March 6, 1928.

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E. MIHALIAK

STREET CROSSING

Filed Jan. 5, 1927

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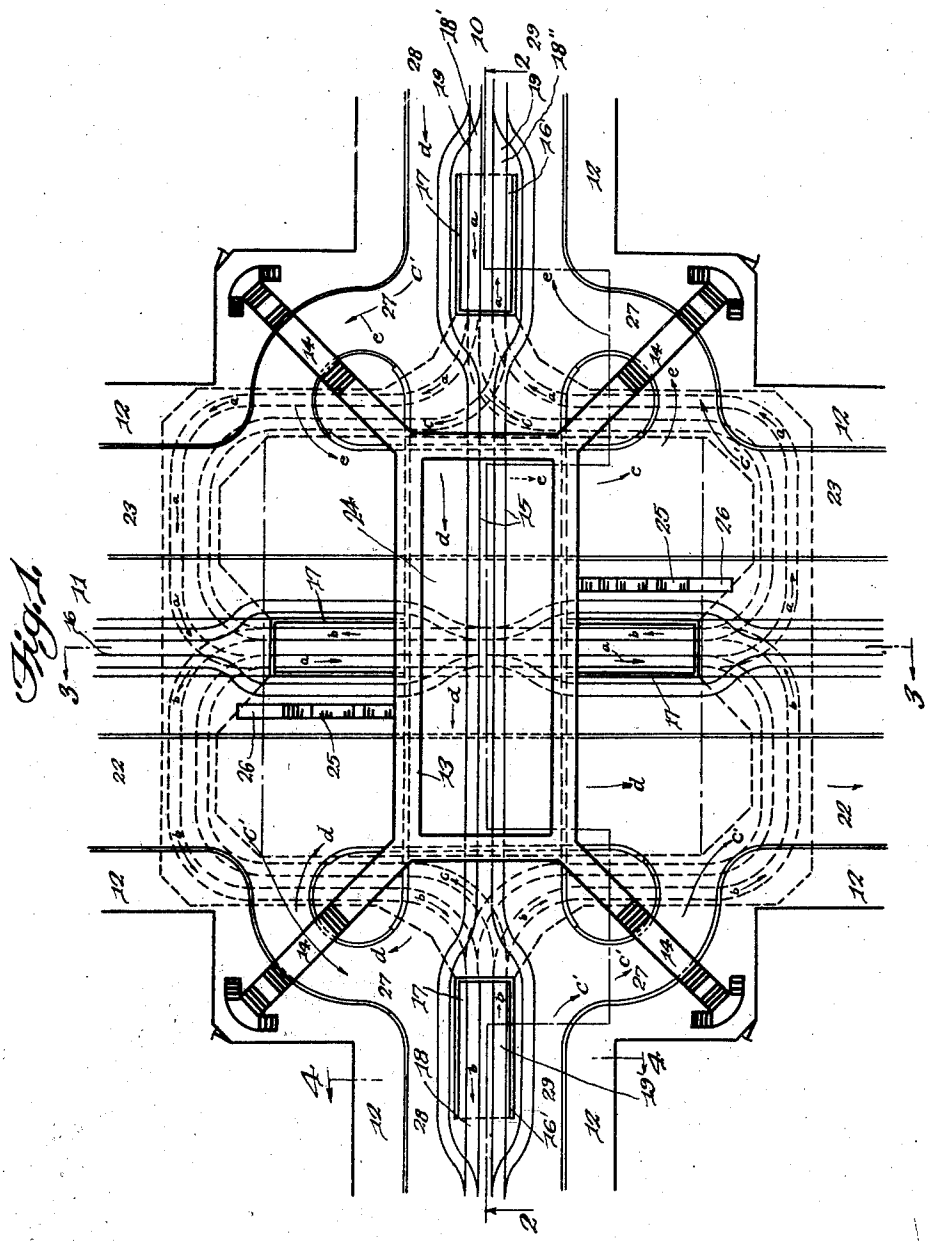


Fig. 1.

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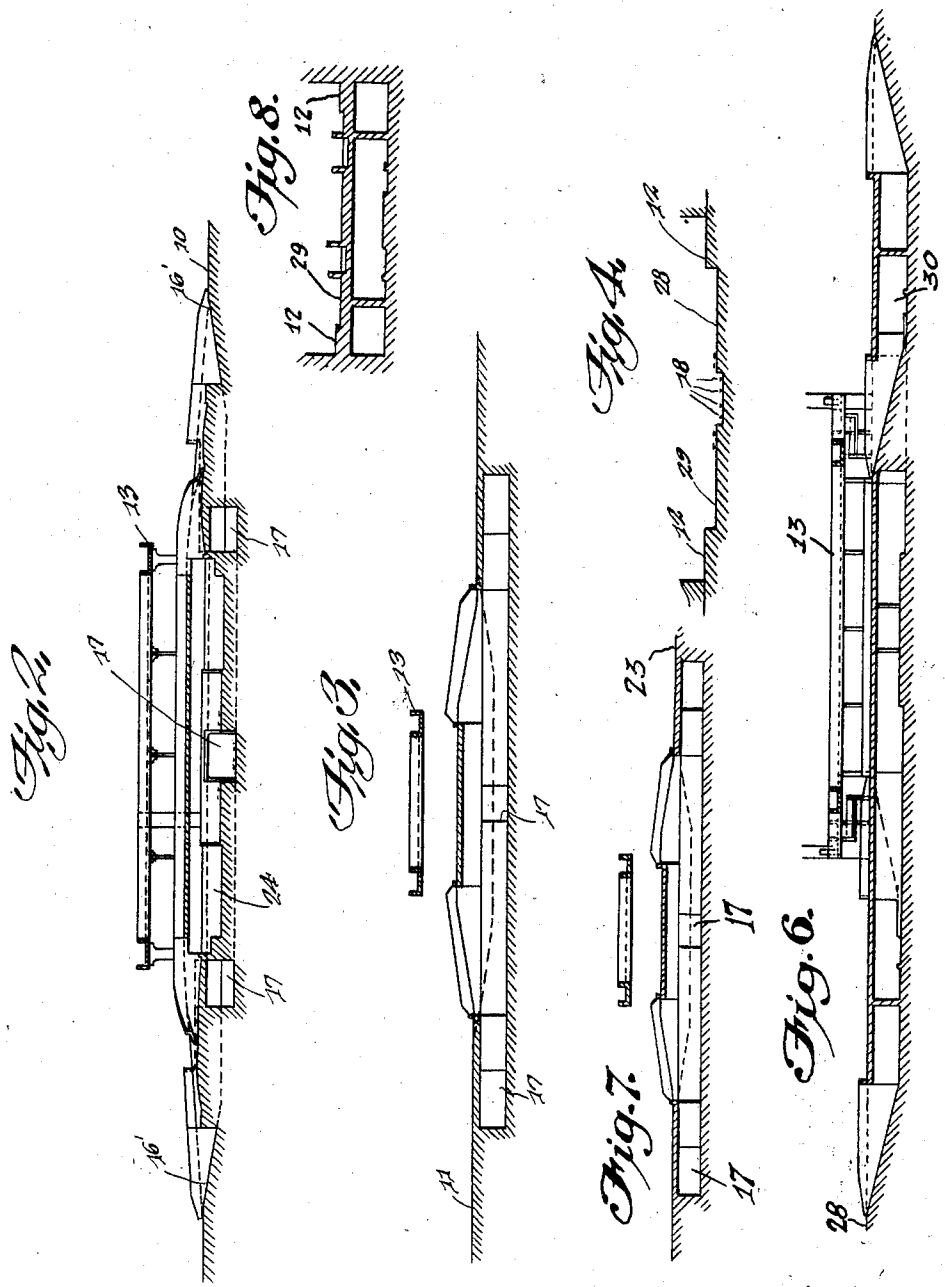
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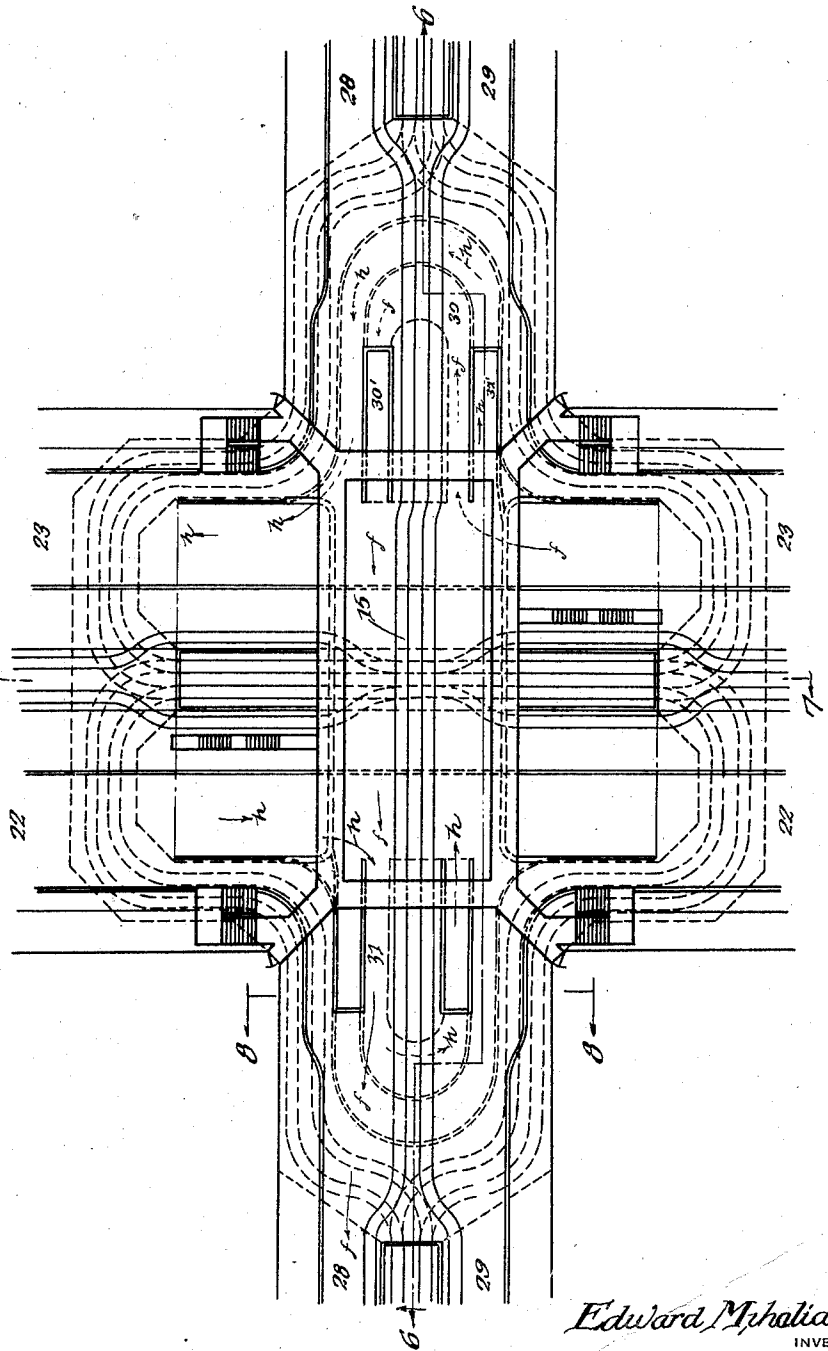
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Fig. 5.



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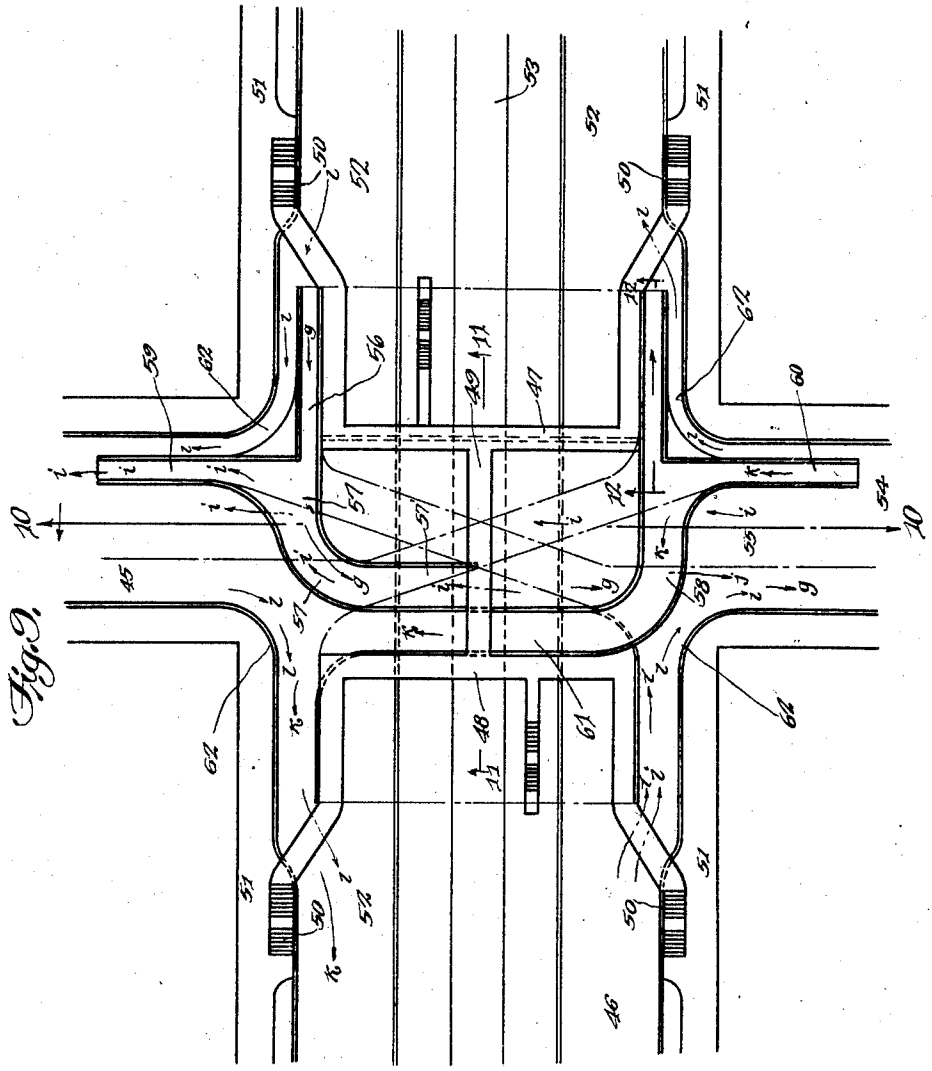


Fig. 9.

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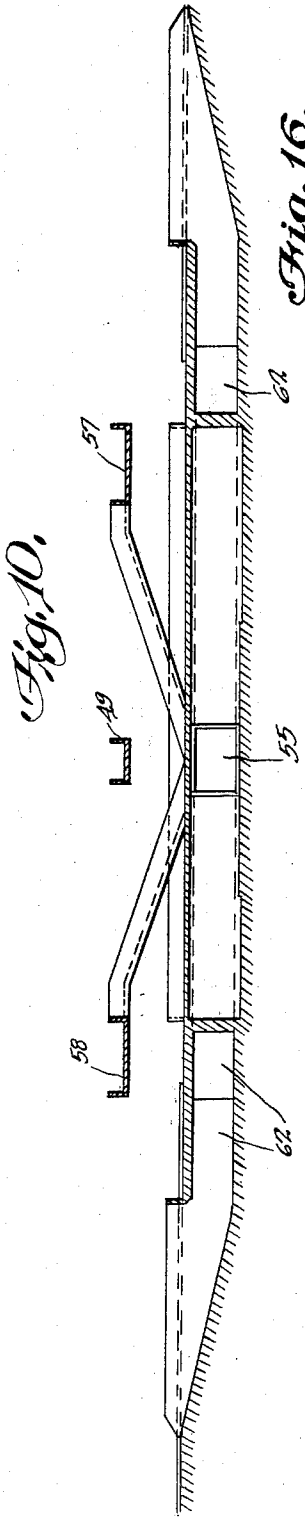


Fig. 10.

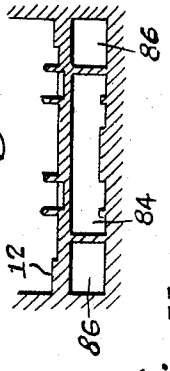


Fig. 16.



Fig. 11.

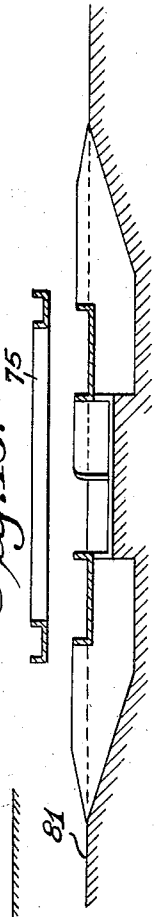


Fig. 15.

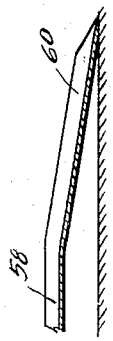


Fig. 12.

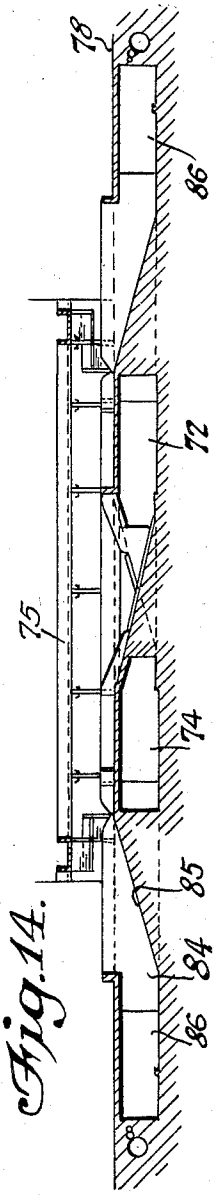


Fig. 14.

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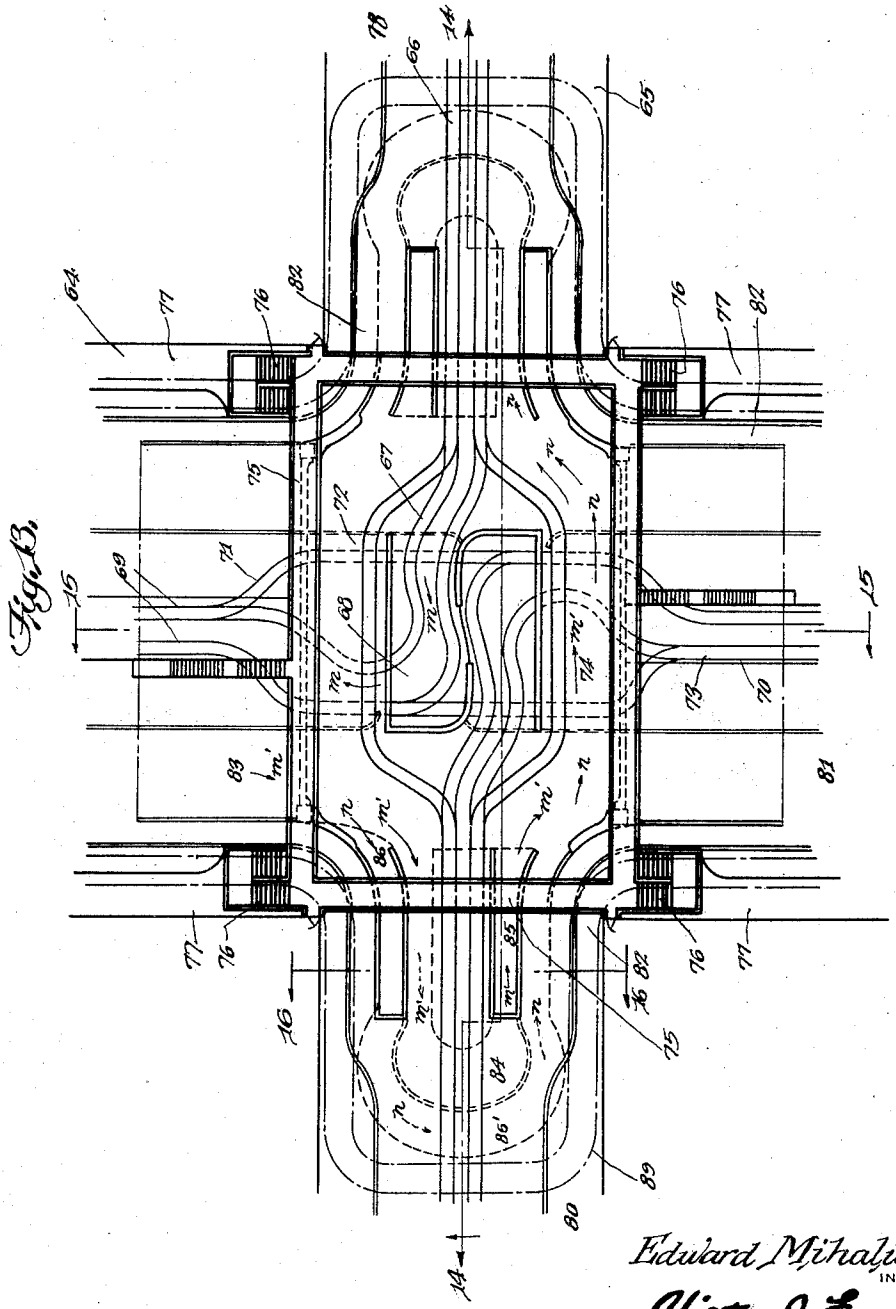
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Fig. 13.



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Patented Mar. 6, 1928. 1,661,490

UNITED STATES PATENT OFFICE.

EDWARD MIHALIAK, OF BROOKFIELD, ILLINOIS.

STREET CROSSING.

Application filed January 5, 1927. Serial No. 159,205.

This invention relates to a system of street crossings for facilitating the movement of vehicles and pedestrians at street intersections and for greatly eliminating the possibility of accidents, while also eliminating the need of traffic directors such as police officers and signal lights, and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

Among the several objects of the invention is to provide a street crossing system in which the traffic lanes will always afford a continuous free travel of vehicles and also free movement of pedestrians off of the level of the streets.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings, showing the preferred form of construction, and in which:

Fig. 1 is a plan view of a street crossing embodying my invention,

Fig. 2 is a sectional detail view taken substantially on line 2—2 of Fig. 1,

Fig. 3 is a sectional detail view taken substantially on line 3—3 of Fig. 1,

Fig. 4 is a sectional detail view taken substantially on line 4—4 of Fig. 1,

Fig. 5 is a plan view of a street crossing embodying the invention showing a modified form of construction,

Fig. 6 is a sectional detail view taken substantially on line 6—6 of Fig. 5,

Fig. 7 is a sectional detail view taken substantially on line 7—7 of Fig. 5,

Fig. 8 is a sectional detail view taken substantially on line 8—8 of Fig. 5,

Fig. 9 is a plan view of a street crossing embodying the invention showing a still further modified form of construction,

Fig. 10 is a sectional detail view taken substantially on line 10—10 of Fig. 9,

Fig. 11 is a sectional detail view taken substantially on line 11—11 of Fig. 9,

Fig. 12 is a sectional detail view taken substantially on line 12—12 of Fig. 9,

Fig. 13 is a plan view of a street crossing embodying the invention showing a still further modified form of construction,

Fig. 14 is a sectional detail view taken substantially on line 14—14 of Fig. 13,

Fig. 15 is a sectional detail view taken substantially on line 15—15 of Fig. 13, and

Fig. 16 is a sectional detail view taken substantially on line 16—16 of Fig. 13.

Referring first to Figs. 1 to 4 inclusive illustrating the preferred form of construction, 10 and 11 indicate two intersecting streets and located on the opposite sides of the streets are sidewalks 12 for the movement of pedestrian traffic. The pedestrian traffic cross the streets is accomplished by means of a bridge 13 disposed centrally with respect to the intersection of the streets and leading to this bridge are stairways 14. A pedestrian who is desirous of crossing from one side of the street to the other ascends one of the stairways 14 to reach the bridge 13 and descends from the opposite stairway to the opposite side of the street. The bridge 13 is substantially rectangular in plan view thereby affording movement of pedestrians over either of the streets or from corner to corner of the streets.

Beneath the bridge 13 are two parallel trackways 15 which afford movement of cars parallel with the street 10. On opposite sides of the street 11 and centrally located within the street 10 are entrances 16′ of a tunnel 17. As shown, the trackways 15 separate for position on opposite sides of the entrances of the trackway. Extending parallel with the street 11 are parallel extending trackways 16. These trackways 16 afford movement of cars parallel with the street 11 and cross the trackways 15 through the tunnel 17. By tunnelling the trackways 16 it will be apparent that cars moving along the trackways 15 will not interfere with the continuous movement of cars moving along the trackways 16. Leading into the tunnel 17 are parallel car rerouting trackways 18 and 19 upon which cars are switched from the trackway 15. The cars on the trackway 18′ of the trackway 19 travel through the tunnel in the direction of arrows *a* back upon the trackway 18″ of the trackways 19. The cars on the trackway 19′ travel through the tunnel in the direction of arrows *b* back on the trackway 19″ of the trackways 18. Or if it is found necessary cars on the trackways 18′ and 19′ may be rerouted to travel in an opposite direction than that indicated by the arrows *a* and *b* as in the direction of arrows *c*. However, it will be seen that a car moving along the trackways 18′ and 19′ in either of these directions will

enter the tunnel beneath the trackways 15 and 16 and therefore eliminate interference with movement of cars on the main trackways 15 and 16.

Main vehicle traffic lanes are indicated at 22 and 23 and extend parallel with the trackways 16 for vehicle movement beneath the bridge 13 through tunnels 24 beneath the trackways 15 above the trackways 18 and 19 and on a level with the trackways 16. Pedestrians desirous of ascending cars on the trackways 16 descend from the bridge 13 by means of stairways 25 onto platforms 26.

Extending parallel with the trackways 15 are main vehicle traffic lanes 28 and 29. The vehicle traffic in turning to the right at the street intersection takes a course in the direction of arrows *c* through curved lanes 27 which extend beneath the stairways 14 without interference with the traffic moving on the car trackways.

Left turn of the vehicle traffic from the lane from one lane to another, as from the lane 28 to the lane 22, the traffic moves across the street 10, on the lane 28 and takes a course through the curved lane 27 in the direction of the arrow *d* beneath the trackways 15 onto the lane 22. Thus, it will be seen that left turns from one main lane to the other main lane does not interfere with moving travel on the other main lanes and trackways.

If a vehicle moving on one main lane is to be directed to the lane parallel with this one main lane the vehicle, without traffic interference, is directed in a course indicated by the arrows *e* beneath the trackways 15 as from lane 28 to lane 29.

Referring to Fig. 5.

In this figure is illustrated a modified form of construction and attention is directed to the fact that the car trackways are identical in arrangement to the car trackways in Fig. 1 and therefore the modification resides mainly in the vehicle traffic lanes which will be described.

In this modified form of construction a vehicle to make a left turn from one of the main lanes to a main lane running at right angles therewith, as from the lane 23 to the lane 28, travels in the direction of the arrows *f* through a tunnel 30 up an incline to the upper level 30′ across the lanes 22 and 23 parallel with the trackways 15 onto the lane 28.

A vehicle travelling on one main lane, to return in the opposite direction on the main lane parallel with said one lane, as from lane 22 to lane 23, travels in the direction of arrows *h* through tunnels 31 along the lane 29 down through tunnels 32 onto lane 23.

Referring to Figs. 9 to 12 inclusive the intersecting streets are indicated at 45 and 46. In this modified form of construction there are provided two opposite bridges 47 and 48 joined together by a bridge 49. Ascending and descending to the bridges is accomplished by stairways 50 which are mounted from the sidewalks 51. A main traffic lane is indicated at 52 and extending parallel in this traffic lane are trackways 53 which may be same as in Fig. 1. A traffic lane 54 intersects the traffic lane 52 and crosses above the trackways 53 and lane 52 through a tunnel 55.

Left turns for the vehicle traffic from the main lanes is accomplished by directing the vehicle traffic, as, for instance, from the lane 52 up an incline 56, in the direction of arrows *g* over a bridge 57′ down an incline 57 and onto the lane 54.

To direct vehicles in opposite directions on the same main lane, as, for instance, to lane 54, the traffic travels in the direction of the arrows *i* beneath a bridge 58, up an incline 57 and down the incline 59 from the bridge 57 for travel in the direction of arrows *i* to direct vehicle traffic from the right hand of lane 54 to the left side for travel on the right of the lane 52 the traffic moves in the direction of arrows *k* up an incline 60 over the bridge 58 down an incline 61 on the right of lane 52.

The right turns from one lane to an opposite lane is accomplished through lanes 62 in the direction of arrows *l*.

The construction illustrated and described in this modified form is especially adapted for intersecting streets where a car runs on but one street and from the description herein it will be manifest that continuous movement of the traffic may be permitted without interference. The arrangement of street car tracks may be same as in Fig. 1 or 5.

In the modified form of construction illustrated in Figs. 13 to 16 inclusive the intersecting streets are indicated at 64 and 65. On the street 65 are trackways 66 and branching from these trackways 66 are trackways 67 which take a course through the tunnel 68 in the direction of the arrows *m*. On the street 64 are trackways 69 which join trackways 70 for movement of cars parallel with this street. The trackway 71 of the trackways 69 takes a course through the tunnel 72 and the trackway 73 of the trackways 70 takes a course through the tunnel 74. From this it will be seen that the cars moving on the trackways 66 can make a right and left turn on the trackways 69 and 70 and that a car moving along the trackways 69 and 70 will continuously move without interference with the cars moving on the trackways 66. A bridge 75 is likewise provided in this modified form of construction to permit pedestrians to cross the intersecting streets and this is accomplished by ascending and descending stairways 76 from sidewalks 77.

The main traffic lanes are indicated at 78, 79, 80 and 81. Traffic moving from the lane 78 to the lane 79 and from the lane 80 to the lane 81 will travel through curved lanes 82. Left turns for vehicle traffic from lanes 79 to 78 or lanes 81 to 80 is directed, in the direction of arrows *m'*, down an incline 83 through a tunnel 84 up an incline 85 onto the lane 78 or 80 as the case may be, for straight travel. To make a left turn as from lane 78 to 81 or 80 to 78, the vehicle traffic is directed in the direction of arrows *n* down the incline 86 through a tunnel 86' onto the lane 79 or 81, as the case may be.

In this form of construction, the sewer, gas and water pipes are indicated at 89.

In all the forms of construction of my improved street crossing it will be apparent that traffic may be moved in one direction without interference of movement of traffic in a direction substantially at right angles with the movement of the traffic in this direction and that the construction will be of great value when used in connection with subways.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention, I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

The invention having been set forth, what I claim as new and desire to secure by Letters Patent is:

1. A street crossing comprising two street car trackways elevated one above the other and extending substantially at right angles with respect to each other, vehicle traffic lanes on opposite sides of the trackways, curved lanes at the corners of the street crossing and connecting adjacent traffic lanes to permit right and left turn of vehicles moving on the traffic lanes, and a bridge structure permitting pedestrian travel over the trackways and traffic lanes.

2. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, curved traffic lanes at the corners of the street crossing connecting adjacent main traffic lanes together and permitting traffic moving along the main traffic lanes to make left and right turns, and a bridge structure permitting pedestrian travel over the trackways and traffic lanes.

3. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, curved traffic lanes at the corners of the street crossing connecting adjacent main traffic lanes together and permitting traffic moving along the main traffic lanes to make left and right turns, street car trackways extending parallel with the main traffic lanes and on the same levels therewith, and trackways connected with the first mentioned trackways and directed through the tunnels permitting cars moving on the first mentioned trackway to make left turns for movement in an opposite direction.

4. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, curved traffic lanes at the corners of the street crossing connecting adjacent main traffic lanes together and permitting traffic moving along the main traffic lanes to make left and right turns, street car trackways extending parallel with the main traffic lanes and on the same levels therewith, trackways connected with the first mentioned trackways and directed through the tunnels permitting cars moving on the first mentioned trackway to make left turns for movement in an opposite direction, and a bridge structure permitting pedestrian travel over the trackways and traffic lanes.

5. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, street car trackways extending parallel with the main lanes and on the same level therewith and substantially at right angles with respect to each other, a tunnel construction beneath one of said main lanes, and trackways connected with the first mentioned trackways and extending through the tunnels to permit rerouting of cars travelling along said first mentioned trackways.

6. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, street car trackways extending parallel with the main lanes and on the same level therewith and substantially at right angles with respect to each other, a tunnel construction beneath one of said main lanes, and trackways connected with the first mentioned trackways and extending through the tunnels to permit rerouting of cars travelling along said first mentioned trackways, and curved lanes at corners of the street crossing permitting right and left turn of traffic travelling on said main lanes.

7. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, street car trackways extending parallel with the main lanes and on the same level therewith and substantially at right angles with respect to each other, a tunnel construction beneath one of said main lanes, trackways connected with the first mentioned trackways and extending through the tunnels to permit rerouting of cars travelling along said first mentioned trackways, and a

bridge structure permitting pedestrian travel over the trackways and traffic lanes.

8. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, street car trackways extending parallel with the main lanes and on the same level therewith and substantially at right angles with respect to each other, a tunnel construction beneath one of said main lanes, trackways connected with the first mentioned trackways and extending through the tunnels to permit rerouting of the cars travelling along said first mentioned trackways, and curved lanes at the corners of street crossing permitting right an left turn of traffic travelling on said main lanes, and a bridge structure permitting pedestrian travel over the trackways and traffic lanes.

9. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, and other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction.

10. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction, and a bridge structure permitting pedestrian travel over the traffic lanes.

11. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction, and street car trackways extending parallel with the main lanes and upon the same level therewith.

12. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction, street car trackways extending parallel with the main lanes and upon the same level therewith, and other street car trackways tunneled beneath the main lanes for permitting rerouting of cars moving along the first mentioned trackways.

13. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction, street car trackways extending parallel with the main lanes and upon the same level therewith, other street car trackways tunneled beneath the main lanes for permitting rerouting of cars moving along the first mentioned trackways, and curved lanes connecting adjacent of the main lanes together to permit right turn of vehicles moving on the main lanes.

14. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction, street car trackways extending parallel with the main lanes and upon the same level therewith, other street car trackways tunneled beneath the main lanes for permitting rerouting of cars moving along the first mentioned trackways, curved lanes connecting adjacent of the main lanes together to permit right turn of vehicles moving on the main lanes, and a bridge structure permitting pedestrian travel over the trackways and traffic lanes.

15. A street crossing comprising two elevated main traffic lanes extending substantially at right angles with respect to each other, a traffic lane tunneled beneath one of the main lanes to permit left turn of vehicles travelling from one main lane to the other main lane, other tunneled lanes permitting travel of vehicles on the main lanes in an opposite direction, street car trackways extending parallel with the main lanes and upon the same level therewith, other street car trackways tunneled beneath the main lanes for permitting rerouting of cars moving along the first mentioned trackways, and a bridge structure permitting pedestrian travel over the trackways and traffic lanes.

In testimony whereof I affix my signature.

EDWARD MIHALIAK.