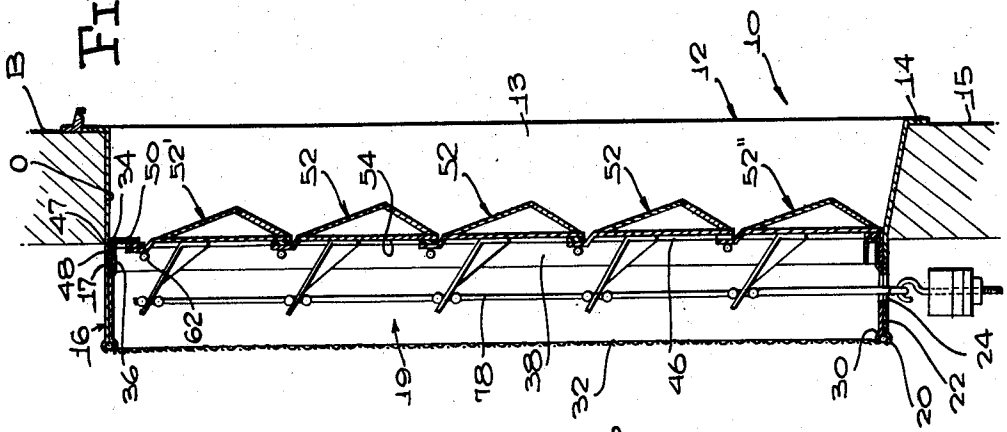
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WIND-RESPONSIVE LOUVER CONSTRUCTION

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FIG. 2



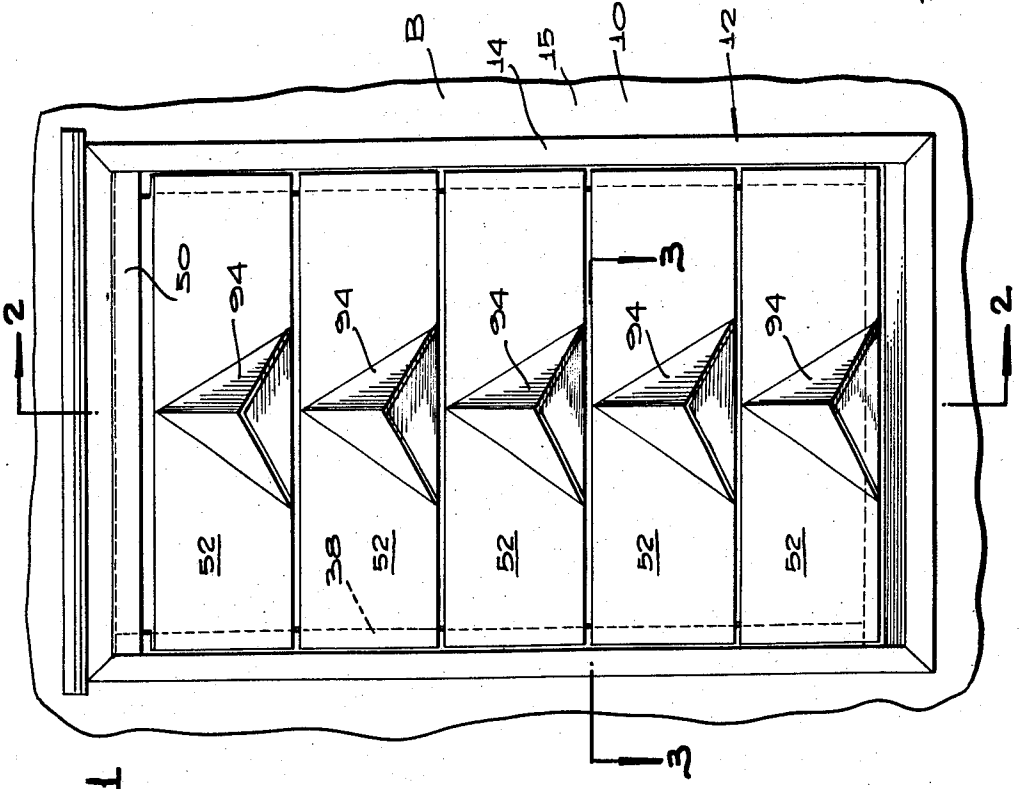


FIG. 1

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FIG. 3

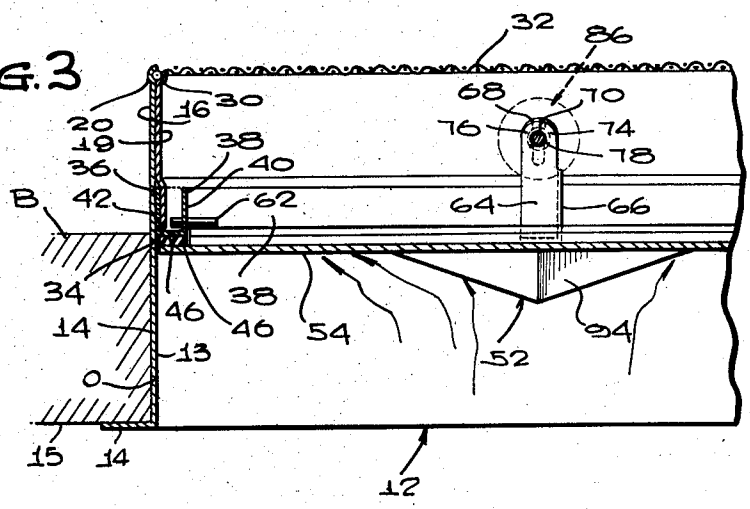
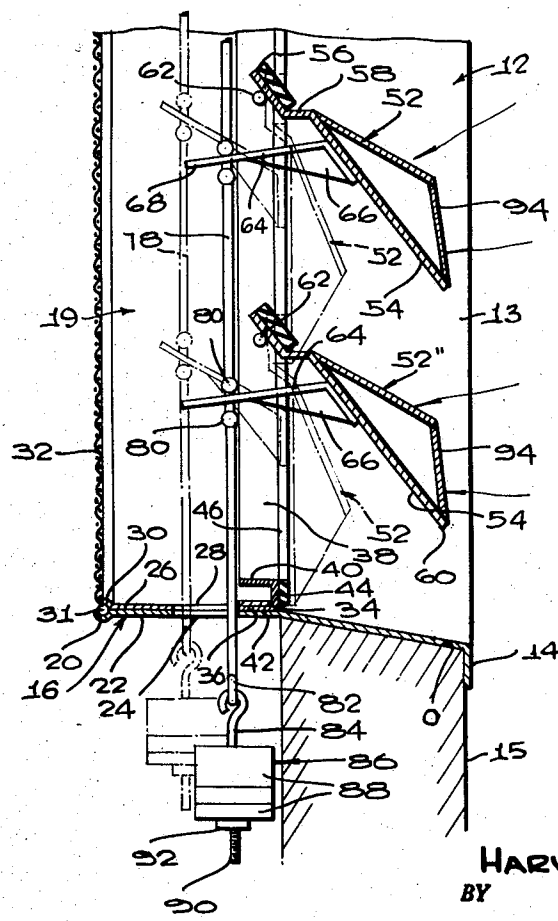


FIG. 4



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WIND-RESPONSIVE LOUVER CONSTRUCTION

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Application November 23, 1956, Serial No. 623,899

3 Claims. (Cl. 98—95)

This invention relates generally to an improved louver assembly of the wind closed, weight opened type.

The primary object of the invention is to provide a more practical and efficient louver assembly of this type, which is more susceptible to mass production, is composed of a minimum number of simple and easily assembled parts, is more reliable in action, and which provides greater sealing of a ventilation opening in which the assembly is installed, when the louvers are closed.

Another object of the invention is to provide a louver assembly of the character indicated which can be made in attractive, rugged, and serviceable forms at relatively low cost, is easily installed and maintained, and is highly satisfactory and practical for the purpose intended.

These together with other objects and advantages which will become apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout the several views, and in which:

Figure 1 is a front elevation of louver assembly in accordance with the present invention, installed in an opening in a wall;

Figure 2 is a vertical transverse section taken substantially on the line 2—2 of Figure 1, showing the louvers closed by excessive wind pressure;

Figure 3 is a fragmentary enlarged horizontal section taken substantially on the line 3—3 of Figure 1; and

Figure 4 is an enlarged fragmentary section similar to Figure 2, showing the louvers in open position in full lines and in closed position in phantom lines.

Referring to the drawings in detail, a fragmentary portion of a building wall B is shown which has therethrough a rectangular opening O, in which is installed a louver assembly in accordance with the present invention and generally designated **10**.

The louver assembly **10** comprises a rectangular main frame **12** having on its outboard or front edge a lateral peripheral flange **14** engaging the outboard side **15** of the wall B.

The main frame **12** is suitably shaped to conform to the wall opening O. The frame **12** has on its inboard edge a peripheral inwardly extending flange **16** which has along its inboard periphery an inwardly opening groove **20**. The bottom portion **22** of the flange **16** has therein a central opening **24**.

The flange **16** is rectangularly conformed and has telescoped therein a rectangular sub-frame **19** whose bottom portion **26** has therein an opening **28** registered with the opening **24** in the flange **16**. The inboard edge of the subframe **19** has thereon an outwardly opening groove **30** cooperating with the groove **20** to hold therebetween peripheral edge portions **31** of a screen **32** which is provided to prevent insects, birds or the like from passing through the louver assembly into an attic, for example.

The outboard edge **34** of the subframe **19** is spaced from the inboard edge of the main frame **12** so as to define with the flange **16** a peripheral forwardly opening slot **36**.

An inboardly opening U channel section frame **38** is interlockingly seated in the sides and bottom of the slot **13** corresponding to the sides and bottom of the flange **16** of the subframe **19** and comprises inner and outer side flanges **40** and **42** and an outboard web **44**. The outer flange **42** is interlockingly engaged in the slot **36** and is retained therein in any suitable manner. Suitably secured on the outboard surface of the web **44** is a strip **46** of sealing material of any suitable character, the strip **46** extending along the vertical and bottom portions of the channel frame **38**.

As seen in Figure 2, extending across the under side of the top member **17** of the flange **16** is an angle bar **47** having a leg **48** engaged in the top of the slot **36**, with a depending leg extending along the top member **17** of the flange **16**.

Extending horizontally between the opposite vertical side members **13** of the frame **12** are a plurality of vertically spaced horizontal louvers **52**. Each louver **52** comprises an elongated rectangular flute plate **54** whose inboard sides are sealingly engaged at their ends with the sealing strip **46** on the vertical web **44**, see Figure 3, when the louvers are closed. The plate **54** has on its upper edge an inboardly offset portion **58** on whose outboard side is secured a horizontally extending sealing strip **56** to be engaged by a next above louver in the closed position of the louvers. The lowermost louver, indicated at **52''**, sealingly engages the portion of the sealing strip **46** extending across the bottom of the channel frame **38**. The sealing strip **56** on the uppermost louver **52'** sealingly engages the inboard side of the leg **50** of the angle bar **47** when the louvers are closed, see Figure 2.

Journaled in the flange **40** of the side members of the channel frame **38** and spaced inboardly from the vertical web **44** are lateral stub shafts **62**, Figures 2 and 4, which are secured to the inboard sides of the offset upper portions **58** of the louver plates **54**. Fixed on and extending in an inboard direction from the inboard sides of the louver plates **54** are flat arms **64** braced by offset plates **66**. The arms **64** have inboard ends **68** having therein longitudinal slots **70**, see Figure 3. The arms **64**, one to each louver, are centrally located in the plates **54** and have inboard ends **68** having therein longitudinal slots **70**, see Figure 3. The arms **64** are of a suitable resilient material enabling the portions **74** and **76** at opposite sides of the slots **70** to be displaced relative to each other to permit an intermediate portion of a vertical connecting rod **78** to extend through the slots. The vertical connecting rod **78** has thereon in uniformly vertically spaced relationship, pairs of vertically spaced abutments between which the arms **64** are engaged, as clearly seen in Figure 4. Considering Figure 4, wherein the louvers **52** are shown in open position, the louvers pivot downwardly together toward closed positions in synchronism because of the connections thereto of the connecting rod **78**, said rod moving in an upward and inboard direction as the louvers are closed. The lower portion of the connecting rod **78** depends through the openings **24** and **28** in the flange **16** and the sub-frame **19**, and terminates in a hook **82** which receives thereon a hook **84** rising from a counter balance weight **86**, composed of a plurality of separate weights **88** of different poundages, which can be added or taken away for adjusting the weight of the weight **86**. The weight hook **84** has a threaded shank **90** traversing the weights **88**, and a nut **92** is threaded on the lower end of the shank **90** to retain the weights **88**. The weight of the weight **86** is to be adjusted to predetermine the amount of wind pressure on the outboard sides of the louvers **52** which

can close the louvers from their normally open positions, in which the weight **86** holds them.

For the purpose of distributing the wind pressure on the outboard surfaces of the louvers **52**, the louver plates **54** have on the outboard sides thereof, central tetrahedrons **94** which tend to prevent wind directed on the outboard surfaces of the louvers from passing therebeneath and thereby facilitate closing of the louvers.

The foregoing is considered as illustrative only of the principles of the invention. Since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, as fall within the scope of the appended claims.

What is claimed as new is as follows:

1. In a louver assembly, a rectangular main frame, a rectangular sub-frame telescoped in said main frame, a channel frame interlockingly seated in said sub-frame and comprising laterally inward and outward flanges and an outboard web connecting said flanges, said channel frame having vertical side members, horizontal louvers each carrying an arm extending between said side members, said louvers having side edges and upper and lower edges, inboardly offset portions on the upper edges of the louvers, horizontal stubshafts on said offset portions journaled in the inner flanges of the channel frame side members at points spaced inboardly from the outboard webs of the side members, said offset portions having outboard sides having sealing strips thereon, said louvers having inboard portions at their lower edges with which said sealing strips are engageable only in the closed positions of the louvers, and means operatively connecting said arms to said louvers for moving the louvers between closed and open positions.

2. In a louver assembly, a rectangular main frame, a rectangular sub-frame telescoped in said main frame, a channel frame interlockingly seated in the sides and bottom of said subframe and comprising laterally inward and outward flanges and an outboard web connecting said flanges, said channel frame having vertical side members, horizontal louvers each carrying an arm extending between said side members, said louvers having side edges and upper and lower edges, inboardly offset portions on the upper edges of the louvers, horizontal stubshafts on said offset portions journaled in the inner flanges of the channel frame side members at points spaced inboardly from the outboard webs of the side members, said offset portions having outboard sides having sealing strips thereon, said louvers having inboard portions at their lower edges with which said sealing strips are engageable only in the closed positions of the louvers, and means operatively connecting said arms to said louvers for moving the louvers between closed and open positions, said sub-frame having extending along the top a depending horizontal element having an inboard side with which the sealing strip of the uppermost louver is engageable only in the closed positions of the louvers.

3. In a louver assembly, a rectangular main frame, a rectangular sub-frame telescoped in said main frame, a channel frame interlockingly seated in the sides and bottom of said subframe and comprising laterally inward and outward flanges and an outboard web connecting said flanges, said channel frame having vertical side members, horizontal louvers each carrying an arm extending between said side members, said louvers having side edges and upper and lower edges, inboardly offset portions on the upper edges of the louvers, horizontal stubshafts on said offset portions journaled in the inner flanges of the channel frame side members at points spaced inboardly from the outboard webs of the side members, said offset portions having outboard sides having sealing strips thereon, said louvers having inboard portions at their lower edges with which said sealing strips are engageable only in the closed positions of the louvers, and means operatively connecting said arms to said louvers for moving the louvers between closed and open positions, said sub-frame having extending along the top a depending horizontal element having an inboard side with which the sealing strip of the uppermost louver is engageable only in the closed positions of the louvers, said channel frame having a bottom member having an outboard side and a sealing strip on said outboard side with which the lower edge of the lowermost louver is engageable only in the closed position of the louvers.

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