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Grow

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[54] **NON-STOP RAPID TRANSIT SYSTEM**

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[51] **Int. Cl.** **B61k 1/00**
[58] **Field of Search** 104/18, 91, 88, 20, 26, 104/27, 28, 29

[56] **References Cited**

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[57] **ABSTRACT**

A non-stop rapid mass transit system comprised of individually operable cars adapted to take on and to let off passengers at a multiplicity of enroute stations, characterized by trains capable of operating on a single track and simultaneously progressing in opposite directions of travel, the cars being continuously utilized as and when they reach enroute stations from which they are operable on lateral feeder tracks and the like. The composition of each train involves at least three cars and one of which remains in motion at operating speed, wherein a first pair of said cars travel together and are uncoupled on approach to an enroute station, and wherein a second pair of cars travel together and are coupled on departure from said enroute station. A feature is the one car which is common to said first and second pairs of cars, and that one car which comes to rest at a subsequent enroute station for unloading and reloading. The number of pairs of cars required is determined by the number of stations and all of which can be varied as and when required. Further, while at said enroute station the said one car is operable on feeder routes for said station. It is a passenger load with which the present invention is primarily concerned, wherein the passengers are relayed progressively into advanced cars having the individual passenger destinations as desired, there being computerized means for control and direction of the passengers.

18 Claims, 9 Drawing Figures

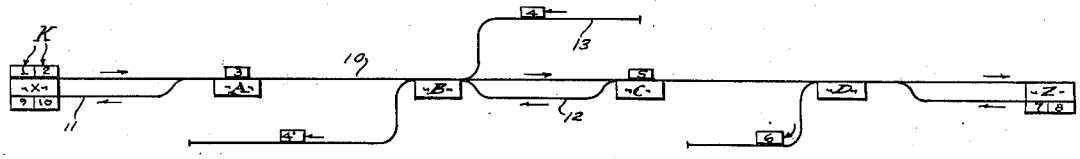
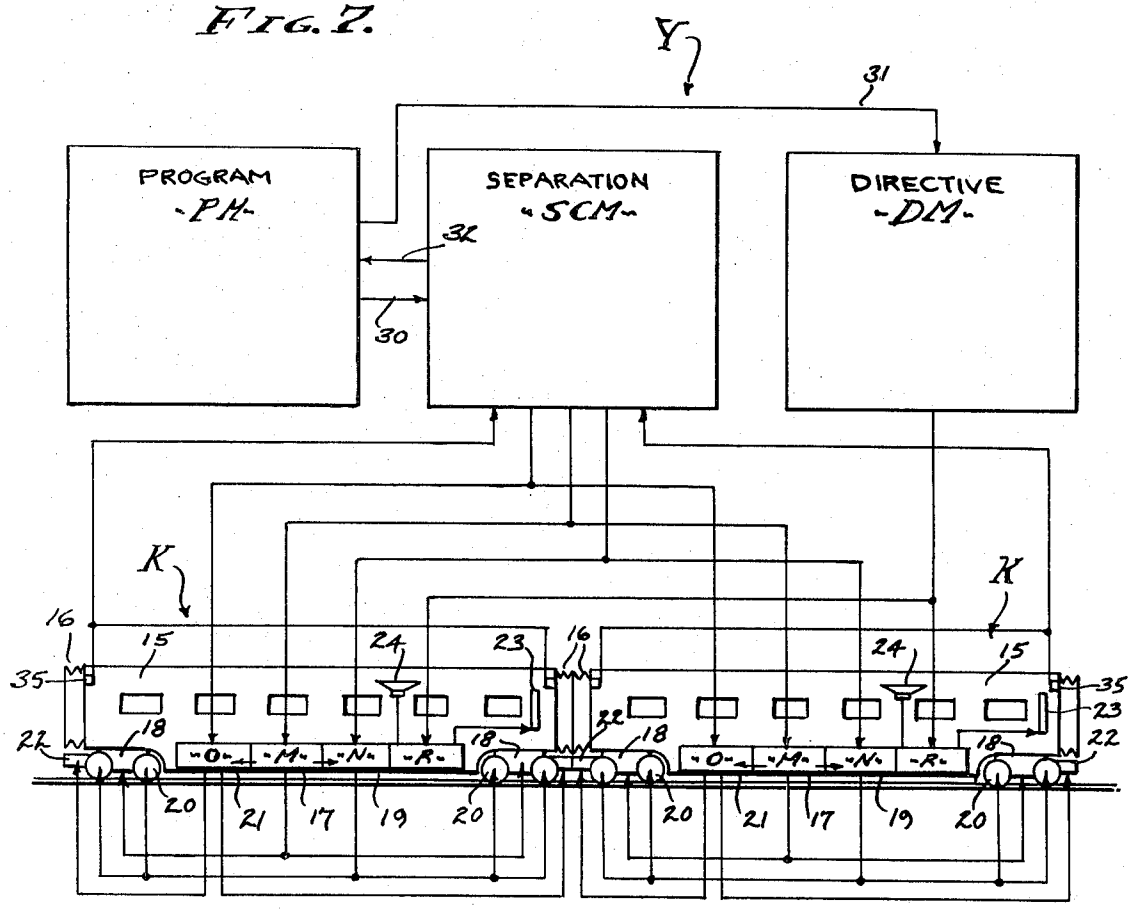


FIG. 1.
FIG. 2.
FIG. 3.
FIG. 4.
FIG. 5.
FIG. 6.

FIG. 7.



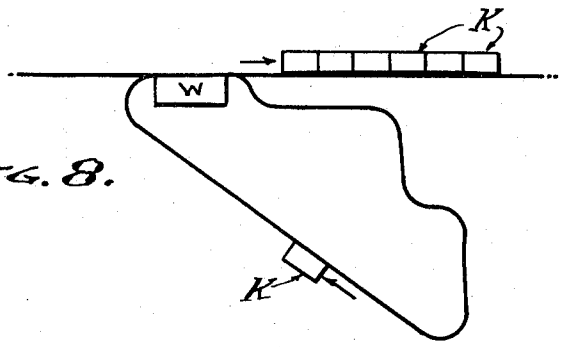
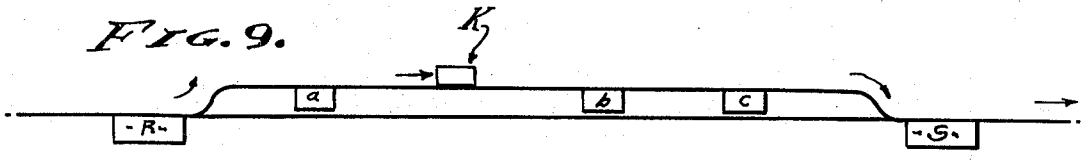


FIG. 8.

FIG. 9.



NON-STOP RAPID TRANSIT SYSTEM

Reference is made to Disclosure Document No. 005819 filed July 2, 1971, which describes, fundamentally, the concept herein disclosed.

BACKGROUND

Rapid transit is complicated by the requirements of mass transit of passengers from terminal to terminal via enroute stations where loading and unloading of passengers is required. Heretofore, trains of cars have been accelerated and decelerated from station to station, making the necessary enroute stops required to acquire and to discharge passengers; and it has been the entire train which must be accelerated and decelerated with great expenditure of energy and with great loss of time. The usual train must involve a full complement of cars for the entire trip, regardless of minimal passenger loads that may prevail throughout certain portions of the trip; and consequently there is a wasted use of equipment which is not utilized to capacity. A rapid transit "main line" is usually characterized by high-powered equipment capable of high rates of acceleration and deceleration, all of which is costly; and non-stop operation is not possible with the requirement for passenger stops at enroute stations.

It is an object of this invention to provide a non-stop rapid mass transit system and means for passenger service between remote terminals while servicing enroute stations as circumstances require. With the present invention, the train is made up of first, second, third, and forth, etc., pairs or groups of individually operable cars wherein there is one or a group of cars common to both the preceeding and succeeding pairs of cars to which they are successively coupled and uncoupled; the uncoupled one or group of cars being decelerated to an enroute station for unloading and reloading, and being accelerated thereafter to make up with a non-stop train section or group of cars moving (in either direction) to form the next pair or group of said cars.

It is an object to provide a system and means of travel as hereinabove referred to which is operable in one direction for peak traffic conditions, or which is operable simultaneously in opposite directions for normal traffic conditions; it being understood that the movement of cars is programmed for optimum availability at enroute points commensurate with the passenger load requirements.

It is also an object to provide a system and means of travel as hereinabove referred to which distributes cars to various enroute stations for feeder route service as required, and all to the end that maximum use of the equipment is obtainable.

It is still another object to provide a system and means of travel as hereinabove referred to which programs the coordinated car movements of the entire system with coordinated operation of propulsion, braking and coupling means of the individually operable cars; whereby each car is accelerated, decelerated and coupled to or uncoupled from other cars of the train to make up the aforementioned sequential pairs of groups of cars.

It is still another object to provide a system or means of travel as hereinabove referred to which directs the passenger load for voluntary shifting into the cars of their individual destination while in non-stop enroute motion. With the present invention, responder means

alerts the passengers to the voluntary shifts required in order to place themselves by appropriate transfer in the car predetermined to separate and decelerate to a station of destination.

DRAWINGS

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred form and application thereof, throughout which description reference is made to the accompanying drawings, in which:

FIGS. **1** through **6** are diagrammatic plan views illustrating a typical "main line" track with side tracks and laterals and showing the progressive movement of the pairs of cars which make up the non-stop transit system and trains of the present invention;

FIG. **1** showing the departure of a first pair of individually operable cars,

FIG. **2** showing the uncoupling of a first car and the non-stop make up of a second pair of cars,

FIG. **3** showing the uncoupling of a second car and the non-stop make up of a third pair of cars,

FIG. **4** showing the uncoupling of a third car and the non-stop make up of a forth pair of cars,

FIG. **5** showing the uncoupling of a forth car and the non-stop make up of a fifth pair of cars,

FIG. **6** showing the arrival of the fifth pair of cars at the terminal of destination.

FIG. **7** is a block diagram illustrating the means of control for the system as it is operated in FIG. **1** through **6.**

FIG. **8** is a diagrammatic plan view showing a portion of a "main line" and a lateral feeder route operable in conjunction therewith, and

FIG. **9** is a diagrammatic plan view showing a portion of a main line and a local route parallel thereto for passenger exchange.

PREFERRED EMBODIMENT

It is the purpose of this invention to provide a high speed mass transit system for passengers operating non-stop between distant terminals while serving intermediate stations. In the drawings there is shown a single track **10** involving a terminal of departure referenced X and a terminal of departure referenced Z. Each of said terminals is also a terminal of destination and has a parallel side track **11** providing for simultaneous departures and arrivals. In the case illustrated, there are four intermediate stations (not stops in the ordinary sense) A, B, C, and D and so on dependent upon route requirements and all of which is varied on passenger load demand. In the case of four intermediate stations as shown, there will be at least six cars (so numbered) involved with each direction of travel, two for the terminal of departure and one for each of the stations involved; there being six stations including the said terminals of departure and destination. It is to be understood that more than one car can eminate at each station, and that stations may or may not be used as circumstances require. For example, a car stopped at a station can be used for lateral feeder route service or can be temporarily omitted from service. In the drawings, the train comprised of a first pair of cars departs from terminal X and is subsequently involved with subsequent pairs of cars as it progresses through to terminal Z; there being second, third, fourth and fifth pairs of cars involved at each subsequent enroute stations A through

D respectively. In the routing illustrated, there are six Figs. of drawings and each illustrating a station condition (considering the terminals X and Y as stations) the process involved being as follows: Note that the return trips will initiate on the parallel side tracks **11** in the same manner but in a reverse direction from what will now be described.

The six station conditions of FIGS. **1** to **6** are typical in which at least six self-propelled cars are employed for a minimum complete service. The letter indicia at each car illustrated is the station indication to be used by the passengers who are thereby directed to move into and occupy the car or cars continuing to their destination, or to remain in or move into the car that will stop at the next station. The said letter information or station indications can take various forms and are displayed to the passengers within each involved car. For example, infinitely changeable video screens are employed for this purpose.

This system is advantageously automated by means of computerization for the execution of the prime functions involved and for safety. The continuous non-stop speed of the train is correlated with variations in speed limits and with the distance between stations, and speed can be variably controlled as required, while taking into consideration the time periods required for loading and unloading the cars at the stations (each with its own time requirement) and while also taking into consideration tolerable rates of acceleration and deceleration, and the time required for moving passengers from car to car. Referring specifically to safety, the continued non-stop operation is dependent upon operability of the cars to perform the acceleration, deceleration, coupling and uncoupling functions; and any malfunction deactivates the system to an extent assuring safe operation.

The trains of cars will be operated non-stop at **80**mph, for example, and at any other required speed when passing through areas having speed limitations. Each car of the train includes separation control means SCM responsive to the approach to or departure from another car, and likewise to or from the stations of departure and destination. Means will be provided for each of these functions and to the end that each car is independently operable to accelerate from the terminal station of departure and to approach and couple to a preceeding car that has also been accelerated to speed, and to uncouple from the preceeding train of cars and decelerates to an enroute station (A-D). Also included is directive means DM, video displays and/or audio, which directs the passengers to the cars of their destination.

Referring to FIG. **1** there are two cars No. **1** and No. **2** coupled together and departing from terminal X and which are accelerated to the non-stop in-transit speed. The in-transit speed is then governed by speed programming means PM, while the indicated destination of car No. **1** by directive means DM is station A and that of car No. **2** is stations B through Z. The passengers occupy the cars according to their destination requirements as designated by means DM, and those passengers requiring transport to advanced stations are relayed thereto by removing themselves to and/or reseating themselves in the required car.

Referring to FIG. **2,** a car No. **3** has been placed upon the track and loaded with passengers (as shown in FIG. **1**) and which departs from station A while car No. **1** is uncoupled from the train and decelerates to station A as governed by its separation control means SCM where it unloads and reloads awaiting the next train to or from terminal X, as the case may be. The departure car No. **3** is accelerated as governed by its separation control means SCM to slightly less than the non-stop in-transit speed and is overtaken by and coupled to the train now made up of cars No. **2** and No. **3.** The indicated destination of car No. **2** by directive means DM is then station B while that of car No. **3** is stations C through Z. Again, the passengers occupy the cars according to their destination requirements as designated by means DM, and those passengers requiring transport to advanced stations are relayed thereto by removing themselves to and/or reseating themselves in the required car.

Referring to FIG. **3,** a car No. **4** has been placed upon the track and loaded with passengers (as shown in FIG. **2**) and which departs from station B while car No. **2** uncouples from the train and decelerates to station B as governed by its separation control means SCM where it unloads and reloads awaiting the next train to or from terminal X, as the case may be. The departing car No. **4** is accelerated as governed by its separation control means SCM to slightly less than the non-stop in-transit speed and is overtaken by and coupled to the train made up of cars No. **3** and No. **4.** The indicated destination of car No. **3** by directive means DM is then station C while that of car No. **4** is stations D through Z. Again, the passengers occupy the cars according to their destination requirements as designated by means DM, and those passengers requiring transport to advanced stations are relayed thereto by removing themselves to and/or reseating themselves in the required car.

Referring to FIG. **4,** car No. **5** has been placed upon the track and loaded with passengers (as shown in FIG. **3**) and which departs from station B while car No. **3** uncouples from the train and decelerates to station C as governed by its separation control means SCM where it unloads and reloads awaiting the next train to or from terminal X as the case may be. The departing car No. **5** is accelerated as governed by its separation control means SCM to slightly less than the non-stop in-transit speed and is overtaken by and coupled to the train now made up of cars No. **4** and No. **5.** The indicated destination of car No. **4** by directive means DM is then station D while that of car No. **5** is terminal Z. Again, the passengers occupy the cars according to their destination requirements as designated by means DM, and those passengers requiring transport to terminal Z are relayed thereto by removing themselves to and/or reseating themselves in the required car.

Referring to FIG. **5,** car No. **6** has been placed upon the track and loaded with passengers (as shown in FIG. **4**) and which departs from station C while car No. **4** uncouples from the train and decelerates to station D as governed by its separation control means SCM where it unloads and reloads awaiting the next train to or from terminal X, as the case may be. The departing car No. **6** is accelerated as governed by its separation control means SCM to slightly less than the non-stop in-transit speed and is overtaken by and coupled to the train now made up of cars No. **5** and No. **6.** The indicated destination of cars No. **5** and No. **6** by directive means DM is then station Z. Again, the passengers occupy the cars according to their destination requirements as desig-

nated for both cars by means DM requiring transport to terminal Z and are relayed thereto without the necessity of reseating themselves.

Referring now to FIG. **6**, the cars No. **5** and No. **6** decelerate to terminal Z as governed by their separation control means SCM, where they unload and reload awaiting a return departure time. Preliminary to arrival of cars No. **5** and No. **6** at the terminal Z destination, cars No. **7** and No. **8** have been coupled together and placed upon the parallel side track **11**, loaded with passengers (see FIG. **5**) and are accelerated to the non-stop in-transit speed as governed by their speed programming means PM so as to pass the arriving cars No. **5** and No. **6** and processed reversely with respect to the arrival of the trains as hereinabove described.

In order to provide for two way operation of this single track **10** system, there is a parallel track **12** extending between two enroute stations, for example between the stations B and C. In the case illustrated, these two stations B and C involve the midway portion of track **10** between terminals X and Z for the simultaneous operation of two trains, one in each direction; it being understood that the system as it is disclosed can be programmed for the simultaneous operation of a plurality of trains in each direction by providing parallel tracks **12** between other enroute stations.

In order to greatly expand the service area, I provide lateral feeder route service to the "main line" **10**, there being one or more lateral tracks **13** extending from the enroute stations requiring such service as is indicated, there being switches joining the tracks **11–13** to the main line track **10**, and in the case of track **12** there being switches at each opposite end thereof and feeding onto and off of said main line. Any car K which stops at a station such as B or D, for example, can be utilized for feeder route service during the interum which occurs between the passing through of the trains in the two directions of travel. That is, there are predetermined and/or programmed intervals of non-stop arrivals and departures at each station, and the available car K which would otherwise remain idle during this interum is usefully employed in such a feeder service. In the case of station D, the round trip from said station to the end of the feeder route and back is less than the interum time between main line arrivals and departures at said station; in which case a single car K will suffice for maximum uninterrupted service. It is to be understood, with respect to this first example, that more than one interum unit of time can be programmed for employment of this one car K as a feeder route car. In the case of station B, the round trip from said station to the end or ends of a multiplicity of feeder lines is greater than the interum time between main line arrivals and departures at said station; in which case a multiplicity of cars K will be employed for maximum uninterrupted service. It is to be understood, with respect to this second example, that the number of interums of time between main line departures and arrivals can be programmed with a car available at said station on schedule as required. It is the programming means PM which governs the scheduling of car movements, coordinated with arrivals and departures at the various stations and terminals.

In order to provide lateral feeder route service adapted to reach the greatest area, an improved feeder route configuration is that shown in FIG. **8** wherein the car K circumnavigates a loop and thereby avoids making a return trip per se. Although local stops are not shown, it is to be understood that the car K continuously progresses around loop **13'** and makes local stops therealong, as required, to pick up and to discharge passengers, thereby effecting a passenger exchange utilizing the car K when not in main line use.

In order to provide coextensive "main line" passenger exchange so as to service the maximum number of passengers, an improved local route **13''** runs parallel therewith with entry and reentry switches at **16'** and **16''** respectively. As shown, there are local stations *a*, *b*, *c*, etc., intermediate the enroute stations R and S taken for example; and the car K which uncouples from the main line train can stop at or pass through station R and onto track **13''** to then stop at each local station as and when required for loading and unloading passengers. It is to be understood that car K continuously progresses along track or route **13''** and effects an exchange of passengers when not in main line use. Also, the exchange of passengers can be made regardless of the direction of local travel since the passengers are subsequently directed by the responder means R when occupying a main line car or cars which will carry them to their destinations. It is to be understood that passengers will change cars, if required, at the enroute stations so as to effect the direction of travel that they require.

From the foregoing it will be seen that there is a process of handling the individually operable cars K comprising a train thereof which are coupled and uncoupled, accelerated and decelerated, and loaded and unloaded with transferable passengers who remove themselves to and occupy the car of their destination. Although the type of transport vehicle can vary widely, in accordance with this invention it is essential that each individually operable car K include propulsion means M, braking means N, coupling means O, and responder means R. The car K is shown as comprising a body **15** that is mobile upon the tracks **10, 11, 12** and **13**, an essential of each car K being its endmost accessibility into the next adjacent car K while in transit. Although the detail of such an accessibility is not shown herein, any number of such flexible hallways **16** exist in the art and all of which is clearly indicated in the drawings at opposite ends of each car K. Such a hallway normally opens into a vestibule at the end of the car, and a door or suitable closure (not shown) is provided so as to close that end of the car when it is not coupled to an adjacent car, and opened therebetween when coupled to another car.

The propulsion means M can vary widely and is indicated in the block diagram of FIG. **7** as involving a controlled power supply **17** transmitting prime mover force to motorized trucks **18**. In accordance with this invention, the controlled power supply **17** is responsive to the separation control means SCM that receives its directive from the programming means PM. The source of motivating power can be that which is available and controllable as will be described.

The braking means N can vary widely and is indicated in the block diagram of FIG. **7** as involving a controlled servo means **19** receiving operational power from the power supply **17** and transmitting braking force to the truck wheels **20**. In accordance with this invention, the braking means N is responsive to the separation control means SCM that receives its directive

from the programming means PM. The brakes, generally, can be of conventional design.

The coupling means O can vary widely and are capable of shock absorption, and as indicated in the block diagram of FIG. 7 involve a coupling unit **22** at each opposite end of each car K, and a controlled servo means **21** receiving operational power from the power supply **17.** In accordance with this invention, the coupling means O is responsive to the separation control means SCM that receives its directive from the programming means PM. The couplings, generally, are automatically disengageable and can be of conventional design.

The responder means R can be video or audio and positioned or installed such that its operation is noticeable by the passengers in the car K. As is indicated in the diagram of FIG. 7 the responder means R involves a video receiver and viewing screen **23** and an audio receiver and speakers **24.** In accordance with this invention, the responder means R is responsive to the directive means DM which receives its directive from the separation control means SCM and/or programming means PM. The video and audio equipment, generally, can be of conventional design.

Referring now to the automation and/or programming of the system herein disclosed for processing the movement of trains, it is preferred that the movements of all cars K be controlled by a common centralized computer Y which includes the programming means PM, the separation control means SCM, and the directive means DM. The signal transmission from the computer Y to the individually operable cars K can vary, either by radio or closed circuit, or a combination thereof with mechanical aids as required. In any case, the commands and/or information issued by the means SCM and DM are communication to the cars or otherwise programmed therein.

The programming means PM initiates the control over all movements of cars K, to keep them within schedule, and to effect all connects and disconnects of couplings and stops of the cars. As is indicated in the block diagram of FIG. 7, the means PM transmits controlling signals to both the separation control means SCM and directive means DM through lines **30** and **31,** and receives verification and/or feedback through line **32.** The programming means PM is, in general, of any suitable commercial form capable of storing predetermined data which is dispensed in coordinated form at precise times and with signal values that determine the desired planned operation of the train system as it is hereinabove described.

The separation control means SCM is responsive to the directives of the programming means PM to govern the propulsion means M by controlling the power supply **17,** governing the deceleration capabilities of the braking means N, and coordinating the actuation of the coupling means O. The separation control means SCM is a computerized coordination means that receives the programming signals and distributes them discriminately to the respective means M, N and O, and that receives signals based upon direction and speed of operation and upon proximity sensed by means **35** sensing the approach of or departure of the next adjacent car K.

The directive means DM is responsive to the directives of the programming means PM and governs the output of the responder means R. Essentially, therefore, the directive means DM is a relay for dispensing video taped and audio recorded information as it is programmed for release by means PM as it is verified either directly or indirectly through line **32** as shown.

It is to be understood that the number or capacity of the cars will vary according to requirements; that intermediate sidings and/or bypasses can be employed, and that the tracks can be any railroad, monorail, vehicle highway, or designated air space and the like. It is feasible to utilize any one of the cars after it gets to its appointed station; as a local service car that is replaced or returned to said station in time for loading and departure preceeding the next train with which it is to be coupled for travel in either direction as may be required. The characteristic feature is the utility of a single track and the cooperative adaptability of vehicles having coupled engagement with open communication for the transfer of passengers and of cargo from car to car, and all of which is programmed as hereinabove described for non-stop transportation between two remote terminals X and Z; or non-stop transportation through a continuous circuit or loop. All passengers are provided with non-stop transportation at the highest possible rate of speed, regardless of their point of loading or destination.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art.

I claim:

1. A two way non-stop rapid mass transit system comprising; a single main line extending between opposite terminals and having at least one enroute station therealong, and at least three individually operable cars adapted to be releasably coupled one to the other, a pair of said cars with its complement of passengers being coupled together and operated to depart from each terminal and progress in opposite directions along said main line, one of said cars with its complement of passengers being loaded at said enroute station and operated to depart therefrom and progress along said main line in the direction of and at a speed less than the foremost of the said pair of cars traveling in the same direction, the rearmost of the said pair of cars in each instance being uncoupled from said foremost car and operated to stop at said enroute station for exchange of passengers, the foremost car in each instance passing said enroute station non-stop and being coupled to said one of said cars and operated for continued progress to the other terminal, and a parallel track with entry and reentry switches to said main line extends between enroute stations at passing points between terminals for simultaneous progress of pairs of cars therebetween progressing in opposite directions.

2. The two way non-stop rapid mass transit system as set forth in claim **1** wherein a pair of cars with its complement of passengers are coupled together on a side track at each opposite terminal with a switch onto said main line and operated to depart therefrom while said foremost car preceeded by said one car arrive.

3. The two way non-stop rapid mass transit system as set forth in cliam **1** wherein the rearmost car of the said pair of cars is operated to exchange its complement of passengers on a feeder route extending laterally from and to the said enroute station.

4. The two way non-stop rapid mass transit system as set forth in claim 1, wherein the rearmost car of the said pair of cars is operated to exchange its complement of passengers on one feeder route extending to and from the said enroute station, and wherein a supplemental car is operated to exchange its complement of passengers on another feeder route extending to and from the said enroute station to replace said rearmost car.

5. The two way non-stop rapid mass transit system as set forth in claim 1 wherein the rearmost car of the said pair of cars is operated to exchange its complement of passengers on a feeder loop extending through the said enroute station with a switch onto said main line.

6. A two way non-stop rapid mass transit system comprising; a single main line extending between opposite terminals and having a plurality of enroute stations therealong, a multiplicity of individually operable cars adapted to be releasably coupled one to the other and with passenger access therebetween, pairs of said cars each with its complement of passengers and being coupled together and operated to progress from each terminal and from enroute station to station and to the opposite terminal, one of said cars with its complement of passengers being loaded at an enroute station and operated to depart therefrom and progress along said main line in the direction of and at a speed less than the foremost of said pair of cars proceeding from the terminal of departure, the rearmost of the said pair of cars in each instance being uncoupled from said foremost car and operated to stop at the enroute station from which said one of said cars departed for exchange of passengers, the foremost car in each instance passing non-stop said enroute station from which said one of said cars departed and being coupled to said one of said cars and operated for continued progress to the other terminal, and a parallel track with entry and reentry switches to said main line extends between enroute stations at passing points between terminals for simultaneous progress of pairs of cars therebetween progressing in opposite directions.

7. The two way non-stop rapid mass transit system as set forth in claim 6, wherein the rearmost uncoupled car is operated through its enroute station of destination and exchanges passengers at one or more local stops along said local track and is subsequently operated through an enroute station to preceed a nonstop car on the main line to which it is coupled.

8. The two way non-stop rapid mass transit system as set forth in claim 6, wherein the rearmost uncoupled car is operated through its enroute station of destination and exchanges passengers at one or more local stops along said local track and is subsequently operated through an enroute station to preceed a non-stop car on the main line to which it is coupled, and wherein the pairs of said cars are operated to exchange their complements of passengers while progressing to the other terminal, the passengers occupying the car of their destination respectively.

9. The two way non-stop rapid mass transit system as set forth in claim 6, wherein the rearmost uncoupled car is operated through its enroute station of destination and exchanges passengers at one or more local stops along said local track and is subsequently operated through an enroute station to preceed a non-stop car on the main line to which it is coupled, and wherein the pairs of said cars are operated to exchange their complements of passengers while progressing to the other terminal with removal of passengers for the next succeeding enroute station destination to the rearmost car of said pair of cars.

10. The two way non-stop rapid mass transit system as set forth in claim 6, wherein the rearmost uncoupled car is operated through its enroute station of destination and exchanges passengers at one or more local stops along said local track and is subsequently operated through an enroute station to preceed a non-stop car on the main line to which it is coupled, and wherein the pairs of said cars are operated to exchange their complements of passengers while progressing to the other terminal with removal of passengers for subsequent destination to the foremost car of said pair of cars.

11. The two way non-stop rapid mass transit system as set forth in claim 6, wherein the rearmost uncoupled car is operated through its enroute station of destination and exchanges passengers at one or more local stops along said local track and is subsequently operated through an enroute station to preceed a non-stop car on the main line to which it is coupled, and wherein the pairs of cars are operated to exchange their complements of passengers while progressing to the other terminal, with removal of passengers for the next succeeding enroute station destination to the rearmost car of said pair of cars, and with removal of passengers for subsequent destination to the foremost car of said pair of cars.

12. A controlled two way non-stop rapid mass transit system comprising; a single main line extending between opposite terminals and having at least one enroute station therealong, and at least three individually operable cars and each having propulsion means and braking means and coupling means and adapted to be releasably coupled one to the other, a pair of said cars with its complement of passengers being operable to be coupled together and progress in opposite directions along said main line from each of said terminals, one of said cars adapted to be loaded with its complement of passengers at said enroute station and thereafter progress along said main line in the direction of and at a speed less than the foremost of said pair of cars, the rearmost of the said pair of cars in each instance being operable to be uncoupled from said foremost car and operated to stop at said enroute station for exchange of passengers, and the foremost car in each instance being operable to pass said enroute station non-stop and adapted to be coupled to said one of said cars and operable for continued progress to the other terminal; programming means, separation control means responsive to the programming means and governing the aforesaid operation of the propulsion means and coordinated actuation of the braking means and coupling means, and a parallel track with entry and reentry switches to said main line extends between enroute stations at passing points between terminals for simultaneous progress of pairs of cars therebetween progressing in opposite directions.

13. The controlled two way non-stop rapid mass transit system as set forth in claim 12 wherein the said separation control means is responsive to directives of the said programming means to govern the propulsion means by controlling a power supply therefor and to govern the braking means and coupling means by controlling actuation of servos therefor.

14. The controlled two way non-stop rapid mass transit system as set forth in claim 12 wherein the said separation control means is responsive to a proximity sensor means detecting car and station location and to the directives of the said programming means to govern the propulsion means by controlling a power supply therefor and to govern the braking means and coupling means by controlling actuation of servos therefor.

15. A controlled two way non-stop rapid mass transit system comprising; a single main line extending between opposite terminals and having a plurality of enroute stations therealong, a multiplicity of individually operable cars and each having a propulsion means and braking means and coupling means and responder means and adapted to be releasably coupled one to the other and with passenger access therebetween, pairs of said cars each with its complement of passengers adapted to be coupled together to progress in opposite directions from said terminals and from enroute station to station and to the other said terminal, one of said cars adapted to be loaded with its complement of passengers at an enroute station and thereafter progress along said main line in the direction of and at a speed less than the foremost of said pair of cars proceeding from the one terminal, the rearmost of said pair of cars in each instance being adapted to be uncoupled from said foremost car and operated to stop for exchange of passengers at said enroute station from which said one of said cars departed, and the foremost car in each instance being adapted to pass non-stop said enroute station from which said one of said cars departed and adapted to be coupled to said one of said cars and operable for continued progress to the other terminal; programming means, separation control means responsive to the programming means and governing the aforesaid operation of the propulsion means and coordinated actuation of the braking means and coupling means, and directive means coordinated with responsive feed back from the separation control means and activating said responder means, and a parallel track with entry and reentry switches to said main line extends between enroute stations at passing points between terminals for simultaneous progress of pairs of cars therebetween progressing in opposite directions.

16. The non-stop rapid mass transit system as set forth in claim 15 wherein said responder means comprises a video screen viewable by the passengers in a car.

17. The non-stop rapid mass transit system as set forth in claim 15 wherein said responder means comprises an audio speaker audible to the passengers in a car.

18. The non-stop rapid mass transit system as set forth in claim 15 wherein said responder means comprises a video screen viewable by and an audio speaker audible to the passengers in a car.

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