaces parallel to the direction of the air current, as indicated at 6, Figure 1, there will be an adequate amount of space between the individual slats to allow a maximum flow of air with a minimum restriction. Each slat is supported upon a metal rod 10, extending transversely of the frame from one supporting plate to the other. These plates are pierced with holes 8 to accommodate these bearing rods and the ends of each rod are welded as at 9, to the supporting member so that each rod is stationary, and rigidly fixed to, and a part of the frame structure of the louver.

In order to form the body of the lower slats a rectangular sheet metal blank is given a longitudinal fold or crease 12 along and near edge 13. The outer portion 14 is bent angularly, as shown particularly in Figure 6, to extend to and rest upon the opposite side and form a brace for the fold 15 forming a hem. The blank is next folded longitudinally at about its middle so as to bring its two edges 13 and 16 together, forming the fold 20. The metal adjacent edge 16 is then folded and bent inwardly forming a hem with the edge 16 directly adjacent the crease 12. This provides a butt and groove joint 17, having a V channel which may be filled with solder. Ordinarily the stiffness of the metal will hold the edges in position but solder may be added to provide a smooth exterior and furnish additional bond. The inward angularly extending portion 14 is important since it forms a brace around and against which the hem is bent. This method of fabrication produces the body of the louver, having sides 18 and 19 adapted to assume a convex sectional shape when the supporting rod 10 is inserted between them. The convexity of the sides, together with the rounded edges 20 and 15 of the louver form the slat having a body shape which may be termed streamlined. The slat is completed by bending or pinching the end edges 22 and 23 together, and at the same time crimping these edges around the rod 10 to maintain it in central lateral position as shown in Figure 5. These edges may be spot welded if desired.

Ordinarily the louver is formed from sheet metal of approximately No. 28 gage. The width of the slats varies from 2 to 4 inches and rod 10

is from $\frac{1}{8}$ th to $\frac{1}{4}$ th of an inch in diameter. These measurements, however, are not critical.

When so constructed there is sufficient resiliency in the metal of the slat sides surrounding rod 10 to maintain the slat in any desired diametrical position by frictional engagement. This frictional engagement continues throughout the entire length of the slat body and although the pressure at any one point is not great, the combined effect is to provide a smooth friction contacting area.

It is therefore unnecessary to provide additional friction means for holding the position as is required where the louver is rigidly mounted on the supporting shaft and the latter is journalled in the side frames of the louver frame. The above described construction of the metal slats makes them inherently stiff and properly shaped without the necessity of additional supporting members or coring material. The louvers are centered on rods 10 by inward dome shaped indentures 11 surrounding the edges of holes 8 in which rods 10 are inserted.

After the louver slats are assembled in the louver frame, they may be individually turned manually to any desired position, for example, those at the top, indicated by Figure 6, are set edgewise offering very little resistance to the full current of air coming through the louver. Those as set at 5 may be used to shut off the air through that portion of the louver. Obviously any individual slat or the entire bank of slats may be turned to any intermediate angle desired.

Having now fully described my invention and explained its use, I wish to be limited only by the following claims:

1. A metal louver slat having a body provided with convex sides joined by rounded edges, formed from a rectangular blank of sheet metal provided with a crease along one longitudinal edge to form an inwardly extending joint-brace, a longitudinal fold approximating the center

thereof thereby forming the opposite sides of said louver body and bringing the longitudinal edges of the blank together, and a hem fold formed along the other longitudinal edge of said blank over and against said joint-brace so that the edge along said hem fold forms a butt and groove joint with said crease, in combination with a supporting rod longitudinally extending through the middle of said slat body contacting the convex sides thereof to afford frictional engagement therewith, the ends of the sides of said slat body being swaged together to form a closure crimped around said supporting rod whereby to retain it in central position.

2. A metal louver comprising a frame having vertical adjacent channel side members joined by cross end members, the inner faces of said side members being provided with holes to receive the ends of louver slat supporting rods, in combination with, a plurality of metal louver slats having convex sides joined by rounded edges, each being formed from a rectangular blank of sheet metal creased along one longitudinal edge to form an inwardly extending joint brace, and having a longitudinal fold approximating the center thereof thereby forming the opposite sides of said louver body and bringing the longitudinal edges of the blank together, and a hem fold formed along the other longitudinal edge of said blank over and against said joint brace so that the edge along said hem fold forms a butt and groove joint with said crease, together with a supporting rod longitudinally extending through the middle of said slat body contacting the convex side thereof to afford frictional engagement therewith, with the ends of said folded slat body swaged together to form a crimped centering closure around said rod, said louver slat supporting rods being inserted into the holes in said side members and rigidly affixed therein so that each slat may be turned on its respective supporting rod.

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