

# PATENT SPECIFICATION

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## (54) ADJUSTABLE HOOD OR CANOPY

(71) We, YOSHIDA KOGYO K.K., a corporation duly organized under the laws of Japan and existing at No. 1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to the construction of a hood or canopy intended to be attached to a wall or building so as to shelter a passage, door, window or the like, and is more particularly concerned with a hood or canopy so constructed that its front-to-rear depth dimension can be adjustably varied.

The present invention seeks to provide a hood or canopy which can be easily adjusted to and made fast at a desired depth.

The invention also seeks to provide an adjustable-depth hood or canopy which can be manufactured economically by use of extruded sections.

According to the invention, there is provided an adjustable hood or canopy comprising a fixed panel adapted to be attached to a stationary part of a building or the like, a movable panel disposed outwardly of and in underlapping relationship with the fixed panel, connector means on the underside of the fixed panel cooperating with slots at the inner end of the movable panel and fixing means passing through the slots in the movable panel and engageable with the connector means, the fixing means being arranged to allow relative movement between the movable panel and the fixed panel along the line of the slots in a loose state and prevent this relative movement in a tight state.

The fixed panel preferably has a front wall extending downwardly from its front edge and the slots located adjacent the inner end of the movable panel preferably extend in the front-to-rear direction of the movable panel. The fixing means may

comprise a plurality of headed fastener elements inserted into and through respective guide slots from under the movable panel.

In practice, the adjustable hood or canopy according to this invention may comprise one fixed panel and a plurality of movable panels of identical construction, with the movable panels disposed in underlapping relationship to the fixed panel and to each other. All the fixed and movable panels may take the form of extruded sections.

The invention will now be described in greater detail, by way of example, with reference to the drawings, in which:—

Figure 1 is a vertical sectional view of one form of an adjustable hood or canopy according to the invention as installed in position on a building;

Figure 2 is an illustration of part of the adjustable hood or canopy as seen in the direction of the arrow II in Figure 1; and

Figure 3 is a perspective view of the adjustable hood or canopy shown in Figure 1.

The above drawings illustrate this invention as adapted specifically for an adjustable hood or canopy of three-panel design, generally designated 10 comprising a fixed panel 11 and first and second movable panels 12 and 13, with the two movable panels disposed forwardly of the fixed panel and in underlapping relationship thereto and to each other. All these panels 11 to 13 are preferably made of extruded aluminum.

The fixed panel 11 has a mounting wall 14 formed along its rear edge, which mounting wall is provided with top and bottom flanges 15 and 16 and a reinforcing rib 17 located intermediate therebetween. The mounting wall 14 is shown to be screwed at 18 to an L-sectioned mounting fixture 19, which in turn is shown to be screwed at 20 to a transom 21 of a building. As will be apparent from Figure 1, the mounting wall 14 is so angled with respect to the fixed panel 11 that the latter is fastened to the

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building in a downwardly sloping disposition.

It will be noted from Figures 1 to 3 that the fixed panel 11 has a front wall 22 angled vertically downwardly from its front edge and having an L-sectioned flange 23 formed along the bottom edge of the front wall to provide an upwardly opening groove. This upwardly opening groove is intended for use in fixedly mounting a connector strip, generally designated 24 in Figures 1 and 3, on the underside of the fixed panel 11.

The connector strip 24 comprises an elongate web 25 extending in the side-to-side direction of the fixed panel 11, and a pair of downturned flanges 26 and 27 formed along the front and rear edges, respectively, of the web. The front flange 26 is closely engaged in the aforesaid upwardly opening groove at the bottom edge of the front wall 22 for holding the connector strip 24 in position on the underside of the fixed panel 11.

Additionally, the connector strip 24 is provided with a ridge 28 projecting upwardly from its web 25 into abutting contact with the underside of the fixed panel 11 and extending in the longitudinal direction of the connector strip. The ridge 28 is adapted for receiving and screw-threadedly engaging a plurality of headed fastener elements such as slotted-head machine screws 29 in connecting the first movable panel 12 to the fixed panel 11 in the manner described later. While this purpose can likewise be accomplished by forming a plurality of spaced-apart bosses on the web 25, the ridge 28 is preferable because it enables the connector strip 24 to be manufactured also by extrusion.

The first and second movable panels 12 and 13 can be identical in shape and size. The construction of only the first movable panel 12, therefore, and how it is connected to the fixed panel 11, will be described, it being understood that the same description applies to the second movable panel and to the manner of its connection to the first movable panel.

Disposed at the same angle to the building as the fixed panel 11, the first movable panel 12 has a vertical, flanged wall formed along its rear edge. The upper and lower portions 30 and 31 of this flanged wall have difference functions, so that the upper wall portion 30, complete with the forwardly projecting flange 32, will hereinafter be referred to as the stop wall, and the lower wall portion 31, complete with the forwardly projecting flange 33, as the guide wall. The flanged stop wall 30 makes sliding contact with the underside of the fixed panel 11, for movement into and out of abutting contact with the ridge 28 of the connector strip 24.

The first movable panel 12 has further formed therein a plurality of spaced-apart guide slots 34 located adjacent its rear edge and each extending in the front-to-rear direction of the panel. While the number of the guide slots 34 may vary depending upon the side-to-side width dimension of the hood or canopy 10, at least two such slots should in any case be provided, preferably adjacent both sides of the movable panel.

For connecting the first movable panel 12 to the fixed panel 11, the aforesaid machine screws 29 are inserted upwardly into and through the respective guide slots 34 with a clearance fit and are threadedly engaged in the ridge 28 of the connector strip 24. The first movable panel 12 is thus constrained to front-to-rear sliding motion relative to the fixed panel 11, and upon tightening of the screws 29, the first movable panel can be immovably secured to the fixed panel via the connector strip 24 because then the heads of the screws engage the bounding edges of the respective guide slots 34.

Like the fixed panel 11, the first movable panel 12 has a front wall 22a angled vertically downwardly from its front edge and having an L-sectioned flange 23a formed along the bottom edge of the front wall to provide an upwardly opening groove. This upwardly opening groove is also intended for use in securely supporting a connector strip 24a which can be exactly identical in shape and size with the connector strip 24 mounted on the underside of the fixed panel 11. The functions of the connector strip 24a are also identical with those of the connector strip 24. It is thus seen that the second movable panel 13 is connected to the first movable panel 11 by slotted-head machine screws 29a in exactly the same fashion as the first movable panel is connected to the fixed panel 11.

The second movable panel 13 is identical in construction with the first movable panel 12, as mentioned previously, so that the same reference characters are employed in the accompanying drawings to designate corresponding parts of the first and second movable panels. However, in the second movable panel 13, the L-sectioned flange 23a at the bottom edge of its front wall 22a is utilized for interlockingly engaging an inverted-L-sectioned mounting flange 35 of a gutter 36. It is therefore apparent that the gutter 36 is supported under and extends along the foremost edge of the hood or canopy 10.

On both sides of the above described assembly of panels 11, 12 and 13, there are provided a pair of side rails 37 (only one shown) each conveniently secured at both ends to the transom 21 or the like of the

building and to a bracing bracket 38 fastened to a suitable stationary part of the building. Each side rail 37 comprises a web 40, top and bottom flanges 41 and 42, and one or more (two in the illustrated embodiment) walls 43 and 44 located intermediate between the flanges. The top and bottom flanges 41 and 42 and the first and second intermediate walls 43 and 44 are all disposed at right angles with the web 40 and are constantly spaced from each other.

The top flange 41 of each side rail 37 is placed over one of the side edge portions of the fixed panel 11. The first intermediate wall 43 is likewise placed over one of the side edge portions of the first movable panel 12 and further extends through a recess formed in the front wall 22 of the fixed panel 11 and slidably through another recess formed in the stop wall 30 of the first movable panel. Similarly, the second intermediate wall 44 is placed over one of the side edge portions of the second movable panel 13 and slidably extends through a recess formed in the front wall 22a of the first movable panel 12 and through another recess formed in the stop wall 30 of the second movable panel. As will be further noted from Figure 1, the second intermediate wall 44 extends under the flanged guide wall 31 of the first movable panel 12 in sliding contact therewith, and the bottom flange 42 extends under the flanged front wall 22a and flanged guide wall 31 of the second movable panel 13 in sliding contact therewith.

It will now be apparent that, in this particular embodiment, two guide channels are formed between the first and second intermediate walls 43 and 44, and between the second intermediate wall 44 and bottom flange 42, of each side rail 37 for guiding the movement of the respective movable panels 12 and 13 during adjustment of the front-to-rear depth dimension of the hood or canopy 10. The pair of side rails 37 thus serve the dual purpose of guiding the front-to-rear sliding movement and the two movable panels 12 and 13 relative to each other and to the fixed panel 11, and bracing the complete assembly of panels 11 to 13, in addition to covering the sides of the panel assembly. Those portions of the side rails 37 are shown to be cut off which are unnecessary to cover the sides of the panel assembly at its full extension.

In the adjustable-depth hood or canopy 10 of the foregoing construction, each movable panel 12 or 13 is extensible from, or retractable toward, the panel lying immediately thereover a distance equal to the length of the guide slots 34. Considered as a whole, therefore, this particular penthouse 10 of the three-panel design is

extensible or retractable a total distance equal to twice the length of the guide slots 34. At full extension of the hood or canopy 10, the flanged stop walls 30 of the movable panels 12 and 13 make abutting contact with the ridges 28 of the respective connector strips 24 and 24a.

Thus, by loosening the screws 29 and 29a, the hood or canopy 10 is adjustable to any desired depth within the above specified limits and, by retightening the screws, can be locked at the desired depth. The guide slots 34 can be prevented from projecting forwardly beyond the front walls 22 and 22a of the panels 11 and 12 even at full extension of the hood or canopy 10 if the length of the guide slots is suitably determined in relation to the positions of the ridges 28 of the connector strips 24 and 24a in the front-to-rear direction of the panels 11 and 12. Furthermore, upon tightening of the screws 29 and 29a, the flanged front walls 22 and 22a of the panels 11 and 12 are urged against the underlying panels 12 and 13, respectively, so that these front walls also aid in improving the sheltering function of the hood or canopy 10, besides serving to enhance its aesthetic appeal.

While in the illustrated embodiment of the invention the ridges 28 for receiving and engaging the screws 29 and 29a are provided on the connector strips 24 and 24a, it is possible to form such ridges integrally with the panels 11 and 12. This alternative arrangement is desirable in that the panels 11 to 13 can be more securely connected to each other. Further, according to this alternative arrangement, the front-to-rear movement of the movable panels 12 and 13 can be effected without necessarily being guided by the intermediate walls and bottom flanges of the side rails 37. It may also be mentioned that the formation of such ridges on the undersides of the panels 11 and 12 does not prevent their manufacture by extrusion.

Although this invention has been shown and described hereinbefore as adapted specifically for a three-panel hood or canopy, it will be apparent that any desired number of movable panels can be employed in combination with the single fixed panel. In its simplest form, however, the adjustable-depth hood or canopy according to the invention comprises one fixed panel and one movable panel.

#### WHAT WE CLAIM IS:—

1. An adjustable hood or canopy comprising a fixed panel adapted to be attached to a stationary part of a building or the like, a movable panel disposed outwardly of and in underlapping relationship with the fixed panel, connector

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building and to a bracing bracket 38 fastened to a suitable stationary part of the building. Each side rail 37 comprises a web 40, top and bottom flanges 41 and 42, and one or more (two in the illustrated embodiment) walls 43 and 44 located intermediate between the flanges. The top and bottom flanges 41 and 42 and the first and second intermediate walls 43 and 44 are all disposed at right angles with the web 40 and are constantly spaced from each other.

The top flange 41 of each side rail 37 is placed over one of the side edge portions of the fixed panel 11. The first intermediate wall 43 is likewise placed over one of the side edge portions of the first movable panel 12 and further extends through a recess formed in the front wall 22 of the fixed panel 11 and slidably through another recess formed in the stop wall 30 of the first movable panel. Similarly, the second intermediate wall 44 is placed over one of the side edge portions of the second movable panel 13 and slidably extends through a recess formed in the front wall 22a of the first movable panel 12 and through another recess formed in the stop wall 30 of the second movable panel. As will be further noted from Figure 1, the second intermediate wall 44 extends under the flanged guide wall 31 of the first movable panel 12 in sliding contact therewith, and the bottom flange 42 extends under the flanged front wall 22a and flanged guide wall 31 of the second movable panel 13 in sliding contact therewith.

It will now be apparent that, in this particular embodiment, two guide channels are formed between the first and second intermediate walls 43 and 44, and between the second intermediate wall 44 and bottom flange 42, of each side rail 37 for guiding the movement of the respective movable panels 12 and 13 during adjustment of the front-to-rear depth dimension of the hood or canopy 10. The pair of side rails 37 thus serve the dual purpose of guiding the front-to-rear sliding movement and the two movable panels 12 and 13 relative to each other and to the fixed panel 11, and bracing the complete assembly of panels 11 to 13, in addition to covering the sides of the panel assembly. Those portions of the side rails 37 are shown to be cut off which are unnecessary to cover the sides of the panel assembly at its full extension.

In the adjustable-depth hood or canopy 10 of the foregoing construction, each movable panel 12 or 13 is extensible from, or retractable toward, the panel lying immediately thereover a distance equal to the length of the guide slots 34. Considered as a whole, therefore, this particular penthouse 10 of the three-panel design is

extensible or retractable a total distance equal to twice the length of the guide slots 34. At full extension of the hood or canopy 10, the flanged stop walls 30 of the movable panels 12 and 13 make abutting contact with the ridges 28 of the respective connector strips 24 and 24a.

Thus, by loosening the screws 29 and 29a, the hood or canopy 10 is adjustable to any desired depth within the above specified limits and, by retightening the screws, can be locked at the desired depth. The guide slots 34 can be prevented from projecting forwardly beyond the front walls 22 and 22a of the panels 11 and 12 even at full extension of the hood or canopy 10 if the length of the guide slots is suitably determined in relation to the positions of the ridges 28 of the connector strips 24 and 24a in the front-to-rear direction of the panels 11 and 12. Furthermore, upon tightening of the screws 29 and 29a, the flanged front walls 22 and 22a of the panels 11 and 12 are urged against the underlying panels 12 and 13, respectively, so that these front walls also aid in improving the sheltering function of the hood or canopy 10, besides serving to enhance its aesthetic appeal.

While in the illustrated embodiment of the invention the ridges 28 for receiving and engaging the screws 29 and 29a are provided on the connector strips 24 and 24a, it is possible to form such ridges integrally with the panels 11 and 12. This alternative arrangement is desirable in that the panels 11 to 13 can be more securely connected to each other. Further, according to this alternative arrangement, the front-to-rear movement of the movable panels 12 and 13 can be effected without necessarily being guided by the intermediate walls and bottom flanges of the side rails 37. It may also be mentioned that the formation of such ridges on the undersides of the panels 11 and 12 does not prevent their manufacture by extrusion.

Although this invention has been shown and described hereinbefore as adapted specifically for a three-panel hood or canopy, it will be apparent that any desired number of movable panels can be employed in combination with the single fixed panel. In its simplest form, however, the adjustable-depth hood or canopy according to the invention comprises one fixed panel and one movable panel.

#### WHAT WE CLAIM IS:—

1. An adjustable hood or canopy comprising a fixed panel adapted to be attached to a stationary part of a building or the like, a movable panel disposed outwardly of and in underlapping relationship with the fixed panel, connector

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means on the underside of the fixed panel cooperating with slots at the inner end of the movable panel and fixing means passing through the slots in the movable panel and engageable with the connector means, the fixing means being arranged to allow relative movement between the movable panel and the fixed panel along the line of the slots in a loose state and prevent this relative movement in a tight state.

2. A hood or canopy as claimed in Claim 1, wherein the fixed panel has a front wall extending downwardly from its front edge.

3. A hood or canopy as claimed in Claim 1 or 2, wherein the slots located adjacent the rear edge of the movable panel extend in the front-to-rear direction of the movable panel.

4. A hood or canopy as claimed in Claim 1, 2 or 3, wherein the fixing means comprises a plurality of headed fastener elements.

5. A hood or canopy as claimed in any one of Claims 1 to 4, wherein the connector means is provided on a connector strip fixedly mounted on the underside of the fixed panel and extending on the side-to-side direction thereof.

6. A hood or canopy as claimed in Claim 5, wherein the connector means is in the form of a ridge extending in the longitudinal direction of the connector strip.

7. A hood or canopy as claimed in Claim 5 or 6 when appendant directly or indirectly to Claim 2, wherein the connector strip is fixedly mounted on the underside of the fixed panel by being engaged by an L-sectioned flange formed on and extending along the bottom edge of the front wall of the fixed panel.

8. A hood or canopy as claimed in Claim 7, wherein the movable panel has a front wall which extends downwardly from its front edge and which is identical to the front wall of the fixed panel, the front wall of the movable panel having formed on its

bottom edge an L-sectioned flange identical to the L-sectioned flange on the front wall of the fixed panel.

9. A hood or canopy as claimed in Claim 8, wherein a gutter is mounted under and extending along the front edge of the movable panel, the gutter having a mounting flange in engagement with the L-sectioned flange on the front wall of the movable panel.

10. A hood or canopy as claimed in any one of Claims 1 to 4, wherein the connector means is formed integral with the fixed panel.

11. A hood or canopy as claimed in Claim 10, wherein the connector means is in the form of a ridge extending in the side-to-side direction of the fixed panel.

12. A hood or canopy as claimed in any one of Claims 1 to 11, wherein the movable panel has a stop wall extending upwardly from its rear edge, the stop wall being adapted to make abutting contact with the connector means upon forward movement of the movable panel to the full relative to the fixed panel.

13. A hood or canopy as claimed in any one of Claims 1 to 12, wherein a pair of side rails extend along the respective sides of the fixed and the movable panels for supporting them and guiding the movement of the movable panel relative to the fixed panel.

14. A hood or canopy as claimed in Claim 13, wherein the movable panel has a guide wall extending downwardly from its rear edge, the guide wall being slidably engaged in a pair of guide channels formed in the respective side rails.

15. An adjustable hood or canopy substantially as described herein with reference to the drawings.

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