This invention relates to sun shades and awnings for windows and doors and it has particular reference to foldable or collapsible awnings.

The principal object of the invention is to provide an awning of neat and attractive design, constructed preferably of sheet metal in collapsible sections, the latter being so related, when in extended position that they will exclude all direct rays of the sun, yet will admit indirect light as well as air, to displace or release heated air tending to accumulate under unventilated awnings. Moreover, the relative spacing but overlapping relationship of the awning sections precludes passage of rainwater while ventilating the area beneath the awning.

Another object of the invention is to provide a sectional ventilated awning in which the sections are normally under a tensile force urging them to extended or open position, to resist which, a pull cord is provided to close or collapse the awning sections, having an operator manipulable interiorly of the building on which the awning is installed.

Another object of the invention is to provide an awning whose parts are so designed that they may be readily assembled and disassembled for convenient packing and shipping and among the parts is a novel form of flashing designed to provide a watertight seal between the awning and its mounting surface.

With the foregoing objects in view, the invention has further reference to certain features of accomplishment which will become apparent as the description proceeds, taken in connection with the accompanying drawing wherein:

Figure 1 is a perspective view of a foldable ventilated awning constructed according to the invention showing a form of interior operator.

Figure 2 is a vertical sectional view of the awning mounted on a window.

Figure 3 is a fragmentary sectional view of a joint employed to join the awning sections to their respective detachable side members.

Figure 4 is a fragmentary sectional view showing the flashing.

Figure 5 is a fragmentary detail view, partly in section showing a torsion spring normally urging the awning sections to open or extended position.

Figure 6 is a fragmentary sectional view of the awning showing the ventilating spaces between the awning sections which also admit indirect light and further illustrating the stops for predetermining overlapped relationship of the sections, and

Figure 7 is a fragmentary perspective view of one of the awning sections.

Sheet metal awnings in collapsible sections are not broadly new, nor is it considered herein to be new to operate an awning interiorly of the building on which it is installed, but it is considered an improvement in this art to so arrange the sections of the folding type of awning in such manner that entrapment of heated air beneath the awning is avoided, thus contributing much towards the comfort of occupants of the building. It is considered also a further advancement in the art relating to collapsible metal awnings to provide for the entrance of indirect light while permitting passage of rainwater so that the interior of the room protected by the awning will not be unduly darkened, even on days when the sun is shining.

Continuing with a more detailed description of the drawing, reference numeral 16 denotes a stationary hood or mounting section having a longitudinally formed flashing plate 11 thereon, the latter in turn, being provided with longitudinal channel 12 adapted to contain a suitable weatherproofing compound 13 which seals the upper portion of the mounting section against passage of moisture between the same and the wall 14 to which it is attached by screws 15.

The awning is designed to be dismounted for convenient packing and shipping and with this in view, a joint 16 such as shown in Figure 3, is provided for attaching the awning section 18 to a substantially triangular side member 17, the parts being held together by means of metal screws 18. This is true also of the several movable sections which are telescopically related and adapted to be foldable under the stationary section 16, hence the same reference characters are employed to indicate the joints and retaining screws throughout.

The movable sections of the awning include a section 19 and its triangular side members 20 and an outer section 21 and its complementary side members 22. It is to be understood that as many awning sections as may be required or described may be incorporated in the awning but in any event, the lower ends of the side members 20 and 22 on each side are mounted on a common pivot 23 situated in the lower end of the side member 17 of the stationary mounting section, the said member 17 having a flange 24 thereon which is secured by means of screws 25 to the wall 14.

It is apparent from the foregoing that the awning sections and their side members are
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capable of being folded one into the other as they are successively raised. This is accomplished by means of a cable 26 adapted to be wound on a spool 27 and which extends upwardly alongside the window frame 28 and through an eyelet 29 at the top of the frame, thence through a second eyelet 30 at the opposite side of the frame, whereupon it extends outwardly and is attached at 31 to the lowermost awning section 21, as shown in Figures 1 and 2. Another length of cable 32 is attached to cable 29 at a point below the eyelet 29 at one end and has its opposite end attached at 33 to the opposite end of the lower awning section 21. Thus, by pulling upon the cable 28 as by winding the same on the spool 27, the lower section 21 is raised to a position within the next section 18, followed by the latter section which disposes both or all of the movable sections underneath the stationary section 16.

Returning to the operating means for the cable 26, the spool 27 on which it is wound is mounted on a shaft 34 (Fig. 1) which extends axially into a hollow shaft 35, the latter extending through an opening made in the wall 14 and carries a crank 36 on its interior end. A clutch consisting of a boss 31 is mounted on and rotated by the hollow shaft 35 which is adapted to enter a hole (not shown) in one side of the spool 27 to rotate the latter in raising the awning sections. A spring 39 within the hollow shaft 35 normally exerts force tending to separate the boss 31 and spool 27 to disengage the clutch. To engage the clutch, the crank 36 is forced inwardly against the resistance of spring 39.

The awning sections 19 and 21 are normally urged to open or extended position by means of a looped or torsion spring 48 (Fig. 5), one end of which is affixed by means of a screw 41 to the wall 14 while the opposite end is secured by a screw 42 to an internal flange 43 formed along one edge of the side member 22 of the lower awning section 21. The tension of the spring 48 resists raising of the awning sections, tending to maintain them in extended position and has the further effect to prevent relative movement of the sections by the wind, hence rattling thereof is minimized or eliminated entirely.

In order that an air pocket beneath the awning will be avoided when the sections thereof are extended, there is provided between these sections an intervening space 44 better shown in Figure 6. The forward edge of each awning sections overlaps the rear edge of the next adjacent section but is out of contiguity therewith to admit direct light yet exclude rainwater. Direct rays of the sun on the exposed part of one of the sections will be reflected by the underside of the overlying portion of an upper section and through the window protected by the awning, thereby dispelling the darkness which would otherwise exist in the room.

To provide the light admitting and ventilating openings 44 and yet insure relative engagement of the awning sections for successive raising and lowering thereof, the forward edge of each sec-

tion is turned under as at 45 (Fig. 6) to lie flush against the underside of the section. The underturned portion not only reinforces the forward edge of the section but from this portion is struck a projection 46 at each end against which abuts a similar projection 47 which is struck from an underturned portion 48 on and longitudinally of the next adjacent and lower awning section. The portion 48 also reinforces the rear edge of each movable section. Therefore, between the downwardly and upwardly turned protuberances 46 and 47 respectively, there is an elongated space 44 through which air and light may pass but, in view of the overlapping relationship of the front and rear edges of juxtapositioned sections, there is little likelihood of rainwater entering the openings 44 except possibly during a wind of hurricane proportions in which case the awning will more than likely be raised or the window closed.

Manifestly, the construction a shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claim is also considered to be within the spirit and intent of the invention.

What is claimed is:

In a sheet metal awning, the combination comprising a stationary mounting section and a plurality of movable sections successively disposed under said stationary section, all but the stationary of said sections having both its forward and rearward portions turned inwardly to lie against the underside of the section, a protuberance depending at right angles from each end of the inner edge of the inwardly turned forward portions of said awning sections, a complementary protuberance extending upwardly at right angles from each end of the rearward portion of each of said movable sections and adapted to lie in the path of said first mentioned protuberances to engage therewith and to limit the degree of relative extension of said movable sections, substantially triangular side member on each of said awning sections, the side members of each side of said awning having a common pivotal point and spring means for imposing tension on said awning sections in extended position thereof.

MAXWELL P. TODD.

REFERENCES CITED

The following references are of record in the file of this patent:

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>148,105</td>
<td>Barnes</td>
<td>Mar. 3, 1874</td>
</tr>
<tr>
<td>603,691</td>
<td>Hogan</td>
<td>May 10, 1898</td>
</tr>
<tr>
<td>1,696,940</td>
<td>Dunsworth</td>
<td>Jan. 1, 1929</td>
</tr>
<tr>
<td>1,832,301</td>
<td>Higman</td>
<td>Nov. 17, 1931</td>
</tr>
<tr>
<td>1,839,052</td>
<td>Richardson</td>
<td>Dec. 29, 1931</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Country</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>140,940</td>
<td>Switzerland</td>
<td>Sept. 1, 1930</td>
</tr>
</tbody>
</table>