

Sept 15, 1925.

1,553,733

G. W. WEMPLE

ELEVATED STREET CROSSING BRIDGE

Filed Dec. 27, 1923

4 Sheets-Sheet 1

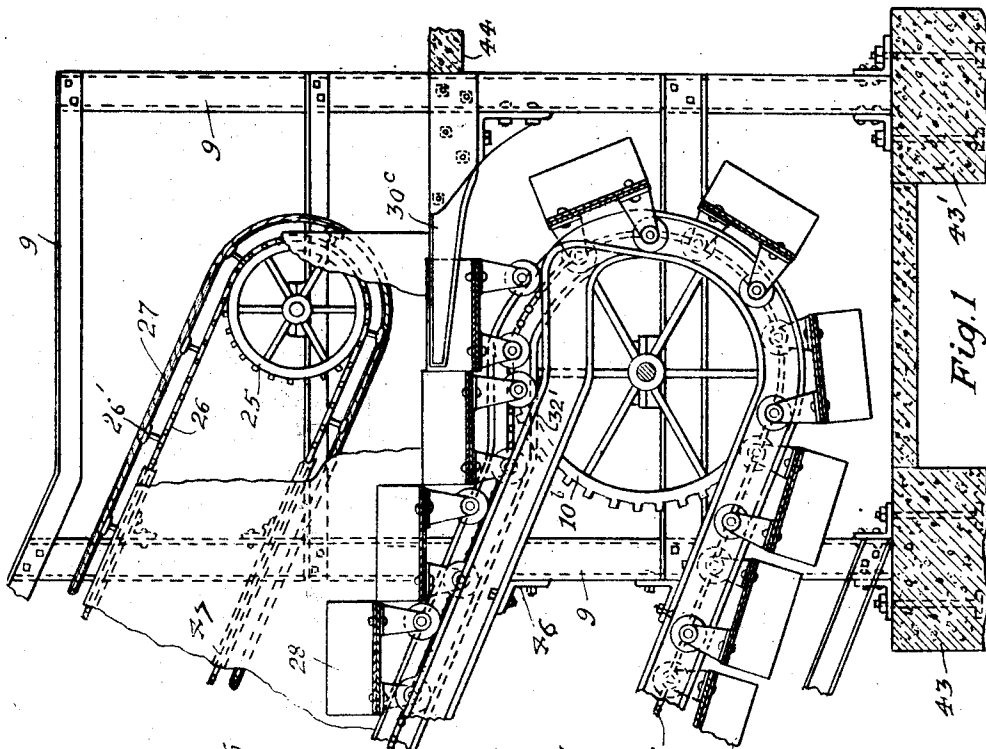


Fig. 1

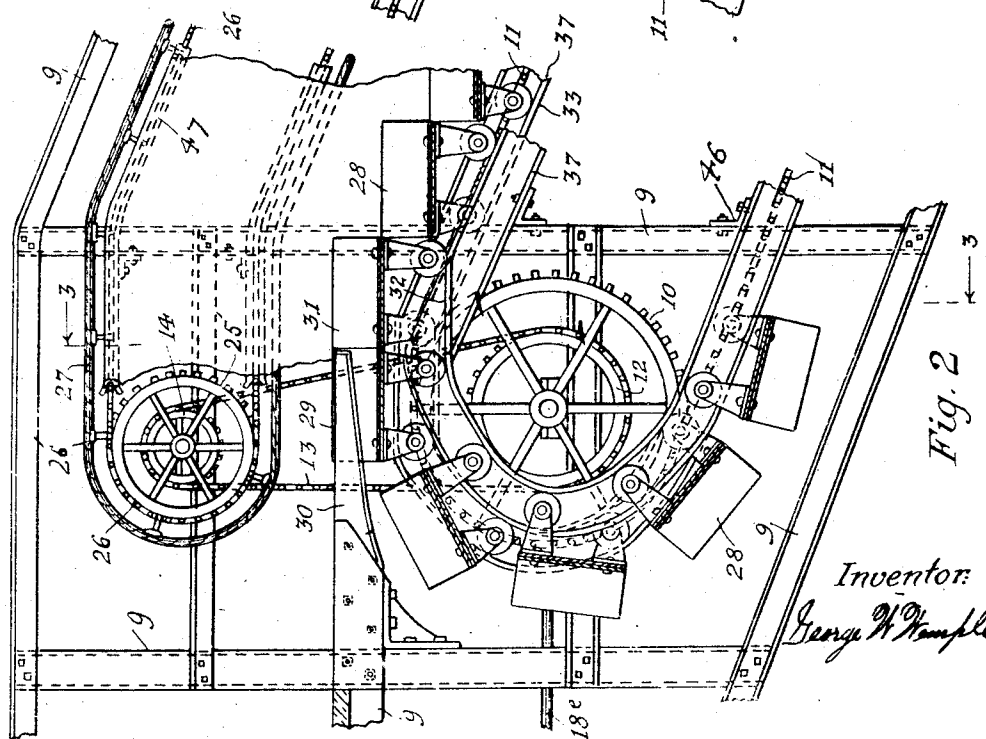


Fig. 2

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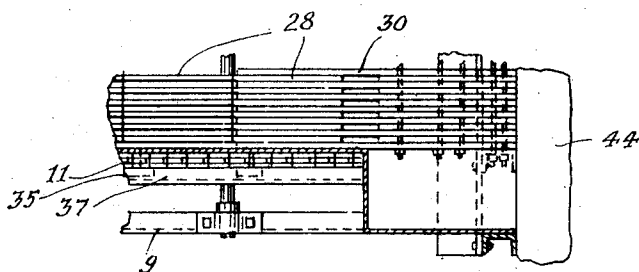
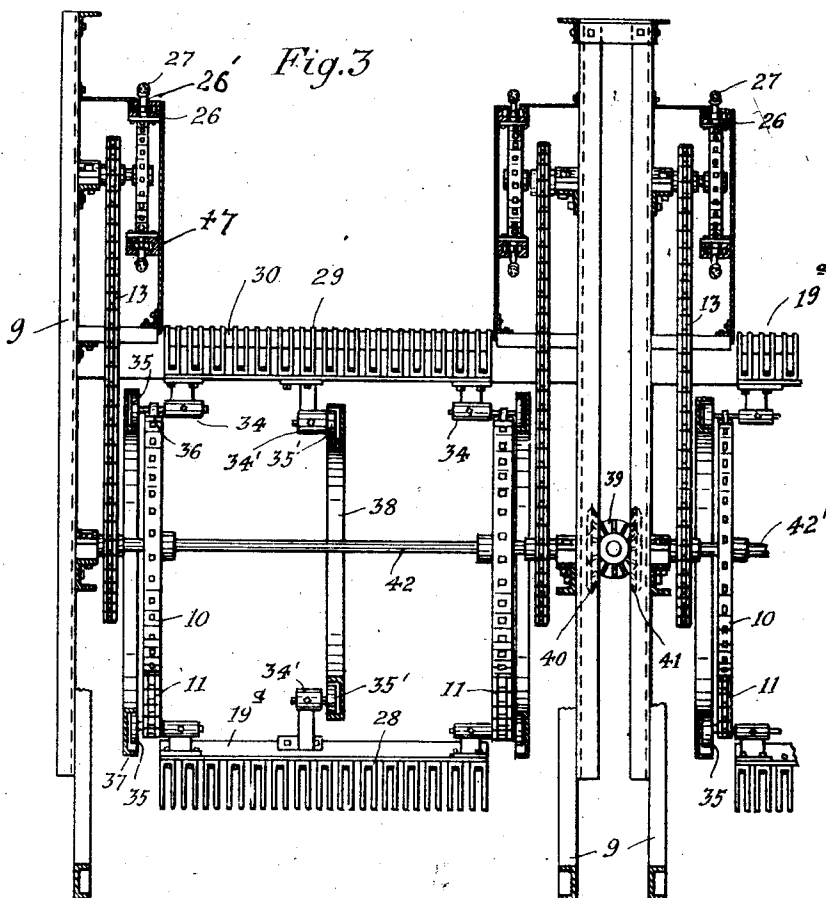


Fig. 6.

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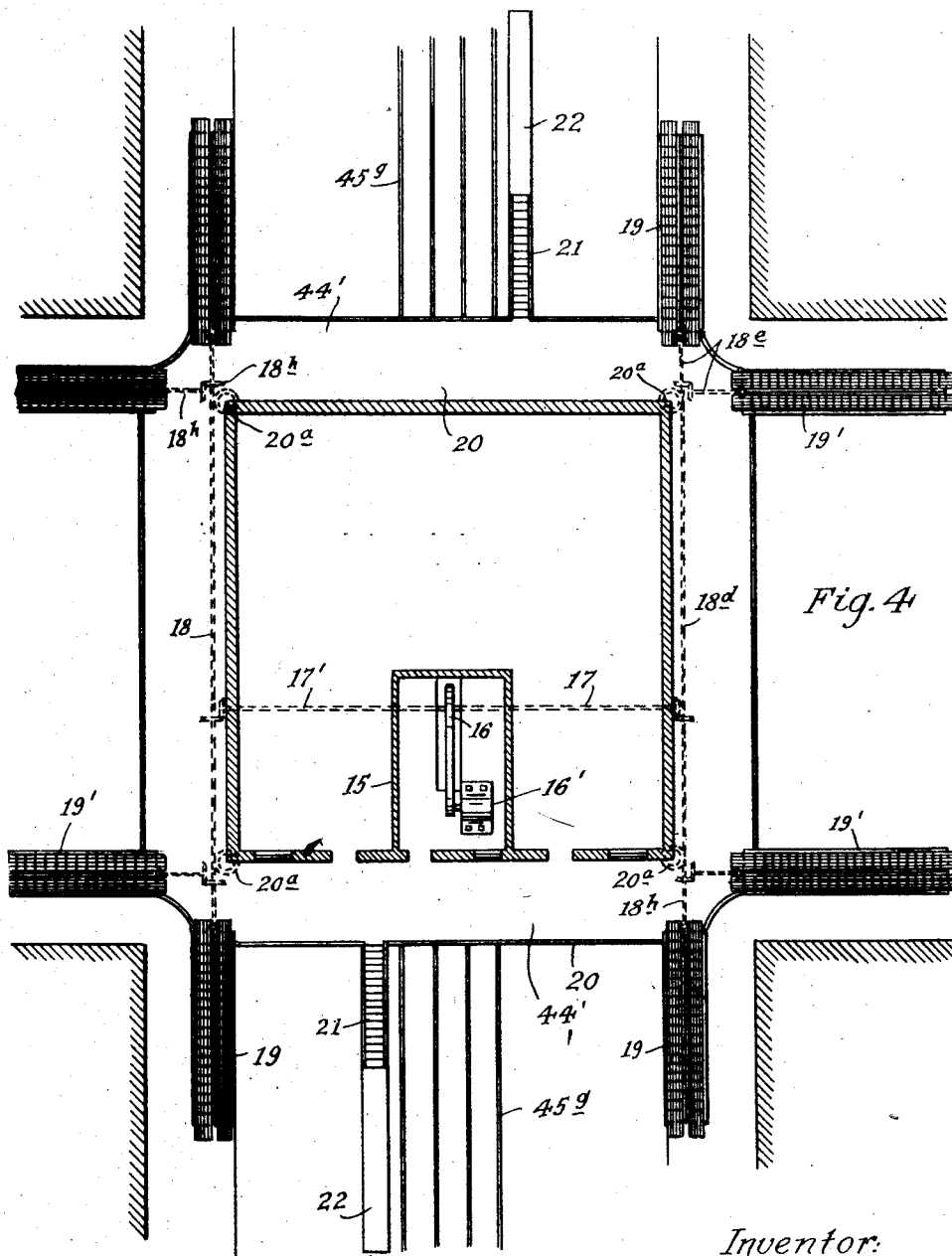
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4 Sheets-Sheet 3



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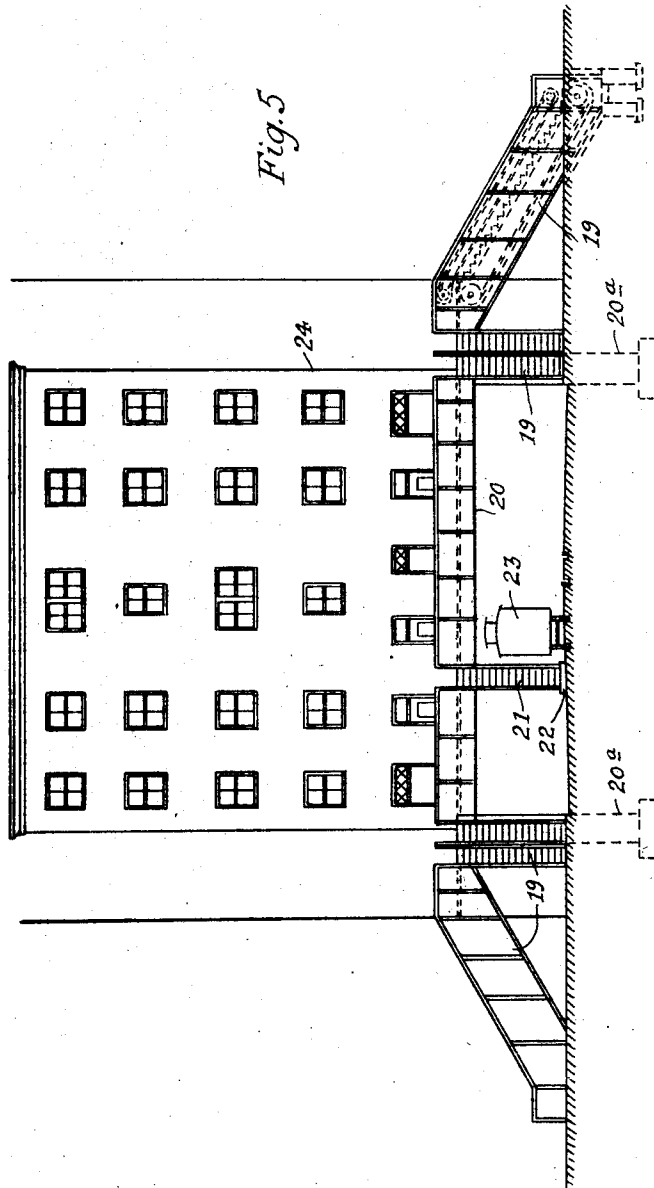
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G. W. WEMPLE

ELEVATED STREET CROSSING BRIDGE

Filed Dec. 27, 1923

4 Sheets-Sheet 4



Inventor:
George W Wemple

UNITED STATES PATENT OFFICE.

GEORGE W. WEMPLE, OF FARIBAULT, MINNESOTA.

ELEVATED-STREET-CROSSING BRIDGE.

Application filed December 27, 1923. Serial No. 682,878.

To all whom it may concern:

Be it known that I, GEORGE W. WEMPLE, a citizen of the United States, residing at Faribault, in the county of Rice and State of Minnesota, have invented a new and useful Elevated Street-Crossing Bridge, of which the following is a specification.

My invention has for its object to provide a practical and highly efficient means for pedestrians to cross city streets safely and free from contact with vehicles of every kind which make up the usual street traffic of our times, and to such ends, generally stated, consists of the novel devices and combination of devices hereinafter described and defined in the claims.

The elevated quadrangular truss bridge-like structure, resting upon four or more buttment piers, to which mechanically moved elevator stair-ways extending from the street walks up to the bridge-walks is adapted to facilitate street traffic, both pedestrian and vehicular in the highest degree of safety and convenience to all who have to cross city streets, especially in the congested districts where all are exposed to accidents and death.

Hitherto the common practice has been to station an officer in the center of certain street crossing certain hours of the day with a stop and go sign, to govern the traffic in greater safety to all concerned. But when he is gone from his post people carry their lives imminently at stake when crossing a street, when trolley cars and vehicles are driving in from all sides.

Thus pedestrians are struck down, killed or maimed by thousands annually. Therefore the necessity for a contrivance which will enable pedestrians to cross the streets, at street crossings, in safety and at the same time facilitate wheel vehicles in their movement with greater safety, is what my invention is designed to accomplish.

While for various reasons I prefer the elevated type of a "traffic-escape" represented in the accompanying drawings, there may be conditional cases when it might be necessary to invert the general structure by placing the traf-escape under the street, in subways excavated under the street with practically the same system of elevators operated in like manner from a sub-way power room.

The improved traffic-escape is illustrated in the accompanying drawings where like char-

acters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a sectional side elevation of the ground end of the elevator frame placed on a suitable foundation, and the lower end of the revolvable stair-like elevator and revolvable baluster hand rail member;

Fig. 2 is a sectional side elevation of the bridge end of the elevator frame and revolvable elevator and baluster handrail member;

Fig. 3 is a vertical sectional front view of the elevator frame, shafts, sprocket-wheels, chains and driving gear, the hand rail baluster member taken from front to rear approximately on the lines 3—3 of Fig. 2.

Fig. 4 is a plan view of cross streets, the bridge-work cross walks, stair-like elevator, the power room, gears and shafting, a street railway, a stairway from the "traffic-escape" to the street car isle, and the relative position of cornering property;

Fig. 5 is a vertical side view of the traffic-escape with superstructure in relation to the ground surface and adjoining building lines, the stairway to street car isle, three of the foundation piers and the relative position of the elevator members;

Fig. 6 is a plan view of a fragmentary section of the shive-like landing platform with the grate-like tread surface of a stair-step entering or leaving the platform.

The numeral 9 indicates a suitable elevator frame work set at an angle approximately of thirty degrees, the lower end of the frame resting upon a foundation in the ground, 9, 43, 43' Fig. 1, the upper end of the frame is fastened to the bridge frame 20, as shown in Figs. 4 and 5 herein designated as the "elevator frame," the numeral 20 indicates a truss bridge-like frame herein designated as the "bridge frame."

The quadrangular bridge frame is supported by four or more suitable buttment piers 20^a as seen in Figs. 4 and 5. The numeral 44' indicates the bridge walk which rests upon the floor of the bridge frame 20. The numeral 15 indicates the power house located and framed to the inside bridge truss frame, and in case of a superstructure 24 as shown in Fig. 5, upon the first floor of the superstructure. The numeral 16' the power engine, 16 the belt and driving pulley, 17 and 17' the main shafts geared

to shafts 18 and 18^a which propel the shafts 18^b, 18^c and 18^d which are mounted with pinions 39 which propel the gears 40 and 41 mounted on shafts 42 and 42', as seen in Figs. 2, 3 and 4. The said shafting suitably hung, boxed and supported as is usual in mechanical engineering of this class of work; together with levers and means for throwing the power on and off, and locking the elevators at given points, when desired.

The numeral 19 and 19' indicates the elevator members, their relative position to the bridge 20, the bridge-walk 44', the street side-walk 44, as seen in Figs. 1 and 4.

In case street car lines run under the "traffic-escape" bridge, numeral 21 indicates the stair-way extending from the traffic-escape bridge-walk to the street isle 22, the car tracks 45^s, the street car 23, as seen in Figs. 4 and 5.

The numeral 19^a indicates the revolvable stairway elevator member which consists of a series of steps 28 (Figs. 1, 2 and 3) which steps are made of a series of elongated U-shaped members rigidly bolted or riveted crosswise to the base frame 19^a (see Fig. 3) which is mounted on suitable box members 34 and 34' in which the shafts and wheel members 35 and 35' revolve, the shafts of which revolving in the box-like links 36 placed at intervals in the sprocket chains 11 which couple the steps together in right relation to make up the step carrier member of the elevators.

The step carrier wheels 35 and 35' run in guide tracks 37 and 38 which are mounted on the elevator frame bars 46, as seen in Figs. 1 and 2, the sprocket chains 11 mounted on sprocket wheels 10 and 10^b which are mounted on suitable shafts and boxing 42 and 42', the sprocket chain 13 mounted on sprocket wheels 12 and 14 the sprocket chain 26 mounted on sprocket wheels 25 and 25', the flexible hand rail member 27 mounted upon sprocket chain 26 by suitable wing-boss chain link members 26' slidable in a suitable guide track 47, as seen in Figs. 1, 2 and 3, constitute the revolvable baluster member of the elevator, and geared to run in the same direction and at the same speed of the elevator step member.

The numeral 30, Figs. 1, 2 and 6, indicate the elevator platforms comprising a series of iron plates and shims bolted together and supported by the elevator frame and brackets 9. As the U members of the elevator steps 28 rise to the position of step 29, as seen in Fig. 2, they rise slightly above the platform member 30 then move out to 31 on the horizontal track section 32 then descend on track 33 to the track section 32' where the steps move horizontally into the platform members 30 with the foot surface slightly above the platform bars and drop beneath, leaving the passenger to step along

on the walk. The same principle and action applying to the steps entering or leaving either platform.

The truss bridge frame 20 of my traffic-escape invention may be of any practical design in truss bridging which mechanical engineers would ordinarily adopt in the construction of a quadrangular bridge, resting upon four or more butment piers, strong enough to support the load the traffic-escape is designed to carry. Therefore, I have shown no particular design of the bridge-frame work 20, as seen in Figs. 4 and 5, as there would be little if anything new or novel beyond arrangements of parts facilitating the location of the shafts and gearing for operating the machinery, and in case of a superstructure to be erected thereon, as shown in Fig. 5, the four inside truss-work structures of the quadrangular bridge would be made essential stronger than the outside trusses. The inside truss work being girded together at or near the bottom of the bridge frame to support the power house of any area, or height allowable, within the bridge square, and suitably girded at the top of the bridge truss-work for roofing, or floor for the second or additional stories, in case of such superstructure, as shown in Fig. 5.

Nearly all of the bridge-work construction, in principle, being old and common, thus used as essential parts in combination with other parts, I have devised and assembled in designing a new, novel and useful traffic-escape.

I have shown herein my preferred form of arrangement and embodiment of the elements that go to make up my invention, but following the general relative arrangement of these parts, they may be differently supported, different means may be provided for their adjustment and generally, the structure may be changed without departing from the spirit of the invention, therefore I do not desire to be limited to the exact construction herein shown, but claim any and all forms of embodiment that fall legitimately within the spirit thereof.

What I claim is:

1. A traffic-escape comprising in combination with an elevated rectangular truss bridge-like structure, spanning the square of two or more intersecting streets, mounted upon suitable abutment bridge piers preferably located near the corner of the bridge structure, a power house erected on the inside frame-work of the rectangular bridge, a power machine located therein and connected to a driving shaft which together with auxiliary shafts and gears suitably mounted on the frame of the bridge connecting with two or more revolvable stair-like elevator members situated at or near the corners of the bridge frame and con-

nected thereto on an angle of approximately thirty degrees, extending from the bridge floor to the ground surface.

2. A traffic-escape comprising in combination an elevated rectangular truss bridge-like structure mounted upon suitable abutment piers, a power house mounted thereon, a suitable motor power located therein, a suitable set of shafts and gearing extending from the power house to, and connected up with the gears of the elevator members, one or two suitable elevator frames extending from the bridge to the side-walk on an angle of approximately thirty degrees, two
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revolvable stair-like elevator members mounted therein which move in opposite directions, a series of stair like steps, linked together by sprocket chains and coupling members, said step construction consisting

of a series of elongated U shaped members rigidly fastened transversely to the base frame of the step member which is mounted upon axle wheel members which run in suitable tracks mounted in the elevator frame, a comb-tooth-like platform rigidly mounted in the top and bottom ends of the elevator frame by means of which the U members of the elevator steps intersect, rest in, or pass through when in motion, one or more suitable flexible baluster hand rail members mounted in the elevator frame to move in the same direction and speed of the elevator members, all constructed, arranged and operated substantially as described.

In testimony whereof, I have signed my name to this specification on this 21 day of December, A. D. 1923.

GEORGE W. WEMPLE.