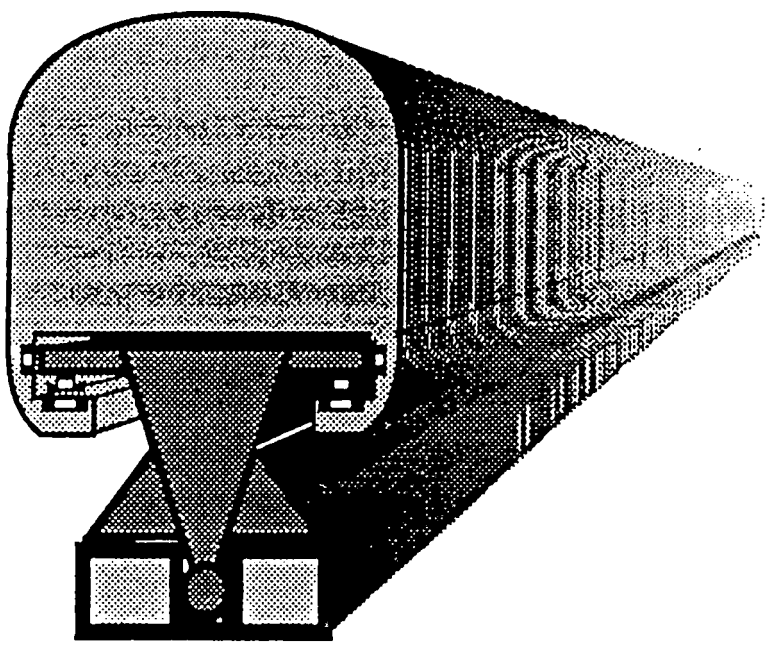
U.S. Department
of Transportation

**Federal Railroad
Administration**

Bibliographic Reference of Magnetic Levitation and Linear Electric Motors Patents

Users Guide



October 1990

MAGNETIC LEVITATION BIBLIOGRAPHIC SYSTEM

Magnetic Levitation Bibliographic System (Maglev) is a software program which primarily consists of a Keyword List and numerous Patent Profiles with Abstracts (Patent). A user can enter a word from the Keyword list or utilize the Adhoc search feature and the program will search each Patent and each Patent title in the system. The system will then list all of the Patents which contain the Keyword requested. Most of the commands and executions in the Maglev system are simple to follow, however, an explanation is necessary to properly operate the Maglev System. This manual provides the instructions on how to search for Patents using the Keyword list, search for patents utilizing the Adhoc search feature, keep track of search levels, add or modify words in the Keyword List, add Patents to the system, and generate printouts of the requested information.

HOW TO GET STARTED.....

To get into the Maglev program from the "C" prompt, TYPE in "MAGLEV" and hit the Enter Key (RETURN). The Maglev Welcome screen will appear and a statement which says "PLEASE ENTER LEVEL-A PASSWORD" will be displayed. (EXHIBIT I). At the blinking cursor, please enter the correct password in UPPER CASE letters. As an added security measure, the password will not appear on the screen as it is entered. Failure to enter the correct password by the third attempt will cause the system to disengage and return to the C:\> prompt.

* * FEDERAL RAILROAD ADMINISTRATION * *

W E L C O M E T O M A G L E V

The Bibliographic Reference System

of

Magnetic Levitation & Linear Electric Motor Patents

Designed & Developed by: LaDorn System Corp.

PLEASE ENTER LEVEL-A PASSWORD : * * * * :
(Keystrokes will not appear on Screen.)

EXHIBIT I

After the correct password is entered, the first screen displayed is the Maglev Patent Bibliographic System screen which is the Main Menu screen of the Maglev System (Exhibit II). To perform any of the functions available, select the action desired by entering the corresponding Alphabetical letter listed at the bottom of the screen.

10/31/90 ** MAGLEV PATENT BIBLIOGRAPHIC SYSTEM **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

V=View More F=Find Keyword T=View Titles P=Patent Profile U =Utility
S =Search using Number from List A =Adhoc Word Search X =Exit System

---

EXHIBIT II

Each time the system is accessed after entering the correct password, the "Maglev Patent Bibliographic System" screen (Maglev screen) (Exhibit II) will appear. The Maglev Screen permits the user to begin the Keyword or Adhoc Patent search. The command selected from the Maglev Screen will take you to the next step of the desired function and to the pertinent screens and options. A command entered from the Maglev Screen may have a global function

initially and after the search for a Keyword or a Patent has begun, the same command will address only the resulting range selected.

For example, V=View More allows the user to scroll the Keyword list displayed on the Maglev Screen from A through Z and back to A again, until the F=Find Keyword process is selected and the First Letter of the Keywords desired entered. The system will then locate the list of Keywords starting with the letter entered. V=View More now limits you to scrolling through the list of Keywords displayed on the screen which start with the letter of the alphabet requested.

AN OVERVIEW OF THE COMMANDS

V=View More

ENTER "V" to scroll the information displayed on the screen.

F=Find Keyword

ENTER "F" to select a Keyword by entering the first Letter of the Keyword. The Keywords starting with the Letter entered will appear on the screen in alphabetical order. If all of the Keywords don't fit on the screen, enter "V" to view the next group.

T=View Titles

ENTER "T" to read the list of Patent Titles available in the Maglev System. The Patent Titles appear on the screen in numerical order of the Patent number (EXHIBIT III).

10/31/90 ** MAGLEV PATENT TITLE LISTING **

```
  408,465 METHOD OF MEGNETICALLY REDUCING FRICTION
  408,465 METHOD OF MAGNETICALLY REDUCING FRICTION
  714,851 RAILWAY AND CAR AND MAGNETIC APPLIANCES THEREFOR
  776,826 ELECTRIC PROPULSION OF CARS OR THE LIKE
  833,635 ANTIFRICTION DEVICE
1,020,943 LEVITATING TRANSMITTING APPARATUS
1,081,260 DEVICE FOR ELECTROMAGNETIC SUSPENSION
1,090,213 HIGH SPEED RAILWAY
1,885,662 ELECTRIC RAILWAY SYSTEM
2,041,607 ELECTRIC RAILWAY
3,198,139 MONORAIL SYSTEMS
3,233,559 TRANSPORTATION MEANS
3,356,041 TRACTION SYSTEMS
3,357,511 AIR CUSHION, OMNIDIRECTIONALLY MAGNETIC FIELD PROPULSION DEVICE
3,361,081 TRACTION SYSTEMS COMPRISING VEHICLES FOR TRAVELLING ALONG A TRACK
3,385,228 TRANSPORTATION SYSTEM
3,407,749 MOTOR FOR PROPULSION AND LOAD SUPPORT
```

V=View More F=Find Keyword T=View Titles P=Patent Profile U =Utility
S =Search using Number from List A =Adhoc Word Search X =Exit Titles Mode

---

EXHIBIT III

P=Patent Number

ENTER "P" to select the Patent Profile you wish to read. A statement which says "Please Enter Patent Number:_____" will be displayed. Type in the Patent number to see the Profile of the desired Patent. Eg. Enter Patent number "3356041" and the corresponding Patent Profile is displayed. (EXHIBIT IV).

10/31/90 ** MAGLEV PATENT PROFILE SCREEN **

1. PATENT NUMBER: 3,356,041
2. TITLE: TRACTION SYSTEMS
3. COUNTRY: G. BRITAIN
4. INVENTOR #1: BLISS, DENYS STANLEY
5. APPLICATION NUMBER: 582067
6. ASSIGNEE:HOVERCRAFT DEVELOPMENT LIMITED
7. FILE DATE: 05/18/62 8. PATENT DATE: 12/05/67
9. STATUS: EXPIRED 10. REFERENCE NUMBER: I-3

A =Abstract X =Exit

EXHIBIT IV

U=Utility

ENTER "U" to see the Utility Menu displayed on your screen (EXHIBIT V). The Utility section of the program enables you to Add and Modify Passwords, Keywords, and Patents, in addition to generating desired reports.

10/31/90 ** SYSTEM UTILITIES MODULE **

1. Modify System Password.

2. Add Or Modify Keywords.

3. Add Or Modify Patents.

4. Report Generation.

WHICH NUMBER WOULD YOU LIKE?
(RETURN to end Utility Mode.)

EXHIBIT V

S=Search using Number from Keyword List

Enter the Number of the Keyword desired and the Patents which contain the requested Keyword in the title or the abstract, will be displayed on the screen. For example, if the desired Patent to be reviewed should contain the word "Accelerate", ENTER "3" (EXHIBIT VI) which is the number corresponding to the Keyword "Accelerate" and hit return. The bottom of the screen will state:

* * SEARCHING FILES...PLEASE WAIT * *

10/31/90 ** MAGLEV PATENT BIBLIOGRAPHIC SYSTEM **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

Enter The Number Of The Keyword 3

EXHIBIT V1

All of the Patent numbers and titles which have the requested word in the Title or Abstract (i.e. Accelerate) will be found and displayed in Patent number order on the screen (EXHIBIT VII).

** MAGLEV PATENT TITLE LISTING ** TOTAL: 10

```
1,885,662 ELECTRIC RAILWAY SYSTEM
3,577,929 ELECTRIC VEHICLE DRIVING AND CONTROLLING APPARATUS
3,768,417 TRANSPORT SYSTEM EMPLOYING ELECTROMAGNETICALLY SUSPENDED VEHICLE
3,842,751 TRANSPORTATION SYSTEM - ELECTROMAGNETICALLY SUSPENDED
3,954,064 RAPID TRANSIT SYSTEM
4,013,014 CIRCUIT ARRANGEMENT FOR A TRACK-BOUND PROPULSION VEHICLE
4,061,089 PERSONAL RAPID TRANSIT SYSTEM
4,075,948 HIGH SPEED TRANSIT SYSTEM
4,148,260 HIGH SPEED TRANSIT SYSTEM
4,709,883 LAUNCH AND ASCENT SYSTEM
```

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F =Find Keyword L =Search Level List
# Of Patent Searches : 1 X = To Return To Main Menu

EXHIBIT VII

The commands at the bottom of the screen will provide options specifically related to the Patent Search. ENTER "X" to return to the Main Menu to start a new Search process.

A=Adhoc Word Search

By enertering an "A", the system permits the user to enter any desired Keyword and any Patents which contain the Keyword requested will be displayed on the screen. It is not necessary to enter the entire word. You may enter the first few letters of a word (i.e. "MAG") (EXHIBIT VIII) and

the system will locate the Patents with those characters. Using the first few letters in a word under the Adhoc Word Search provides a very broad and thorough Search for a range of desired Patents. For example, ENTER "MAG" and all of the Patents which contain any word with the root "MAG" will be found. When "MAG" was entered, 243 Patents were found in the system.

10/31/90 ** MAGLEV PATENT BIBLIOGRAPHIC SYSTEM **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

Please Enter the Keyword(s) MAG

EXHIBIT VIII

When "MAGNET" was entered, the same 243 Patents were located. However, when "MAGNETIC" was entered, 232 Patents were found, thus narrowing the scope of the Search. Entering the first few letters of the Keyword also helps to prevent Patents from being overlooked by the system because the Keyword entered was misspelled, or was entered as an

adjective or adverb when all of the related Patents contain the noun. In the example, eleven (11) more Patents were found using the noun Magnet instead of the adjective "Magnetic". Once a Patent Search has begun either using the S=Numeric Patent Search command or the A=Adhoc Word Search command, most of the commands at the bottom of the screen will provide options specifically related to the Patent Search in process, thus continuing to provide options towards narrowing the field of Patents until the desired one is found. The command F=Find Keyword operates the same way on the main menu as it does from a Patent Search in process. ENTER "F" from the main menu and the system will prompt that the First Letter of the Keyword be entered (EXHIBIT IX).

10/31/90 ** MAGLEV PATENT TITLE LISTING ** TOTAL:243

```
3,741,613 ELECTROMAGNETIC LEVITATION GUIDE
3,742,862 FLOATING ELECTROMAGNETIC SUSPENSION SYSTEM
3,746,899 LINEAR INDUCTION MOTOR PRIMARY MEMBER
3,750,803 RAPID TRANSPORTATION SYSTEM
3,763,788 MAGNETIC SWITCHING OF VEHICLES
3,768,417 TRANSPORT SYSTEM EMPLOYING ELECTROMAGNETICALLY SUSPENDED VEHICLE
3,770,995 LINEAR INDUCTION MOTOR
3,771,033 APPARATUS FOR PROPELLING A MOVABLE BODY IN A SUSPENDED STATE
3,771,462 ELECTROMAGNETIC MOTION IMPARTING MEANS AND TRANSPORTER SYSTEM
3,780,667 ELECTRO-MAGNETIC SYSTEM FOR GUIDED SUSPENSION OF A VEHICLE
3,780,668 ELECTROMAGNETIC  SUSPENSION  AND;  OR  GUIDE  SYSTEM
3,783,794 MAGNETIC SUSPENSION WITH NON CONTROLLED SUSPENDING MAGNETS
3,791,309 GUIDE AND SUSPEND A VEHICLE BY MAGNETIC FORCES
3,797,402 MAGNETICALLY SUSPENDED RAILWAY SYSTEM
3,797,403 POWER ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM FOR VEHICLES
3,799,436 LOW SPEED LINEAR INDUCTION MOTOR REACTION RAIL
3,800,708 TRACKED VEHICLE AND SUSPENSION SYSTEM
```

Enter The First Letter Of Keyword
RETURN To Exit

EXHIBIT IX

The list of Keywords starting with the letter requested will be displayed in both the Main menu "F" selection and the Search "F" selection. The commands at the bottom of the Main menu screen (EXHIBIT X) are different from the Search screen (EXHIBIT XI) which will also continue to display the number of Patents found.

** MAGLEV PATENT TITLE LISTING ** TOTAL:243

```
1,020,942 LEVITATING TRANSMITTING APPARATUS
1,020,943 LEVITATING TRANSMITTING APPARATUS
1,081,260 DEVICE FOR ELECTROMAGNETIC SUSPENSION
1,090,213 HIGH SPEED RAILWAY
1,885,662 ELECTRIC RAILWAY SYSTEM
2,041,607 ELECTRIC RAILWAY
3,111,265 RAIL FOR RAILWAY VEHICLES
3,125,964 TRANSPORTATION APPARATUS
3,225,228 LINEAR MAGNETIC DRIVE SYSTEM
3,357,511 AIR CUSHION, OMNIDIRECTIONALLY MAGNETIC FIELD PROPULSION DEVICE
3,361,081 TRACTION SYSTEMS COMPRISING VEHICLES FOR TRAVELLING ALONG A TRACK
3,407,749 MOTOR FOR PROPULSION AND LOAD SUPPORT
3,459,137 VEHICLE DRIVING SYSTEM
3,460,485 ELECTROMAGNETICALLY-PROPELLED VEHICLES
3,470,828 ELECTROMAGNETIC INDUCTIVE SUSPENSION AND STABILIZATION SYSTEM
3,506,862 DYNAMIC AND EDDY CURRENT RAILWAY BRAKE DEVICE
3,512,852 STABILIZED LEVITATION OF MAGNETIC ELEMENTS
```

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F =Find Keyword L =Search Level List
# Of Patent Searches : 1 X = To Return To Main Menu

EXHIBIT X

10/31/90 ** MAGLEV KEYWORD LISTING ** TOTAL:243

```
303 MAGLEV
304 MAGNEPLANE
305 MAGNET
306 MAGNETIC
307 MAGNETOMOTIVE
308 MAGNITUDE
309 MANGANSE
310 MASS
311 MATERIAL
312 MATRIX
313 MECHANICAL
314 MECHANISM
315 MEMBER
316 METAL
317 MIRROR
318 MODULATION
319 MOMENT
```

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F =Find Keyword L =Search Level List
# Of Patent Searches : 1 X = End Keyword Find Mode

EXHIBIT XI

X =Return to Main Menu.

To exit from a Search in process, ENTER "X" and the program will exit and run the file reset procedure (EXHIBIT XII).

10/31/90 ** MAGLEV PATENT TITLE LISTING **

3,802,349	LINEAR MOTOR FOR GUIDED TRANSPORT-INSTALLATION
3,803,466	LINEAR MOTOR PROPULSION SYSTEM
3,804,022	ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM
3,804,023	DYNAMIC-MAGNETIC SUSPENSION SYSTEM
3,804,024	DYNAMIC UNCOUPLING OF A RAIL-GUIDED VEHICLE
3,806,782	ELECTROMAGNETIC RAIL FOR DRIVING LINER MOTOR
3,807,313	LINEAR MOTOR-DRIVEN RAILWAY TRUCK
3,809,433	ANTI-FRICTION VEHICLE SUPPORT SYSTEM
3,815,511	DC MAGNETIC PROPULSION & LEVITATION SYSTEM FOR HIGH SPEED VEHICLES
3,820,470	GUIDANCE MEANS FOR MAGNETICALLY SUSPENDED RAILWAY VEHICLES
3,820,471	MAGNETIC LEVITATING AND PROPELLING DEVICE
3,820,472	TWO SIDED LINEAR INDUCTION MOTOR FOR SUSPENDED VEHICLES
3,822,647	PASSIVE SWITCHING SYSTEM
3,823,672	HIGH SPEED GROUND TRANSPORTATION SYSTEMS
3,827,370	PASSIVE SWITCHING SYSTEM
3,827,371	LINEAR AND ROTARY MOTOR DRIVING SYSTEM FOR ELECTRIC CAR
3,828,686	MAGNETIC GUIDE FOR RAILWAY VEHICLE

* * FILE RESET PROCEDURE ... PLEASE WAIT * *

EXHIBIT XII

ENTER "X" to return to the Main Menu to start a new Search process.

FIND A PATENT WHEN YOU DON'T KNOW THE KEYWORD

A Keyword may be found by using V=View More to scroll the entire Keyword list from A through Z. If you know the first letter of the word desired, use F=Find Keyword to look at the list of words starting with the letter of the alphabet entered.

F=Find Keyword

ENTER "F" to select a Keyword by entering the first Letter of the Keyword desired. ENTER a Letter and the Keywords starting with that letter will appear on the screen in Keyword Number order. For example, enter "M" and the words starting with "M" will appear. Keyword Number "303" is the first number in the Keyword list that represents a Keyword beginning with "M" i.e. "MAGLEV" (EXHIBIT XIII).

10/31/90 ** MAGLEV KEYWORD LISTING **

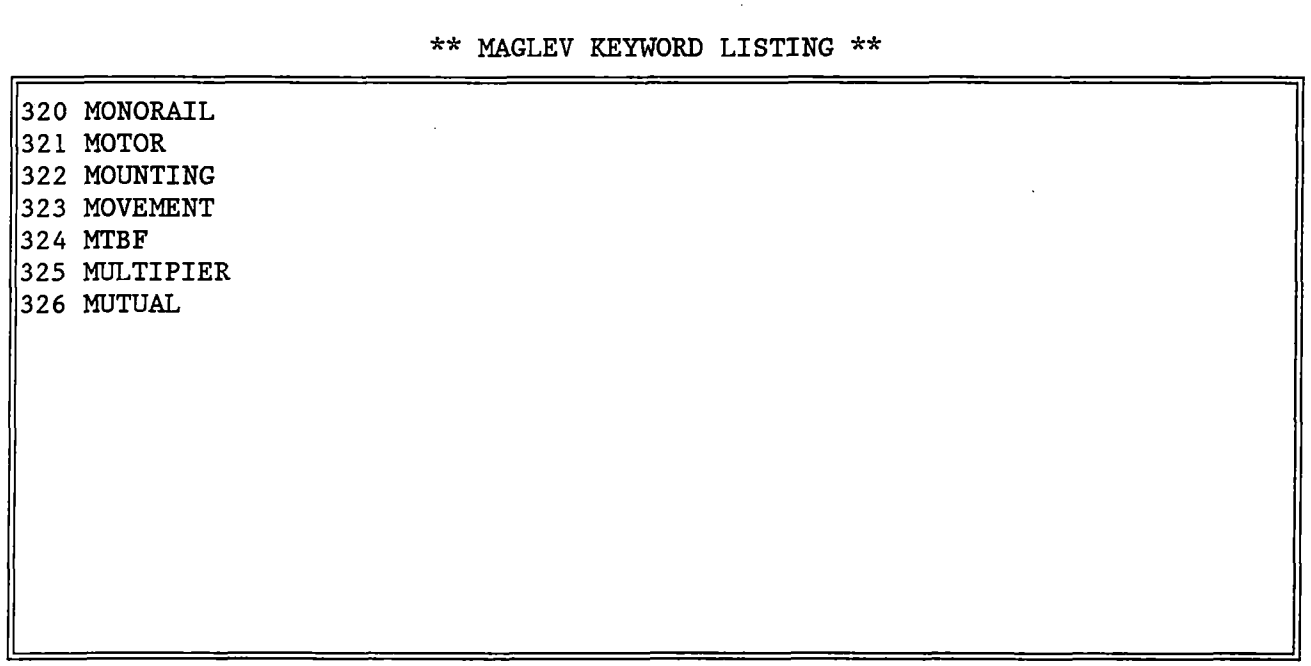
```
303 MAGLEV
304 MAGNEPLANE
305 MAGNET
306 MAGNETIC
307 MAGNETOMOTIVE
308 MAGNITUDE
309 MANGANSE
310 MASS
311 MATERIAL
312 MATRIX
313 MECHANICAL
314 MECHANISM
315 MEMBER
316 METAL
317 MIRROR
318 MODULATION
319 MOMENT
```

V=View More F=Find Keyword T=View Titles P=Patent Profile U =Utility
S =Search using Number from List A =Adhoc Word Search X =Exit Keyword Mode

---

EXHIBIT XIII

The menu at the bottom of the screen shows the same command options as the Maglev screen. However, the V=View More command now scrolls the list of words displayed which start with the letter requested. You can hit "V" until all of the words have been displayed, and you can see the last word on that alphabetical list (EXHIBIT XIV). In this example, Keyword "Mutual" Number 326 is the last word beginning with the letter "M".



** MAGLEV KEYWORD LISTING **

320 MONORAIL
321 MOTOR
322 MOUNTING
323 MOVEMENT
324 MTBF
325 MULTIPIER
326 MUTUAL

* * END OF KEYWORD M FILE * *

V=View More F=Find Keyword T=View Titles P=Patent Profile U =Utility
S =Search using Number from List A =Adhoc Word Search X =Exit Keyword Mode

---

EXHIBIT XIV

Once you have identified the desired Keyword, make a note of the corresponding number to the right of the Keyword. Select the command: S=Search using Number from List by ENTERING "S" and the screen will display:

Enter The Number Of The Keyword ___

ENTER the number of the Keyword you want to perform the Search on and the program will locate the Patents which contain that Keyword. For example, enter Keyword Number "326" corresponding to 'Mutual" and the screen displays 7 Patents, listed in order of their Patent Numbers. The Patents located will be displayed on the "Maglev Patent Title Listing" screen and in the top right hand corner of the screen, the "TOTAL" number of Patents found will be displayed (i.e. "7") (EXHIBIT XV). The commands at the bottom of the screen now provide options specifically related to the Patent Search.

** MAGLEV PATENT TITLE LISTING ** TOTAL: 7

3,803,466 LINEAR MOTOR PROPULSION SYSTEM
3,837,287 MAGNETIC SUSPENSION UTILIZING AN ELONGATED COIL
3,951,075 ELECTRO DYNAMIC SUSPENSION AND GUIDANCE SYSTEM
3,964,398 MAGNETIC-SUSPENSION VEHICLE SYSTEM HAVING SWITCH TRACKS
4,593,625 MOTOR VEHICLE BOGIE
4,620,358 METHOD SECURING EQUIPMENT PARTS TO A TRACKWAY SUPPORTING STRUCTURE
4,698,895 METHOD SECURING EQUIPMENT PARTS TO A TRACKWAY SUPPORTING STRUCTURE

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F =Find Keyword L =Search Level List
# Of Patent Searches : 1 X = To Return To Main Menu

EXHIBIT XV

THE SEARCH IS OVER: DISPLAY THE PATENT PROFILE AND ABSTRACT

Use the techniques described above to narrow the number of Patents displayed down through the use of Keywords which move you closer and closer to the specific concept desired. Once one Search is performed, all subsequent Searches using the "S=Numeric Patent Search" and the "A=Adhoc Word Search" will search only the Patents identified in the previous Search performed. Four Searchs were performed, "MAG" located 243 records, "LINEAR" narrowed the 243 records down to 103 records, "INDUCTION" was found in 39 of the 103 records and "LEVITATING" in 2 of the 39 records (EXHIBIT XVI).

10/31/90 ** MAGLEV SEARCH LEVEL LISTING ** TOTAL: 2

LEVEL	KEY	WORD	RECORDS
1	ADH	MAG	243
2	ADH	LINEAR	103
3	ADH	INDUCTION	39
4	283	LEVITATING	2

Press any key to continue...

EXHIBIT XVI

The four level Search above narrowed the initial 243 records down to two Patents (EXHIBIT XVII) which are specific to the conceptual direction being taken.

** MAGLEV PATENT TITLE LISTING ** TOTAL: 2

4,587,472 APPARATUS CONTROLLING A MAGNET IN A MAGNETICALLY SUSPENDED VEHICLE
4,624,617 LINEAR INDUCTION SEMICONDUCTOR WAFER TRANSPORTATION APPARATUS

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F=Find Keyword L=Search Level List R=Return to a Prior Search Level
# Of Patent Searches : 4 X = To Return To Main Menu

EXHIBIT XVII

During a Search, the commands at the bottom of the screen are specifically geared towards the Patent Search process as follows:

V=View More

V now scrolls through the Patents listed on the screen in numerical order by the Patent number.

P=Patent Profile

ENTER "P" and the program will request the Patent Number of the desired Patent Profile to be entered (EXHIBIT XVIII).

10/31/90 ** MAGLEV PATENT TITLE LISTING ** TOTAL: 2

4,587,472 APPARATUS CONTROLLING A MAGNET IN A MAGNETICALLY SUSPENDED VEHICLE
4,624,617 LINEAR INDUCTION SEMICONDUCTOR WAFER TRANSPORTATION APPARATUS

Please Enter Patent Number: 0

EXHIBIT XVIII

Enter the desired Patent number and the Patent Profile will be displayed on your screen. In this example, select the first Patent and ENTER the Number "4587472" The Patent Profile will be displayed on your screen (EXHIBIT XIX).

10/31/90 ** MAGLEV PATENT PROFILE SCREEN **

1. PATENT NUMBER: 4,587,472
2. TITLE: APPARATUS CONTROLLING A MAGNET IN A MAGNETICALLY SUSPENDED VEHICLE
3. COUNTRY: GERMANY
4. INVENTOR #1: STEINMETZ, GUNTER
5. APPLICATION NUMBER: 715495
6. ASSIGNEE:MESSERSCHMITT-BOELKOW-BLOHM
7. FILE DATE: 03/25/85 8. PATENT DATE: 05/06/86
9. STATUS: CURRENT 10. REFERENCE NUMBER: XII-9

A =Abstract X =Exit

EXHIBIT XIX

The screen will permit you to view the Abstract of the Patent Profile currently displayed by entering "A" and to return to the "Maglev Patent Title Listing" screen by hitting the Esc key.

ENTER "A' and the Abstract corresponding to the Patent Profile displayed (i.e. Number "4,587,472) will appear on the screen titled "Maglev Patent Abstract Display" (EXHIBIT XX). The Patent Number is displayed on the top right hand corner of the Abstract screen. To return to the list of Patent titles identified in the current Search level, "HIT" the Escape Key. Patent Number "457472" and Patent Number

"4624617" and their corresponding Titles are once again displayed on the "MAGLEV PATENT TITLE LISTING" screen. The commands pertinent to the continuation of the Patent Search appear at the bottom of the screen.

10/31/90 ** MAGLEV PATENT ABSTRACT DISPLAY ** 4,587,472

THE LEVITATING FORCE OF THE LEVITATION MAGNETS OF A MAGNETICALLY LEVITATED VEHICLE OF THE LINEAR STATOR TYPE IS CONTROLLED FOR REGULATING THE AIR GAP WIDTH BETWEEN THESE LEVITATION MAGNETS AND A RAIL TRACK HAVING TEETH OF UNIFORM, DETERMINED WIDTH IN THE TRAVEL DIRECTION. THE CONTROL IS RESPONSIVE TO THE AIR GAP WIDTH AND, IF DESIRED, TO THE DIFFERENTATION OF THE AIR GAP WIDTH WITH RESPECT TO TIME. THE CONTROL REQUIREMENTS ARE DEPENDENT ON THE VEHICLE SPEED, WHEREBY IN THE LOW SPEED AND STOPPING SITUATIONS THE PRIMARY TASK IS A GOOD FOLLOWING BEHAVIOR. FOR THIS PURPOSE A STEERING SIGNAL IS DERIVED FROM THE OUTPUT TERMINALS OF AN INDUCTION CONDUCTOR LOOP LOCATED IN THE SURFACE OF A POLE PIECE OF A LEVITATION MAGNET FACING THE TRACK TEETH. THE LOOP HAS A WIDTH CORRESPONDING TO THE TOOTH WIDTH. THE FREQUENCY OF THE SIGNAL INDUCED IN THE LOOP IS DIRECTLY PROPORTIONAL TO THE VEHICLE SPEED. THE STEERING SIGNAL PASSES THROUGH AN ADAPTING CIRCUIT AND IS SUPPLIED TO THE MAGNET CONTROL CIRCUIT WHEREBY THE CONTROL PARAMETERS ARE ADJUSTED ACCORDING TO THE VEHICLE SPEED IN ORDER TO FULFILL THE CONTROL REQUIREMENTS IN THE WHOLE SPEED RANGE.

Up/Down Arrows To View More Esc To End Mode

EXHIBIT XX

S=Numeric Patent Search

ENTER "S" and the the screen will request you to enter the Number of the Keyword desired. The Program will search the Patents identified in a prior Search if one is in process, and select those Patents which contain the Keyword just requested. If a Patent Search was not previously in process the program will search all of the Patents in the system and provide a list of the Numbers and Titles which contain the Keyword used.

A=Adhoc Word Search

ENTER "A" and the screen will ask you to enter the Keyword desired. The Program will search the Patents identified in a prior Search if one is in process, and select those which contain the Keyword selected. If a Patent Search was not previously in process the program will search all of the Patents in the system and provide a list of the Numbers and Titles for those found.

F=Find Keyword

ENTER "F" and the program will prompt you to enter the First Letter of the Keyword desired, at any point during the Patent Search Process. Once you have identified the number of the desired Keyword, select "S=Numeric Patent Search: by ENTERING "S" and the screen will request the number of the Keyword desired. The Program will search the Patents identified in a prior Search if one is in process, and select those which contain the Keyword requested. (EXHIBIT XXI) displays the commands at the bottom of the screen after one Search has been performed.

10/31/90 ** MAGLEV PATENT TITLE LISTING ** TOTAL:243

1,020,942	LEVITATING TRANSMITTING APPARATUS
1,020,943	LEVITATING TRANSMITTING APPARATUS
1,081,260	DEVICE FOR ELECTROMAGNETIC SUSPENSION
1,090,213	HIGH SPEED RAILWAY
1,885,662	ELECTRIC RAILWAY SYSTEM
2,041,607	ELECTRIC RAILWAY
3,111,265	RAIL FOR RAILWAY VEHICLES
3,125,964	TRANSPORTATION APPARATUS
3,225,228	LINEAR MAGNETIC DRIVE SYSTEM
3,357,511	AIR CUSHION, OMNIDIRECTIONALLY MAGNETIC FIELD PROPULSION DEVICE
3,361,081	TRACTION SYSTEMS COMPRISING VEHICLES FOR TRAVELLING ALONG A TRACK
3,407,749	MOTOR FOR PROPULSION AND LOAD SUPPORT
3,459,137	VEHICLE DRIVING SYSTEM
3,460,485	ELECTROMAGNETICALLY-PROPELLED VEHICLES
3,470,828	ELECTROMAGNETIC INDUCTIVE SUSPENSION AND STABILIZATION SYSTEM
3,506,862	DYNAMIC AND EDDY CURRENT RAILWAY BRAKE DEVICE
3,512,852	STABILIZED LEVITATION OF MAGNETIC ELEMENTS

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F =Find Keyword L =Search Level List
# Of Patent Searches : 1 X = To Return To Main Menu

EXHIBIT XXI

The number following the caption at the bottom of your screen "# of Patent Searches : " will increase by one, each time a subsequent Search is performed. As soon as more than one Search level has been performed the commands at the bottom of the screen will change (EXHIBIT XXII) and will include "R=Return to a Prior Search Level". If a Patent Search was not previously in process the program will search all of the Patents in the system and will provide a list of the Numbers and Titles which contain the Keyword used for the Search.

10/31/90 ** MAGLEV PATENT TITLE LISTING ** TOTAL: 2

4,587,472 APPARATUS CONTROLLING A MAGNET IN A MAGNETICALLY SUSPENDED VEHICLE
4,624,617 LINEAR INDUCTION SEMICONDUCTOR WAFER TRANSPORTATION APPARATUS

V=View More P=Patent Profile S=Numeric Patent Search A=Adhoc Word Search
F=Find Keyword L=Search Level List R=Return to a Prior Search Level
# Of Patent Searches : 4 X = To Return To Main Menu

EXHIBIT XXII

R=Return to a Prior Search Level

Enter "R" and the screen will ask

"Which Level would You Like to Return To?: :

The Search level, the ADH (Adhoc) Key or the Numeric Key used for the Search, the description of the Key used, and the number of records found in each Search are displayed on the screen (EXHIBIT XXIII). Enter the number corresponding to the LEVEL Search you wish to return to. The program will display all of the records attached to the previous Search Level on the screen. (e.g. Search Level 1 using the Adhoc Key "MAG" found 243 Patents. Search Level 2 using the

Adhoc Key "LINEAR" found 103 Patents out of the 243 Patents which contained the "MAG". To recall the 243 Patents, Enter "1" to select the Search Level 1, and the Patents will be displayed on your screen.

** MAGLEV SEARCH LEVEL LISTING ** TOTAL: 2

LEVEL	KEY	WORD	RECORDS
1	ADH	MAG	243
2	ADH	LINEAR	103
3	ADH	INDUCTION	39
4	283	LEVITATING	2

Press any key to continue...

EXHIBIT XXIII

Of Patent Searches : 1

This caption is displayed and will identify the number of the Searches performed in the current sequence. On the top right hand corner of the screen a field which states "TOTAL # is displayed. The field "TOTAL: #" indicates the number of records found in the last Search performed.

X = End Keyword Find Mode

ENTER "X" to return to the previous screen and command menu.

FIND A PATENT WHEN YOU KNOW THE KEYWORD

The Maglev system provides you with a number of options on how to find the Patents desired. If you know the Keyword that you wish to use select the command A=Adhoc Word Search.

A=Adhoc Word Search

ENTER "A" and the screen will display:

Please Enter the Keyword(s)_____

ENTER the first letter or first few letters of the Keyword desired, or type in the complete word. At the bottom of the screen the program will flash:

** SEARCHING FILES ... PLEASE WAIT **

Once the process is completed, all the Patent Numbers and Titles of the Patents found which contain the Keyword selected, will be displayed. If there are too many Patents to fit on one screen, use the command V=View More to scroll through the Patents found.

You have narrowed the Keyword List down to those words starting with the letters of the word you desire, and if the Keyword desired is listed, select S=Search Using Number From the List. ENTER "S" and the command "Enter The Number Of The Keyword" will be displayed. Enter the number listed on the left hand side of the Keyword desired.

The program will flash ** SEARCHING FILES ... PLEASE WAIT ** at the bottom of the screen. Once the process is completed all of the Patent Numbers and the Titles of those Patents found which contain the Keyword selected, will be displayed. If there are too many Patents to fit on one screen, use the command V=View More to scroll through the Patents found.

THE UTILITY MENU

U=Utility

ENTER "U" and the program will display the Utility Menu selections (EXHIBIT XXIV). Enter the Number corresponding to the Menu selection you wish to proceed with.

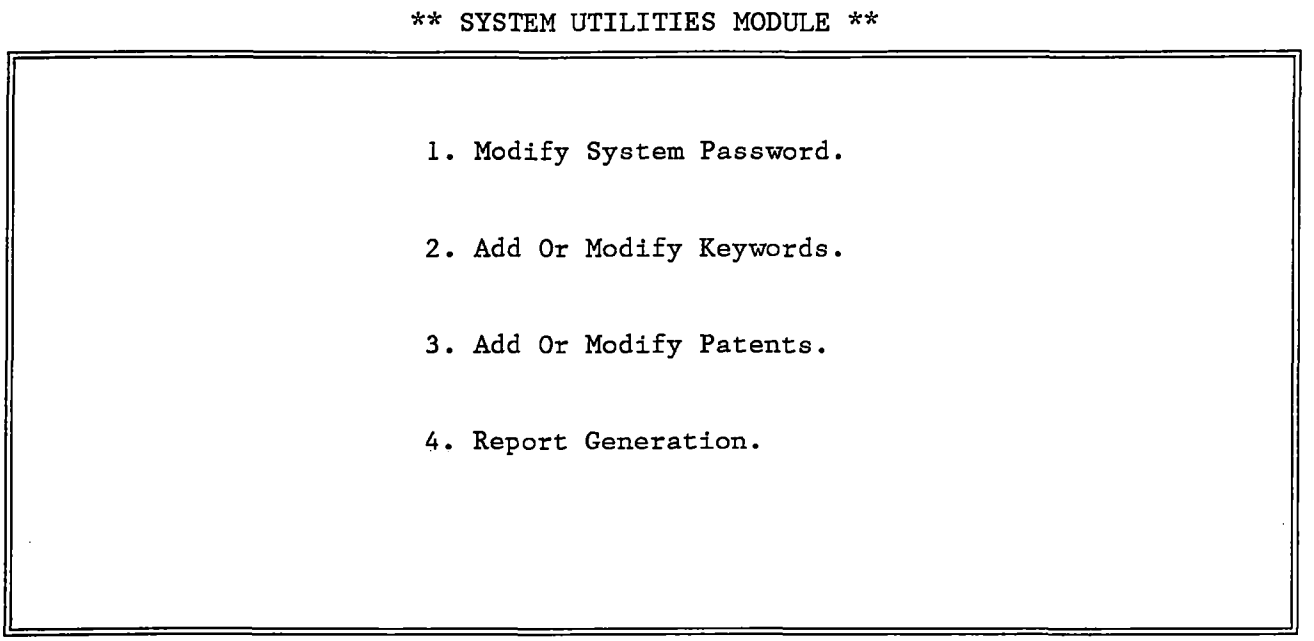


EXHIBIT XXIV

1. Modify System Password

Authorized personnel with the correct Password can change the Level A Password which allows entry into the Maglev system, or change the Level B Password which allows entry into the various Utility functions.

In the Utility Module, ENTER "1" to modify the System Passwords. The screen will Prompt

PLEASE ENTER LEVEL-B PASSWORD : * * * * :

Enter the current Level B password and the program will display the current Level-A password (i.e. FOUR) (EXHIBIT XXV). To change the Level-A Password type in the new four character or four digit password desired. To leave the Level-A Password as displayed, simply hit the "ENTER" key.

** SYSTEM UTILITIES MODULE **

1. Modify System Password.

2. Add Or Modify Keywords.

3. Add Or Modify Patents.

4. Report Generation.

LEVEL-A PASSWORD IS CURRENTLY FOUR
(RETURN to leave Password as is.)

EXHIBIT XXV

The screen will display the Level-B Password (EXHIBIT XXVI) which can be changed by typing in the four character or four digit password desired. To leave the Level-B Password as displayed, simply hit the "ENTER" key.

10/31/90 ** SYSTEM UTILITIES MODULE **

1. Modify System Password.

2. Add Or Modify Keywords.

3. Add Or Modify Patents.

4. Report Generation.

LEVEL-B PASSWORD IS CURRENTLY FOUR
(RETURN to leave Password as is.)

EXHIBIT XXVI

2. Add or Modify Keywords

Once you are in the Utility Module, ENTER "2" to Add or Modify Keywords. The screen will Prompt:

PLEASE ENTER LEVEL-B PASSWORD : * * * * :

Enter the current Level B password and the screen will display the list of Keywords available. You may select from the list of commands at the bottom of the screen (EXHIBIT XXVII) which will allow you to perform the Keyword add or the Keyword modify function. At the completion of one function, the system will return to the Utilities Menu and the Password must be entered again to perform another function.

10/31/90 ** SYSTEM UTILITIES MODULE **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

A =Add M =Modify V =View More F =Find Keyword X =End Mode

EXHIBIT XXVII

A=Add

ENTER "A" to add a Keyword to the list. Enter the Keyword desired at the cursor. If the Keyword entered (i.e. AC) already exists on the Keyword list, the screen will display the Keyword entered and a message that it already exists (EXHIBIT XXVIII). If the Keyword entered is not on the List, it will immediately be added to the system.

10/31/90 ** SYSTEM UTILITIES MODULE **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

AC * * KEYWORD ALREADY EXISTS * *
Press any key to continue...

EXHIBIT XXVIII

You may enter any words which you believe are pertinent to the objective, onto the keyword list. Enter the noun of a word onto the list and then if desired, enter adjectives, adverbs, etc. The rational behind entering the noun first is to have the word which encompasses the broadest possible concept in the first Patent Search level. Many adjectives and adverbs contain as their root, the noun. As a result, once the noun is entered the patents which contain either the noun, the adjective, the adverb, or any other derivitive of the noun, will be retrieved by the system. You may add the adjectives and adverbs to the list to assist in narrowing the ranges of subsequent Searches.

"M"=Modify

ENTER "M" to change the Keyword corresponding to the number shown. The screen will request you to enter the number of the Keyword (EXHIBIT XXIX).

10/31/90 ** SYSTEM UTILITIES MODULE **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

Enter The Number Of The Keyword To Be Modified 0

EXHIBIT XXIX

As an example, if you want to modify the Keyword "ACTUATING" enter the corresponding Number "10" and the bottom of screen will display the Keyword Number and the corresponding Keyword (EXHIBIT XXX). Type in the desired change and the modified Keyword will be displayed at the top of the Keyword list displayed on the screen. The Keyword Number cannot be changed, although subsequent to the modification, the Number may represent a completely different word.

10/31/90 ** SYSTEM UTILITIES MODULE **

```
 1 A.C.
 2 AC
 3 ACCELERATE
 4 ACCELERATION
 5 ACCELERATOR
 6 ACCELEROMETER
 7 ACTING
 8 ACTIVATING
 9 ACTIVE
10 ACTUATING
11 ACTUATOR
12 ADHESIVE
13 ADVANCE
14 AERODYNAMIC
15 AIR
16 ALGEBRA
17 ALTERNATOR
```

10 ACTUATING

EXHIBIT XXX

"V"=View More

ENTER "V" to scroll through the list of Keywords in the system.

F= Find Keyword

ENTER "F" and the program will prompt you to enter the First Letter of the Keyword desired, or to enter the Number of the Keyword desired (EXHIBIT XXXI). Enter the First Letter of the Keyword and the program will search all of the Keywords in the system and provide a list of the words beginning with the letter entered. Enter the Number of the Keyword desired and the corresponding Keyword will be the first one displayed on the screen.

10/31/90 ** SYSTEM UTILITIES MODULE **

```
27 ARTICULATE
28 ARTICULATION
29 ASYCHRONOUS
30 ATMOSPHERIC
31 ATO
32 ATTENUATION
33 ATTRACTION
34 AUTOMATECONCURRENT
35 AUTOMATIC
36 AUXILIARY
37 AXES
38 AXIALLY
39 BAND
40 BANK
41 BARRIER
42 BASE
43 BATTERIES
```

Enter The First Letter Of Keyword Or Enter The Number Of The Keyword 0
RETURN Twice To Exit

EXHIBIT XXXI

X=End Mode

ENTER "X" to return to the System Utilities Main Menu screen.

3. Add or Modify Patents

Once you are in the Utility Module, ENTER "3" to Add or Modify Patents. The screen will prompt:

PLEASE ENTER LEVEL-B PASSWORD : * * * * :

Enter the current Level B password and the screen will display the list of commands at the bottom of the screen (EXHIBIT XXXII). At the completion of one function , the system will return to the Utilities Menu for the Password to be entered again prior to performing another function.

10/31/90 ** SYSTEM UTILITIES MODULE **

1. Modify System Password.

2. Add Or Modify Keywords.

3. Add Or Modify Patents.

4. Report Generation.

A = Add a New Patent M = Modify an existing Patent X =Exit Mode

---

EXHIBIT XXXII

A=Add a New Patent

ENTER "A" to add a Patent to the system. The screen will request that you enter the Patent Number, which should be taken directly from the hardcopy of the Patent to be entered. The Patent Number and the Patent Date is printed on the top of every page in the paper copy of the Patent Profile/Abstract. Enter the Patent Number at the cursor. If the Keyword entered already exists in the system, the screen will display the message

** PATENT NUMBER EXISTS IN FILE **

Press any key to continue...

If the Patent Number entered was not in the system, the program will prompt you to continue the data entry of each field in the Patent Profile (EXHIBIT XXXIII). Use the hardcopy of the Patent to locate and enter the pertinent data at each prompt.

10/31/90 ** SYSTEM UTILITIES MODULE **

1. PATENT NUMBER: 1,234,568
2. TITLE:
3. COUNTRY:
4. INVENTOR #1:
5. APPLICATION NUMBER:
6. ASSIGNEE:
7. FILE DATE: / / 8. PATENT DATE: / /
9. STATUS: 10. REFERENCE NUMBER:

Please Enter Title

(Press Esc To Abort Data Entry.)

EXHIBIT XXXIII

Most Patents contain the pertinent information on the first page, including the Patent number, Patent date, Inventors, Assignee, Filed date, Application Number, Country of origin, and the Abstract. ENTER the "Patent Number" and the Maglev system will prompt you in turn for the Patent Title,

Country, Inventor #1, Application Number, Assignee, File Date, Patent Date, Status, and the Reference Number (EXHIBIT XXXIV).

10/31/90 ** SYSTEM UTILITIES MODULE **

1. PATENT NUMBER: 1,234,568
2. TITLE: A DEMONSTRATION PATENT
3. COUNTRY: USA
4. INVENTOR #1:
5. APPLICATION NUMBER:
6. ASSIGNEE:
7. FILE DATE: / / 8. PATENT DATE: / /
9. STATUS: 10. REFERENCE NUMBER:

Please Enter Inventor:
(Press Esc To Abort Data Entry.)

EXHIBIT XXXIV

Select the appropriate information from the Patent hardcopy and then enter the requested data at each prompt.

FIELD 1. PATENT NUMBER

The Patent Number is an identifying number unique to each Patent assigned once the Patent is granted. The Nubmer is displayed on every page of the Patent, generally in the upper right hand corner of the page.

FIELD 2. TITLE

Each Patent has a title which helps to describe the applicable area of technology.

FIELD 3. COUNTRY

Country represents the Country in which the Patent was granted.

FIELD 4. INVENTOR #1

The Patent may be registered under more than one persons name. Enter the name of the person identified as the Lead person or whose name is listed first.

FIELD 5. APPLICATION NUMBER

When an Application is initially submitted to a Patent Office, an application number is assigned as the identifying number until the Patent is approved and a Patent Number is assigned.

FIELD 6. ASSIGNEE

An inventor may grant Patent rights to another individual or company. This field lists who the Patent has been assigned to.

FIELD 7. FILE DATE

The File date is the date on which the Patent Application was officially filed at the Patent Office.

FIELD 8. PATENT DATE

The Patent Date is the actual date on which the Patent was granted.

FIELD 9. STATUS

A Patent is granted for 17 years at a time. If there is no activity on the part of the Inventor, a Patent will Expire at the end of this period. This field indicates whether a Patent is Active or Expired.

FIELD 10. REFERENCE NUMBER

The Maglev System is designed to be used in conjunction with the hardcopies of the Patents. The Patents which have been entered into the Maglev System are contained in several perfect bound volumes. The Reference Number identifies the perfect bound Volume Number and Divider Section in which the corresponding Patent is contained.

After the Reference Number has been entered, the program will ask:

"Do You Wish To Modify This Entry? (Y/N) "

Type "Y" and ENTER the number corresponding to the field you wish to modify. The field with the current information will be displayed at the bottom of your screen. Type the correct

information over the data displayed. You may modify from Field "2" TITLE: through Field "10" REFERENCE NUMBER: or at any time "Press Esc To Abort Data Entry". If the Patent Number was entered incorrectly, press "Esc" and start over again by entering the correct Patent Number. Once you have completed entering and modifying the Patent Profile, a blank screen will appear on which the Patent Abstract can be entered. Enter the Abstract and make any corrections desired. Once you are satisfied with the Abstract entered, hit "Ctrl W" and the information will be saved.

ENTER A PATENT WHICH DOES NOT CONTAIN AN ABSTRACT

If the Patent does not contain an abstract enter the "First Claim". To find the First Claim, read through the patent until you locate the phrase "I claim" or "We claim". Enter the paragraph or section immediately following the phrase. When time permits, enter the Abstract and the First Claim, thus adding additional depth to the information available in the system.

M=Modify an existing Patent

ENTER "M" and the screen will request the Patent Number. To change any of the information displayed in the Patent Profile or Astract, enter the Patent Number of the Patent in the system to be changed. If the corresponding Patent is not in the system, the message "Patent Not Found" will be displayed. Enter the number again to be sure that it was

not a data entry error. Once a Patent Number that exists in the system is entered, the corresponding Profile will be displayed (i.e. Number 3555380) (EXHIBIT XXXV). The available commands at the bottom of the screen are: "H =Modify Header", "A =Modify Abstract", and "X =Exit".

10/31/90 ** SYSTEM UTILITIES MODULE **

1. PATENT NUMBER: 3,555,380
2. TITLE: LINEAR ROLLING MOTOR
3. COUNTRY: CANADA
4. INVENTOR #1: HINGS, DONALD LEWES
5. APPLICATION NUMBER: 788190
6. ASSIGNEE:UNASSIGNED OR ASSIGNED TO INDIVIDUAL
7. FILE DATE: 12/31/68 8. PATENT DATE: 01/12/71
9. STATUS: EXPIRED 10. REFERENCE NUMBER: I-13

H =Modify Header A =Modify Abstract X =Exit

EXHIBIT XXXV

ENTER "H" to modify any of the fields in the Patent Profile which includes the Title, Country, Inventor #1, Application Number, Assignee, File date, Patent Date, Status, and Reference Number. The program will prompt you:

"Enter Field Number to Modify Or RETURN To End __"

Enter the number of the field and the screen will display

the information currently in the field. For example, you may ENTER "4" to select the "INVENTOR #1" field for modification. In Patent Number 3,555,380, the data in field #4 is "HINGS, DONALD LEWES", which is displayed at the bottom of the screen once selected for modification (EXHIBIT XXXVI). Type in the desired change over the data currently displayed, or hit enter to leave the information as it is. The screen will return to the prompt, "Enter Field Number to Modify Or RETURN To End __" after each desired Field is modified. Field "1" Patent Number cannot be changed, although the data contained under the Patent can be modified.

10/31/90 ** SYSTEM UTILITIES MODULE **

1. PATENT NUMBER: 3,555,380
2. TITLE: LINEAR ROLLING MOTOR
3. COUNTRY: CANADA
4. INVENTOR #1: HINGS, DONALD LEWES
5. APPLICATION NUMBER: 788190
6. ASSIGNEE:UNASSIGNED OR ASSIGNED TO INDIVIDUAL
7. FILE DATE: 12/31/68 8. PATENT DATE: 01/12/71
9. STATUS: EXPIRED 10. REFERENCE NUMBER: I-13

Please Enter Inventor: HINGS, DONALD LEWES

EXHIBIT XXXVI

ENTER "A" to modify the Patent Abstract. The Abstract will be displayed and you can type over any of the information which needs to be changed (EXHIBIT XXXVII). Activate the Insert key on your computer to enter data without replacing the data currently on the screen, deactivate the Insert key to replace the data on the screen with new data. The commands at the bottom of your screen show "Up/Down Arrows To View More", "Ctrl W =Save Changes", and "Esc To End Mode".

10/31/90 ** SYSTEM UTILITIES MODULE ** 3,555,380

A LINEAR MOTOR IS DISCLOSED USING STATOR ELECTROMAGNETS SPACED ALONG A LINEAR GUIDEWAY, FOR EXAMPLE, TO GUIDE A VEHICLE FOR RAPID TRANSIT GUIDANCE AND PROPULSION. THE VEHICLE CARRIES AN ARMATURE REACTING WITH THE STATOR ELECTROMAGNETS FOR THE PROPULSION OF THE VEHICLE. THE ARMATURE IS MAGNETICALLY POLARIZED AS BY A PERMANENT MAGNET TO ELIMINATE ANY NEED FOR ELECTRICAL POWER OR CONTROL CONNECTIONS TO THE VEHICLE, FOR EXAMPLE, BY THE USUAL THIRD RAIL OR OVERHEAD CATENARY. THE ARMATURE IS PREFERABLY A ROTATABLE WHEEL RUNNING ON THE GUIDEWAY AND THE STATOR ELECTROMAGNETS ARE ENERGIZED IN TRAVELLING SEQUENCE TO REACT WITH THE ARMATURE TO PROPEL THE VEHICLE INDEPENDENT OF ANY TORQUE ON THE WHEEL.

Up/Down Arrows To View More Ctrl W =Save Changes Esc To End Mode

---

EXHIBIT XXXVII

"Up/Down Arrows To View More",

Use the Arrows on your computer to move around in the Abstract without deleting or changing data. Once you have used the arrows to locate the data you want to change, type the desired data over the data displayed. To save your changes, HIT "Ctrl W" or if you decide that you do not want the changes saved, HIT "Esc" and the question "Abort Edit? (Y/N)" will appear in the top right hand corner of your screen above the Patent Number (EXHIBIT XXXVIII). ENTER "N" and the program will reenter the Abstract displayed and allow you the opportunity to edit the data displayed. ENTER "Y" and the system will return to the System Utilites Main Menu without saving the changes.

Abort Edit? (Y/N)

10/31/90 ** SYSTEM UTILITIES MODULE ** 3,555,380

A LINEAR MOTOR IS DISCLOSED USING STATOR ELECTROMAGNETS SPACED ALONG A LINEAR GUIDEWAY, FOR EXAMPLE, TO GUIDE A VEHICLE FOR RAPID TRANSIT GUIDANCE AND PROPULSION. THE VEHICLE CARRIES AN ARMATURE REACTING WITH THE STATOR ELECTROMAGNETS FOR THE PROPULSION OF THE VEHICLE. THE ARMATURE IS MAGNETICALLY POLARIZED AS BY A PERMANENT MAGNET TO ELIMINATE ANY NEED FOR ELECTRICAL POWER OR CONTROL CONNECTIONS TO THE VEHICLE, FOR EXAMPLE, BY THE USUAL THIRD RAIL OR OVERHEAD CATENARY. THE ARMATURE IS PREFERABLY A ROTATABLE WHEEL RUNNING ON THE GUIDEWAY AND THE STATOR ELECTROMAGNETS ARE ENERGIZED IN TRAVELLING SEQUENCE TO REACT WITH THE ARMATURE TO PROPEL THE VEHICLE INDEPENDENT OF ANY TORQUE ON THE WHEEL.

Up/Down Arrows To View More Ctrl W =Save Changes Esc To End Mode

EXHIBIT XXXVIII

X=Exit Mode

ENTER "X" to return to the System Utilities Main Menu. To end the Utility Mode, hit the Return or Enter Key.

4. Report Generation

Once you are in the Utility Module ENTER "4" to select the Reports desired (EXHIBIT XXXIX). The screen will prompt:

"WHICH LETTER WOULD YOU LIKE? _ "

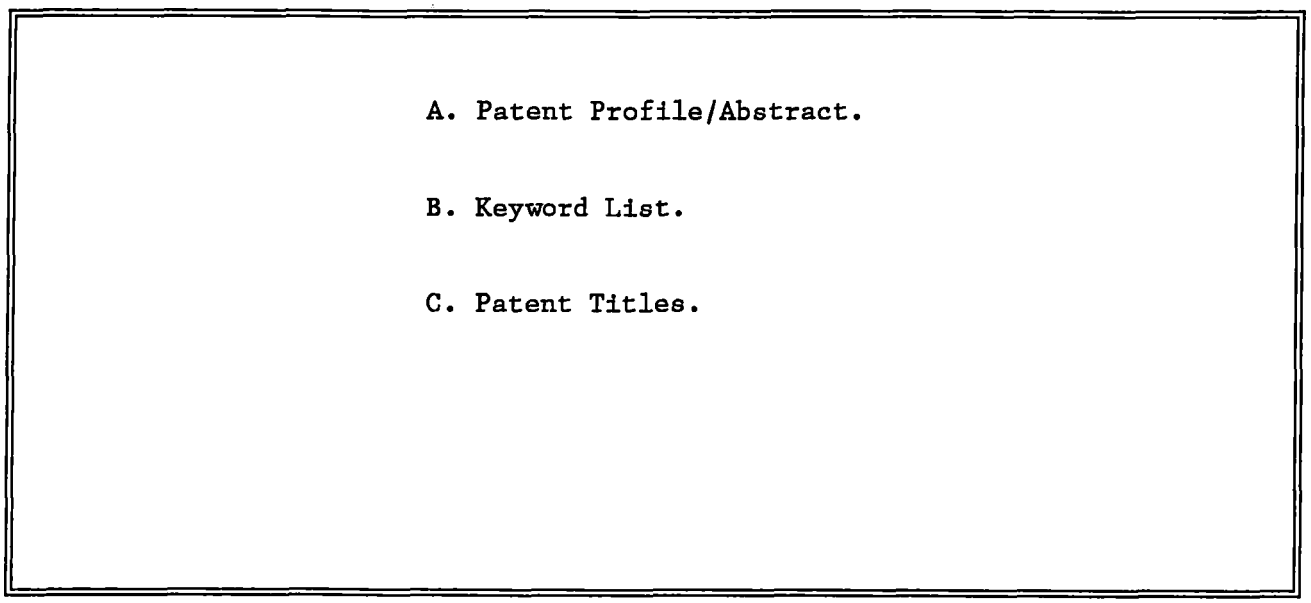


EXHIBIT XXXIX

Select any of the three reports listed on the menu and make sure that your printer is online (EXHIBIT XXXX). Enter the Letter corresponding to the desired printout and the report will automatically be sent to your printer.

10/31/90 ** REPORT GENERATION MODULE **

A. Patent Profile/Abstract.

B. Keyword List.

C. Patent Titles.

Printer Ready? (Y/N) Y

EXHIBIT XXXX

A. Patent profile/Abstract

Enter "A" to print the Patent Profile and Abstract of selected Patent. The system will prompt you

"Please Enter Patent Number: _____ "

Enter the desired Patent Number (i.e. 3555380) and the system will ask:

"Printer Ready? (Y/N) _"

Make sure that your printer is online, and Enter "Y". The Patent Profile and Abstract of the number entered will be printed out (EXHIBIT XXXXI). Enter "N" to return to the System Utilites Main Menu.

1. PATENT NUMBER: 3,555,380
2. TITLE: LINEAR ROLLING MOTOR
3. COUNTRY: CANADA
4. INVENTOR #1: HINGS, DONALD LEWES
5. APPLICATION NUMBER: 788190
6. ASSIGNEE:UNASSIGNED OR ASSIGNED TO INDIVIDUAL
7. FILE DATE: 12/31/68 8. PATENT DATE: 01/12/71
9. STATUS: EXPIRED 10. REFERENCE NUMBER: I-30

A LINEAR MOTOR IS DISCLOSED USING STATOR ELECTROMAGNETS SPACED ALONG A LINEAR GUIDEWAY, FOR EXAMPLE, TO GUIDE A VEHICLE FOR RAPID TRANSIT GUIDANCE AND PROPULSION. THE VEHICLE CARRIES AN ARMATURE REACTING WITH THE STATOR ELECTROMAGNETS FOR THE PROPULSION OF THE VEHICLE. THE ARMATURE IS MAGNETICALLY POLARIZED AS BY A PERMANENT MAGNET TO ELIMINATE ANY NEED FOR ELECTRICAL POWER OR CONTROL CONNECTIONS TO THE VEHICLE, FOR EXAMPLE, BY THE USUAL THIRD RAIL OR OVERHEAD CATENARY. THE ARMATURE IS PREFERABLY A ROTATABLE WHEEL RUNNING ON THE GUIDEWAY AND THE STATOR ELECTROMAGNETS ARE ENERGIZED IN TRAVELLING SEQUENCE TO REACT WITH THE ARMATURE TO PROPEL THE VEHICLE INDEPENDENT OF ANY TORQUE ON THE WHEEL.

EXHIBIT XXXXI

B. Keyword List

Enter "B" to print the entire Keyword List in the system. (APPENDIX A)

C. Patent Titles

ENTER "C" to print the entire list of Patent Titles available. (APPENDIX B)

DATA ENTRY POINTS

1. When information being entered does not fill up the whole data entry space that is allocated to it or there is no information to enter into a particular field, press the <RETURN> key to proceed to the next function or field.

2. If the information being entered fills up the space allocated to the data entry field, the program will automatically proceed to the next function or field.

3. Some data entry fields only permit data entry of numbers, and will reject all characters and signs.

4. At any point during data entry the record that is being entered can be destroyed by hitting the escape key (Esc). This allows the Patent or Keyword being entered to be deleted if mistakes occur during data entry.

THE MAGLEV SYSTEM AND THE PATENTS

The Maglev System is designed to be used in conjunction with the hardcopies of the Patents. The Patents which have been entered into the Maglev System are contained in several perfect bound volumes.

1) Use the Maglev system to perform a multilevel Search.

2) Find the Patents of interest to you, which warrant further investigation.

3) Enter the Patent Number to display the "MAGLEV PATENT PROFILE SCREEN"

4) Within the Patent Profile, field number "10" represents the REFERENCE NUMBER. The Reference Number identifies the perfect bound Volume Number and Divider Section that the corresponding Patent is contained in.

5) Use the hardcopy to look at the Patent's diagrams and to read the complete details of the technology for which the Patent was granted.

** THE END **

IF YOU HAVE ANY QUESTIONS WHICH THIS MANUAL DOES NOT ADDRESS

PLEASE FEEL FREE TO CALL:

LaDORN SYSTEMS CORPORATION
600 Water Street, S.W.
Washington, D.C. 20024

(202) 484-8448

KEY#	KEYWORD
1	A.C.
2	AC
3	ACCELERATE
4	ACCELERATION
5	ACCELERATOR
6	ACCELEROMETER
7	ACTING
8	ACTIVATING
9	ACTIVE
10	ACTUATING
11	ACTUATOR
12	ADHESIVE
13	ADVANCE
14	AERODYNAMIC
15	AIR
16	ALGEBRA
17	ALTERNATOR
18	ANALOG
19	ANGLE
20	ANNULAR
21	ANTENNA
22	ANTI
23	APTITUDE
24	ARCHED
25	ARMATURE
26	ARRAY
27	ARTICULATE
28	ARTICULATION
29	ASYCHRONOUS
30	ATMOSPHERIC
31	ATO
32	ATTENUATION
33	ATTRACTION
34	AUTOMATECONCURRENT
35	AUTOMATIC
36	AUXILIARY
37	AXES
38	AXIALLY
39	BAND
40	BANK
41	BARRIER
42	BASE
43	BATTERIES
44	BEAM
45	BEARINGS
46	BI-MODAL
47	BLOCK
48	BLOWER
49	BOBIN
50	BODY
51	BOGIE
52	BOOSTER

KEY#	KEYWORD
53	BRAKE
54	BRANCH
55	BUSHING
56	CABLE
57	CAGE
58	CAM
59	CANTILEVERED
60	CAPACITY
61	CARRIAGE
62	CARS
63	CATCHING
64	CATENARY
65	CATERPILLAR
66	CAVITIED
67	CAVITIES
68	CELL
69	CENTER
70	CENTERBOARD
71	CENTRALIZED
72	CERTIFICATION
73	CHANNEL
74	CIM
75	CIRCUIT
76	CLAMPINGCONDUCTIVITY
77	CLAMPS
78	CLOSED
79	CLOSURE
80	CO-MOVING
81	COASTING
82	COATING
83	COEFFICIENT
84	COIL
85	COINCIDENT
86	COLLECTION
87	COLUMN
88	COMB
89	COMMUTATE
90	COMMUTATION
91	COMPENSATION
92	COMPOSITE
93	COMPRESSION
94	COMPRESSOR
95	COMPUTER
96	CONCRETE
97	CONDUCTIVITY
98	CONDUCTOR
99	CONFRONTING
100	CONGRUENCE
101	CONSTANT
102	CONSUMPTION
103	CONTACTLESS
104	CONTINUOUS

KEY#	KEYWORD
105	CONTROL
106	CONVERTER
107	COOLING
108	CORE
109	CORRESPONDING
110	COUNTER
111	COUPLING
112	CROSS
113	CRYOCOOLER
114	CRYOGENIC
115	CRYOSTAT
116	CURRENT
117	CURTAIN
118	CURVATURE
119	CURVILINEAR
120	CUSHION
121	CYCLOCONVERTER
122	D.C.
123	DAMPING
124	DATA
125	DC
126	DECELERATE
127	DECELERATION
128	DEFLECTION
129	DELAY
130	DELTA
131	DEMAND
132	DENSITY
133	DEPTH
134	DERIVATIVE
135	DETECTING
136	DETECTION
137	DETENT
138	DETERMINATION
139	DEVIATION
140	DEVICE
141	DIAGRAM
142	DIFFERENTIATOR
143	DIRECTION
144	DISCONTINUITIES
145	DISCONTINUOUS
146	DISPLACEMENT
147	DISPOSED
148	DISSIPATION
149	DISTANCE
150	DISTORTION
151	DIVERGENT
152	DIVERGING
153	DIVIDER
154	DLIM
155	DOUBLE
156	DRAG

KEY#	KEYWORD
157	DRIFT
158	DRIVE
159	DUST
160	DYNAMIC
161	EDDY
162	EDGE
163	EDS
164	EFFECIENCY
165	EFFECT
166	EFFICIENCY
167	EJECTION
168	ELASTOMERIC
169	ELECTRODYNAMIC
170	ELECTROMAGNET
171	ELECTRORESPONSIVE
172	EMERGENCY
173	EMF
174	EMMISSION
175	EMS
176	ENCLOSED
177	ENERGIZATION
178	ENERGY
179	EQUILIBRIUM
180	EVACUATED
181	EXCESSIVE
182	EXCHANGER
183	EXCITATION
184	EXCITER
185	EXPANSION
186	FACTOR
187	FAIL
188	FAIL SAFE
189	FAILURE
190	FEEDBACK
191	FEEDER
192	FEELER
193	FERRITE
194	FERRO-MAGNETIC
195	FERROMAGNETIC
196	FIBER
197	FIBER OPTIC
198	FIBRE
199	FIELD
200	FILLINGS
201	FILTER
202	FLANGE
203	FLEXIBLE
204	FLUCTUATE
205	FLUCTUATION
206	FLUX
207	FOLLOWER
208	FORCE

KEY#	KEYWORD
209	FRAME
210	FRAMEWORK
211	FREQUENCY
212	FRICTION
213	FRP
214	FUEL
215	FUNCTIFORM
216	GAP
217	GAS
218	GATE
219	GENERATOR
220	GEOMETRY
221	GEOTHERMAL
222	GIRDER
223	GRADIENT
224	GRAVITATION
225	GRAVITY
226	GRIDWORK
227	GTO
228	GUIDANCE
229	GUIDEWAY
230	HALL-EFFECT
231	HARMONIC
232	HAZARD
233	HEADWAY
234	HEALTH
235	HEAT
236	HELIUM
237	HEMISPHERICAL
238	HERTZ
239	HIGH
240	HIGH SPEED
241	HINGE
242	HOVER
243	HUNTING
244	HYDRA
245	HYDRAULIC
246	HYDRO
247	HYSTERESIS
248	I-STRIP
249	ILLUMINATION
250	IMBALANCE
251	INDUCE
252	INDUCTANCE
253	INDUCTION
254	INDUCTOR
255	INFLATABLE
256	INFLECTION
257	INSTANTANEOUS
258	INTEGRATION
259	INTEGRATOR
260	INTERFERENCE

KEY#	KEYWORD
261	INTERINGAGING
262	INTERPOSED
263	INTERVENING
264	INVERTER
265	IRON
266	ISOCHORIC
267	JERK
268	JOINT
269	JOULE
270	JT VALVE
271	JUXTAPOSED
272	KEEL
273	KENETIC
274	LAMELLAE
275	LAMINATE
276	LAMINATION
277	LATERAL
278	LAYER
279	LEAKAGE
280	LENGTH
281	LEVER
282	LEVITATE
283	LEVITATING
284	LEVITATION
285	LFM
286	LHIA
287	LIFT
288	LIM
289	LINE
290	LINEAR
291	LINING
292	LINK
293	LIQUEFACTION
294	LIQUID
295	LOAD
296	LOCKED
297	LOGITUDINAL
298	LONG
299	LOOP
300	LOSS
301	LSM
302	LUGS
303	MAGLEV
304	MAGNEPLANE
305	MAGNET
306	MAGNETIC
307	MAGNETOMOTIVE
308	MAGNITUDE
309	MANGANSE
310	MASS
311	MATERIAL
312	MATRIX

KEY#	KEYWORD
313	MECHANICAL
314	MECHANISM
315	MEMBER
316	METAL
317	MIRROR
318	MODULATION
319	MOMENT
320	MONORAIL
321	MOTOR
322	MOUNTING
323	MOVEMENT
324	MTBF
325	MULTIPIER
326	MUTUAL
327	NEGATIVE
328	NEOPREN
329	NETWORK
330	NIOBIUM
331	NITROGEN
332	NOISE
333	NOTATIONAL
334	NOZZLE
335	NULL
336	OCS
337	ONBOARD
338	OPERATING
339	OPERATION
340	OPTIC
341	OPTICAL
342	OPTIMUM
343	OPTO-ELECTRONIC
344	ORBITAL
345	ORIENTATION
346	ORTHOGONAL
347	OSCILLATION
348	OUTER
349	OVERHEAD
350	OVERLAP
351	PACKS
352	PADS
353	PASS
354	PASSENGER
355	PASSIVE
356	PATH
357	PAYLOAD
358	PDR
359	PEAK
360	PENDULAR
361	PERMANENT
362	PERMEANCE
363	PERPENDICULAR
364	PERSISTENT

KEY#	KEYWORD
365	PERTURBATION
366	PHASE
367	PHOTOCELL
368	PIEZOELECTRIC
369	PISTON
370	PISTON
371	PITCH
372	PIVOT
373	PLASTIC
374	PLATE
375	PNEUMATIC
376	POLARIZED
377	POLE
378	POLYPHASE
379	POSITION
380	POSTURE
381	POTENIOMETER
382	POWER
383	PRECOMPRESSED
384	PRESENCE
385	PRESSURE
386	PRESTRESSED
387	PROAGATION
388	PROGRESSIVELY
389	PROPELLED
390	PROPORATIONAL
391	PROPULSION
392	PROXIMITY
393	PWM INVERTER
394	QUENCH
395	RADIAL
396	RADIATION
397	RAIL
398	RAILWAY
399	RATIO
400	REACTION
401	RECESSES
402	RECTIFIER
403	REDUCTION
404	REDUNDANCY
405	REFLECT
406	REFRIGERATOR
407	REGENERATIVE
408	REGISTERING
409	REINFORCED
410	RELAY
411	RELUCTANCE
412	REPETITIVE
413	REPULSION
414	REPULSIVE
415	RESILIENT
416	RESISTANCE

KEY#	KEYWORD
417	RESISTIVITY
418	RESTART
419	RETRACT
420	RIDE
421	RIDE COMFORT
422	RIDE QUALITY
423	RIDERSHIP
424	RIGID
425	ROLL
426	ROTATION
427	ROUGHNESS
428	SAFE
429	SAFETY REQUIREMENT
430	SAGGING
431	SALIENT
432	SATURATE
433	SATURATION
434	SCR
435	SECONDARY
436	SECTION
437	SELF-ORIENTING
438	SENSOR
439	SEPARATION
440	SERVO
441	SHADED
442	SHANKS
443	SHAPE
444	SHEET
445	SHIELD
446	SHIFTER
447	SHOE
448	SHORT
449	SHUNT
450	SIDED
451	SIDEWALL
452	SIGNAL
453	SINTER
454	SINUSOIDAL
455	SKIDS
456	SKIN
457	SLEEVE
458	SLIM
459	SLIP
460	SLITPLATE
461	SLM
462	SLOPE
463	SLUG
464	SOLENOID
465	SPACED
466	SPAN WIDTH
467	SPECTRAL
468	SPEED

KEY#	KEYWORD
469	SPRING
470	SQUIRREL
471	STABILITY
472	STABILIZING
473	STACK
474	STARLIM
475	START
476	STATIC
477	STATOR
478	STEEL
479	STIFFNESS
480	STIRLING
481	STIRRUP
482	STOP
483	STORAGE
484	STRAY
485	STRUCTURE
486	SUBJECTION
487	SUBSTATION
488	SUCTION
489	SUPERCONDUCTING
490	SUPERCONDUCTOR
491	SUPERELEVATION
492	*SUPERIMPOSE*
493	SUPERLEVATION
494	SUPPLY
495	SUPPORT
496	SURFACE
497	SUSPEND
498	SUSPENSION
499	SWINGING
500	SWITCH
501	SWIVEL
502	SYMMETRIC
503	SYNCHRONOUS
504	SYSTEM
505	TAPER
506	TAPPED
507	TARGET
508	TEETH
509	TEFLON
510	TENSION
511	TFM
512	THERMAL
513	THRUST
514	THYRISTOR
515	TIMING
516	TITANIUM
517	TORQUE
518	TRACK
519	TRAIN
520	TRAJECTION

KEY#	KEYWORD
521	TRANSDUCER
522	TRANSFER
523	TRANSFORMER
524	TRANSLATOR
525	TRANSMITTER
526	TRANSVEKTOR
527	TRANSVERSE
528	TRAPEZOID
529	TRAVELING
530	TRIAC
531	TRUCK
532	TRUNCATE
533	TUBE
534	TUBULAR
535	TUNNEL
536	TURBOGENERATOR
537	U-SECTION
538	U-SHAPE
539	ULTRASONIC
540	UNDERCARRIAGE
541	UNDULATING
542	UNITARILY
543	UNROLLED
544	UNSPRUNG
545	UNSTABLE
546	VACUUM
547	VACUUM CONTACTOR
548	VARIABLE
549	VEHICLE
550	VELOCITIES
551	VELOCITY
552	VERTICAL
553	VIBRATION
554	VOLT
555	VVVF INVERTER
556	WAVE
557	WAVEGUIDE
558	WAYSIDE
559	WEAKENING
560	WEB
561	WEDGES
562	WHEELS
563	WIDTH
564	WIEGHT
565	WINDING
566	YAW
567	ZONE
568	ACID
569	
570	DETECT

PATENT#	TITLE
1020942	LEVITATING TRANSMITTING APPARATUS
1020943	LEVITATING TRANSMITTING APPARATUS
1081260	DEVICE FOR ELECTROMAGNETIC SUSPENSION
1090213	HIGH SPEED RAILWAY
1437549	ELECTRICALLY OPERATED TRANSPORTATION APPARATUS
1885662	ELECTRIC RAILWAY SYSTEM
2041607	ELECTRIC RAILWAY
3111265	RAIL FOR RAILWAY VEHICLES
3125964	TRANSPORTATION APPARATUS
3198139	MONORAIL SYSTEMS
3225228	LINEAR MAGNETIC DRIVE SYSTEM
3233559	TRANSPORTATION MEANS
3356041	TRACTION SYSTEMS
3357511	AIR CUSHION, OMNIDIRECTIONALLY MAGNETIC FIELD PROPULSION DEVICE
3361081	TRACTION SYSTEMS COMPRISING VEHICLES FOR TRAVELLING ALONG A TRACK
3368496	TRANSPORTATION SYSTEM
3385228	TRANSPORTATION SYSTEM
3407749	MOTOR FOR PROPULSION AND LOAD SUPPORT
3459137	VEHICLE DRIVING SYSTEM
3460485	ELECTROMAGNETICALLY-PROPELLED VEHICLES
3470828	ELECTROMAGNETIC INDUCTIVE SUSPENSION AND STABILIZATION SYSTEM
3506862	DYNAMIC AND EDDY CURRENT RAILWAY BRAKE DEVICE
3511544	LINEAR SELF-ACTING BEARING WITH CONFORMABLE SURFACE
3512852	STABILIZED LEVITATION OF MAGNETIC ELEMENTS
3516361	ELECTROMAGNETICALLY-PROPELLED VEHICLE
3516364	RESILIENT SUPPORTING DEVICE FOR A RAILWY LINEAR MOTOR
3547041	INDUCTION LINEAR TRACTION MOTOR FOR MONORAIL SYSTEMS
3548751	ELECTRIC LINEAR LOCOMOTIVE
3549966	LINEAR MOTOR SPEED CONTROL SYSTEM
3555380	LINEAR ROLLING MOTOR
3557704	ELECTRO-MAGNETICALLY PROPELLED
3559583	OVERHEAD RAILWAY
3575454	BUMPER SHOCK ABSORBING VEHICLE
3577928	LINEAR INDUCTION MOTOR DRIVE SYSTEM
3577929	ELECTRIC VEHICLE DRIVING AND CONTROLLING APPARATUS
3585939	LINEAR INDUCTION MOTOR FOR VEHICLE PROPULSION
3588555	LINEAR ELECTRIC DRIVE: WINDINGLESS CARRIAGE CONDUCTIVE RAIL MEANS
3589300	MAGNETIC SUSPENSION SYSTEM
3589302	LINEAR MOTOR-DRIVEN VEHICLE
3594622	A LINEAR COMB-SHAPED SYNCHRONOUS MOTOR
3602149	LINEAR MOTOR DRIVEN RAILWAY VEHICLE TRUCK
3611944	SUSPENDED VEHICLE CONSTRUCTION
3612395	LINEAR MOTOR REACTION RAIL ASSEMBLY
3616763	LINEAR INDUCTION MOTOR RAIL
3618529	TRACKED AIR CUSHION VEHICLE POWERED BY LINEAR INDUCTION MOTOR
3623433	CIRCUITS FOR TRACK GUIDED AIR CUSHION VEHICLE PROPULSION SYSTEM
3623434	LINEAR MOTOR PROPELLED AIR CUSHION VEHICLE
3626858	LINEAR INDUCTION MOTOR STATOR ASSEMBLY
3629753	MAGNETIC FLOATING DEVICE USING HARD SUPERCONDUCTOR
3630153	VEHICLE ENCLOSED RAILWAY TRANSPORTATION SYSTEM
3631808	LINEAR MOTOR POWERED RAILWAY
3631809	LINEAR INDUCTION MOTOR BAIL

PATENT#	TITLE
3641939	SPEED CONTROL SYSTEM FOR LINEAR MOTOR CONVEYORS
3644762	LINEAR INDUCTION MOTOR STATOR
3662689	HIGH SPEED TRAIN UTILIZING HARD SUPERCONDUCTOR
3663075	SELF CENTERING PERMANENT MAGNET BEARING
3664268	LEVITATING VEHICLES IN A GROUND TRANSPORTATION SYSTEM
3667397	LINEAR INDUCTION MOTOR SECONDARY MEMBER
3667398	LINEAR INDUCTION MOTOR SECONDARY MEMBER
3675585	HANDLING CONVEYORS HAVING SELF PROPELLED TROLLEYS
3680489	VEHICLE PROPELLED BY LINER MOTOR
3691960	CRYOGENIC MAGNET FORCE APPLICATION MEANS AND METHOD
3696753	GUIDEWAY AND SWITCHING LINEAR MOTOR PROPELLED VEHICLE
3697908	FERROMAGNETIC MATERIAL IN A MAGNETIC FIELD AS A PROPULSION SYSTEM
3701321	CONTINUOUS RAILWAY TRANSPORTATION SYSTEM
3707924	ELECTROMAGNETIC MOTION IMPARTING MEANS & TRANSPORTOR SYSTEM
3712240	LINEAR ELECTRIC MOTOR PROPULSION SYSTEM
3717103	LOW DRAG MAGNETIC SUSPENSION SYSTEM
3719395	MAGNETIC WHEEL
3724388	ELECTROMAGNETIC SUSPENSION & GUIDANCE OF TRACKED CARS
3729135	EXPANSION JOINT FOR FLOW SPEED REACTION RAILS
3734565	ANTI-FRICTION MAGNETIC WHEEL
3736880	FEEDBACK CONTROL CIRCUIT FOR MAGNETIC SUSPENSION & PROPULSION SYST
3736881	STANDSTILL-POSITIONING/RESTARTING ARRANGEMENT FOR LINEAR INDUCTION
3738281	EMERGENCY SUPPORT & DECELERATING MAGNETICALLY SUPPORTED VEHICLES
3740628	LINEAR ELECTRIC MOTOR
3741613	ELECTROMAGNETIC LEVITATION GUIDE
3742862	FLOATING ELECTROMAGNETIC SUSPENSION SYSTEM
3746899	LINEAR INDUCTION MOTOR PRIMARY MEMBER
3750803	RAPID TRANSPORTATION SYSTEM
3760737	MONORAIL
3763788	MAGNETIC SWITCHING OF VEHICLES
3768417	TRANSPORT SYSTEM EMPLOYING ELECTROMAGNETICALLY SUSPENDED VEHICLE
3769914	SPEED SYNCHRONIZING CONTROL ARRANGEMENT FOR TRANSPORT SYSTEMS
3770995	LINEAR INDUCTION MOTOR
3771033	APPARATUS FOR PROPELLING A MOVABLE BODY IN A SUSPENDED STATE
3771462	ELECTROMAGNETIC MOTION IMPARTING MEANS AND TRANSPORTER SYSTEM
3780667	ELECTRO-MAGNETIC SYSTEM FOR GUIDED SUSPENSION OF A VEHICLE
3780668	ELECTROMAGNETIC SUSPENSION AND; OR GUIDE SYSTEM
3783794	MAGNETIC SUSPENSION WITH NON CONTROLLED SUSPENDING MAGNETS
3791309	GUIDE AND SUSPEND A VEHICLE BY MAGNETIC FORCES
3792665	LINEAR INDUCTION CONTROL SYSTEM
3797402	MAGNETICALLY SUSPENDED RAILWAY SYSTEM
3797403	POWER ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM FOR VEHICLES
3799436	LOW SPEED LINEAR INDUCTION MOTOR REACTION RAIL
3800708	TRACKED VEHICLE AND SUSPENSION SYSTEM
3802349	LINEAR MOTOR FOR GUIDED TRANSPORT-INSTALLATION
3803466	LINEAR MOTOR PROPULSION SYSTEM
3804022	ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM
3804023	DYNAMIC-MAGNETIC SUSPENSION SYSTEM
3804024	DYNAMIC UNCOUPLING OF A RAIL-GUIDED VEHICLE
3806782	ELECTROMAGNETIC RAIL FOR DRIVING LINER MOTOR
3807313	LINEAR MOTOR-DRIVEN RAILWAY TRUCK
3809433	ANTI-FRICTION VEHICLE SUPPORT SYSTEM

PATENT#	TITLE
3815511	DC MAGNETIC PROPULSION & LEVITATION SYSTEM FOR HIGH SPEED VEHICLES
3820470	GUIDANCE MEANS FOR MAGNETICALLY SUSPENDED RAILWAY VEHICLES
3820471	MAGNETIC LEVITATING AND PROPELLING DEVICE
3820472	TWO SIDED LINEAR INDUCTION MOTOR FOR SUSPENDED VEHICLES
3822647	PASSIVE SWITCHING SYSTEM
3823672	HIGH SPEED GROUND TRANSPORTATION SYSTEMS
3827370	PASSIVE SWITCHING SYSTEM
3827371	LINEAR AND ROTARY MOTOR DRIVING SYSTEM FOR ELECTRIC CAR
3828686	MAGNETIC GUIDE FOR RAILWAY VEHICLE
3830162	SWITCHING ARRANGEMENT FOR A CONVEYANCE BOUND TO A GUIDE
3834316	TWO RAIL SUSPENSION RAILWAY WITH A LINEAR MOTOR
3834317	MAGNETIC MOVING VEHICLE SUSPENSION
3834318	GROUND TRANSPORTATION SYSTEMS AND TRACKS AND VEHICLES
3836799	LINEAR INDUCTION MOTOR WITH ELECTROMAGNETIC LEVITATION
3837287	MAGNETIC SUSPENSION UTILIZING AN ELONGATED COIL
3841224	VEHICLE CONTROLLED SWITCH SYSTEM
3841227	SUSPENSION SYSTEM FOR A MAGNETIC SUSPENSION RAILROAD
3842747	ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM FOR VEHICLES
3842748	ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM
3842749	TRANSPORT SYSTEM WITH MAGNETIC-SUSPENSION VEHICLE
3842750	ELECTRO-MAGNETIC SYSTEM FOR VEHICLE GUIDED SUSPENSION
3842751	TRANSPORTATION SYSTEM - ELECTROMAGNETICALLY SUSPENDED
3842753	SUSPENSION DAMPENING FOR A SURFACE SUPPORT VEHICLE
3844220	MAGNETIC SUSPENSION AND SWITCHING FOR VEHICLES
3845720	MAGNETIC-LEVITATION VEHICLE WITH AUXILIARY MAGNETIC SUPPORT
3845721	LINEAR MOTOR ASSEMBLY FOR DRIVING A VEHICLE OF A CONVEYING SYSTEM
3847086	SUSPENDED RAILWAY HAVING A MAGNETIC SUSPENDED GUIDE
3847087	POWER TRANSMISSION ARRANGEMENT FOR MAGNETIC SUSPENSION
3847088	MAGNETICALLY SUSPENDED RAILWAY SYSTEM
3847089	VEHICLE DRIVE MEANS
3849724	MEASURING GAP SPACING AND RELATIVE TRANSVERSE DISPLACEMENT
3850108	ARMATURE ASSEMBLY AND MAGNETICALLY SUSPENDED VEHICLE
3850109	TRANSPORTATION SYSTEM EMPLOYING MAGLEV, GUIDANCE & PROPULSION
3851592	APPARATUS FOR INFLUENCING THE SPEED OF TRACK-BOUND VEHICLES
3851594	ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM
3853068	MECHANICALLY LINKED PERSONAL RAPID TRANSIT SYSTEM
3854411	MECHANICALLY SETTABLE SWITCH FOR MAGNETIC SUSPENSION
3854412	SWITCH FOR USE IN A MAGNETIC SUSPENSION RAILROAD
3855939	MAGNETICALLY SUPPORTED SUSPENDED RAILWAY
3856202	TRACK ELEMENT FOR LINEAR MOTOR VEHICLES
3858521	MAGNETIC LEVITATION GUIDANCE SYSTEM
3858522	LINEAR MOTOR FOR HIGH SPEED RAILROADS
3861320	ELECTROMAGNETIC TRACK GUIDANCE ARRANGEMENT FOR A VEHICLE
3861321	TRANSPORTATION SYSTEM AND VEHICLES FOR THE SYSTEM
3863574	POWER SUPPLY FOR HIGH SPEED VEHICLES
3865043	DETECTING & CONTROLLING SPACING BETWEEN 2 JUXTAPOSED BODIES
3867886	APPARATUS FOR LEVITATING AND STABILIZING A VEHICLE
3869990	SWITCH ARRANGEMENT FOR A MAGNETIC SUSPENSION RAILROAD
3871300	TRANSPORTATION MEANS
3871301	STABILIZATION AND RIDE CONTROL OF SUSPENDED VEHICLES
3872357	LINEAR SYNCHRONOUS MOTOR FOR HIGH-SPEED VEHICLES
3874299	ELECTROMAGNETIC SWITCHING

PATENT#	TITLE
3874300	SUSPENSION AND COUPLING DEVICE FOR MOVABLE MAGNETIC FIELD
3875856	HIGH SPEED TRANSPORTATION MEANS FOR SMALL VEHICLES
3877387	TRACTION CAR
3882788	ELECTROMAGNETICALLY DRIVEN HIGH-SPEED ELEVATED RAILWAY CAR
3882789	ELECTROMAGNETICALLY OPERATED OVERHUNG
3882790	ADJUSTABLE TRACK MOUNTING DEVICE IN RAIL SYSTEM
3884154	CONVERTIBLE RAIL-HIGHWAY TRACTION VEHICLE
3885504	MAGNETIC STABILIZING OR SUSPENSION SYSTEM
3885505	TRACK FOR MAGNETIC-SUSPENSION VEHICLE
3888185	HIGH SPEED TRANSPORTATION SYSTEM
3890906	LINEAR SYNCHRONOUS MOTOR FOR MAGNETICALLY LEVITATED VEHICLE
3892185	LOW DRAG MAGNETIC SUSPENSION SYSTEM
3895585	TWO-SIDED LINEAR INDUCTION MOTOR FOR SUSPENDED VEHICLES
3896737	SWITCH FOR A SUSPENSION RAILROAD
3899979	MAGNETIC SUSPENSION SYSTEMS FOR VEHICLES
3900739	PROVIDING CURRENT SUPPLY TO INDUCTIVE LOADS BY BATTERY & DC PULSE
3903808	EDDY CURRENT PROPULSION SYSTEM
3903809	ELECTROMAGNETIC SUSPENSION GUIDANCE SYSTEM
3904898	LINEAR ELECTRIC MOTORS
3904899	LINEAR ASYNCHRONOUS ELECTRIC MOTORS
3904941	DRIVE POWER SUPPLY SYSTEM FOR THYRISTORIZED LINEAR MOTOR
3904942	SYSTEM FOR OPERATING A SELF-PROPELLED TRACK BOUND VEHICLE
3905302	SWITCH, MAGNETICALLY AND PNEUMATICALLY FLOATING VEHICLES
3905303	SWITCH FOR A MAGNETIC SUSPENSION RAILROAD
3911828	LINEAR-INDUCTION MOTOR FOR HIGH-SPEED MAGNETIC-LEVITATION
3912991	LINEAR-INDUCTION MOTOR WITH CONTINUOUS ACTIVE TRACK
3912992	PARALLEL CONNECTED LINEAR ELECTRIC MOTOR SYSTEM
3913492	SWITCH FOR A MAGNETIC SUSPENSION RAILROAD
3913493	SYSTEM FOR PROPELLING TRAIN BY LINEAR SYNCHRONOUS MOTOR
3914669	ATTENUATING VERTICAL OSCILLATIONS OF A SUSPENDED TRACK
3914670	DAMPING OSCILLATIONS IN THE PROPULSION DIRECTION
3921535	ELECTRODYNAMIC SUSPENSION ARRANGEMENT
3924537	ELECTROMAGNETIC RAILS FOR THYRISTOR-CONTROLLED LINEAR MOTORS
3924538	ELECTROMAGNETIC-SUSPENSION VEHICLE SYSTEM
3927620	MAGNETIC PROPULSION SYSTEM
3927735	MAGNET SYSTEM FOR USE IN CONTACTLESS GUIDANCE
3930451	ROADWAY FOR HIGH PERFORMANCE RAPID TRANSIT RAILWAYS
3931767	MAGNETIC SUSPENSION RAILWAY
3934183	LINEAR RELUCTANCE MOTOR FOR THE PROPULSION OF RAIL VEHICLE
3937148	VIRTUALLY ZERO POWER LINEAR MAGNETIC BEARING
3937149	RAIL SYSTEM FOR MAGNETIC-SUSPENSION VEHICLES
3937150	MAGNET SYSTEM FOR USE IN ELECTRODYNAMICLY SUSPENDED VEHICLES
3937431	POSITIONING DEVICE FOR TRACKED TRANSPORT VEHICLES
3951074	SECONDARY LIFT FOR MAGNETICALLY LEVITATED VEHICLES
3951075	ELECTRO DYNAMIC SUSPENSION AND GUIDANCE SYSTEM
3952668	ELECTRODYNAMIC SUSPENSION GUIDANCE SYSTEM
3954064	RAPID TRANSIT SYSTEM
3960090	LINEAR SYNCHRONOUS MOTOR POWERED VEHICLE
3964398	MAGNETIC-SUSPENSION VEHICLE SYSTEM HAVING SWITCH TRACKS
3967561	LINEAR-INDUCTION MOTOR FOR HIGHSPEED SUSPENSION VEHICLES
3968753	CIRCUIT ARRANGEMENT FOR MAGNETIC SUSPENSION VEHICLE SYSTEMS
3974778	SPEED CONTROL SYSTEM

PATENT#	TITLE
3994236	SWITCH FOR MAGNETIC SUSPENSION RAILROAD
3996858	LINEAR SOLENOID MOTORS
4006373	STAGGERED MOTOR CORE
4013014	CIRCUIT ARRANGEMENT FOR A TRACK-BOUND PROPULSION VEHICLE
4013906	ELECTROMAGNETIC LEVITATION
4015540	ELECTROMAGNETIC TRANSPORTATION SYSTEM
4023500	HIGH-SPEED GROUND TRANSPORTATION SYSTEM
4027597	LINEAR INDUSTION MOTOR WITH DAMPING CAGE
4029020	MAGNETICALLY LEVITATED VEHICLE WITH MODULE CONSTRUCTION
4049983	ELECTROMAGNETIC LEVITATION
4055123	SYSTEMS FOR MAGNETICALLY SUPPORTING A VEHICLE
4061089	PERSONAL RAPID TRANSIT SYSTEM
4064808	ARMATURE RAILS AND RAIL CARRYING ARRANGEMENT
4068152	POWER SUPPLY SYSTEM FOR A LINEAR MOTOR
4072110	ELECTROMAGNETIC SUSPENSION ASSEMBLY
4075948	HIGH SPEED TRANSIT SYSTEM
4092554	LINEAR ELECTRIC GENERATING SYSTEM
4123976	ATTRACTIVE TYPE ELECTROMAGNET DEVICE FOR MAGNETIC LEVITATION
4131811	TRACTION MEANS WITH ELECTRODYNAMIC VEHICLE SUSPENSION
4140063	ELECTROMAGNETIC SUSPENSION AND GUIDE SYSTEM
4142469	MAGNETIC SUSPENSION SYSTEM RELATED TO LIFTING FORCE CONTROL
4148260	HIGH SPEED TRANSIT SYSTEM
4151447	LINEAR MOTOR
4181080	SUPPORT STRUCTURE FOR A MAGNETICALLY LEVITATED VEHICLE
4198910	MAGNET SUSPENSION RAILWAY VEHICLE
4205243	SYNCHRONOUS LINEAR MOTOR
4217829	SYSTEM AND VEHICLE TO BE HELD MAGNETICALLY
4220899	POLYPHASE LINEAR MOTOR
4233905	MAGNETICALLY SUSPENDED VEHICLE
4233906	LINEAR INDUCTION MOTOR WITH IMPROVED RAIL ASSEMBLY
4236455	GENERATING LINEAR ELECTROMAGNETIC TRAVELLING FIELDS
4238715	STARTING CIRCUIT FOR TRACKBOUND ELECTRIC PROPULSION VEHICLE
4259908	ELECTROMAGNETIC SUSPENSION VEHICLE
4273054	VEHICLE VIBRATION DAMPING METHOD REGARDING INDUCED REPULSION
4274020	SYNCHRONOUS LINEAR MOTOR
4276832	TRANSPORTATION DEVICE WITH AN ELECTRODYNAMIC SUSPENSION
4280412	INDEPENDENT SUSPENSION FOR MAGNETICALLY FLOATED BODY
4284010	CONVEYANCE SYSTEM
4289074	CONSTRUCTION OF TRUCK FOR MAGNETICALLY LEVITATED VEHICLE
4299173	LEVITATION AND GUIDE MECHANISM FOR CURVED TRACK
4303017	LONG STATOR LINEAR MOTOR WITHOUT IRON
4303870	POWER SUPPLY SYSTEM FOR LINEAR MOTOR
4307668	TRANSPORT SYSTEM USING PERMANENT MAGNETS FOR VEHICLE LEVITATION
4324185	PERMANENT MAGNET LEVITATED TRANPORTATION SYSTEM
4348618	FEEDING SYSTEM FOR LINEAR MOTOR TYPE TRANSPORTING SYSTEM
4350525	MAGNETIC SUSPENSION RAILROAD STEEL PARTS
4356772	MAGNETICALLY LEVITATED OBJECT
4361095	POWER SUPPLY FOR THE TRAVELING-FIELD WINDING OF A LSM
4381478	CONTROL SYSTEM FOR A LINEAR SYNCHRONOUS MOTOR
4387935	LINEAR MAGNETIC BEARING
4388543	HIGH-POWER LINEAR ELECTRIC MOTOR
4408139	ASYNCHRONOUS LINEAR ELECTRIC MOTOR

PATENT#	TITLE
4419937	MAGNET SUPPORTING FRAME FOR A MAGNETICALLY LEVITATED VEHICLE
4440092	RAILWAY STEERING TRUCK LINEAR INDUCTION MOTOR ASSEMBLY
4454457	POWER SUPPLY SYSTEM FOR A LINEAR MOTOR
4454820	DAMPING OSCILLATIONS OF MAGNETIC ELEVATED TRACKS
4473259	LINEAR MAGNETIC BEARINGS
4505206	CIRCUIT ARRANGEMENT FOR OPTIMALLY CONTROLLING AN AIR GAP
4516505	VEHICLE HELD WITH THE AID OF AN ATTRACTING MAGNETIC DEVICE
4528466	COMPONENTS FOR POLYPHASE LINEAR MOTORS
4549156	SUPERCONDUCTING MAGNET AND METHOD OF MANUFACTURE THEREOF
4585282	MAGNETIC LEVITATION SYSTEM
4587472	APPARATUS CONTROLLING A MAGNET IN A MAGNETICALLY SUSPENDED VEHICLE
4593625	MOTOR VEHICLE BOGIE
4603640	INCREMENTALLY IDENTIFYING THE VEHICLE POSITION
4607203	METHOD AND APPARATUS FOR DETERMINING POLE POSITION FOR LSM
4611169	SENSOR FOR MEASURING RELATIVE MOVEMENT BETWEEN A VEHICLE AND A TRA
4620358	METHOD SECURING EQUIPMENT PARTS TO A TRACKWAY SUPPORTING STRUCTURE
4624617	LINEAR INDUCTION SEMICONDUCTOR WAFER TRANSPORTATION APPARATUS
4635560	CONTACTLESS POWERING OF LIM ELECTRICAL SYSTEM BY SLIP POWER
4636666	HETEROPOLAR MAGNET
4636667	EXCITATION ARRANGEMENT FOR A LONG STATOR DRIVE
4641586	MAGNETIC SUSPENSION RAILWAY
4646651	FLOATING APPARATUS FOR ATTRACTIVE MAGNETIC FLOATER
4686435	ELECTROMAGNETIC LINEAR DRIVE
4689529	LINEAR STEPPING MOTOR
4696235	STEEL ROADWAY FOR MAGNETIC TRACKS
4698895	METHOD SECURING EQUIPMENT PARTS TO A TRACKWAY SUPPORTING STRUCTURE
4709639	RAILWAY SYSTEM UTILIZING A LINEAR MOTOR
4709883	LAUNCH AND ASCENT SYSTEM
4711182	MAGNETIC SUSPENSION FOR A VEHICLE
4723103	CONTROL EQUIPMENT FOR AN ELECTRO-MAGNETIC LINEAR MOTOR
4731569	CONTROLLING A MAGNET IN A MAGNETICALLY SUSPENDED VEHICLE
4732087	TRANSPORTATION SYSTEM OF A FLOATED CARRIER TYPE
4742778	FLOATING CARRIER TYPE TRANSPORTING SYSTEM
4763578	METHOD FOR CONTROLLING A MAGNETIC SUSPENSION VEHICLE
4766358	LINEAR STEPPING MOTOR
4769580	ELECTROMAGNETIC LINEAR DRIVE
4779538	LEVITATION-PROPULSION MECHANISM FOR INDUCTIVE REPULSION
4787317	MAGNETIC MEANS FOR COMPENSATING FOR LOAD WEIGHT
4789815	LINEAR MOTOR
4793263	INTEGRATED LINEAR SYNCHRONOUS UNIPOLAR MOTOR
4794866	LINEAR MOTOR DRIVEN RAILWAY CAR
4812757	DETERMINING THE DISTANCE OF A MAGNETIC SENSOR
4817533	TRANSPORTATION SYSTEM OF FLOATED CARRIER TYPE
4825111	LINEAR MOTOR PROPULSION SYSTEM
4838169	MINIMUM FILLER RUNNER FOR AIR CONVEYOR SYSTEM
4840125	RAIL OPERATION COMPRISING A LONG-STATOR LINEAR MOTOR
4849666	ELECTROMAGNETIC ISOLATOR ACTUATOR SYSTEM
4854028	LOCATING OPERATIONAL SURFACES OF A TRACK
4860662	LINEAR MOTOR TRUCK APPARATUS
4862809	SUPPORTS FOR RAILWAY LINEAR SYNCHRONOUS MOTOR
4866380	DETERMINING THE DISTANCE BETWEEN AN ELECTROMAGNETIC SENSOR
4867070	LINEAR MOTOR TYPE MONORAIL CONVEYING APPARATUS

PATENT#	TITLE
4868708	VOLTAGE CONTROL OF MAGNETICALLY LEVITATED RAILROAD
4870906	DUAL SWITCH SYSTEM FOR COMMON USE BY TRACK GUIDED RAIL VEHICLES