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Kohen

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[45] **Oct. 21, 1975**

[54] **PARKING SPACE BARRIER**

[76] Inventor: **Isak Kohen,** 9330 W. Pico Blvd., Los Angeles, Calif. 90035

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[52] **U.S. Cl.** **49/49;** 49/9

[51] **Int. Cl.²** **E01F 13/00**

[58] **Field of Search** 49/35, 49, 131, 9

[56] **References Cited**

UNITED STATES PATENTS

2,356,559	8/1944	Banschbach	49/49

Primary Examiner—Kenneth Downey

Attorney, Agent, or Firm—Charles T. Silberberg

[57] **ABSTRACT**

A motor vehicle parking space barrier for preventing unauthorized use of a parking space. A lateral blocking arm is mounted to an upright post. The post is mounted for reciprocable longitudinal movement in a fixed base. When locked, a novel mechanism prevents longitudinal movement of the blocking arm, thereby preventing usage of the parking space. When unlocked, the barrier can be pushed by the vehicle to a non-blocking position. A resilient means returns the barrier to its initial position when the vehicle leaves the parking space. Means are provided for allowing the driver to unlock the locking mechanism without getting out of the vehicle.

5 Claims, 5 Drawing Figures

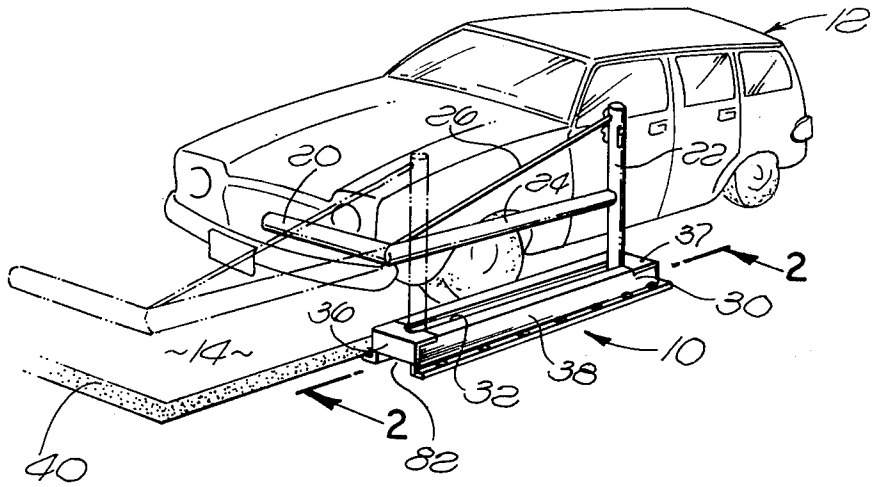


FIG. 1.

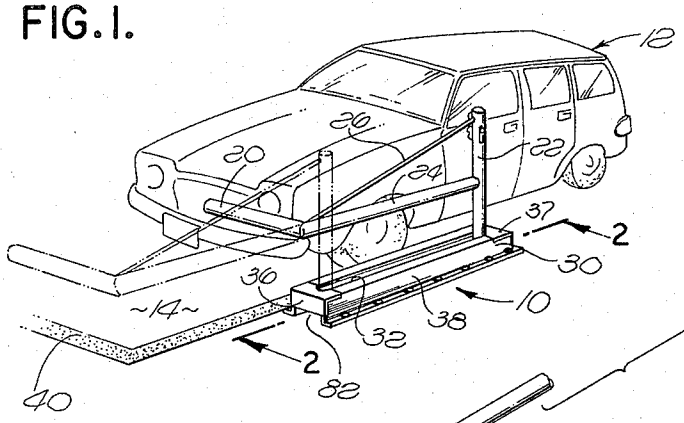
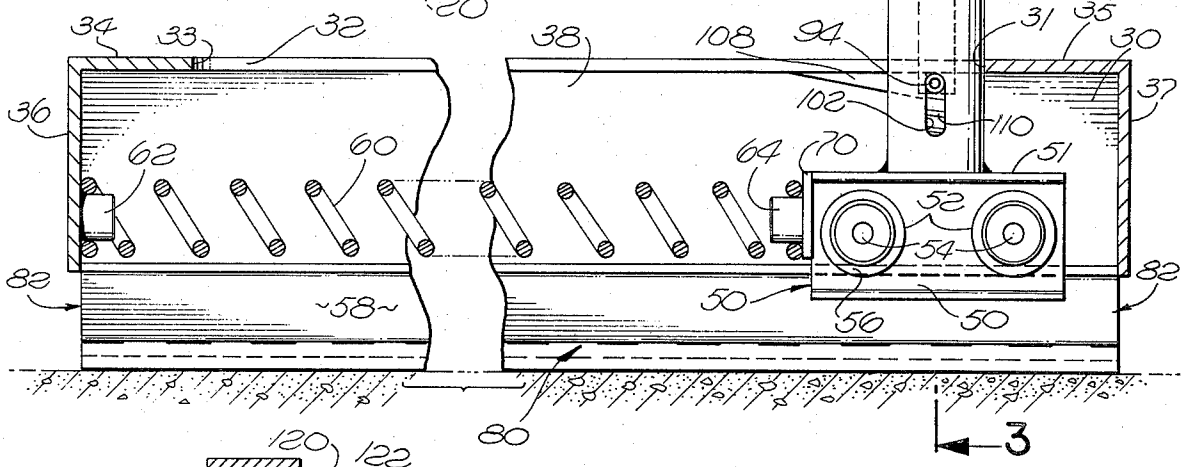


FIG. 2.



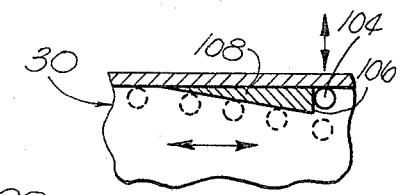


FIG. 5.

FIG. 3.

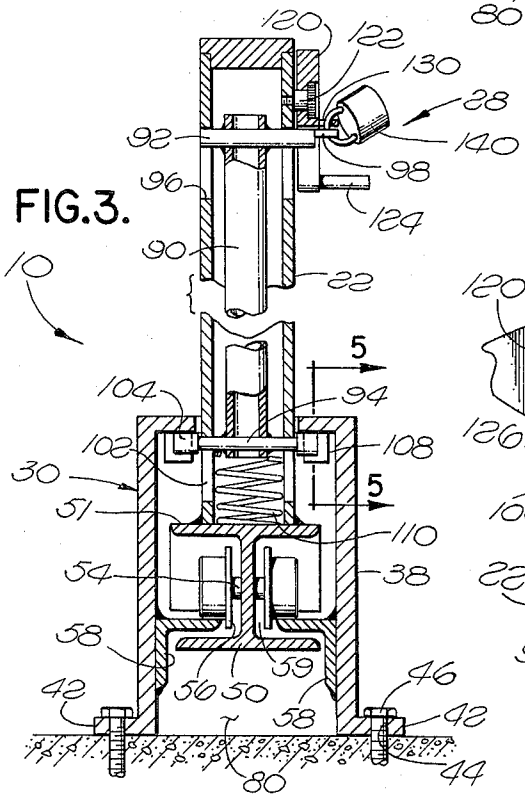
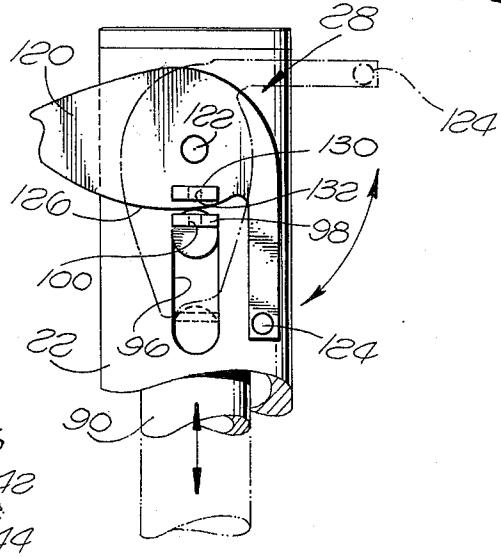


FIG. 4.



PARKING SPACE BARRIER

BACKGROUND OF THE INVENTION

Assigning parking places in commercial parking lots, factories, offices, apartment lots, and the like is a normal practice. Unauthorized parking in such lots is a source of great inconvenience and annoyance to the authorized parking space holder since it deprives him of his regular assigned location. This discourages orderly and profitable renting of such spaces. However, usage of parking spaces is difficult to monitor since there is a normal turnover in such spaces and also because the amount of rent cannot justify extensive or elaborate guarding means.

The present invention relates generally to a motor vehicle parking space barrier that can be rigidly fixed and locked into position to restrict a vehicle from entering a reserved parking space, particularly in such locations where there are no parking attendants. More specifically, the present invention relates to a parking barrier that can be moved out of its barricaded position to permit entrance and exit of the vehicle of the person authorized to use the space. More particularly, the present invention concerns a barrier that can when unlocked be longitudinally moved by the authorized vehicle to a non-blocking position and returned to the barricading position automatically upon exit of the vehicle from the parking space. The invention can advantageously allow the barrier to be locked and unlocked while the authorized driver remains in the vehicle.

Other parking space barriers have been disclosed and illustrate the need for such devices. For example, U.S. Pat. Nos. 3,417,508 to Sprung, 3,600,853 to Goldberg, and 3,688,439 to Doxsee disclose parking space barriers comprising a vertical barrier that can be locked in a rigid upright position and pivotably swing downward to a non-blocking position when unlocked. However, these inventions have been unsatisfactory as complicated locking mechanisms are employed and they are inconvenient. The driver of the authorized vehicle must get out of his car to unlock the barricade to enter the space, and he must get out of his car, lift the barricade to the upright position, and lock it upon exiting from the space.

U.S. Pat. No. 3,296,741 to Lubmann discloses a spring operated gate which a vehicle can ride over when unlocked and which will automatically return to the upright position when the vehicle exits. However, this device is for a fence which completely encircles a portion of land. There is no teaching of employing this device to block a longitudinal strip of land. Further, to so employ only a portion of the fence would be unobvious, expensive, and impractical. Use of this invention also requires the driver to get out of his vehicle to lock and unlock the blocking mechanism.

U.S. Pat. No. 2,356,559 to Banschbach discloses a vehicle arrestor which uses an impact member longitudinally reciprocably movable and a spring for retarding movement of the impact member. This device is employed specifically to resiliently arrest a vehicle so as to protect pedestrians without doing harm to the vehicle or the arresting device. It would never be locked in a fixed blocking position. To do so would defeat these purposes and the reason for using the spring which resiliently arrests the vehicle.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide an efficient, practical, and inexpensive parking barrier which will prevent unauthorized use of a parking space.

It is another object of the present invention to provide a parking barrier which is mounted for reciprocable longitudinal movement.

It is yet another object of the present invention to provide a parking barrier which automatically returns to the barricading position upon exit from the space of the authorized vehicle.

It is still another object of the present invention to provide a parking barrier which can be locked and unlocked by the authorized driver while remaining in his car.

Moreover, another object of the present invention is to provide a locking mechanism for preventing longitudinal movement of the parking barrier from the barricaded position.

Briefly, in accordance with the invention, there is provided a parking space barrier having a vertical post mounted for reciprocable longitudinal movement in a base. A lateral blocking arm is mounted for movement with the post. A resilient means is provided to urge longitudinal movement of the post in one direction. A locking means is provided to prevent longitudinal movement of the post. In the preferred embodiment, a longitudinal extending arm is connected to the blocking arm and vertical post.

Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the parking space barrier as applied to a parking space in the blocking position as shown in full lines blocking a vehicle and in non-blocking position in broken lines;

FIG. 2 is a sectional view of the barrier of FIG. 1 taken in the direction of arrows 2—2 of FIG. 1;

FIG. 3 is a sectional view of the barrier of FIG. 2 taken in the direction of arrows 3—3 of FIG. 2.

FIG. 4 is a detailed view of the cam employed in the locking mechanism shown in FIGS. 2 and 3 showing in full lines the cam in the lock position and in broken lines the cam in the unlocked position;

FIG. 5 is a detail view of a wedge stop and roller used in the locking mechanism shown in FIGS. 2 and 3 with the roller in the locked position as shown in full lines and in various unlocked positions as shown in broken lines.

While the invention will be described in connection with the preferred embodiment, it will be understood that it is not intended to limit the invention to those embodiments. On the contrary, it is intended to cover all alternatives, modifications, and equivalents that may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF THE INVENTION

Turning first to FIG. 1, there is shown an example of carrying out the invention wherein a parking space barrier, generally indicated at 10, is shown in the blocking position by the full lines and the non-blocking position by the broken lines. A vehicle 12 is prevented by block-

ing arm 20 from fully entering the parking space 14 when the barrier is in the blocking position. A driver of an unauthorized vehicle could not safely or legally park his car in space 14, as a large portion of the vehicle would extend from the space 14 into the driving lane (not shown).

The blocking arm 20 is advantageously connected to a hollow tubular upright post 22 by a longitudinal extending arm 24. Arm 24 allows the driver to unlock the locking mechanism generally indicated at 28 (FIG. 3) on post 22 without leaving his vehicle by virtue of offsetting the blocking arm 20 from post 22. The longitudinal length of extending arm 24 can be selected as desired, but optimally would be a length corresponding to the average distance between the front and driver position of a standard vehicle. When extending arm 24 is used, a tie rod 26 is preferably provided for added support of extending arm 24 and blocking arm 20. Tie rod 26 is connected to post 22 and extends angularly downward to the joint between blocking arm 20 and extending arm 24 where it is also suitably connected. Lateral blocking arm 20 could also be connected directly to post 22. However, post 22 would then be located at the front of vehicle 12, and the driver would have to leave the vehicle to lock and unlock the barrier.

As can best be seen in FIG. 2, hollow post 22 extends upwardly from hollow base 30 through longitudinal slot 32. Slot 32, which has a longitudinal length corresponding to the distance the standard vehicle would protrude from space 14 when blocked, extends substantially the longitudinal length of base 30. The inward ends 31 and 33 of upper surfaces 34 and 35 of end plates 36 and 37 form the ends of slot 32. End plates 36 and 37 are preferably detachably mounted to the major unitary section 38 of base 30. By detachably mounting the end plates 36 and 37, assembly of the mechanisms inside the base 30 is facilitated. End plates 36 and 37 do not extend vertically downward the entire height of base 30 so that openings 82 are provided for drainage from base 30.

The position of base 30 relative to space 14 depends on whether extending arm 24 is used. However, the base is always positioned to the side of space 14 and with blocking arm 20 extending to the innermost end 40 of space 14 when post 22 is in the non-blocking position at the end of slot 32 as shown by the broken lines in FIG. 1 where the extending arm is used. In the embodiment shown in FIG. 1, the base is positioned intermediate the ends of space 14. When blocking arm 20 is directly connected to post 22, the innermost end 36 of base 30 is positioned approximately at the innermost end 40 of space 14.

The bottom of base 30 is flanged at 42. A plurality of holes 44 are provided in the flanged ends 42 for insertion of an equal number of anchor bolts 46 which fixedly attach the base 30 and consequently the barrier 10 to the ground. The base 30 could also be mounted within the ground as in U.S. Pat. No. 2,356,559 to Banschbach so that the top of base 30 and slot 32 are at ground level.

For mounting post 22 for reciprocal longitudinal movement within base 30 a carriage arrangement is provided. In the form shown in FIGS. 2 and 3 the carriage comprises an I-beam 50 having a plurality of lipped wheels 52 mounted intermediate the I-beam for rotational movement by axle 54. The inner larger diameter portion 56 of wheels 52 is provided to keep the wheels 52 in alignment with angle iron supports 58. Supports 58 are mounted to the side walls of portion 38 of base 30 and extend longitudinally the entire length of base 30. The lateral dimension of supports 58 is such as to provide a longitudinal passage 59 between the supports. Post 22 is fixedly connected to the top portion 51 of carriage 50.

In order to automatically return the barrier to the barricading position from the non-blocking position, a resilient means shown as spring 60 is provided within base 30. Spring locaters 62 and 64 are fixedly mounted to end plates 36 and a plate 70 which is connected to the inner end of I-beam 50. Spring 60 exerts a longitudinal outward force on plate 70 and consequently carriage 50 urging the carriage toward the blocking position.

To prevent damage to the inner mechanisms of the base 30 from rain, dirt, ice, snow, and debris which might enter base 30 through slot 32, supports 58 are mounted elevated from the ground so that the drainage will fall through passage 59 formed between the ends of supports 58 into conduit 80. Drainage can then exit from the base 30 through the openings 82 beneath ends plates 36 and 37. Should base 30 be mounted within the ground, drainage conduit 80 would advantageously be connected to sewers, especially where a plurality of barrier devices 10 are used to protect a plurality of parking spaces 14.

Referring now to FIGS. 3, 4, and 5 a locking mechanism generally indicated at 28 for preventing longitudinal movement of post 22 from the locking position is illustrated. Mounted within and coaxially with hollow post 22 is a vertical rod 90. Fixedly attached to rod 90 are upper lateral cross pin 92 and a lower lateral pin 94. Pin 92 has an end projecting inwardly towards space 14 through vertical slots 96 in hollow post 22. The inner end of pin 92 terminates in a flange 98 with an aperture 100 therein. The lower lateral pin 94 projects through lower vertical slots 102 in post 22. Both ends of pin 94 terminate in rollers 104. When the post 22 is in the blocking position, the rollers 104 bear against the outer end 106 of wedge stops 108 which are fixedly mounted to the top of portion 38 of base 30. Rod 94 is connected to spring 110 which urges rod 90 upward so that rollers 104 normally bear against the top of portion 38 of base 30. The other end of spring 110 bears against the upper end 51 of carriage 50. Thus, when the post 22 is in the blocking position as shown in FIG. 2, post 22 cannot be moved longitudinally inward to the non-blocking position due to stops 108 restraining rollers 104. Releasing the locking mechanism is accomplished by cam 120 which is mounted for rotation to the inner side of post 22 towards space 14 by shoulder bolt 122. As shown in FIG. 4, the rotation of the cam 120 by upward rotation of a handle 124 attached to the cam 120 exerts a downward force on pin 92 which is in contact with surface 126 of cam 120. Spring 110 is depressed and pin 92 moves vertically downward until it reaches the lower end of slots 96, thereby lowering an equal distance rod 90, pin 94, and rollers 104. In this position the stops 108 would no longer restrain the rollers and post 22 from inward longitudinal movement to the non-blocking position. Cam 120 is provided with a flange 130 with an aperture 132 which is in vertical alignment with aperture 100 when the cam is in the lock position shown by the full lines in FIG. 4. For locking cam 120 in the lock position when post 22 is in the blocking po-

sition so that unauthorized use of space **14** will be prevented, a padlock **140** which would fit through apertures **100** and **132** is provided. When padlock **140** is located in this position, the cam **120** cannot be upwardly rotated to lower rollers **104** and thereby release the locking mechanism.

OPERATION

When a vehicle **12** enters space **14,** it is prevented from fully entering the space by blocking arm **20.** An unauthorized vehicle could thereby not safely or legally park in space **14** as a portion of the vehicle would protrude into the driving lane.

The authorized driver, however, would using his key unlock padlock **140** and remove it from flanges **98** and **130,** rotate upward cam **120** using handle **124,** thereby lowering rollers **104** below stops **108,** whereupon the driver could move his vehicle inwardly fully into space **14** with the front of the vehicle bearing against blocking arm **20** and pulling post **22** to the non-blocking position. When extending arm **24** is used, the unlocking of barrier **10** could be accomplished by the authorized driver while remaining seated in his vehicle simply by reaching out to the cam **120** through the driver's window. In practice, the driver would, after releasing the locking mechanism, move his vehicle slightly longitudinally inward, and then rotate downward cam **120.** This allows rollers **104** to follow the upper surface of portion **38** of base **30.** Thus, when the authorized vehicle exits from space **14,** post **22,** moves longitudinally outward due to the force of spring **60** bearing against carriage **50** until it reaches the blocking position with rollers **104** following the path illustrated in FIG. **5** finally being positioned behind stops **108.** The authorized driver could then lock the barrier **10** in the blocking position while remaining seated in the vehicle by attaching and locking padlock **140** to flanges **98** and **130.**

What is claimed is:

1. A parking space barrier comprising a hollow base having a longitudinal slot therein, a vertical post movably mounted in said base for reciprocable longitudinal movement with respect to said base to blocking and non-blocking positions and projecting upwardly through said slot, resilient means in said base engaging said post for resiliently urging longitudinal movement of said post in one direction, a blocking arm mounted for movement in unison with said post, and locking means for fixedly preventing longitudinal movement of said post while in blocking position.

2. The parking barrier of claim **1,** wherein said blocking arm is transverse to said post, and also including a longitudinally extending arm connected to said blocking arm and said post whereby said blocking arm is displaced from said post.

3. The parking barrier of claim **2,** also including means for fixedly securing said base to the ground.

4. The parking barrier of claim **2,** wherein said vertical post is hollow and has upper and lower vertical slots therein, and said locking means comprises a vertical rod movably mounted within said vertical post, a lateral pin fixedly connected to said rod and projecting through said upper vertical slot, a cam means rotatably mounted to said post for movement of said pin, and a lock mounted to said cam means and said pin.

5. The parking barrier of claim **4,** wherein said locking means also includes a spring exerting upward force on said rod, a stop mounted inside said base, a lower lateral pin fixedly connected to said rod and projecting through said lower vertical slot whereby said lower pin engages said stop in the locked position and is spaced from said stop when said cam means is rotated to the unlocked position to overcome said spring.

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