Nov. 29, 1932. L. E. LIPSCHULTZ 1,889,206

COVER

Filed May 18, 1931

Fig.1

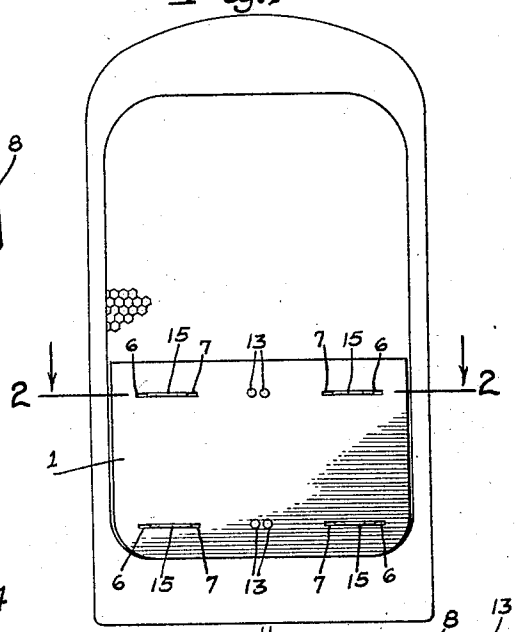



Fig.5

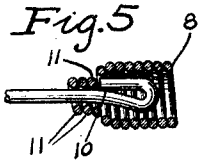



Fig.4

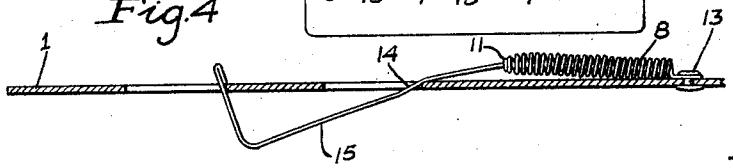



Fig.2

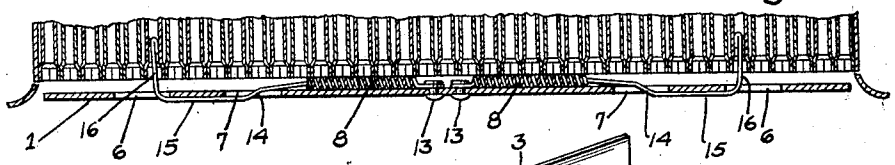
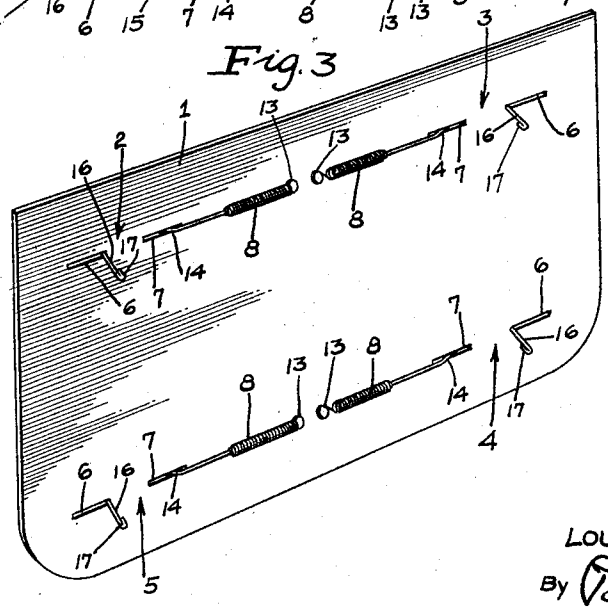



Fig.3




INVENTOR

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# UNITED STATES PATENT OFFICE

LOUIS E. LIPSCHULTZ, OF ST. PAUL, MINNESOTA

## COVER

Application filed May 18, 1931. Serial No. 538,197.

This invention relates to improvements in covers and has among its objects to provide a cheap, efficient and neat device which may be easily and quickly applied to reduce air circulation through an automobile radiator.

Other objects are: to provide a type of fastening device of which the major portion is hidden; to provide yieldably adjustable attaching means which can be easily inserted in the radiator openings, and which when so inserted act automatically to secure the device in operative position; and to provide means by which the attaching means can be so positioned as to facilitate support of the cover, during the attaching operation.

Objects, features and advantages of the invention will be set forth in the description of the drawing forming a part of this application, and in said drawing

Figure 1 is a front view of a radiator with the device applied thereto, the radiator being of the honeycomb type;

Figure 2 is a plan section on line 2—2 of Figure 1;

Figure 3 is a perspective view of the cover viewing its inner side;

Figure 4 is a view illustrating the manner in which the attaching device can be manipulated to provide a finger hold by which the cover is supported during attachment;

Figure 5 is a detail section showing how the wire is pivotally connected to the spring.

In the drawing, numeral 1 indicates a sheet of thin material which serves as a cover. The cover has four pairs of slots, two pair aligned adjacent each of two opposite edges of the sheet. The pairs are respectively indicated at 2, 3, 4 and 5, and the members of the pairs are indicated 6—7. The outermost members are designated 6, and innermost 7.

The attaching device or means is, per se, a feature of the invention, as well as the arrangement of these means in cooperative pairs. Each fastening means is composed of a single piece of wire connected to coil spring 8. A feature of the invention is the construction by which the wire element is connected to the spring 8, see Figure 5. One end of the wire is bent upon itself as at 10 to form a swiveling or hinging abutment. The spring has a number of constricted terminal coils 11 which embrace the wire, with the innermost coil abutting the end of the turned portion 10 as a stop for limiting outward movement of the wire.

Each coil is connected by one terminal to the cover as at 13. The wire (connected by one end to the free end of the spring) is first passed loosely through the inner slot 7, and has an off-setting portion 14 formed by first bending in direction of passage of the wire through the slot and then in an opposite direction, as best shown in Figure 2. A portion 15 lies flatly against the outer face of the cover when the device is attached, and the wire terminates in an angularly related attaching portion 16 which passes through the slot 6. This portion 16 is terminally bent as at 17 to increase its frictional action, with whatever portion of the radiator (or other object) it is engaged, to resist withdrawal in a direction substantially perpendicularly to the face of the cover.

When the device is not attached, the extension 16 engages the inner side of the slot 6, and the off-set portion 14 is spaced from the inner side of the slot 7, see Figure 3. When the extension 16 is engaging the end of the slot 6, the spring is under tension.

Another feature of the invention is the arrangement whereby the wire can be swung to the position shown in Figure 4. This swinging motion is limited by means of the terminally bent portion 17, which engages the inner side of the cover as a stop, see Figure 4. When the wire is positioned as shown in Figure 4 with the stop 17 engaging the cover, the off-set portion 14 is disposed as shown, with that bend nearest the spring engaging the inner end of slot 7. As the wire is pulled outwardly to the position shown in Figure 4, the spring acts continuously to hold the extension 16 against the end of the slot. There is a kind of a lever-like motion in which that portion of the wire between the bend 14 and the spring may be considered a sliding fulcrum. In any event, the action is lever-like.

As shown in Figure 4, the portion 15 of the wire is adapted to form a ledge, as means for supporting the cover while the operator

manipulates the attaching means to secure the cover to the radiator.

It is conceivable that other forms of spring may be used, and that the wire element may be an integral continuation of the spring instead of being swiveled (or pivoted) as shown in Figure 5. One of the broader features of the invention relates to the placement of the spring so that it is hidden when the cover is attached, and another feature relates to the arrangement of the springs to act in a direction of slot alignment.

This device finds valuable application as a cover for a radiator, but is not limited to such a use. The term "slot" refers to any opening in which the wire element can move for the purposes herein. Although a wire element is the cheapest material for the purposes herein, other material may be used.

Preparatory to applying the cover, the wires should be positioned as shown in Figure 4 to dispose the portion 15 for engagement by the index finger to support the cover. Moreover, when the wire is so disposed, the operator can more readily grasp the portion 15, by thumb and index finger to move the wire axially against the action of the spring 8. It will be noted that motions of the hands are in the opposite directions. After registration of the attaching extensions 16 with corresponding openings and while the springs 8 are under tension, the wires are pushed toward the radiator and the portions 16 assume the relation shown in Figure 2, with the springs 8 under tension to forcefully move the portions 16 into frictional abutting engagement with the corresponding tube interior.

I claim as my invention:

1. A cover element having pairs of slots, covering-attaching means one for each pair, each means comprising a spring secured to the cover, a wire attached to the spring and passing through one slot and then through the other, and having an attaching portion.

2. A cover element having pairs of slots, cover-attaching means one for each pair, each means comprising a spring secured to the cover, a wire attached to the spring and passing through one slot and then through the other and having an attaching portion, said wire being adapted to swing upon the cover.

3. A cover element having pairs of slots, cover-attaching means one for each pair of slots, said means being cooperatively arranged in pairs, each means comprising a spring secured to the cover, a wire attached to the spring and passing through one slot and then through the other, and having a portion positioned and adapted to attachingly engage the device to which the cover is applied.

4. A cover element having pairs of slots, cover-attaching means one for each pair of slots, said means being cooperatively arranged in pairs, each means comprising a coil spring secured to the cover, a wire attached to the spring and passing through one slot and then through the other, said wire having an attaching portion and said wire being adapted to swing upon the cover, the springs of corresponding pairs acting to urge the attaching portions toward one another.

5. A cover element having pairs of slots, cover-attaching means one for each pair of slots, each means comprising a spring secured to the cover, a wire attached to the spring and passing through one slot and then through the other and having an attaching portion, said wire being adapted to swing upon the cover, said wire having means for limiting the degree of swinging motion, said means also acting for increasing frictional engagement between the attaching means and the body to which the cover is attached.

6. A cover element having pairs of slots, attaching means one for each pair, each means comprising a coil spring secured to one side of the cover for elongation in a direction lengthwise of the slots, and a wire pivotally attached to said spring and passing through one slot to the opposite side and then through the other slot and having an attaching portion, said wire being adapted to swing upon the cover and said attaching portion having means which acts to increase the frictional engagement of the attaching portion and which also acts as a stop to limit swinging motion of the wire about its fulcrum, said attaching means being arranged in pairs with the springs of the members of the pairs acting to urge the attaching portions toward one another.

7. A cover element having pairs of slots, attaching means one for each pair of slots, each means comprising a spring secured to the cover and a wire attached to the spring and passing through one slot to the opposite side and then through the other slot and having a portion adapted to be inserted in the air circulation passage of a radiator, and lying on the same side with the spring, and said attaching means being arranged in pairs acting to urge the radiator engaging portions toward one another.

8. A cover element having pairs of slots, cover-attaching means for each pair, each means comprising a spring secured to the cover and having an extension which passes through one slot, and then through the other, said extension having means for engaging a body to which the cover is attached.

9. A cover element having pairs of slots, cover-attaching means for each pair, each means comprising a spring secured to the cover and having an extension which passes through one slot, and then through the other, said extension having means for engaging a

body to which the cover is attached, said springs acting to draw the extensions toward one another, and inwardly from the outer margins of the cover.

In witness whereof, I have hereunto set my hand this 13th day of May, 1931.

LOUIS E. LIPSCHULTZ.