March 22, 1927. 1,622,245

E. J. BLISS

AWNING

Filed April 27, 1925 3 Sheets-Sheet 1

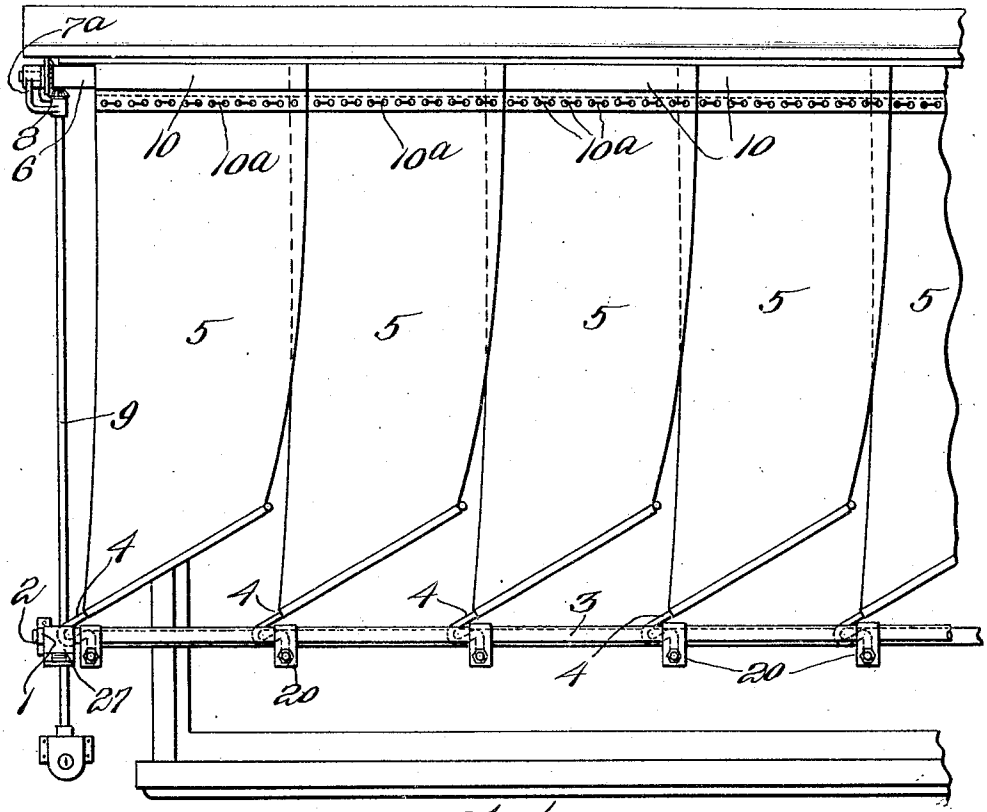

Fig. 1.

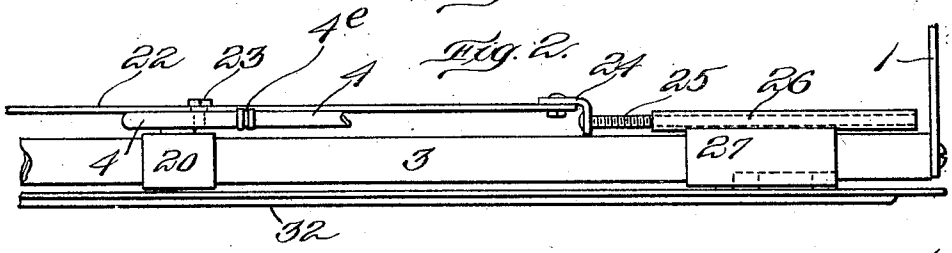

Fig. 2.

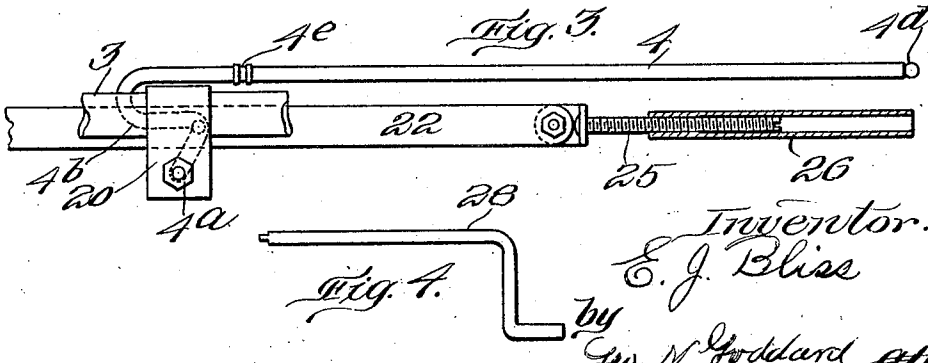

Fig. 3.

Fig. 4.

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AWNING

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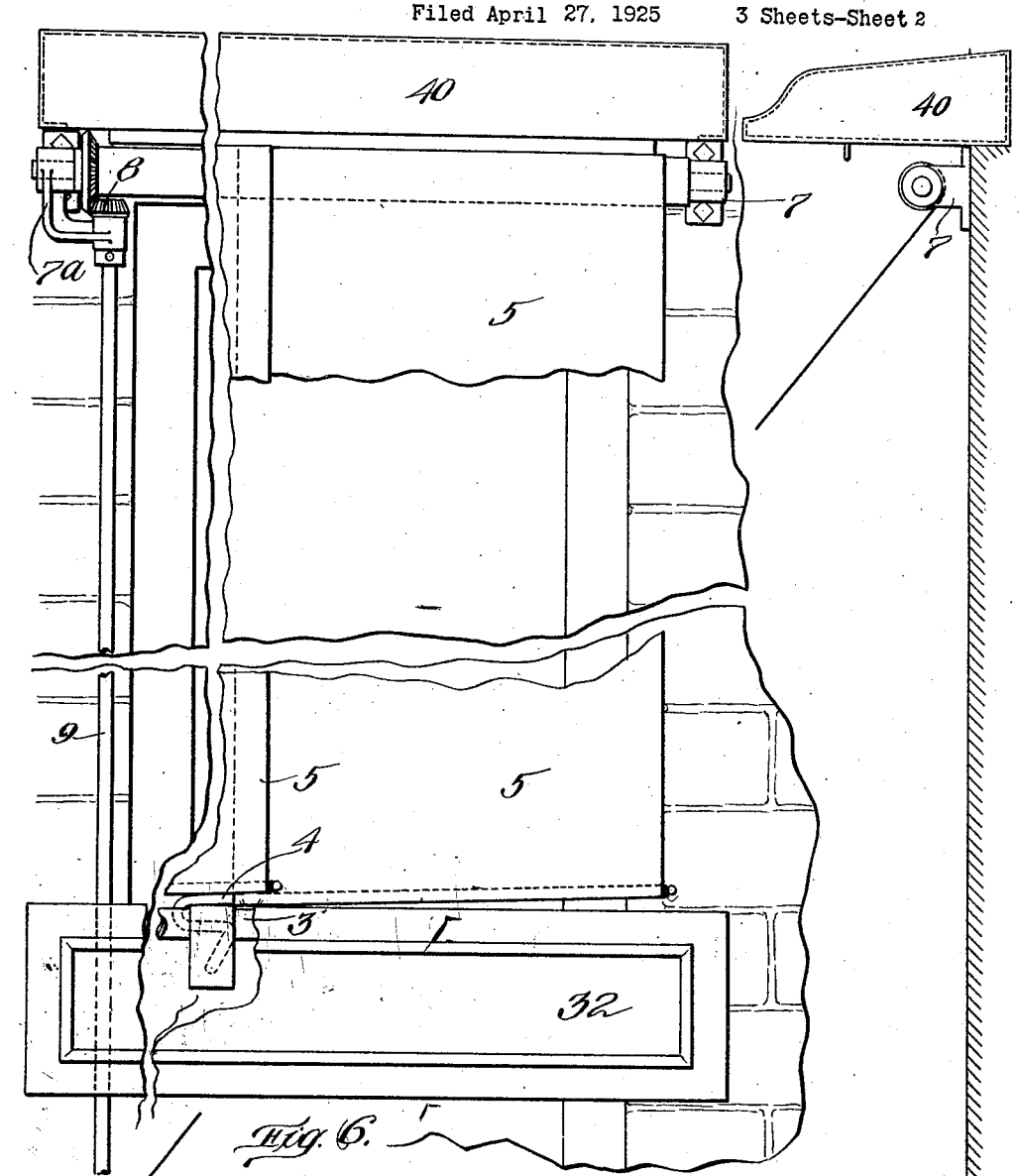

Fig. 6.

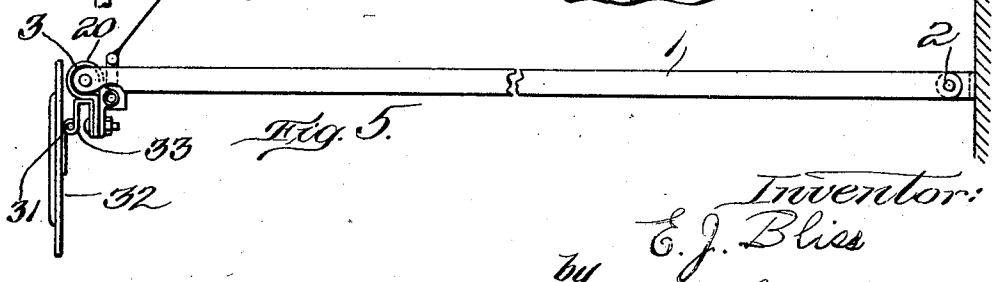

Fig. 5.

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AWNING

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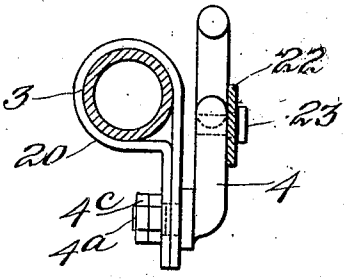

Fig. 8.

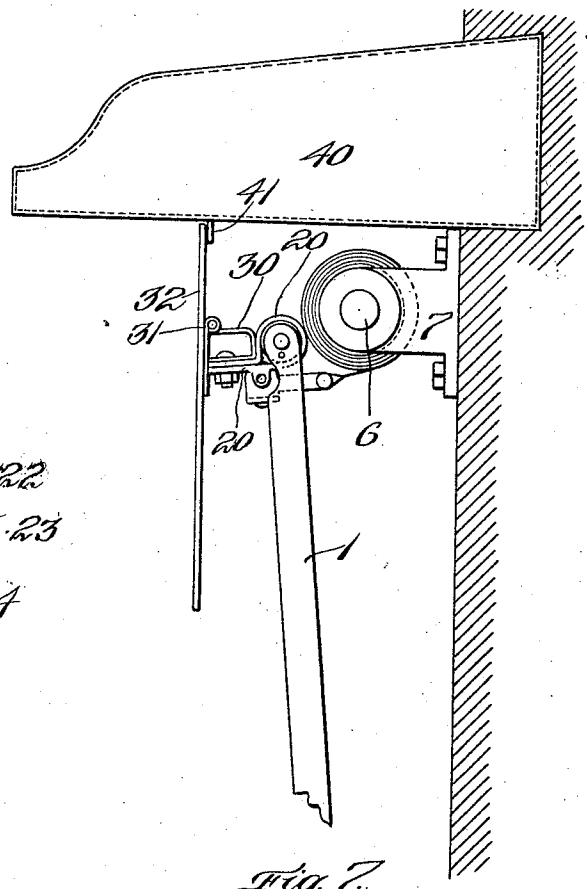

Fig. 7.

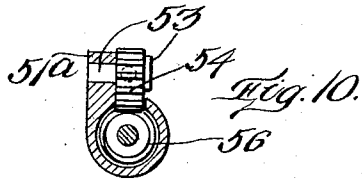

Fig. 10.

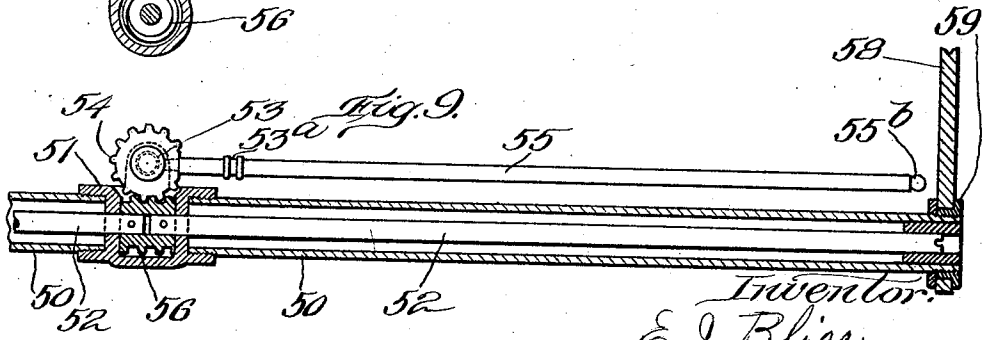

Fig. 9.

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Patented Mar. 22, 1927. 1,622,245

UNITED STATES PATENT OFFICE.

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AWNING.

Application filed April 27, 1925. Serial No. 26,038.

This invention relates to awnings for shading doors, windows and the like, and is intended to provide a simple and convenient construction by which direct rays of the sun may be excluded, while at the same time permitting the admission of light and air without impairing its function of excluding direct sunshine.

With this object in view, the invention comprises a series of vertically extending flexible strips whose lower ends are attached to arms that are capable of angular adjustment relative to the normal plane of the awning in order to separate the individual strips sufficiently to admit light and air but in such a manner as to exclude direct sunshine. Another feature of the invention resides in the construction of a sectional awning the upper ends of whose individual strips are attached to a winding roller or drum, while their lower ends are swingable about individual pivot points to separate their adjacent edges while still protecting against direct sunshine. Provision is also made for easily removing any one or all of the strips for cleansing and replacement.

These and other features of the invention will be particularly described in the following specification and will be defined in the claims hereto annexed.

In the accompanying drawings I have illustrated a construction embodying the principles of this invention, in which:

Figure 1 is a front elevation showing my improved awning in partly opened position.

Figure 2 is a plan view showing in detail a portion of the supporting frame for the awning.

Figure 3 is a front elevation of the same construction the cross-bar of the frame being partly removed to expose the strip-adjusting mechanism.

Figure 4 is a detail view showing a key by which the adjusting mechanism is manipulated.

Figure 5 is a side elevation showing the awning in profile position with its overhanging protective hood.

Figure 6 is an enlarged front view of the awning in closed or flat position, the portions being broken away to permit the showing of the same on an enlarged scale.

Figure 7 is a side elevation showing the awning in rolled up position beneath the hood.

Figure 8 is an enlarged detail showing the main front bar of the frame in cross section with the means of mounting an individual strip-carrying arm thereon.

Figures 9 and 10 are detail views of the front bar of the frame with the mechanism for adjusting the strip-carrying bars to their different positions of adjustment.

In its essential features the awning comprises a series of up and down or vertically extending strips arranged side by side, preferably with their adjacent edges overlapping, each strip at its lower end being attached to the awning frame by means permitting it to be adjusted to appropriate angular relationship to the plane of the awning, when in flat or closed position.

As shown the frame comprises two substantially parallel side arms 1, pivotally connected with the side of the building structure, as shown at 2, to permit them to swing upward with their outer ends beneath an overhanging hood 40 when the awning is rolled up to be out of use. The pivotal side arms 1 have their front or free ends connected by the main cross-bar 3 of the awning frame, which is preferably made of metal tubing. At intervals along said front bar 3 is mounted a series of strip-carrying arms 4, in any suitable manner that will permit them to swing away from their position in parallelism of the front bar to angular relation therewith so as to open spaces between the adjacent edges of the awning strips 5, whose lower ends they support, and thus provide for ventilation and light.

According to the form illustrated in detail in Figures 2, 3 and 8, these adjustable arms 4 are fulcrumed at 4^a in brackets or clips 20, secured at spaced intervals around the front bar 3. The fulcral end of the arm, attached to the brackets or holding clips 20, is preferably bent into a sort of goose-neck curve as shown at 4^b, and is provided with a laterally projecting pivot stud 4^a, which passes through the depending portion of the clip 20 and receives a suitable securing nut 4^c.

To simultaneously adjust these arms in unison I provide an actuating bar 22, provided with pivot pins 23, forming a pivotal connection between the adjacent bar 22 and each individual arm 4, at a short distance from its fulcral end. This adjusting bar or member 22 is provided with an angle bracket

24, at one end, to which is attached an adjusting screw 25 which passes through a threaded sleeve 26 that is attached, by means of a clip 27, to the adjacent end of the front bar 3 of the awning frame. The farther the screw is adjusted in a relatively fixed sleeve 26, the greater will be the angular position of the strip-carrying arms 4, by reason of their connection with the adjusting bar 22, already described. To prevent tampering with the adjustment, the slotted end of the screw 25 may be located some distance inside of the threaded sleeve 26, and in that case the key 28, in the form of a crank, is provided for inserting its reduced end into the sleeve for engagement with the screw.

The individual awning strips 5 are attached, at their upper ends, to a common winding drum or roller 6 in any suitable manner, but it is preferred that the winding drum or roller 6 shall be provided with short tab ends 10, suitably perforated to permit the individual strips 5 to be detachably secured thereto by means of lacing 10^a. The lower end of each awning strip is folded back and stitched down to make a transverse pocket or sleeve that will fit snugly over their respective supporting arms 4. These arms 4 are formed with annular grooves, as shown at 4^e, to retain an anchoring spring attached to the corresponding portion of each awning strip and at their free ends the arms 4 are provided with a groove 4^d, to receive a similar tying cord. By simply untying these cords each strip may be slipped off from its carrying arm 4, and as it is attached to the roller by a detachable roller 10^a, it will be seen that each and all of the strips can be removed for cleansing or replacement as often as may be desired.

The winding drum or roller is mounted in end brackets 7 and 7^a the latter being provided with an angularly disposed arm forming a sleeve for supporting the upper end of the vertical shaft 9 which carries a miter gear 8, intermeshing with a similar gear on the end of the winding drum so that the rotation of the shaft 9, from a point near enough to the ground or to the floor to be easily accessible, will wind up or unwind the drum to which the awning strips are attached.

In Figures 9 and 10 I have illustrated a modified construction for the front bar of the awning frame in which the adjusting mechanism is located inside the front bar instead of externally thereof, as in the form previously described.

In this case the front bar is made of longitudinal sections 50 coupled together by means of special coupling members 51, into which the adjacent ends of two sections 50 are threaded, the opposite end walls of said coupling member being provided with aligned apertures for passage of the sections of a rotatable adjusting shaft 52. This adjusting shaft is pinned to a worm 56 mounted in a suitable recess between the two end walls of the coupling, and the worm intermeshes with a sector worm gear 54 which is pivoted on a cross pivot pin 53, mounted in an upward extension 51^a formed on the rear side of the coupling member or box. Each individual strip-carrying arm 55 is secured to the sector gear 54 so as to form a radial spoke thereof. It also has the annular shoulders 55^a and 55^b for the reception of tying cords, as in the case of the form previously described. Each end of the front bar 50 is provided with a flanged collar 59 to receive and retain the adjacent side arm 58 which connects it with the building structure, said arm 58 having its ends enlarged to form an eye of sufficient size to receive the end of the front bar 50.

To protect the awning from bad weather, I provide an overhead hood 40, and also provide a pivotal guard or shield 32, which is pivotally connected with holding brackets 33 that are clamped to two or more of the holding clips or brackets 20, as shown in Figures 5 and 7. The hood is provided with a downwardly projecting pin or finger 41 arranged in position to engage the upper edge of the shield 32, when the awning is in raised position, so that the shield will extend vertically and cover the awning and the working part of the frame, this being permitted by the pivotal connections 31 between the brackets 33 and the shield 32. In lowered position the shield, of its own gravity, assumes a vertical position concealing the working parts and may be made of ornamental design to add to the attractiveness of the awning.

The advantage of the form shown in Figures 9 and 10 is that the adjusting arm or mechanism is mounted inside the frame of the awning so that only the adjustable arms 55 and the sector gears, in which they are mounted, are externally exposed. Moreover, with this construction it is possible to have the adjusting arms 55 set to point the opposite direction where the exposure to the sun renders such a setting desirable without disassembling or re-assembling the parts.

What I claim is:

1. An awning embracing in its construction an upper winding roller mounted in stationary bearings, a lower U-shaped frame adapted to swing up and down, a series of individual narrow awning strips connected at their upper and lower ends respectively with said roller and said swinging frame, connection with said frame permitting angular adjustment of the awning strips to said frame.

2. An awning embracing in its construction an upper horizontal roller, a series of side by side relatively narrow individual

awning strips secured at their upper ends to said roller to be wound thereon, a pivotal frame adapted to be supported in an outwardly projecting position by said strips which are individually connected thereto by individual joints permitting angular adjustments of the lower ends of said strips in relation to said frame.

3. An awning embracing in its construction an upper horizontal winding roller mounted in fixed bearings, a bottom frame pivotally mounted on the structure to which the awning is applied, a series of awning strips secured at their upper ends to said roller by a quick detachable connection, and having their lower ends secured by individual pivotal connection to said bottom frame, means for winding said roller and thereby roll up said awning strips and raise said frame to folded position.

4. An awning embracing a series of side by side flexible strips arranged to lie in substantially the normal plane of the awning when in closed position, means for adjusting the lower ends of said strips to oblique relation to said normal plane, and a roller forming a support for the upper ends of said strips and for winding them.

5. An awning embracing in its construction a series of vertically extending strips of flexible material detachably secured at their upper ends to a winding roller and also having individual detachable connection, at their lower ends, with separate angularly adjustable supporting arms which, when adjusted to angular relation to the normal plane of the awning, cause the individual strips to separate for the admission of light and air.

6. A supporting frame for an awning embracing side arms and a front bar, a series of strip-carrying arms pivotally connected with said front bar, and means connected with said strip-carrying arms for adjusting them to angular relation to said front bar.

7. A supporting frame for an awning embracing side arms and a front bar, a series of angularly adjustable strip-carrying arms carried by said front bar, and an adjusting screw having actuating connections with said arms to adjust them to the desired angular relationship to said front bar, substantially as described.

8. A supporting frame for an awning embracing side arms, a connecting tubular front bar, a series of strip-carrying arms pivotally mounted thereon, and means disposed interiorly of said bar to effect the simultaneous adjustment of said strip-carrying arms.

9. An awning frame embracing in its construction side arms and a connecting front bar, individual strip-carrying arms pivotally supported by said bar, and adjusting mechanism for said strip-carrying arms embracing a longitudinal worm shaft and individual worm gears secured to said arms, whereby the rotation of said worm shaft changes the angular position of said arm.

10. An awning embracing in its construction, a frame comprising front and side members connected together, a series of upwardly extending strips placed side by side and connected to said frame by individual pivotal connections that permit adjustment of the strips to oblique relation to said front member.

11. An awning embracing in its construction a bottom frame having separate strip-carrying arms movable to various positions of adjustment, an overhead winding roller, a series of side by side flexible strips detachably connected with the winding roller at their upper ends by removable lacings, and having their lower ends detachably secured to said strip-carrying arms.

12. An awning structure comprising an overhead winding drum, a protective housing above said drum, a lower frame having pivotally mounted arms for carrying individual awning strips, awning strips, means carried by the lower frame for adjusting said strips, and a shield suspended in front of said lower frame to protect said adjusting means in both its lower and its raised positions.

In witness whereof, I have subscribed the above specification.

ELMER J. BLISS.