April 28, 1953 B. COOPER 2,636,456

PREFABRICATED CANOPY FOR TOLL COLLECTION BOOTHS

Filed March 24, 1950

3 Sheets-Sheet 1

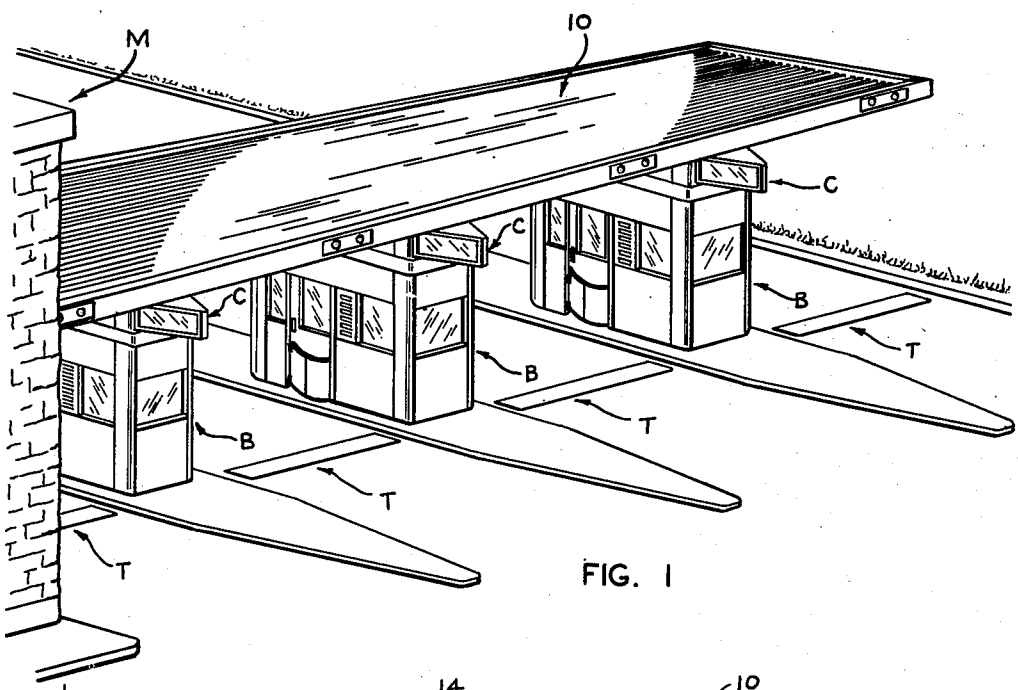


FIG. 1

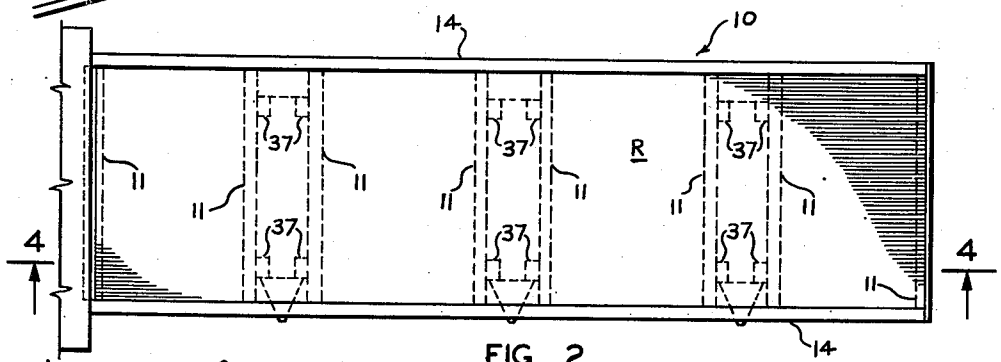


FIG. 2

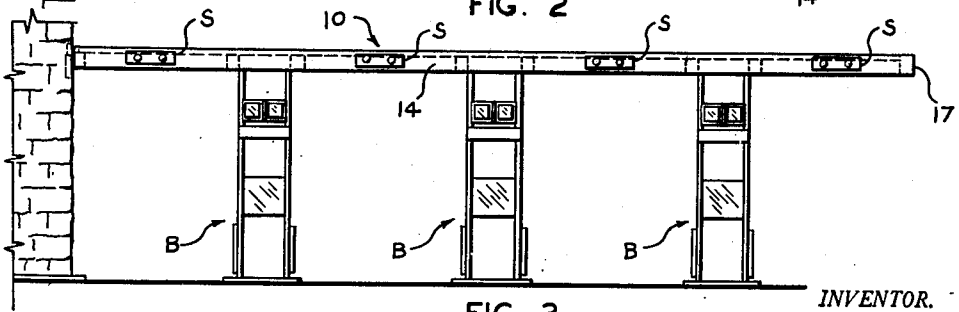


FIG. 3

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PREFABRICATED CANOPY FOR TOLL COLLECTION BOOTHS

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3 Sheets-Sheet 2

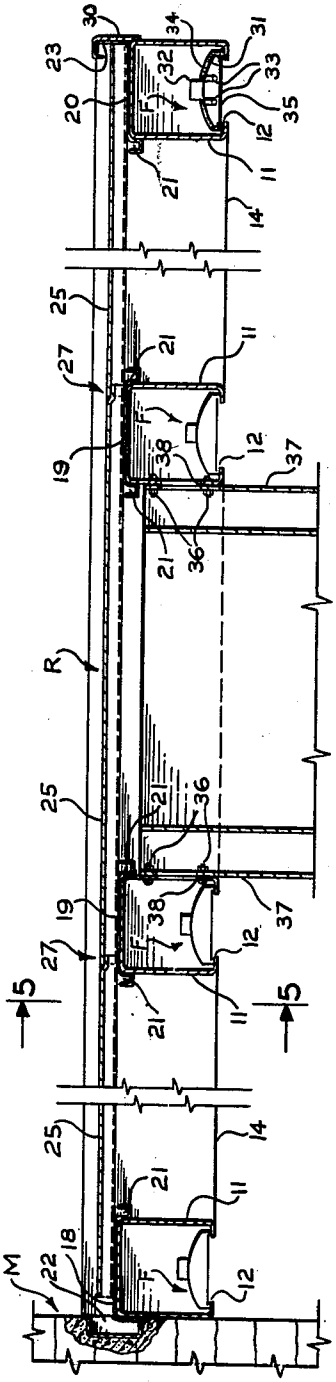


FIG. 4

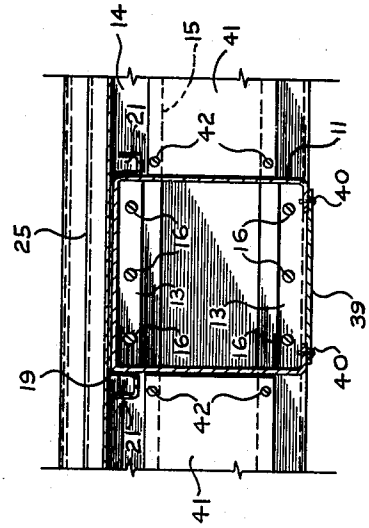


FIG. 6

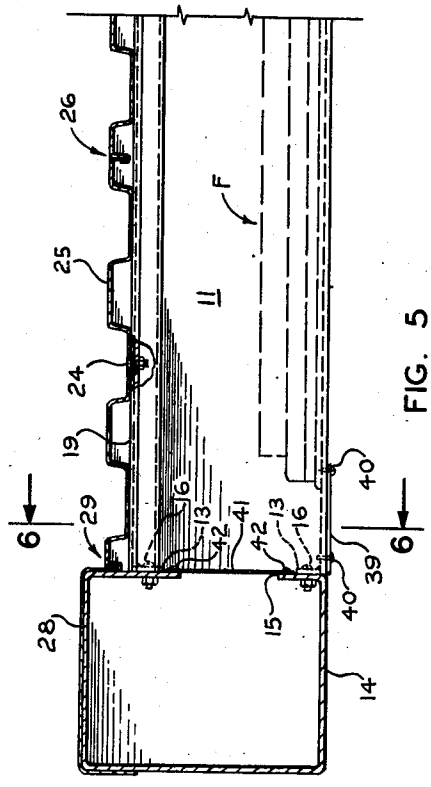


FIG. 5

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PREFABRICATED CANOPY FOR TOLL COLLECTION BOOTHS

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3 Sheets-Sheet 3

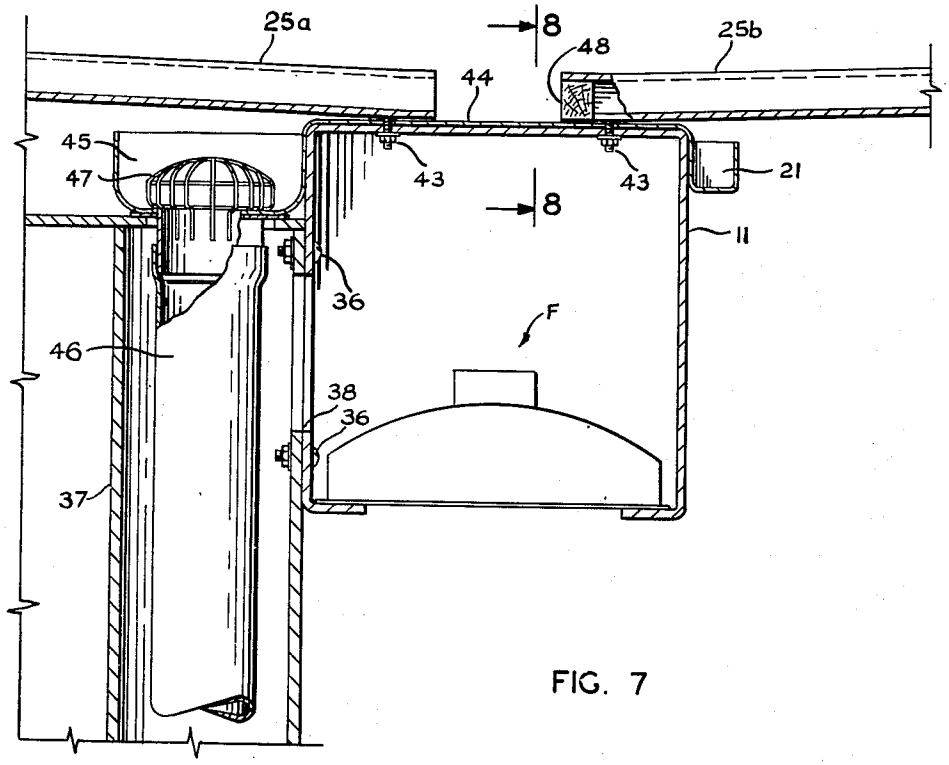


FIG. 7

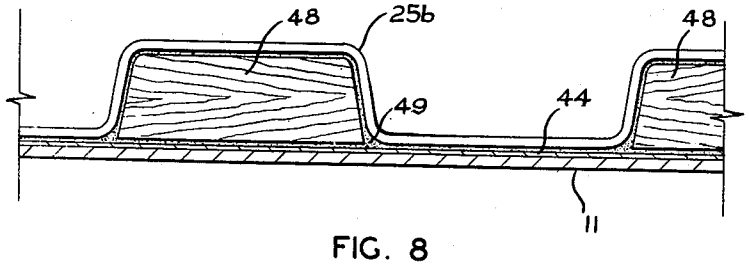


FIG. 8

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PREFABRICATED CANOPY FOR TOLL COLLECTION BOOTHS

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Application March 24, 1950, Serial No. 151,639

11 Claims. (Cl. 108—1)

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This invention relates to prefabricated canopy structures and is particularly directed to a prefabricated canopy for use in connection with highway toll collection booths.

It is usual in highway toll collection stations to provide a canopy over the toll collection booth structure both for the purpose of keeping snow and rain away from the area around the booth and for housing traffic signals at a location above the highway where they can readily be seen by oncoming motorists.

The advantages of constructing such a unit at the factory, where materials, machines, tools, etc. are available in efficient organization are manifest.

It is one object of this invention to provide a prefabricated canopy of the character described that is simple and functional and at the same time strong enough to withstand the possibility of rough handling during transportation.

Another object of this invention is to provide a prefabricated canopy of the character described wherein main structural elements serve additionally as housing for overhead lighting fixtures.

It is another object of this invention to provide a prefabricated canopy of the character described wherein main structural elements serve as conduits for wiring and piping from the maintenance building and from booth to booth in a multi-booth installation.

Other objects of this invention will in part be obvious and in part hereinbelow pointed out.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinbelow described and of which the scope of application will be indicated in the appended claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention:

Fig. 1 is a perspective view showing a canopy embodying the invention interconnecting three toll booths in a multi-lane toll collection installation,

Fig. 2 is a plan view of the canopy installation shown in Fig. 1,

Fig. 3 is a front elevational view of the canopy installation shown in Fig. 1,

Fig. 4 is a partial cross-sectional view taken on line 4—4 of Fig. 2,

Fig. 5 is a partial cross-sectional view taken on line 5—5 of Fig. 4,

Fig. 6 is a cross-sectional view taken on line 6—6 of Fig. 5,

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Fig. 7 illustrates a modification of the canopy adapting it for use with more than three toll booths, and

Fig. 8 is a partial cross-sectional view taken on line 8—8 of Fig. 7.

Referring now in detail to the drawings, 10 represents a prefabricated canopy structure in accordance with this invention showing a three-booth toll collection installation. Toll booths B are preferably of the type described and claimed in my co-pending patent application for Prefabricated Toll Collection Booths, Serial Number 175,132, filed July 21, 1950. Fixed to the ends of the toll booths are the usual fare indication signal lights C, employed to indicate to a customer or an observer that a given toll transaction fare has been registered. There is also shown the usual treadles, T for counting the passage of vehicles through the toll collection lanes, and a maintenance building M which may house toll recording equipment and heat and light supply facilities for the collection booths.

The prefabricated canopy contemplated by this invention comprises a plurality of hollow lateral girder members 11, two for each toll booth and one at each end of the canopy, made of sheet metal and approximately square in cross-section and having longitudinal openings 12 in the underside for the installation of fluorescent lighting fixtures, as is hereinbelow described (Figs. 2 and 4). Each end of said lateral girder members has welded therein at the top and bottom thereof, end plates 13. Interconnecting the ends of said lateral girder members are hollow transverse girder members 14, approximately rectangular in cross-section and having longitudinal side openings 15 (Figs. 5 and 6). Said transverse girder members are fixed relative to said lateral girder members as by bolts 16 through end plates 13. The outer ends of said girder members are sealed by metal plates 17 welded thereat (Fig. 3).

For the purpose of draining condensation moisture, or water that may leak under the canopy roofing, hereinbelow described, there are sheet metal gutter members 18, 19 and 20 disposed on top of said lateral girder members and extending nearly to the respective ends thereof. Said gutter members have similar U-shaped troughs 21 disposed along the sides of their respective lateral girder members. Gutter member 18 is further provided with a comparatively large hooded U-shaped roof drainage trough 22 for placement within the outer side wall of maintenance building M, against which its associated lateral girder member is fixed. Gutter member 20 has, at the

outer end of the canopy, an upwardly extending L-shaped portion 23 (Fig. 4.).

There is a corrugated sheet metal roof R between the front and back transverse girder members 14 and bolted atop the lateral girder members 11 as by stud bolts 24 welded to said roof (Fig. 5). The roof comprises elongated sections of corrugated sheet metal 25 formed for a watertight interlocking junction at the sides, as at 26 (Fig. 5); and formed for an overlapping junction between sections at the ends, as at 27 (Fig. 4). Said junctions are preferably caulked to insure their being completely watertight.

Transverse girder members 14 are capped with close fitting trim pieces 28 formed at the inner sides of said girder members so as to join with the adjacent corrugated roof section as at 29. The outer end of the canopy is provided with a trim piece 30, close fitting to the outer sides of L-shaped portion 23 of gutter member 20 and extending down somewhat over the outer side of outer lateral girder member 11.

In installation, the canopy is preferably slightly downwardly inclined, from front to back, and from the outer end to the inner end against the building M, so that any water in the gutters will drain off at the back side of the canopy and so that water on the corrugated roof will drain off gutter trough 22.

In installations where the canopy is used in conjunction with more than three toll booths it is desirable that water is allowed to drain off at intermediate locations along the roofing rather than at the end of the canopy. This is preferably accomplished by inclining the corrugated roof sections 25 downwardly to alternate booths and anchoring the downward ends thereof separately and apart to the upper side of the lateral girder members 11 so that water drains under the corrugated roof at one side of said girder member, the other side being sealed to prevent flow of water, and into a gutter connected with the water disposal system. Fig. 7, a partial view similar to that shown in Fig. 4, illustrates this modification. Downwardly inclined corrugated sheet metal roof sections 25a and 25b are separated and anchored as by stud bolts 43 to lateral girder member 11. Between said roof sections and said lateral girder member is a gutter member 44 having side troughs 21 and 45. Trough 45 communicates with a drainpipe 46 at the upper end of toll booth column member 37, said drain pipe being concealed within said column member and connected at its lower end to the water disposal system. Preferably, the mouth of drainpipe 46 in trough 45 is furnished with a strainer 47 to prevent debris from clogging the drainage system. Water flows down inclined roof sections 25a into trough 45 and thence through drainpipe 46 into the water disposal system. Water is prevented from flowing under roof section 25b by wood blocks 48 formed to fit in the openings under said roof section and sealed watertight therein by layers of mastic cement 49 (Fig. 8).

For illuminating the toll collection booth area under the canopy there is provided a plurality of fluorescent lighting fixtures F installed in each lateral girder member 11 and extending practically the whole length of said girder (Figs. 4 and 5). Shown detailed in outer lateral girder member 11, said lighting fixtures comprise a reflector body 31, a transformer 32, light tubes 33, a layer of insulation 34 on the upper side of said reflector body and a glass cover 35 (Fig. 4).

The canopy assembly is installed over the toll booth as by bolts 36 clamping the lateral girder members 11 to the upright structural column members 37 of the toll booths (Fig. 4). Openings 38 are provided at these junctions to allow for communication of service pipes, wires and cables between the interiors of the canopy girder members 11 and 14 and the toll booth column members 37.

The usual "stop" and "go" traffic signal lights S are mounted in the outer side of girder members 14 as shown in Fig. 3. It is to be noted that these signal lights can be easily interconnected to equipment in the maintenance building and the individual toll booths by wiring carried within the interior of the transverse and lateral girder members of the canopy.

Openings 12 in lateral girder members 11 between the ends thereof and the fluorescent lighting fixtures F are closed by access plates 39 fixed thereagainst as by self-tapping screws 40 (Fig. 5). The openings 15 in the transverse girder members 14 between the ends of said lateral girder members fixed thereagainst are closed by access plates 41 fixed thereto as by self-tapping screws 42. All wiring and piping within these girders will thus normally be hidden from view, but at the same time readily accessible for servicing upon the removal of said access plates.

It should be noted that although the embodiment hereindescribed is illustrated by a canopy for an installation including three toll booths, this canopy construction is equally adaptable for use with any other number of toll booths. In a multi-booth canopy, where the transverse length is so great that it is difficult to construct and ship the canopy in a single prefabricated unit, it is preferably broken into smaller sections along the transverse girders members 14 and reassembled upon installation by bolting these girders together.

It will thus be seen that there is provided a canopy structure in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical application.

As various possible embodiments might be made of the above invention, and as various changes might be made of the embodiment set forth, it is to be understood that all matters herein set forth or shown in the accompanying drawings are to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A canopy for a toll collection booth, comprising a pair of hollow lateral girder members of inverted U-shaped cross-section adapted to be fixed against opposite sides of the booth and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed against corresponding ends of said lateral girder members and extending above said lateral girder members and between said transverse girder members, said transverse girder members having the open sides thereof communicating with the ends of said lateral girder members, said lateral girder members being open at the bottom and having inwardly extending integrally formed flanges to support lighting fixtures thereon.

2. In combination, a plurality of spaced vertical aligned booths, each provided at opposite sides with vertical channels, a pair of lateral hollow girders of inverted U-shaped cross-section attached to opposite sides of each booth,

said girders and booths being formed with registering openings to establish communication between each channel of each booth and the girder adjacent thereto, a pair of transverse hollow girders of C-shaped cross-section attached to corresponding ends of the hollow lateral girders for said booths and having the open sides thereof communicating with the ends of said lateral girder members and disposed between said transverse girder members, said lateral girder members being formed with spaced inwardly extending flanges to support lighting fixtures therein for casting light downwardly through the bottom open sides of said lateral girders.

3. In combination, a plurality of spaced vertical aligned booths, each provided at opposite sides with vertical channels, a pair of lateral hollow girders of inverted U-shaped cross-section attached to opposite sides of each booth, said girders and booths being formed with registering openings to establish communication between each channel of each booth and the girder adjacent thereto, a pair of transverse hollow girders of C-shaped cross-section attached to corresponding ends of the hollow lateral girders for said booths and having openings communicating with the ends of said lateral girder members and disposed between said transverse girder members, said lateral girder members being open at the bottom to receive lighting fixtures therein for casting light downwardly through the bottom open ends of said lateral girders, lateral gutters at opposite sides of each lateral girder member and adjacent its upper end and means for securing said gutters to the upper side of said lateral girder members to support said gutters in said adjacent relation.

4. A canopy for a toll collection booth, comprising a pair of hollow lateral girder members of inverted U-shaped cross-section adapted to be fixed against opposite sides of the booth and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed against corresponding ends of said lateral girder members and extending above said lateral girder members, gutter troughs fixed along the upper sides of said lateral girder members, a corrugated metal roof disposed on top of said lateral girder members and between said transverse girder members, said canopy being fixed to said booth lightly inclined with reference to a horizontal plane, so that water will drain from said gutter members at one end of said canopy, said hollow lateral girder members comprising a top downwardly extending sides and inwardly extending flanges from the outer end of said sides, and said flanges adapted to have fluorescent lighting fixtures mounted within said lateral girder members and fixed against the inner sides of their respective flanges.

5. A canopy for a plurality of toll collection booths comprising a plurality of pairs of hollow lateral girder members of inverted U-shaped cross-section, each pair fixed, one each, against opposite sides of one each of said booths and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed against corresponding ends of said lateral girder members and extending beyond the ends of said outermost and innermost lateral girder members of said pairs of lateral members, an outer hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding outermost ends of said transverse girder members, an inner hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding innermost ends of said transverse girder members, gutter troughs fixed along the upper sides of said lateral girder members, and a corrugated metal roof disposed on top of said lateral girder members and between said transverse girder members.

6. A canopy for a plurality of toll collection booths comprising a plurality of pairs of hollow lateral girder members of inverted U-shaped cross-section, each pair fixed, one each, against opposite sides of one each of said booths and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed against corresponding ends of said lateral girder members and extending beyond the ends of said outermost and innermost lateral girder members of said pairs of lateral members, an outer hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding outermost ends of said transverse girder members, an inner hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding innermost ends of said transverse girder members, gutter troughs fixed along the upper sides of said lateral girder members, and a corrugated metal roof disposed on top of said lateral girder members and between said transverse girder members, said canopy being fixed atop said booths slightly inclined with reference to a horizontal plane, so that water will drain off said gutter members to one end of said canopy.

7. A canopy for a plurality of toll collection booths comprising a plurality of pairs of hollow lateral girder members of inverted U-shaped cross-section, each pair fixed, one each, against opposite sides of one each of said booths and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed against corresponding ends of said lateral girder members and extending beyond the ends of said outermost and innermost lateral girder member of said pairs of lateral members, an outer hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding outermost ends of said transverse girder members, an inner hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding innermost ends of said transverse girder members, gutter troughs fixed along the upper sides of said lateral girder members, a corrugated metal roof disposed on top of said lateral girder members and between said transverse girder members, said hollow lateral girder members comprising a top downwardly extending sides and inwardly extending flanges from the outer end of said sides, said flanges adapted to support a plurality of fluorescent lighting fixtures within said lateral girder members on the inner sides of their respective flanges, said hollow transverse girder members comprising a top, a side and a bottom, a downwardly extending flange from the outer edge of said top, an upwardly extending flange from the outer edge of said bottom, said last girder members having an opening between the outer edges of said downwardly and upwardly extending flanges, and access plates removably mounted against said flanges to cover said openings.

8. A canopy for a plurality of toll collection booths comprising a plurality of pairs of parallel hollow lateral girder members of inverted U-shaped cross-section alternately disposed on differing planes, each pair fixed, one each, against opposite sides of one each of said booths and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed

against corresponding ends of said lateral girder members and extending beyond the ends of said outermost and innermost lateral girder members of said pairs of lateral members, an outer hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding outermost ends of said transverse girder members, an inner hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding innermost ends of said transverse girder members, gutter members fixed along the upper sides of said lateral girder members and a corrugated metal roof disposed on top of said lateral girder members and between said transverse girder members, said roof comprising sections slightly downwardly inclined from the plane of one pair of said plurality of pairs of hollow lateral girder members to the adjacent pair of lateral girder members whereby water gravitationally draining down said roof sections will flow into the gutter members on said lateral girder members to which said sections are downwardly inclined.

9. A canopy for a plurality of toll collection booths comprising a plurality of pairs of parallel hollow lateral girder members of inverted U-shaped cross-section, each pair fixed, one each, against opposite sides of one each of said booths and near the top thereof, a pair of hollow transverse girder members of C-shaped cross-section fixed against corresponding ends of said lateral girder members and extending beyond the ends of said outermost and innermost lateral girder members of said pairs of lateral members, an outer hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding outermost ends of said transverse girder members, an inner hollow lateral girder member of inverted U-shaped cross-section mounted between the corresponding innermost ends of said transverse girder members, gutter members fixed along the upper sides of said lateral girder members and a corrugated metal roof disposed on top of said lateral girder members and between said transverse girder members, said roof comprising sections slightly downwardly inclined from the higher plane of alternate pairs of said plurality of pairs of hollow lateral girder members to the lower plane of intermediate adjacent lateral girder members, whereby water gravitationally draining down said roof sections will flow into the gutter members on the lowermost lateral girder members, to which said sections are downwardly inclined, and concealed means at each booth to drain said last mentioned gutter members.

10. In combination, a pair of parallel lateral hollow girder members, a pair of parallel transverse girder members interconnecting the ends of the lateral girder members, and having openings communicating with said lateral girder members, lighting fixtures in said lateral girder members, and means in said lateral girder members to support said fixtures therein, whereby the wiring for said fixtures may pass thru the hollow lateral and transverse girder members.

11. In combination, a pair of parallel lateral hollow girder members, a pair of parallel transverse girder members interconnecting the ends of the lateral girder members, and extending above said lateral girder members, and having openings communicating with said lateral girder members, decking supported on said lateral girder members and between the upwardly extending portions of the transverse girder members, lighting fixtures in said lateral girder members, and means in said lateral girder members to support said fixtures therein, whereby the wiring for said fixtures may pass thru the hollow lateral and transverse girder members.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,633,641	Kasch	June 28, 1927
2,033,689	Dawson	Mar. 10, 1936
2,128,539	Roach	Aug. 30, 1938
2,178,975	Specht	Nov. 7, 1939