United States Patent

Hill

[15] **3,641,727**

[45] **Feb. 15, 1972**

[54] VEHICLE-PARKING SYSTEM

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[22] Filed: **Mar. 24, 1969**

[21] Appl. No.: **869,102**

[52] U.S. Cl. **52/174**, 52/169

[51] Int. Cl. **E01f 9/00**

[58] Field of Search 52/169, 174–179; 94/1; 214/16.10, 16.18

[56] **References Cited**

FOREIGN PATENTS OR APPLICATIONS

282,322 0/1927 Great Britain 52/174

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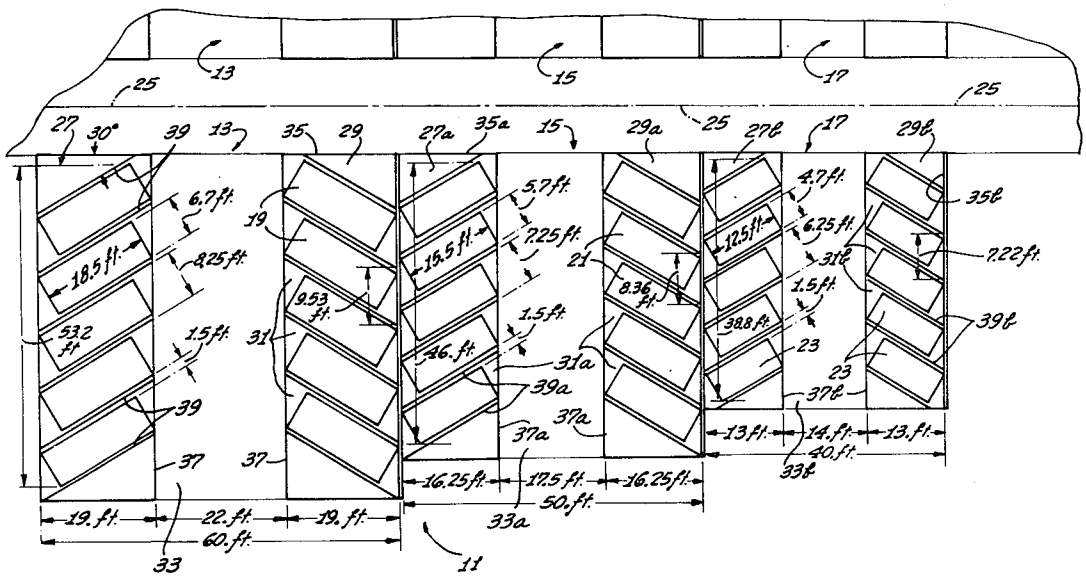
[57] **ABSTRACT**

This disclosure describes a vehicle-parking system in which a series of relatively large stalls are laid out in one region of the parking area and smaller stalls are laid out in another region of the parking area. Relatively large or full sized passenger vehicles are then directed to the relatively large stalls and the smaller or compact and foreign vehicles can be directed to the smaller stalls. Thus, no space is lost as a result of a relatively small vehicle parking in a relatively large parking stall.

5 Claims, 2 Drawing Figures



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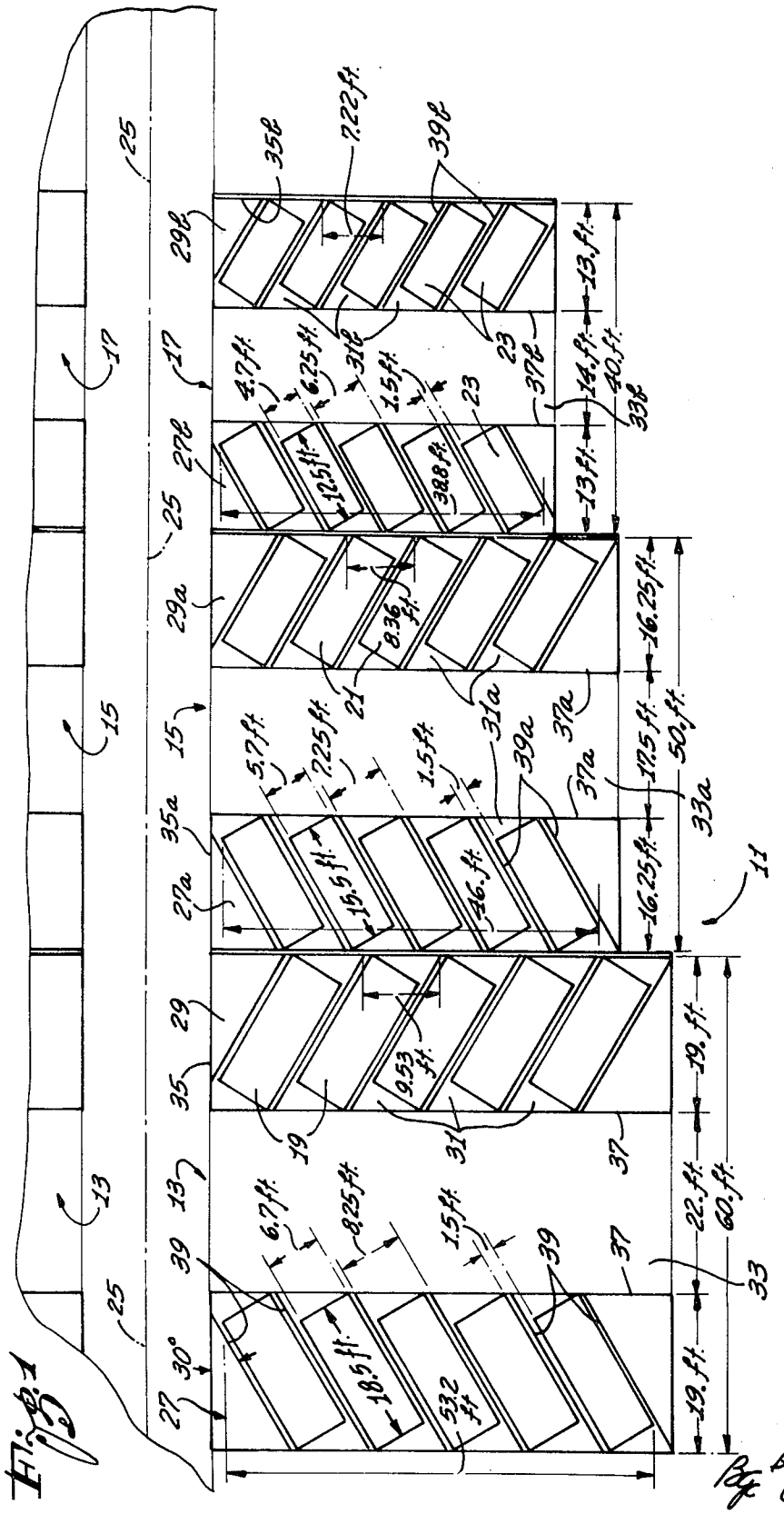

Fig. 1

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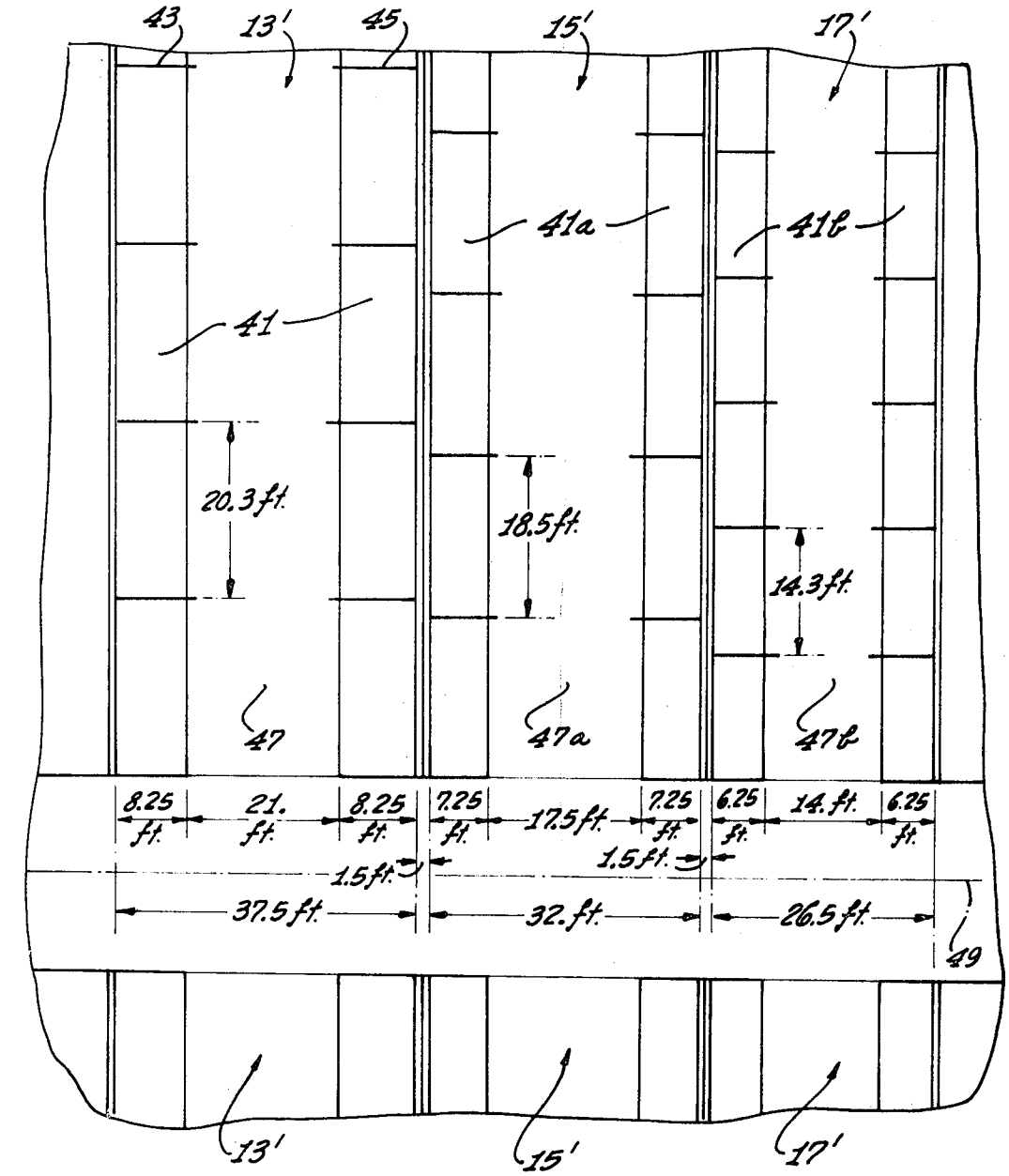

Fig. 2

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VEHICLE-PARKING SYSTEM

BACKGROUND OF THE INVENTION

In the conventional parking lot, markers are placed so as to define parking stalls in which passenger vehicles are parked. The stalls are all of equal size and therefore must be sufficiently large to permit parking of a full-sized automobile therein. Today, however, a significant percent of the automobiles driven in this country are not full-sized American vehicles. Basically passenger vehicles can be divided into the following size categories: (1) large or full-size American made automobiles; (2) medium-size or compact automobiles; and (3) small, foreign vehicles which are typically smaller than the compact cars. Thus, a significant amount of valuable space is wasted whenever a medium or small-size car parks in the standard parking stall which is sized to accommodate a large car.

SUMMARY OF THE INVENTION

The present invention teaches that significant space can be saved by providing at least two parking lot regions one of which has relatively large parking stalls sized to receive relatively large cars and the other of which has relatively small parking stalls sized to receive the relatively small cars. With this arrangement, the large cars can be directed to the large stalls and the small cars to the small stalls. Thus, excessive clearance around the vehicle is eliminated and no space is lost due to the parking of a relatively small vehicle in one of the relatively large parking stalls. As there are basically three different sizes of cars driven in this country today, preferably three of such regions with large, medium and small size stalls are provided.

In a typical parking lot, the stalls are arranged in generally parallel rows with an aisle between adjacent rows to provide vehicle access to the stalls thereof. As the typical parking lot has only the large size stalls, the aisles are, of course, of correspondingly large width to provide adequate space for the relatively large vehicle traveling thereon. The present invention teaches that the aisle size or width can be reduced if the separate size stalls are appropriately segregated.

According to the present invention, two rows of stalls, all of which are of the same size, are separated by an aisle, the width of which is selected to correspond to the size of the stalls on either side of the aisle. With this arrangement, the region of the parking lot having the large stalls thereon are separated by a relatively wide aisle with the aisle width for the medium and small sized stalls being correspondingly reduced. Thus, substantial additional space saving is realized by the reduction in aisle width to conform to the vehicle size traveling thereon. In actual use of the present invention, it is contemplated that traffic will be directed within the parking lot so as to assure parking of the vehicles in the appropriate size stalls.

The space saving using the present invention is much more than might at first glance be appreciated. To illustrate, in a typical angle-in type of parking arrangement, a given number of the small foreign vehicles may be parked in less than one half of the space required for parking the same number of full-size American automobiles.

The invention, both as to its organization and method of operation together with further features and advantage thereof may best be understood by reference to the following description taken in connection with the accompanying illustrative drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic plan view of one illustrative form of parking lot layout embodying the concepts of this invention.

FIG. 2 is a schematic top plan view of a second form of parking lot arrangement embodying the concepts of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. 1 of the drawings, reference numeral **11** designates a parking lot laid out in accordance with the teachings of this invention. The parking lot **11** has three separate regions **13**, **15** and **17** in which large, compact, and small automobiles **19**, **21** and **23** are parked, respectively. The regions **13**, **15** and **17** may be as long as desired depending upon the space available and the number of vehicles which must be parked.

The parking lot **11** has an access road **25** for providing vehicle access to the three parking lot regions. In the embodiment illustrated the parking lot region **13** includes two rows **27** and **29** of parking stalls **31** with an aisle **33** dividing or separating the two rows. The regions **15** and **17** are similarly laid out with corresponding portions thereof being designated by corresponding reference characters followed by the letters *a* and *b*, respectively. In the embodiment illustrated, the rows **27** and **29** are straight and parallel and the aisle **33** extends for the full length of the rows. The stalls **31** are of the angle-in type and, in the embodiment illustrated, extend at a 60° angle with respect to the centerline of the aisle **33**, it being expressly understood that various other angles may be employed within the spirit of this invention.

Additional identical regions **13**, **15** and **17** may be located across the access road **25** as illustrated. Similarly, any or all of the regions may be increased in width by adding additional aisles and rows of stalls.

A feature of this invention is that the stalls **31** are sized to receive the relatively large full-size American automobiles **19** whereas the stalls **31***a* and **31***b* sized to receive medium and small size automobiles, respectively. Each of the stalls **31**, **31***a* and **31***b* has the necessary length and width to accommodate the vehicle parked therein with the appropriate clearance on all sides of the vehicle to permit persons to enter and leave the vehicle. With this arrangement, no space is lost as a result of one of the smaller vehicles **21** and **23** parking in one of the large stalls **31**. To make this most effective, the different size stalls **31**, **31***a* and **31***b* should be segregated according to size. That is, it would not be an effective layout to position in alternating fashion a large, medium and small-size stall in a single row of stalls.

Another important feature of this invention is that the width of the aisles **33**, **33***a* and **33***b* is sized to be no larger than is necessary to accommodate vehicles of the size which will be driven thereon. Thus, the aisles **33**, **33***a* and **33***b* are of relatively large, medium and small widths, respectively. If the stalls of a given row were of different sizes, the aisle width would have to be selected to accommodate the widest vehicle that would be parked therein. To avoid this, all of the stalls in a given row are preferably of the same size so that the aisle width may be selected accordingly. With this arrangement, the maximum amount of parking space is saved.

Any suitable conventional manner of marking off the stalls **31** and the aisles **33** may be utilized. For purposes of illustration, the region **13** has a boundary line or marker **35** which extends completely around the region **13**, two straight parallel aisle lines or markers **37** which define the aisle **33** therebetween, and numerous stall lines or markers **39** adjacent ones of which define the lateral boundaries of the stalls **31**. The markers **35**, **37** and **39** may be painted on a suitable supporting surface or may be in the form of walls or rigid members such as concrete blocks, or of any other construction suitable to mark off the stalls and aisles.

It will be readily appreciated that the length and width of the stalls **31** and aisles **33** may be appropriately selected depending upon the size of the vehicle to be parked therein, the space available, the amount of desired clearance between adjacent vehicles, and many other factors. Accordingly, for illustrative purposes only, FIG. **1** of the drawing contains dimensions which could be used for laying out portions of the parking lot **11**. The dimensions are presented herein solely to illustrate the amount of space which can be saved by utilizing the

present invention. Thus, using the illustrative dimensions, an area of 3,192 sq. ft. is used to park 10 of the relatively large vehicles **19** whereas only 1,552 sq. ft. is required to park 10 of the small vehicles **23**. Using these figures, it can be seen that by parking the small vehicles in the region **17** in lieu of the region **13** that over a 50 percent space savings is realized. Similarly, only approximately 2,300 sq. ft. are required for parking the 10 medium sized vehicles **21** and this effects a space savings of approximately 28 percent. This space savings is most significant considering the relatively high cost of industrial and commercial property.

It should be apparent that the concepts of this invention are not limited to the angle-in type of parking illustrated in FIG. **1**. Rather, the basic concepts of this invention have applicability to other types of parking arrangements such as parallel parking illustrated in FIG. **2**, the sardine type of parking in which cars are parked bumper to bumper in a lot, and a straight-in type of parking system in which the longitudinal axes of the stalls **31** are perpendicular to the centerline of the aisle **33**.

FIG. **2** shows a parallel type parking system having regions **13'**, **15'** and **17'**. The region **13'** contains parking stalls **41** which are sized to receive relatively large vehicles and the regions **15'**, **17'** have parking stalls **41***a* and **41***b* of correspondingly reduced size to accommodate medium and small-sized vehicles, respectively. The stalls **41** are arranged in rows **43** and **45** with an aisle **47** therebetween, sized to accommodate the large size vehicle thereon. The region **15'** and **17'** are similarly constructed and corresponding reference numerals followed by the letters *a* and *b*, respectively, are utilized to designate corresponding parts. An access road **49** provides vehicle access to the regions **13'**, **15'**, and **17'** and additional regions may be located on the opposite side of the access road **49** as shown.

It will be apparent that the embodiment shown in FIG. **2** is constructed in accordance with the same basic principles that were employed in connection with the embodiment of FIG. **1**. Thus, the stalls and aisles are of three different sizes to accommodate vehicles of large, medium and small size, respectively. Similarly, the large, medium and small size stalls are arranged as to size so that aisles of the minimum width may be used in each of the regions **13'**, **15'** and **17'**. Similarly, the regions **13'**, **15'** and **17'** may be of any desired length and as many of the rows **43** and **45** may be used as is necessary.

Although exemplary embodiments of the invention have been shown and described, many changes, modifications, and substitutions may be made by one having ordinary skill in the art without necessarily departing from the spirit and scope of this invention.

I claim:

1. In a system for parking passenger vehicles, wherein some of the vehicles are relatively large and other of the vehicles are relatively small, comprising:

a supporting surface;

first visible marking means for marking a plurality of adjacent passenger vehicle stalls on a first region of said supporting surface, said stalls being of substantially equal size, each of said stalls being relatively large and sized to permit parking of a relatively large passenger vehicle therein;

second visible marking means for marking a plurality of adjacent passenger vehicle stalls on a second region of said supporting surface, said stalls of said second region being of substantially equal size, each of said stalls of said second region being relatively small and sized to receive a relatively small passenger vehicle whereby parking space is not lost as a result of the relatively small vehicles parking in the relatively large stalls; and

the stalls of each of said first and second regions being arranged in at least two-spaced rows with the space between the rows defining an aisle for providing vehicle access to said stalls, the aisle of said first region being wider than the aisle of said second region whereby no space is lost by providing an excessively large aisle for the relatively small vehicles.

2. A combination as defined in claim **1** wherein said first and second regions are contiguous.

3. A system as defined in claim **1** wherein said aisle of said second region is no wider than about 17.5 feet.

4. A parking system as defined in claim **1** wherein the stalls of each of said regions are arranged at an acute angle with respect to the centerline of the aisle for such region to thereby provide stalls of the angle-in type and said first and second visible marking means each include marking lines applied to the supporting surface.

5. A parking system as defined in claim **1** including third visible marking means for marking a plurality of adjacent vehicle stalls on a third region of said supporting surface, said stalls of said third region being of substantially equal size, said stalls being smaller than the stalls of said second region and being sized to receive vehicles smaller than the relatively small vehicles, and wherein said step of directing includes directing the vehicles which are smaller than the relatively small vehicles into the stalls of said third region.

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