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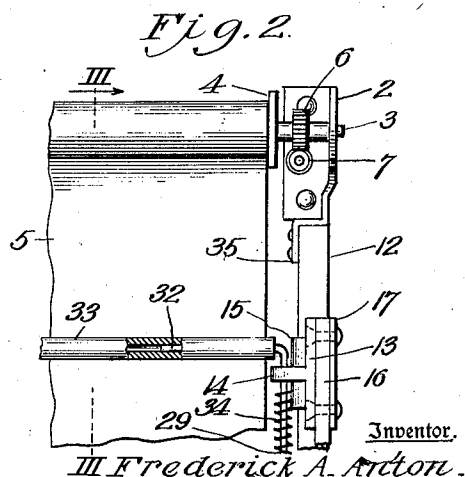
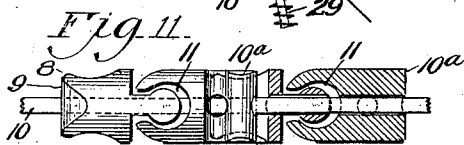
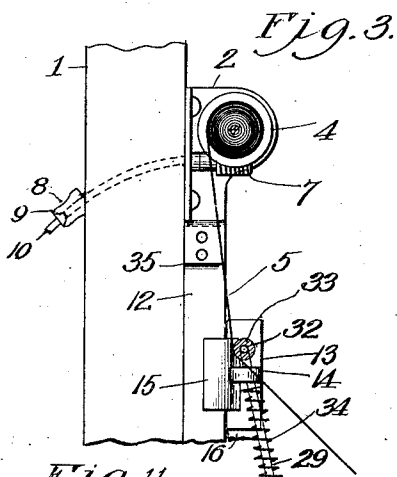
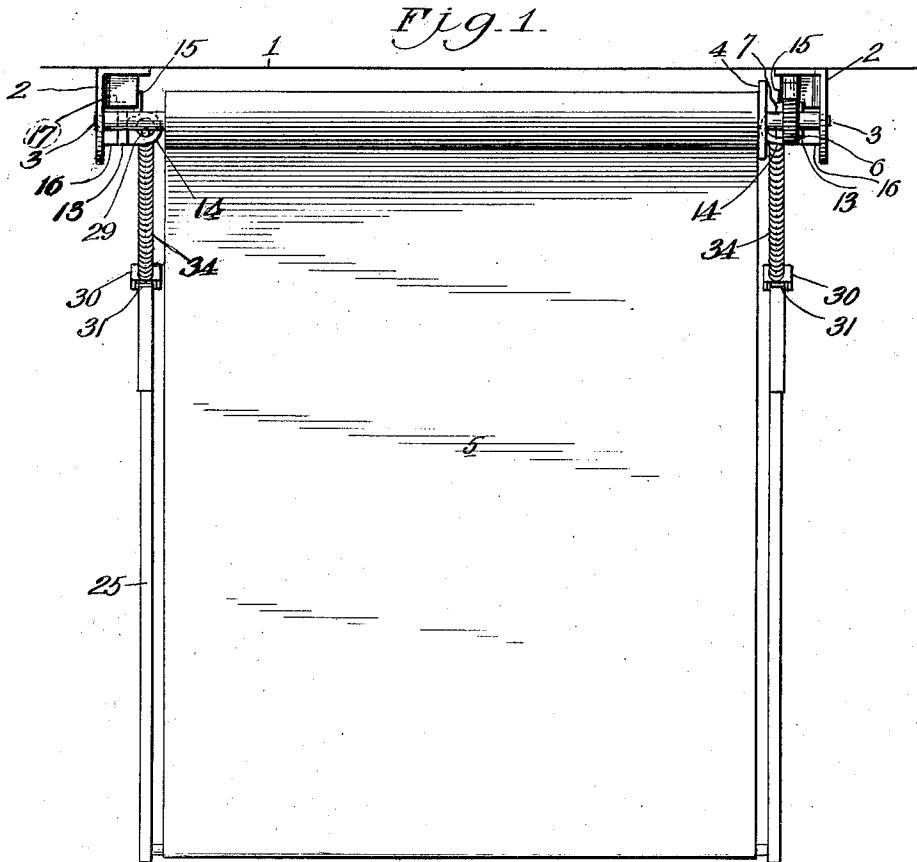
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2,129,555

AUTOMATIC VISOR AWNING

Filed March 18, 1935

2 Sheets-Sheet 1



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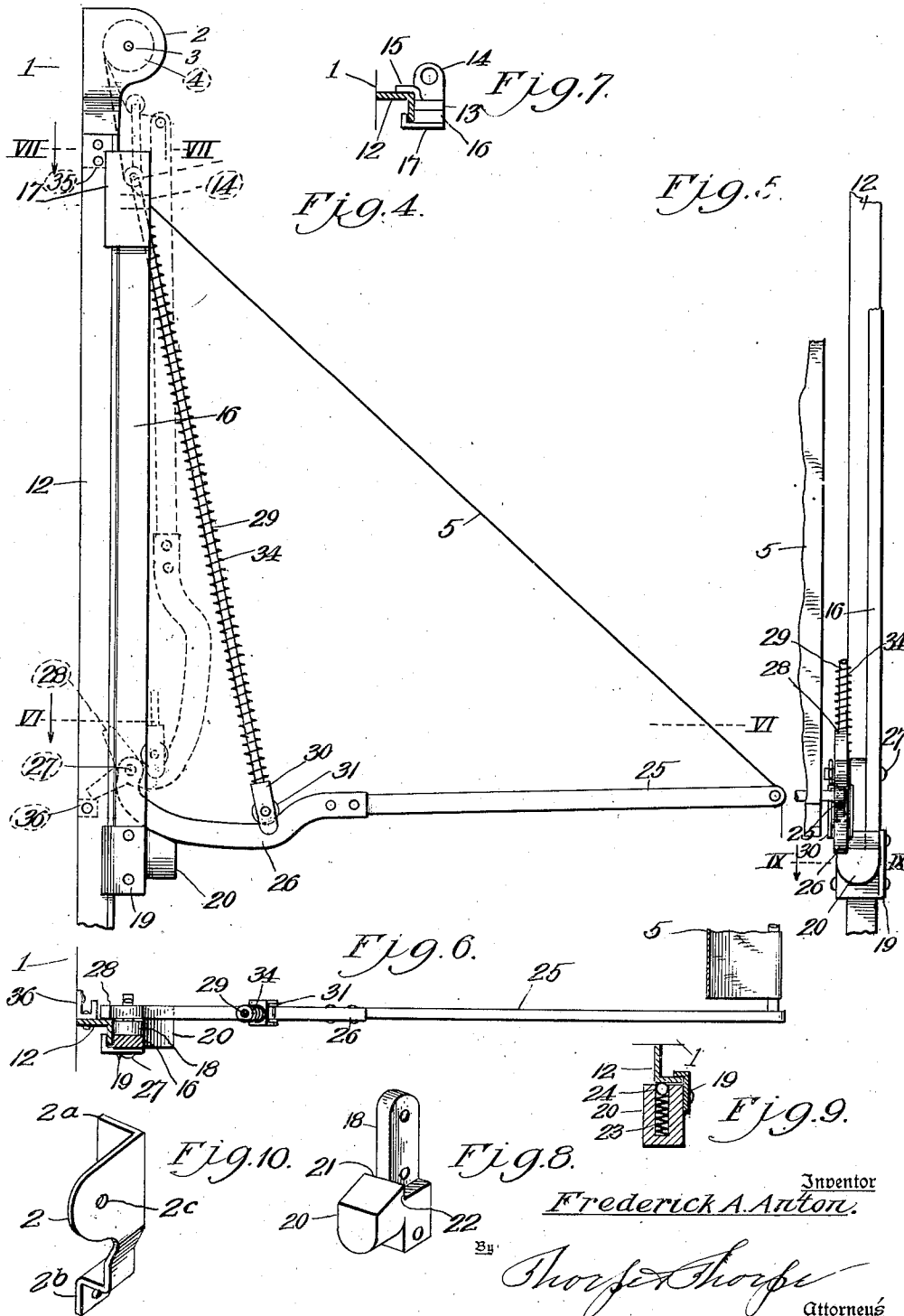
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AUTOMATIC VISOR AWNING

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2 Sheets-Sheet 2



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AUTOMATIC VISOR AWNING

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Application March 18, 1935, Serial No. 11,644

6 Claims. (Cl. 156—44)

This invention relates to automatic window awnings of the general class shown in my Patent No. 1,587,135. A long experience in the production of such awnings has demonstrated that the success of this type of awning is dependent upon the maintenance of parallelism between the tracks or guides upon the opposite sides of a window opening. In practice, it has been found economically impossible to secure sufficiently skillful and careful labor in the installation of such awnings to insure parallelism of the tracks, and even when once properly installed, settling of the buildings or uneven wear of the parts of the awnings, have been found to interfere with awning operation, even though it originally operated successfully. Thus, when the guides or tracks of a construction such as shown in my aforesaid patent, or in certain other types of automatic awnings patented by me, diverged or converged slightly, a binding or wedging action of the parts was transmitted from one slide frame to the other, through the intermediacy of the visor bar. This caused one side of the awning or the other to jamb, and manual power applied to overcome the binding sometimes resulted in the twisting or bending of the parts. When this occurred proper operation of the awning was impossible.

The present invention, therefore, has as its chief object, to provide an extensible and flexible visor-forming bar connecting the opposite slide frames so that each may follow its track independently of the other.

Another object of the present invention is to provide an automatic visor forming awning with operating means of such nature that an operator can not free the structure for gravitative action. This provision has been found desirable since careless operators frequently permitted the awning structure to drop for the full length of the tracks, resulting in the breaking and bending of the parts, or the twisting thereof to such a degree as to interfere with proper awning operation.

With the general objects named in view and others as will hereinafter appear, the invention consists in certain novel and useful features of construction and combination of parts, as hereinafter described and claimed; and in order that it may be fully understood, reference is to be had to the accompanying drawings, in which:—

Figure 1 is a top plan view of an awning embodying the invention as it appears in operative position, the customary awning roller housing being omitted.

Figure 2 is a front view of the right hand end of the awning roller, and also shows the roller

operating mechanism and the upper end of the right hand slide frame and extensible visor-forming bar.

Figure 3 is a section on the line III—III of Figure 2.

Figure 4 is a side view of the left-hand side of the awning as it appears with the awning in open position, in full lines, and, in dotted lines, as it appears in closed or folded position.

Figure 5 is a front view disclosing part of the right-hand guide track, the lower end of the right-hand slide frame, and the adjacent lower corner of the visor in open position.

Figure 6 is a section on the line VI—VI of Figure 4.

Figure 7 is a horizontal cross-section on the line VII—VII of Figure 4.

Figure 8 is a perspective view of one of the casting members forming parts of the lower ends of the slide frames.

Figure 9 is a section through one of the castings shown in Figure 8, to illustrate a spring-pressed anti-rattle take-up for contact with the track.

Figure 10 is a perspective view of one of the roller-supporting brackets.

Figure 11 is a detail of a flexible shaft for transmitting power to the awning roller.

In the said drawings, where like reference characters identify corresponding parts in all of the figures, 1 indicates a building front. Secured thereto in proper relation to a window opening (not shown), to be shaded, are a pair of spaced brackets 2, having flanges 2a and 2b, respectively, for securing the bracket to the building front and for supporting the upper end of a vertical rail or track hereinafter identified. The ends 3 of an awning roller 4 are journaled in openings 2c in said brackets 2. One end of the fabric 5 is permanently secured to the roller 4 to be wound and unwound thereon.

To prevent careless operators from damaging the awning structure by letting it drop for the length of the guides or tracks, hereinafter identified, it has been found desirable to prevent gravitative operation of the awning, such as by keying a worm wheel 6 on one of the shafts 3. Enmeshed with said worm wheel 6 is a worm 7 to be manually operated through a suitable drive, such as a flexible shaft 8, which may project through the wall (Figure 3) for operation from inside the building. The flexible shaft may be composed of a series of links 9 (see Figure 10) threaded on a flexible cable or wire 10 around which they rotate. Each of the links, at one end, has a male

cylindrical transversely extending projecting head 11a, and at right angles thereto and at its other end, each link is formed with a female cylindrical transversely extending socket 11, to receive the male portion of an adjacent link.

Secured to the building front in any suitable manner and preferably attached at their upper ends to flanges 2b of brackets 2, are a pair of guide rails or tracks 12, which preferably parallel the opposite sides of a window opening, although slight deviations from parallelism will not destroy the operation of the structure. In the construction illustrated, the tracks comprise L-shaped or flange members, one flange being held in edgewise relation against the front of the building, and the other flange being spaced away from the building and parallel thereto. The last-named flanges in the present exemplification, each turn outward or away from the window opening, but their exact shape, whether flanged cylindrical, or otherwise, is entirely immaterial, as will hereinafter appear.

Mounted for vertical sliding movement on the tracks 12 are a pair of slide frames, each of said frames as here illustrated, comprising upper brackets 13 having eye-members 14 projecting laterally or toward each other. Adjacent the eye-members, the brackets are formed with inwardly projecting flanges 15 which are between and overlap the vertical tracks 12. On the opposite side of each bracket, from the eye 14, is the upper end of a downwardly extending side strap or bar 16, said bars and brackets being held together by a pair of L-shaped brackets 17, secured to bars 16 and hooking around behind the flanges of the tracks, spaced from the building. The L-shaped brackets 17 prevent the awning from swinging away from the building front and also prevent it from moving inwardly or toward the window opening, while the flanges 15 prevent the awning from moving outwardly or laterally to the opening, parallel to the building front.

The lower ends of the bars 16 are secured to a second pair of track engaging castings or brackets 18 by means of a hook-shaped member 19, hooking around behind the flanged tracks. These castings or brackets 18, like the castings 13, may be used interchangeably as rights or lefts, and are formed with a forwardly-projecting boss 20 which provides shoulders 21 and 22 (see Figure 8), which respectively function, according to whether the casting is on a right or a left-hand slide frame, as an awning stop as will hereinafter appear. The boss 20 is bored or cored out to receive a spring 23 pressing a ball 24 yieldingly against the face of the track 12 to act as an anti-rattling means as clearly shown in Figure 9.

The U-shaped awning frame 25 is secured to one end of the fabric, and said frame is adapted to be swung to and from open, or substantially horizontal position, to closed, or substantially vertical position, through the rolling and unrolling of the fabric on the awning roller 4. The awning frame is held in its open position by any suitable brace means, either of break-joint type, or a shifting spring pressure type such as shown in this case. In the present case, the inner ends of the awning frame terminate in curved track or roller guides 26, which are pivoted as at 27 to the castings or brackets 18, and each is provided with a stop finger 28 beyond its pivotal point to prevent the slide frames from shifting laterally from the tracks and for a further purpose which will hereinafter appear. The braces for cooperating with the awning frame in holding the awning open are here shown as comprising L-shaped rods

having their long portions 29 equipped with clips or fittings 30 lapping on opposite sides of the curved tracks 26 and being provided with journaled rollers 31 for rolling on said tracks. The upper ends of the rods 29 extend loosely through the eyes 14, and then inwardly toward each other as at 32 (Figure 2) and are rotatively and slidably received within a tubular roller 33 forming the visor bar. Encircling the rods 29 are springs 34 which at one end press against fittings 30 and at their opposite ends against the eyes 14.

Operation

The operation of the awning is substantially as follows: Assuming that the awning stands open as shown in full lines in Figure 4, it is held in such position through abutment of the rollers 31 with the curved tracks 26 under the pressure of the springs 34. The awning visor thus provided may be adjusted at any point throughout the height of the window opening by rolling up the fabric on the awning roller. When it is desired to completely fold the awning, the fabric is wound up until the slide frames come into abutment with suitable stops, in the construction here illustrated, the flanges 15 of the brackets 13 come into contact with the flanges 35 (Figure 2) formed on the brackets 2. As the operator continues to wind up the fabric, the awning frame commences to pivot upwardly, and the rolling braces 29 will start to travel independently of each other along their curved tracks 26, since both braces are free because of their loose connection through the visor bar or roller 33.

The first part of the folding action, causes the fingers 28 to rock into position where they overlie stops 36 secured to the tracks and building front, so that, if for any unforeseen reason the braces should suddenly collapse, the awning structure will not fall on the tracks, but will be caught through abutment of the fingers 28 with the stops 36. However, normally, the curvature of the tracks 26 is such that the rollers 31 will move inwardly gradually, in accordance with the degree of folding movement imparted through the rolling up of the fabric on the awning roller.

The rolling of the fabric is continued until the awning structure is completely and compactly folded as shown in dotted lines in Figure 4, at which time the fingers 28 will have just contacted the stops 36 (if the awning has been accurately installed), but such contact is not essential at this time. It will be noted that at this time the rolling braces will have reached their innermost position, but will still be exerting pressure to swing the awning frame to open position.

When it is desired to open the awning, the operator will start to unwind the fabric. Just as soon as slack is provided, the fingers 28, if not already in contact, will be carried down by movement of the entire awning structure, into contact with the stops 36. The weight of the awning will thus be largely taken off the fabric and imposed on said fingers and stop, which, in conjunction with the pressure of the springs 34, will immediately start the downward swinging or opening movement of the awning frame 25. Just about the time the awning is fully open, the fingers 28 rock out of line with the stops 36, but the structure will not fall and cause collapse of the visor as the leverage of the springs 34 on the awning frame has been increased by the outward rolling of the braces 29, to such a point that their force is slightly greater than the weight of the awning structure as a whole. Consequent-

ly the entire structure will remain adjacent the top of the window opening until the visor has been fully formed. When the visor is fully formed the bottom edges of the curved guides 26 will contact the stops 21 and 22 of the castings 18. The fingers 28 are now fully clear of the stop 36, and the operator, by continuing to unwind fabric from the roller, may lower the completed visor to any desired point through the length of the tracks 12.

From the above description it will be apparent that I have described a construction embodying all of the features of advantage set forth as desirable, but it is to be understood that I reserve the right to make all changes within the spirit of the invention and without the ambit of the prior art.

I claim:—

1. In a window awning construction comprising an awning roller, a fabric attached at one end to the roller, a pair of vertically-extending horizontally-spaced tracks, slide members secured to each track for vertical reciprocation thereon, a U-shaped awning frame to which the free end of the fabric is attached, said frame having its opposite ends respectively pivoted to the lower ends of the slide members to swing towards and from said members, a visor-forming bar bridging the space between the upper ends of the slide members and being of extensible nature to permit of variation in the distance between the upper ends of the slide members, and brace means reacting at their opposite ends against the slide members and the awning frame to constantly urge the latter away from said slide members.

2. In a window awning construction comprising an awning roller, a fabric attached at one end to the roller, a pair of vertically-extending horizontally-spaced tracks, slide members secured to each track for vertical reciprocation thereon, a U-shaped awning frame to which the free end of the fabric is attached, said frame having its opposite ends respectively pivoted to the lower ends of the slide members to swing towards and from said members, a visor-forming bar bridging the space between the upper ends of the slide members and being of extensible nature to permit of variation in the distance between the upper ends of said slide members, and brace means longitudinally movable through the upper ends of the slide members at one end and having their other ends abutting the awning frame to urge same away from the slide members.

3. In a window awning construction comprising an awning roller, a fabric attached at one end to the roller, a pair of vertically-extending horizontally-spaced tracks, slide members secured to each track for vertical reciprocation thereon, a U-shaped awning frame to which the free end of the fabric is attached, said frame having its opposite ends respectively pivoted to the lower ends of the slide members to swing towards and

from said members, a visor-forming bar bridging the space between the upper ends of the slide members and being of extensible nature to permit of variation in the distance between the upper ends of said slide members, brace means longitudinally movable through the upper ends of the slide members at one end and having their other ends abutting the awning frame, and springs for urging the awning frame away from the slide members.

4. In a window awning construction comprising an awning roller, a fabric attached at one end to said roller, a pair of vertically-extending horizontally-spaced tracks, slide members secured to each track for vertical reciprocation thereon, a U-shaped awning frame to which the free end of the fabric is attached, said frame having its opposite ends respectively pivoted to the lower ends of the slide members for swinging toward and from said members, and brace members having shiftable abutment lengthwise of the ends of the U-shaped frame at one of their ends, the other ends of said braces being longitudinally slidable in the upper ends of the slide members.

5. In a window awning construction comprising an awning roller, a fabric attached at one end to said roller, a pair of vertically-extending horizontally-spaced tracks, slide members secured to each track for vertical reciprocation thereon, a U-shaped awning frame to which the free end of the fabric is attached, said frame having its opposite ends respectively pivoted to the lower ends of the slide members for swinging toward and from said members, brace members having shiftable abutment lengthwise of the ends of the U-shaped frame at one of their ends, the other ends of said braces being longitudinally slidable in the upper ends of the slide members, and springs for urging the U-shaped frame away from the slide members.

6. In a window awning construction comprising an awning roller, a fabric attached at one end to the roller, a pair of vertically-extending horizontally-spaced tracks, slide members secured to each track for vertical reciprocation thereon, a U-shaped awning frame to which the free end of the fabric is attached, said frame having its opposite ends respectively pivoted to the lower ends of the slide members for swinging towards and from said members, a visor-forming bar bridging the space between the upper ends of the slide members and being of extensible nature to permit of variation in distance between the upper ends of the slide members, brace members having shiftable abutment lengthwise of the ends of the U-shaped awning frame at one of their ends, the other ends of said braces being longitudinally slidable in the upper ends of the slide members, and springs for urging the U-shaped frame away from said slide members.

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