Feb. 13, 1968 M. BALL 3,368,304

INSECT REPELLING VIBRATORY SCREEN

Filed Feb. 7, 1966

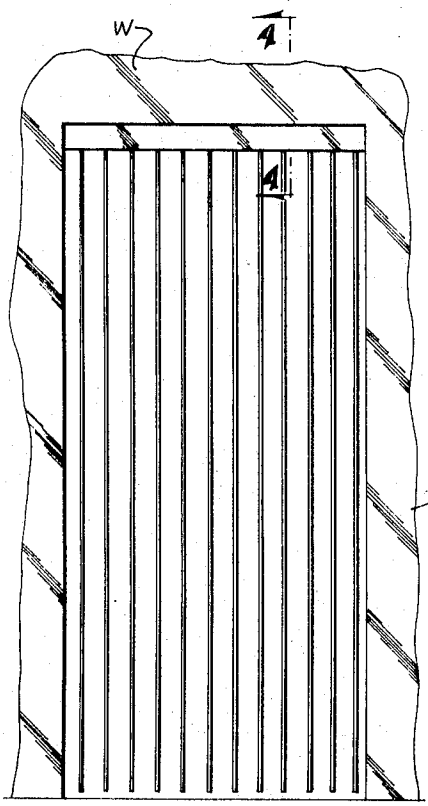


Fig. 1

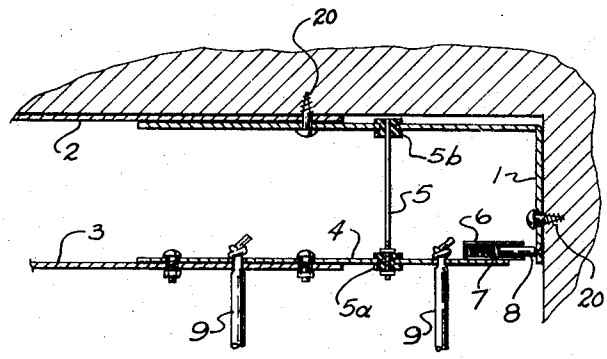


Fig. 3

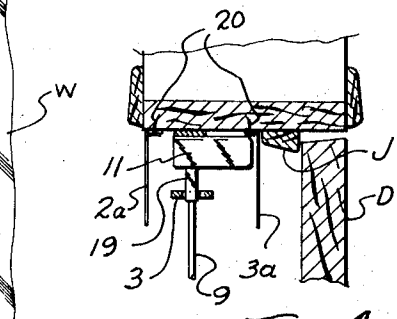


Fig. 4

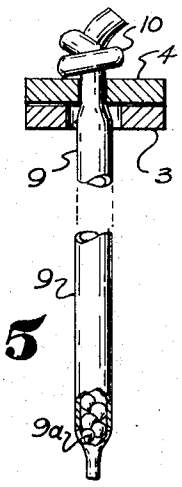


Fig. 5

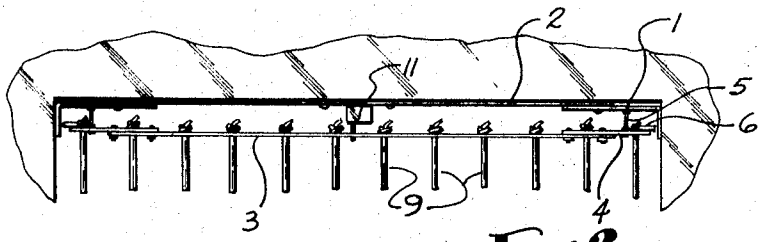


Fig. 2

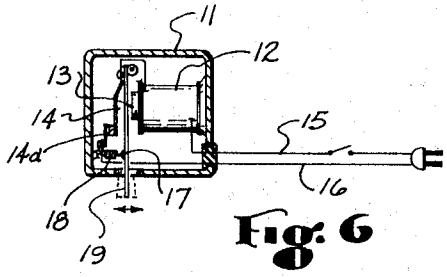


Fig. 6

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INSECT REPELLING VIBRATORY SCREEN

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ABSTRACT OF THE DISCLOSURE

An insect repelling screen comprising a horizontal member having flexible members depending therefrom, and a vibrating mechanism arranged thereabove for vibrating the flexible members.

This invention relates to an insect repelling vibratory screen which is intended for the enclosure of any opening, or area, where it is desirable to repel insects, and at the same time to provide a convenient means of passage through the said screen whether or not it is vibrating.

The object of the present invention is to provide a simple and practical means of repelling insects by means of a series of uniformly spaced, resilient members depending from a horizontally disposed bar which is adapted to be vibrated sufficiently to cause insects to avoid any proximity thereto.

Another object of the present invention resides in the fact that the mechanism used for vibrating the screen elements is housed in such a manner as to result in an aesthetic ensemble when installed for use.

A further object of the invention resides in the provision for easy passage through the screen without in any way interfering with the useful operation thereof.

A still further feature of the screen of this invention is the fact that it is so constructed that it will provide an easy means of installation in any type of doorway opening, across a room, or out of doors such as in or around a patio or lanai.

Another feature of the invention is the simplicity of construction, thereby providing a simple and economical means of manufacture. Also the design of the screen unit is such as to permit ease of packaging, assembling for installation, and convenient means of replacement or repair of any of the parts thereof.

According to the present invention, the insect repelling screen may include a plurality of flexible appendages depending from a supporting member spaced beneath and connected to an overhead bracket, and wherein an electric vibrating means may be mounted beneath the overhead bracket for imparting vibratory movement to the supporting member and the flexible appendages.

Other objects, advantages and features of the invention may hereinafter appear.

FIG. 1 is a front elevational view of the screen as it would appear when installed in a doorway opening.

FIG. 2 is a slightly enlarged fragmentary front elevational view of the upper portion of the screen unit, with the front cover of the vibrator housing removed to show the internal portions of the vibrator mechanism.

FIG. 3 is a longitudinal, vertical section taken through the right hand end of the assembly shown in FIG. 2, being somewhat enlarged to show the details thereof.

FIG. 4 is a transverse vertical section taken on the line 4—4 of FIG. 1, and shown on the same scale as FIG. 3.

FIG. 5 is a detailed view of the flexible vibrating element, being shown in elevation and with portions broken away for convenience of illustration other portions being partly in section to indicate the details of construction.

FIG. 6 is a vertical section taken through the vibrator housing to show the interior details thereof.

Referring in detail to the drawing, the angular element at the end portion of the vibrator unit housing is designated by the numeral **1**, while the top cover thereof is indicated by the numeral **2**. The resilient vibrating members **9** depend from the transverse member **3**, **4** which in turn is supported at the ends thereof by member **5**. Each supporting member **5** is joined at its upper end **5***b* to angular portion **1**, and at its lower end to the plate member **4**. The portions **5***a* and **5***b* are of resilient material such as plastic or rubber.

The vibrating unit **11** is secured to the underneath portion of member **2**. Reference to FIG. 6 shows the vibrator **11** in detail, and comprises the coil **12**, magnetic core **13**, the spring **14**, contact points **14***a*, electrical contact **18**, and contact **17** on vibrator arm **19** which contacts **18**, and electric cord leads **15** and **16**, the lead **15** including an on-and-off switch therein.

It will be seen that the vibrating arm **19** shown in FIG. 6 is in direct contact with members **3**, **4** from which the resilient members depend. The vibrating members **9** may be weighted at the lower ends thereof, as indicated by FIG. 5 wherein **9***a* shows ball-like elements, for example. It is quite obvious that other forms of weighting means may be used, as deemed necessary. The upper ends of the flexible members **9** may be knotted, as indicated at **10** in FIG. 5 as a means of securing the same to the rigid member **3**, **4**. While a preferred embodiment of the vibrating members **9** is shown in FIG. 5 it is to be understood that other flexible types may be used.

A compression spring member **6** which is secured to the vibrating member **3**, **4** at the end **7** thereof is in contact with pin **8** which is joined to the outer end of bracket **1**, so that the vibratory action of said member **3**, **4** is cushioned by the spring units **6** at both ends thereof. It is pointed out that other types of cushioning members may be substituted for the units **6** which have been shown as preferred embodiments in the drawing. As seen in FIG. 4 the vibrating mechanism is enclosed by skirt portions **2***a*, **3***a*, a typical door jam installation being represented by **20**, J, and D.

It is to be understood that the form of my invention, herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangements may be resorted to without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. An insect repelling screen comprising a substantially horizontally disposed member, a series of spaced flexible members secured to and depending from said horizontal member, overhead bracket means having depending bent portions on the ends thereof, said horizontal member being connected to said bracket portions by spring means, said overhead bracket means having spaced walls depending therefrom, means for vibrating said horizontal member, said vibrating means being arranged between

said spaced walls whereby said vibrating means is concealed therewithin.

2. Structure as set forth in claim 1 wherein said vibrator means is disposed beneath and secured to said overhead bracket means.

3. Structure as set forth in claim 1 wherein said vibrating means is electrical.

4. Structure as set forth in claim 1 wherein said horizontal member is connected adjacent its outer ends to said overhead bracket means by supporting members, said supporting members being connected to said horizontal member by resilient means.

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