

May 11, 1965

W. W. WISEMAN
MOLDED FLEXIBLE LOUVER

3,182,579

Filed Feb. 12, 1962

2 Sheets-Sheet 1

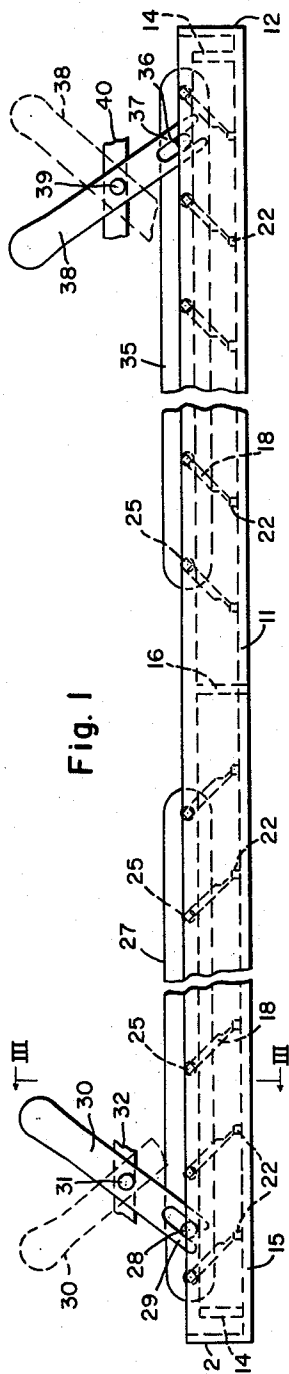


Fig. 1

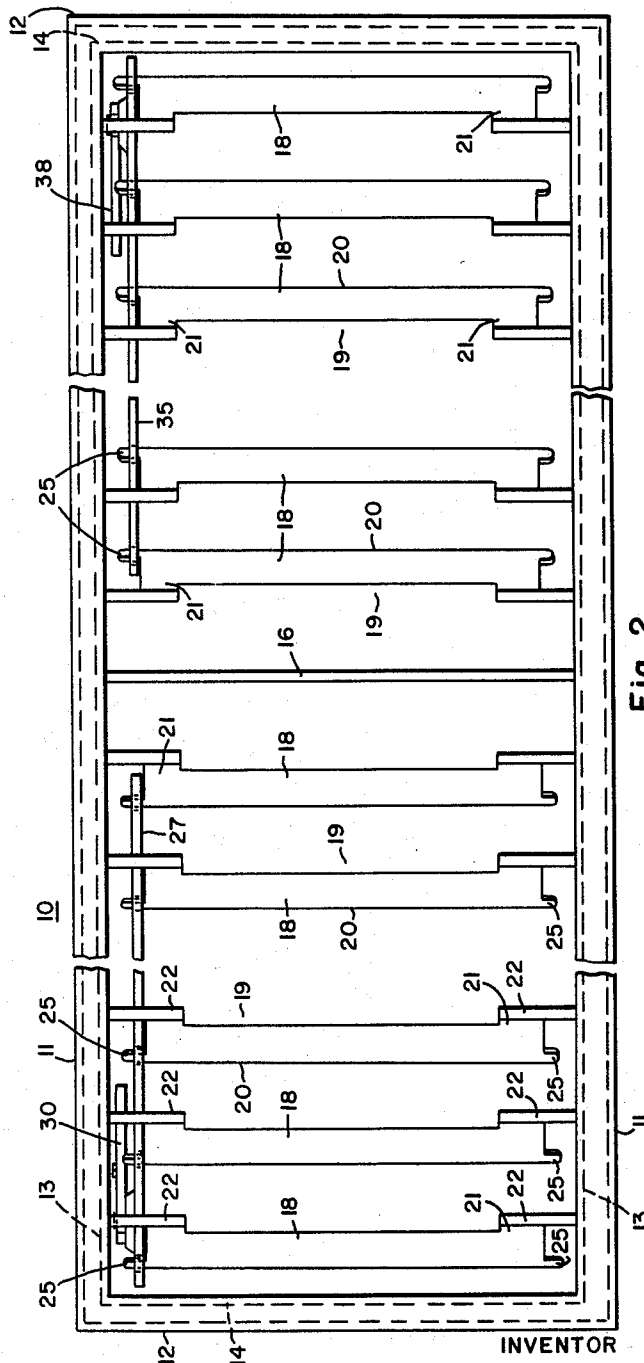


Fig. 2

INVENTOR
Woodrow W. Wiseman
BY
Ralph T. French
ATTORNEY

May 11, 1965

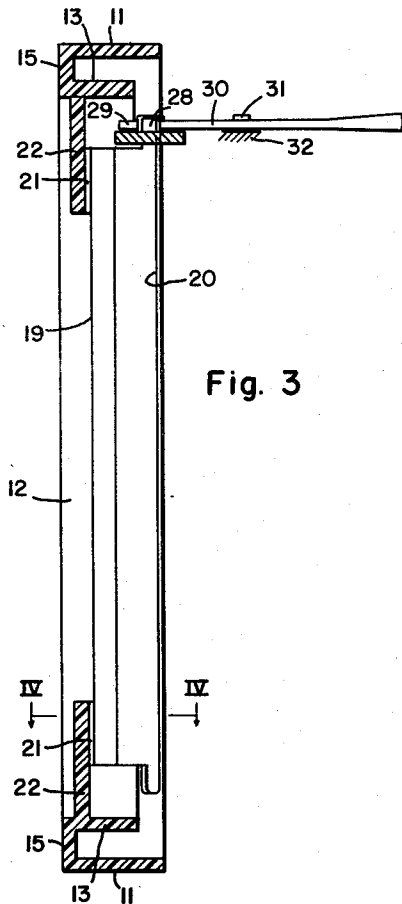
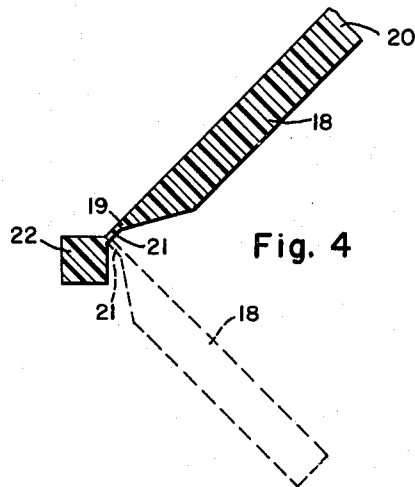
W. W. WISEMAN

3,182,579

MOLDED FLEXIBLE LOUVER

Filed Feb. 12, 1962

2 Sheets-Sheet 2



INVENTOR
Woodrow W. Wiseman

BY
Ralph T. French
ATTORNEY

1

2

3,182,579

MOLDED FLEXIBLE LOUVER

Woodrow W. Wiseman, East Longmeadow, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 12, 1962, Ser. No. 172,500

1 Claim. (Cl. 98-40)

This invention relates to adjustable louvers for use in air outlets of air conditioning units, and relates more particularly to louvers which can be adjusted to change the directions of air leaving the outlets of air conditioning units.

Air conditioning units such as room coolers, usually have air outlet openings containing frames which contain directional louvers having pins extending from their ends which are journaled in circular openings in the longitudinal sides of the frames, and which form pivots about whose axes the louvers can be rotated. Such louvers have other pins extending from their ends which extend into circular openings in slides which can be positioned to rotate the louvers to different air deflecting positions.

This invention molds such a frame and its louvers into an integral structure. In one embodiment of this invention, the louvers have support posts extending inwardly from the longitudinal side walls of a rectangular frame, which are connected to the end portions of the louvers by flexible membranes which form pivots about which the vanes can be rotated. The louvers have pins extending from their ends for engaging the usual slides. The frame, the louver support posts, the flexible membranes, and the louvers are molded in an integral structure from material such as nylon or polypropylene. By forming such an integral structure, there are fewer parts to be manufactured and assembled, thus reducing the manufacturing cost, and there are no loose parts which can become misplaced or lost in shipment or use.

An object of this invention is to form the louvers and frame of an adjustable louver assembly in an integral structure.

Another object of this invention is to reduce the manufacturing cost of an adjustable louver assembly.

This invention will now be described with reference to the annexed drawings, of which:

FIG. 1 is a side elevation of an air outlet frame embodying this invention;

FIG. 2 is a plan view looking downwardly upon FIG. 1;

FIG. 3 is an enlarged section along the lines 3-3 of FIG. 1, and

FIG. 4 is an enlarged section along the lines 4-4 of FIG. 3.

A frame 10, rectangular in outline, has parallel, longitudinal side walls 11, and parallel, end walls 12, which are generally U-shaped in cross-section, so as to have inner side walls 13, inner end walls 14, and base walls 15. The frame has a partition 16 extending transversely thereof, midway between its ends, which divides the frame into two equal sections which are referred to hereinafter with respect to FIGS. 1 and 2 of the drawings, as left and right sections.

Each frame section contains a plurality of spaced-apart louvers 18 for deflecting the air passing through the frame sections. Each louver 18 has inner and outer edges 19 and 20 respectively. Its inner edge portion is so beveled towards its inner edge 19 that its inner edge is almost a knife edge. The inner edge has end portions connected by flexible membranes 21 having the same thicknesses as the inner edge, to posts 22 which extend inwardly from the inner side walls 13 of the frame, with inner portions which extend alongside the end portions of the inner edge

of the louver, the membranes extending between the inner portions of the posts and the end portions of the inner edge of the louver.

The louvers 18 in the left frame section are so molded to their membranes 21 and posts 22 that in their normal positions, their sides extend at angles of approximately 45° to the left of vertical planes extending through the axes of their respective posts 22. The louvers 18 in the right frame section are so molded that in their normal positions, their sides extend at angles of approximately 45° to the right of vertical planes extending through the axes of their respective posts.

The louvers 18 have at their ends adjacent to their outer edges, pins 25 which extend outwardly towards but are spaced from the inner side walls of the frame, these pins being molded to the louvers as part of the integral structure. A slide 27 for the left frame section has spaced-apart, circular openings along its longitudinal center, into which the pins 25 on corresponding ends of the louvers of the left section extend. The slide 27 has a pivot pin 28 extending therefrom adjacent to its left end, which extends between spaced-apart prongs 29 on the inner end of a handle 30 which is pivoted on a pin 31 on an external frame member 32.

A slide 35 for the right frame section has spaced-apart, circular openings along its longitudinal center, into which the pins 25 on corresponding ends of the louvers 18 of the right frame section extend. The slide 35 has a pivot pin 36 extending therefrom adjacent to its right end, which extends between spaced-apart prongs 37 on the inner end of a handle 38 which is pivoted on a pin 39 on an external frame member 40.

The slide 27 is fitted in a slot in an external frame member which is not shown, so that when the handle 30 is moved to the left to the dashed-line position shown on FIG. 1, the slide 27 is moved to the right to rotate all of the louvers 18 of the left frame section about their membranes 21, through angles of 90° to the right from their normal positions shown by FIG. 1, so that they extend at angles of 45° to the right inside of at angles of 45° to the left as shown by FIG. 1. The handle 30 can be adjusted to position the louvers 18 of the left frame section to intermediate positions between those of 45° to the left and 45° to the right. FIG. 4 shows in solid lines the normal position of a louver of the left frame section, and shows by dashed lines, the louver rotated through an angle of 90° to the right.

The slide 35 is fitted in a slot in an external frame member which is not shown, so that when the handle 38 is moved to the right to the dashed-line position shown on FIG. 1, the slide 35 is moved to the left to rotate all of the louvers 18 of the right frame section through angles of 90° to the left from their normal positions shown by FIG. 1, so that they extend at angles of 45° to the left instead of at angles of 45° to the right as shown by FIG. 1. The handle 38 can be adjusted to position the louvers 18 of the right frame section to intermediate positions between those of 45° to the right and 45° to the left.

In the structure shown by FIGS. 1 and 2, a pin 25 on only one end of each louver 18 is used with a slide and a handle to rotate a louver about its flexible membranes. The similar pin 25 is provided at the opposite end of each louver so that a slide and a handle can be placed on the opposite side of the frame from that shown by FIG. 1, if that location is more convenient.

The entire structure described in the foregoing, except for the slides, the handles, and the external frame members which are more or less conventional, is molded integrally from a material such as nylon or polypropylene, so that the membranes which connect the louvers to their support posts are flexible and resilient. Breakdown tests have shown that the lives of such membranes are longer

3

than the expected lives of the room coolers for which they are designed.

While the invention has been shown in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof.

What is claimed is:

An integral louver structure comprising
a rectangular frame having
molded together, spaced-apart side and end walls,
a plurality of spaced-apart louvers extending trans-
versely of said frame between said side walls, said
louvers having
beveled inner portions with minimum thicknesses at
their inner edges,
louver support posts molded to said side walls and
extending from said side walls alongside of and
spaced from the end portions of said inner edges,
and flexible membranes in the spaces between said
posts and said end portions and molded to said
posts and said end portions, said louvers having

4

pins extending outwardly from the ends of their outer edge portions,

a slide member having a plurality of openings along its longitudinal center for receiving said pins, whereby said louvers are interconnected for collective movement,

a pivot pin on said slide member,
and a handle adapted to cooperate with said pivot pin for imparting translational movement to said slide member whereby tilting of said louvers is effected.

References Cited by the Examiner

UNITED STATES PATENTS

2,735,351	2/56	Abrahamsen	98—40
2,920,549	1/60	Freitag	98—40
3,060,832	10/62	Wright	98—40
3,093,060	6/63	Emery	98—40

ROBERT A. O'LEARY, *Primary Examiner*.

CHARLES E. O'CONNELL, *Examiner*.