

A. M. DAUERNHEIM.

AWNING.

APPLICATION FILED MAY 5, 1911.

1,021,508.

Patented Mar. 26, 1912.

3 SHEETS—SHEET 1.

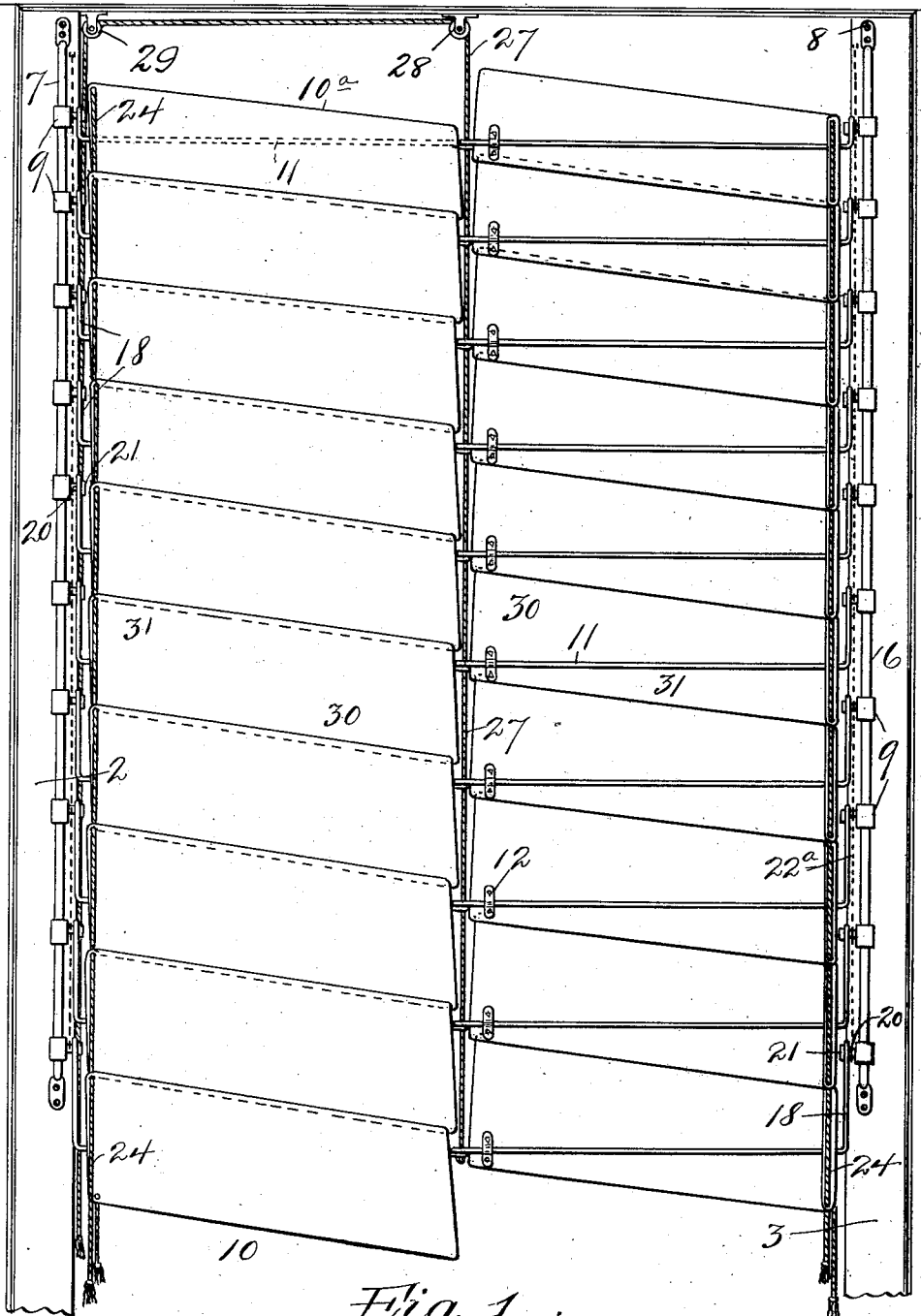


Fig. 1.

Witnesses:
Edward D. L. Sperry

Inventor
Augustus M. Dauernheim
By his Attorney
Charles S. Nunsley

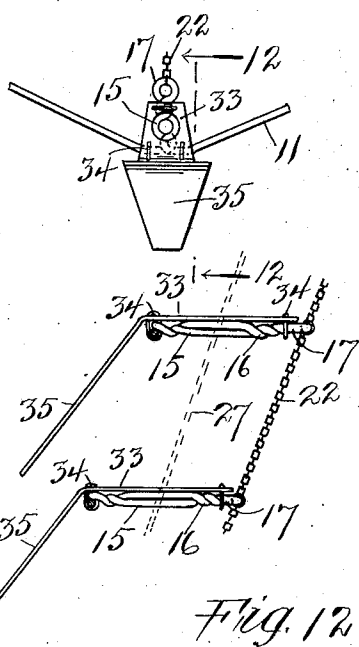
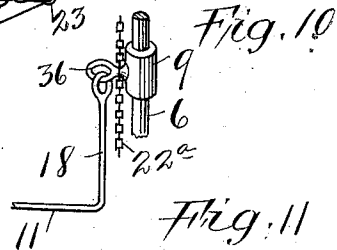
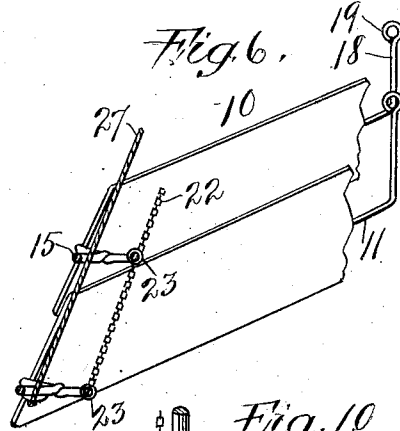
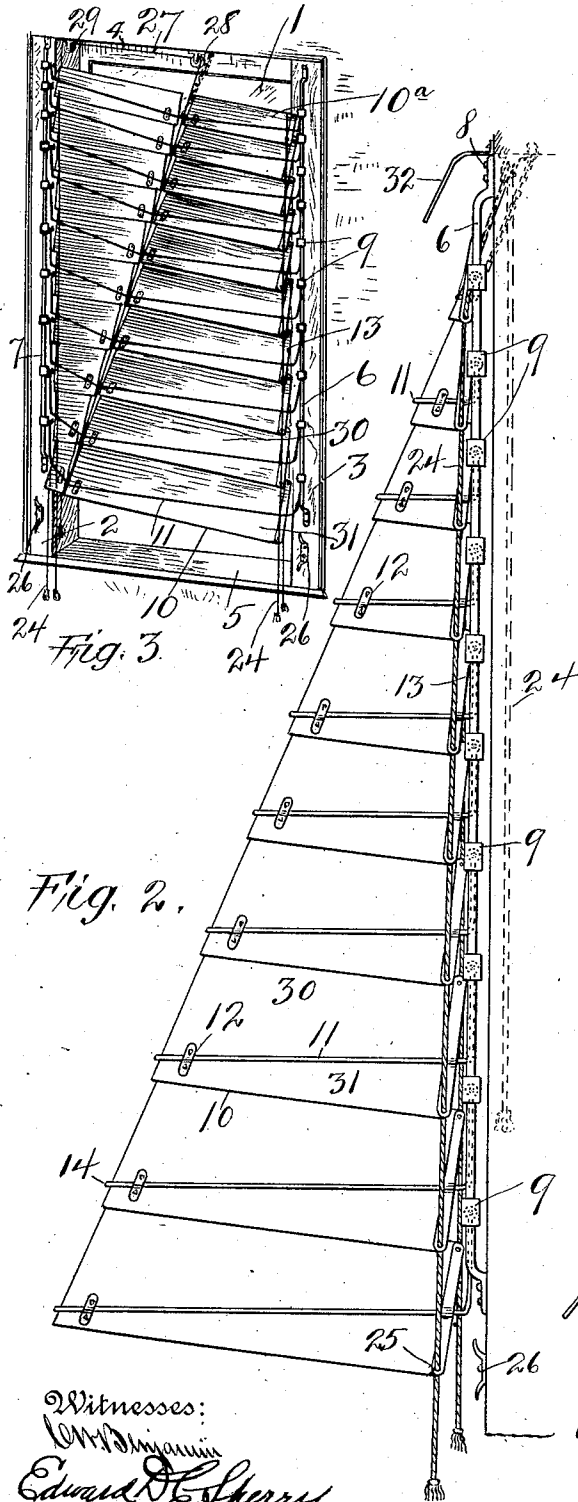
A. M. DAUERNHEIM.
AWNING.

APPLICATION FILED MAY 6, 1911.

Patented Mar. 26, 1912.

3 SHEETS-SHEET 2.

1,021,508.



Witnesses:
Wm. J. Manning
Edward D. Sperry

Inventor
Augustus M. Dauernheim
By his Attorney
Charles S. Mansley.

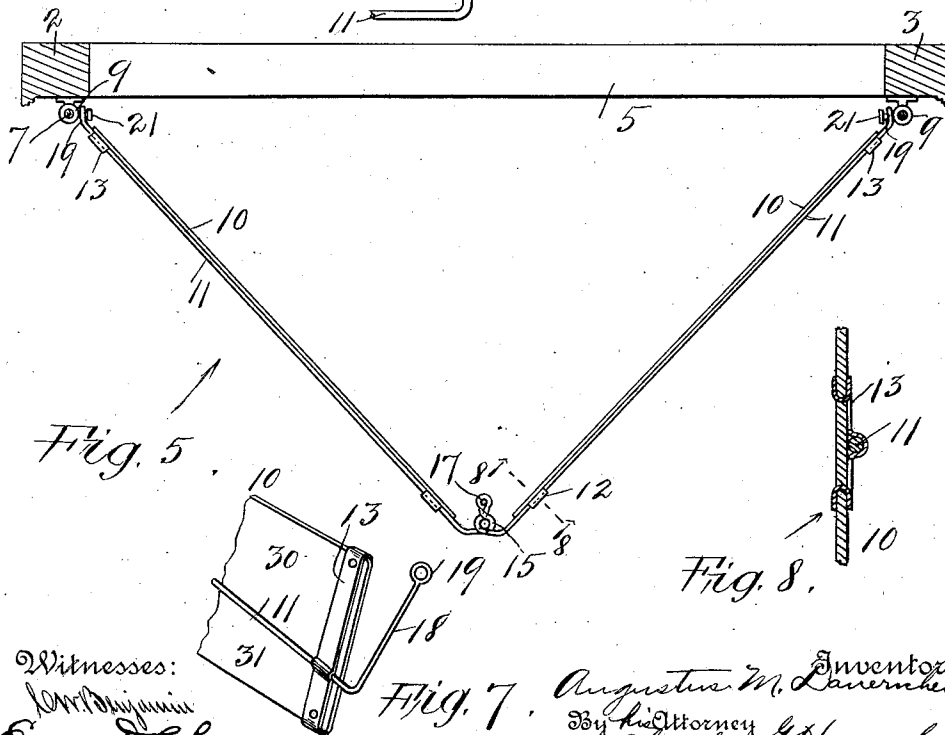
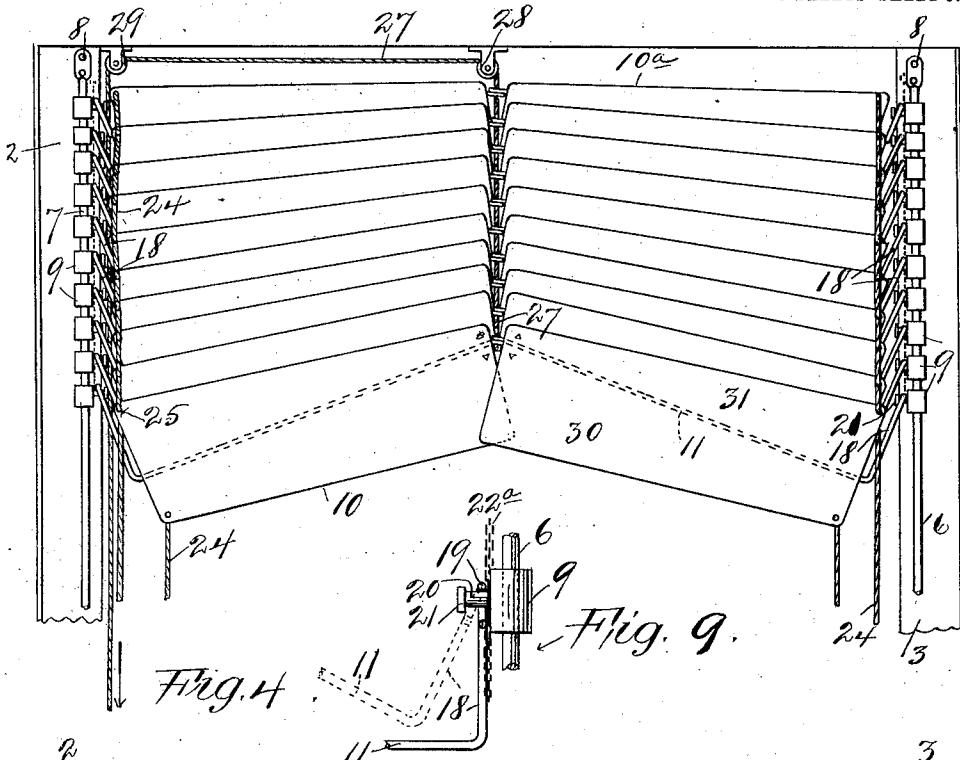
A. M. DAUERNHEIM.
AWNING.

APPLICATION FILED MAY 5, 1911.

1,021,508.

Patented Mar. 26, 1912.

3 SHEETS—SHEET 3.



Witnesses:
Edward D. Sperry

Fig. 7. Augustus M. Dauernheim
By his Attorney Charles S. Hensley.

UNITED STATES PATENT OFFICE.

AUGUSTUS M. DAUERNHEIM, OF NEW YORK, N. Y.

AWNING.

1,021,508.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed May 5, 1911. Serial No. 625,180.

To all whom it may concern:

Be it known that I, AUGUSTUS M. DAUERNHEIM, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Awnings, of which the following is a specification.

My invention relates to an awning such as may be used for shading windows, doors and other openings in buildings and the invention embodies many features which are useful not only for shading a window, but for deflecting air currents into the room of the building and thereby securing additional advantages over the ordinary awning.

The object of my invention consists in providing an awning formed of individual planes which can be adjusted in various positions to shade the window and at the same time permit proper circulation of air.

The awning is constructed in such a way that the planes can not only be adjusted in various positions for such purposes, but they may also be folded and moved to the top of the window or door, when not in use. The lower planes, when the awning is down, are adapted to converge from the window toward the middle of the awning, and the angle of convergence of the lowest planes is the most acute, the ones above the lowest gradually increasing and the top-most pair of planes preferably lie substantially flat. This arrangement causes the meeting ends of the several pairs of planes to form a middle line extending from the top of the window, downwardly and outwardly so that the bottom of the awning sets out from the window. This causes the awning to shed rain, and causes the awning to properly shade the sun from the window and gives the same general appearance as the awnings in general use. When the planes are folded up they are adapted to lie flat and close to the building or other supporting structure.

The details of construction of the preferred form of my invention and its advantages in general, will more fully appear in the description hereinafter.

In the drawings forming a part of this application Figure 1, is a front elevation of an awning constructed in accordance with my invention, showing the two sets of planes in different positions. Fig. 2, is a side elevation showing the planes in one position.

Fig. 3, is a perspective view showing the awning in use. Fig. 4, is a front elevation, showing the awning in the action of being folded up. Fig. 5, is a cross section showing the position of the lower planes when the awning is about to be raised. Fig. 6, is a perspective view of the two lowermost planes showing the devices for spacing and for folding the planes. Fig. 7, is a perspective view of the end of one of the planes, showing the method of supporting the same. Fig. 8, is a cross section taken on the line 8-8 of Fig. 5. Fig. 9, is a detailed view, showing the connection between the rod on which the planes rock and the guiding collar. Fig. 10, is a similar view showing a modified form of swivel connection. Fig. 11, is a plan view of a portion of the structure showing the application of shields used to shade the light at the meeting points of the main planes, and Fig. 12, is a sectional view taken on the line 12-12 of Fig. 11.

Heretofore awnings for shading the sun light from windows and doors have been constructed of flexible material such as canvas, supported upon a rigid folding frame, but owing to the fact that the awning consisted of a large sheet of material which covered the greater portion of the window or door, most of the air currents were prevented from entering the building through the window or door and while the awnings shut a great deal of the sunlight out, and were to this extent advantageous, they had the disadvantage that they shut off the air currents and interfered with the ventilation of the room. Not only this but the awning when made of a large sheet of material was subject to such tremendous air pressure, that at times it was necessary to fold the awning up, to save it from destruction and at a time when it was required for shading the window. Under my invention it is possible to make the awning simple in construction and in a way which will not only cause it to shade the window or door of the building, regardless of the angle at which the sun light strikes the awning, but the several planes of which the awning is constructed will be so adjusted that the air currents will be deflected and be caused to enter the building to give the proper circulation of air; and the awning will not be subject to such great air pressure as heretofore. In the fullest embodiment of my invention the planes on one half of the

awning are adjusted separately from those of the other half, and the awning is adjustable in such a manner that a part or all of the window opening may be shaded by the
5 awning.

I prefer to make the planes on each side of the awning separately adjustable, because at times sunlight may strike principally upon one side of the awning, in which event
10 the planes of that side can be placed in a position which will readily deflect the light while those on the other side may be adjusted with more regard to the air currents, whereby the window opening will not only
15 be shaded but the air deflecting properties of the planes will be utilized.

In the drawings I have shown my invention in the preferred form applied to the ordinary window of a building, but it is
20 to be understood that there are other uses for my invention and the precise form herein shown need not be followed in every instance. The structure to which I have shown my invention applied, consists of a
25 window 1, placed in the window frame consisting of the side frames 2 and 3, and the upper and lower sills 4 and 5. In each of the side frames 2, and 3, or other suitable supporting means I have secured upright
30 guides 6, and 7, which are secured to the structure by means of screws 8, the guides being bent at each end whereby the greater part of their length will be spaced from the window frame sufficient to permit of the
35 movement of certain working parts of the awning. Mounted upon these guides and adapted to slide up and down thereon, I have provided loose collars 9, there being at least one collar on each of the guides 6, and
40 7, for each bar of the planes of which the awning proper is constituted. These collars are loose upon the bars and can therefore be moved up and down with the planes.

As shown, the awning structure proper
45 consists of planes 10, the upper ones 10^a, of which are shorter and the others are of increasing length toward the bottom of the awning and they are arranged in pairs, that is, the ends of the planes meet at a point
50 preferably in line with the middle of the window opening and diverge inwardly toward the window casing when the awning is down, or in the position assumed when in use. By making the planes of increasing
55 length from the upper to the lower planes, the middle points of the several plane supporting bars will form a line extending outwardly and downwardly from the upper sash or top of the window opening. The
60 planes are mounted in such a way that they will turn axially upon their support, and the supports are arranged and adapted to be moved upwardly for the purpose of folding the planes upon themselves: and the sup-
65 ports are so constructed that when the

planes are moved upwardly they will overlap on each side of the awning and the corners of the lower planes of one side will slightly overlap those of the opposite side. For this purpose I have provided the bars
70 or rods 11, upon which the planes are secured in any desired position, so that the planes may be swung upon the bars; and I prefer to connect the planes with the bars for this purpose by means of the straps
75 12, and 13, which are preferably arranged at the opposite ends of the planes; and the latter straps I prefer to bind entirely around one end of the plane in order to give the proper stiffness to the latter. I prefer to
80 make these several bars of heavy wire, whereby they may be bent outwardly toward the middle portion 14, at which place I form a loop 15, toward the inside of the
85 awning and I twist the wire at 16, and form a second loop 17. The ends of the bars 11, should bend at an angle to form upwardly extending portions 18 the ends of which, in the form shown in Fig. 9, etc., are provided
90 with a loop 19 which engages around the pins 20, of the collars 9; and the head 21, of the pin 20, prevents the rod loop 19, from coming off the pin, but permits of a certain amount of play of the loop on the pin. The
95 loop itself is larger than the pin to permit the bars to assume different positions, such as that shown in dotted lines in Fig. 9. The upwardly bent ends 18, of the bars of the
100 uppermost planes, are preferably short or the bar may be even straight on this plane, but the ends 18, on the other planes are of increasing length, the one for the lowest plane being greater than the rest, etc. The purpose of the gradual increase in the
105 length of these upturned ends is to cause, or permit the planes to overlap each other when the awning is folded so that the second plane from the top will overlap the top one, the third will overlap the first and
110 second, etc.; and the ends 18, of the lower bar will therefore have to be of a length to permit the lower plane to overlap all the planes above it, which requires the lower plane to move out from the guides 6 and 7,
115 more than the planes above it.

I have provided means for retaining the several planes in proper spaced relation when the awning is down, and which will permit the awning to be folded; and I prefer to connect the spacing device to the
120 middle and side of the plane carrying or supporting parts. For this purpose I have provided a chain 22, which I secure at its upper end to a part of the building structure preferably the upper sill 4; and at various
125 places on this chain I provide rings 23, which are located according to the desired spaced relation of the several planes and each ring 23, engages in the loop 17, of one
130 of the bars 11. In addition to this middle

chain, chains 22^a are also provided with rings 23, spaced to correspond with the rings in chain 22. The rings of these chains circle about the pins 20 of the several collars and perform the same function on each side of the awning as the middle chain. When the awning is in its lowered position as in Figs. 2 and 3, the bars 11, are supported through the rings 23, by the chains 22, and 22^a in proper spaced relation to each other, and when the awning is folded the chains being flexible, will not interfere with the folding action of the planes.

I have provided means for inclining the planes at various horizontal angles whereby they can be adjusted to suit the angle at which the sun light strikes the building, to properly prevent the sunlight from entering the window; and also to secure the greatest amount of ventilation, by adjusting the planes with relation to the air currents striking them. I prefer to employ means for adjusting the planes on one half of the awning separate from those of the other as it may often happen that the light or air currents striking the planes are different on one half of the awning from the other and separate adjustment will produce better results. To secure the proper horizontal adjustment of the planes I have provided ropes, one for each side or half of the awning and the rope forms a loop around the several planes preferably near their ends. The rope 24, passes through an aperture 25, in each plane, preferably the lower part, which is of lesser weight than the upper half, until it reaches the topmost plane, when it passes twice through the latter and returns on the inside of the planes, forming two ends, near the bottom, which may be secured as by the holder 26, to retain the planes at any desired inclination. When the awning is down as shown in Fig. 2, the planes on either half the awning may be placed at any inclination by pulling on one or the other end of the rope 24, when the engagement of the rope with the several planes will cause the latter to rock on their bars until the planes are adjusted to the desired position; when the ends of the ropes are secured to retain the planes in a steady position. The planes on one side of the awning may be tipped downwardly from back to front and those of the other side upwardly from back to front, or vice versa; and in fact various arrangements are possible to secure the best circulation while at the same time preventing the light entering the window.

In the preferred construction I support the planes upon their bars 11, so that the bars are diagonally disposed with relation to the planes and so that the planes are overbalanced on one side of their pivotal

line. That is, the portion 30, of the plane when the planes are in the position shown in Fig. 3, lies above the bar 11, or toward the window frame, according to the angle of inclination of the plane; and this portion of the plane is larger, and therefore somewhat heavier than the portion 31, which lies below the bar, so that the natural tendency of the planes will be to swing, when the inclining rope is released or let out.

In order to control the raising and lowering or folding of the awning I have provided a flexible member, in the nature of a rope 27, which is secured to the loop 15, of the bar of the lowermost plane and which passes through the loops 15, of the several bars of the planes, until it passes from the loop of the uppermost bar, when it is preferably passed over a pulley 28, fastened to the window frame and thence to one side of the window, around another pulley 29, and downwardly where it will be in easy reach of the operator.

The operation of my invention is as follows: When the awning is down for use, as shown in Figs. 2 and 3, the planes may be placed at various angles by adjusting the ropes 24, on either side and securing them. In this position of the awning, the middle and ends, of the bars 11, are supported by the chains 22, and 22^a which support them in proper spaced relation, while the ends of the bars are connected by the collars 9, with the guides at the sides.

Whenever it is desired to raise partially or wholly the awning, the ropes 24, are first released, when the planes, by reason of their being overbalanced, will rock on their bars to the position shown at the left in Fig. 1, when the part 30, which was above, hangs down below the supporting bar 11, and the edge of one plane slightly overlaps the edge of the next in vertical relation to it, etc. The inclining ropes are preferably allowed to hang free during the raising of the awning. When the rope of the second, or last side to be released has been freed, the planes of such side will rock by reason of their overweight and this will bring such planes into the same position as those of the first side, with their horizontal edges slightly overlapping. When the second set of planes are allowed to fall, the lower planes will, by reason of the angle of the ends of the planes in relation to their pivotal line, slightly overlap at the ends which come near the middle of the awning. This overlapping of the ends or corners of the planes of the two sets, preferably takes place when the last set of planes is lowered by the releasing of the inclining ropes. The rope 27, is now pulled, when the end of it, pulling on the middle portion of the lowermost bar 11, will cause the latter to slightly rock from the pins 20, at each end. Finally the bar

and its planes move bodily upwardly, guided by the guides, until the second plane from the bottom is overlapped by the lowest one, when both will move together, overlapping the third, etc., as shown in Fig. 4, until the

5 planes are folded up to the top of the window when they preferably lie under a sheltering shed 32, secured to the window frame. The difference in length of the upturned
10 ends 18, of the several bars 11, permits the lowermost bar and its planes to swing out to travel over the next plane to it, and then for those to overlap the next one, etc., until the planes are all folded upon themselves.
15 The uppermost plane requires in fact, no upturned end, or a very slight upturn. When the awning is thus folded upon itself it is held up out of the way, leaving the window unshaded. When the planes were
20 raised the supporting chains 22, and 22^a simply fell into short loops and in no way interfered with the folding operation. When the awning is to be lowered, the above operations are reversed.

25 It will be obvious from the above that provision is made for various adjustments of the planes so that the greatest advantages may be had under all conditions. It is also obvious that the air pressure and strains on the awning are much less than in the ordinary awning constructed of one large piece
30 of canvas.

As there is more or less space through which the light might pass, where the planes
35 of each half come together at the middle of the awning, I prefer to arrange a series of small shields down the middle line of the awning to prevent sun light from passing and I have shown such means in Figs. 11, and 12, preferring to omit the same from
40 the remaining views of the drawings for the purpose of better illustrating the more important features of my invention. For this purpose I have secured to the rods 11, at
45 their middle extended portion, plates, consisting of the horizontally disposed portion 33, which is secured to the looped portion of the bar by binding wires 34, passing therethrough; and the downwardly and out-
50 wardly extending portions 35. The parts 35, are preferably wider near the portion 33, and are narrowed outwardly and are preferably of such dimension and location that when the awning is in use, they will form
55 a continuous shield in front of the line where the main planes come together as shown in Fig. 12.

In Fig. 10, I have shown the collars 9, as provided with a pin having a loop 36,
60 through which the loop of the plane rod engages and this form of connection may be preferred to that shown in Fig. 9.

It will be obvious that many changes may be made in the arrangement of and con-
65 struction of the various parts of the awning

without departing from the spirit and scope of my invention.

Having described my invention what I claim is:

1. An awning of the character described, 70 embodying a plurality of planes, a plurality of converging supporting elements for the planes, said supporting elements being adapted to support the planes in converging relation when the awning is down, and in 75 overlapping relation when folded up, said planes being arranged to be rocked on substantially longitudinal axes on their said supporting elements whereby they may be placed at various angles relative to the general disposition of the awning, and means 80 for guiding said supporting elements during the operation of folding the planes.

2. An awning of the character described, 85 embodying a plurality of planes, a plurality of converging supporting elements for the planes, said supporting elements being adapted to support the planes in converging relation when the awning is down and in overlapping relation when folded up, 90 said planes being arranged to be rocked on substantially longitudinal axes on their said supporting elements whereby they may be placed at various angles relative to the general disposition of the awning, flexible 95 means for adjusting the planes at various angles on their axes, and means for guiding said supporting elements during the operation of folding the planes.

3. An awning of the character described, 100 embodying a plurality of planes, a plurality of movable converging supporting elements for the planes, on which the said planes are arranged in diverging pairs, and of increasing length from top to the bottom of the 105 awning, said supporting elements being arranged to support the planes in converging relation when the awning is down and in overlapping relation when folded up, said planes being arranged to be rocked relative 110 to their supports upon substantially longitudinal axes whereby they may be placed at various angles relative to the general disposition of the awning, and means for guiding said supports. 115

4. An awning of the character described, 120 embodying a plurality of planes, a plurality of movable converging supporting elements for the planes, adapted to support the planes in converging relation when the awning is 125 down and in overlapping relation when folded up, said planes being arranged to be rocked relative to their supports upon substantially longitudinal axes whereby they may be placed at various angles relative to the general disposition of the awning, and arranged to fall in overlapping relation 130 when swung to an upright position, and means for swinging said planes on their axes.

5. An awning of the character described, composed of diverging supports arranged to swing and to slide, planes arranged in converging pairs upon said supports and adapted to swing on their supports on substantially longitudinal axes, said planes being adapted to be swung upon their axes to different inclinations relative to the general disposition of the awning and to lie in overlapping relation when the said supports are moved to close the awning, the planes of one diverging side of the awning being adapted to be swung independently of those of the other and means for swinging the planes on each side of the awning independently.

6. An awning of the character described, embodying a plurality of independently swinging and sliding diverging supports, planes arranged upon the diverging portions of said supports and movable therewith, said planes being arranged to swing on their supports on substantially longitudinal axes whereby they may be placed at various angles of incidence relative to the general disposition of the awning when down, means for guiding said supports and upon which the latter may swing, means for retaining the supporting members in such spaced relation when the awning is down as to cause the planes to overlap as the awning is folded and means for swinging said planes on their axes.

7. An awning of the character described, composed of a plurality of planes means for retaining said planes in converging relation when the awning is down and in overlapping relation when the awning is up, means for guiding said retaining means, means for supporting said retaining means in spaced relation when the awning is down, said planes being adapted to swing on a substantially longitudinal axis and adapted to overlap when swung in an upright position and a flexible member having a sliding engagement with a plurality of said retaining means and adapted to raise the lower planes whereby said planes will be folded upon themselves as the awning is raised.

8. An awning of the character described composed of a plurality of planes, means for supporting said planes in converging relation when the awning is down, said planes being adapted to swing on substantially longitudinal axes and overbalance as to their axes, flexible means for swinging said planes on their axes and flexible means for raising said planes in overlapping relation.

9. An awning of the character described, composed of sets of planes arranged in longitudinal pairs, means for retaining said sets of planes in converging relations when the awning is down, and in overlapping relation when the awning is raised, said planes being adapted to swing on axes extending diagonally

nally of the planes and adapted to overlap when swung in an upright position and means for independently swinging said sets of planes.

10. An awning of the character described, comprising a plurality of converging bars, planes arranged to swing on said converging bars, guides for the ends of said bars, and means for supporting said bars in spaced relation when the awning is down, the planes of the several bars being adapted to overlap when the bars are raised.

11. An awning of the character described, comprising a plurality of bars extending outwardly at their middle portion to form converging members, said bars being adapted to swing, planes arranged upon said converging portions and adapted to swing thereon, the planes of the several bars being adapted to overlap when the bars are raised, guides for the bars, and means for supporting the bars in spaced relation when the awning is down.

12. An awning comprising a plurality of bars extending outwardly at their middle portion to form converging members, said bars being adapted to swing, and having loops near their apices, planes arranged upon said converging portions and adapted to swing thereon, the planes of the several bars being adapted to overlap when the bars are raised, guides for the bars, flexible means for supporting the middle and ends of said bars in spaced relation, and means for raising the bars and planes, comprising a flexible member passing through the loops of said bars and connected with the lowermost bar, whereby the bars may be raised by pulling up the lowermost bar.

13. An awning comprising bars extending outwardly to form converging parts and having upwardly extending ends, the said bars being arranged to swing from their ends, guides for the bars, means for supporting the bars in spaced relation when the awning is down, planes carried by the converging portions of the bars whereby they will be disposed in converging relation with each other, the upturned portions of the lower bars being greater than those of the bars above them, whereby, when the bars are swung, the lower planes will overlap those above them, and means for swinging and raising said bars.

14. An awning comprising guide rods for each side of the window or the like, collars slidable along the said guide rods, bars having upturned ends arranged to swing from said collars, and extending outwardly near their middle portion to form converging elements, sets of planes arranged to swing on the converging portions of the bars, whereby the planes of one set will be disposed convergingly relative to the other, flexible means for separately adjusting the

angles of the sets of planes, flexible means for supporting the apices of the bars in spaced relation when the bars are down, means for supporting the collars in spaced
5 relation when the bars are down, and a flexible member arranged to draw up on the middle of the lower bar, whereby the planes will be raised and folded, the upturned ends of the lower bars being longer than those of
10 the bars above them, whereby the lower planes may swing out to permit them to overlap those above them.

15 15. An awning comprising a plurality of planes, bars for supporting said planes on which the latter are adapted to swing, said bars extending outwardly at the middle to

form converging portions to which the planes are secured in converging relation, means for guiding said bars, whereby they may be raised to fold the planes upon each
20 other, and shields for shading the space where the planes come together near the middle of the awning, said shields being carried by said bars and adapted to overlap
25 each other when the bars are raised.

Signed at the city, county and State of New York, this 2nd day of May 1911.

AUGUSTUS M. DAUERNHEIM.

Witnesses:

ARMA L. BAUER,
EDWARD D. C. SPERRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."