

PARKING SPACE HOLDER

TECHNICAL FIELD OF THE INVENTION

-5 The present invention relates generally to parking space designation devices,
and more particularly is a collapsible barrier to reserve a parking space.

BACKGROUND ART

10 There are various current art methods used to designate reserved parking
spaces and to secure restricted areas. The most common techniques are painting
reserving signs either on a wall of an adjacent building, or on the surface of the
parking space itself.

15 The obvious limitations to these methods are if there is no cooperative building
in an appropriate position, or if a potential unauthorized user does not see or simply
ignores a space designation.

20 Another method of assuring that a space is available is to physically block the
space. This is generally done by simply placing an obstacle in the space, such as
a barrel or a post. However, depending on the installation, these barriers can be
moved by determined violators. Making the barriers immovable, such as by locking
them down, makes them difficult to deploy. These types of barriers also generally
require significant storage space as well.

DISCLOSURE OF THE INVENTION

Accordingly, it is an object of the present invention to provide a means to

designate a parking space.

It is another object of the present invention to provide a device that cannot be easily removed by an unauthorized person so that a vehicle parked in the designated space is secure.

5 It is a further object of the present invention to provide a blocking device that can be operated by remote control.

10 In summary, the present invention is a parking space holder. It comprises a plurality of telescoping sections that can be locked in an upright, extended position to block an entrance to a parking area or space. When unlocked, the space holder can be collapsed to a position flush with the parking surface to allow passage of a car. The device can be actuated by remote control to raise from the retracted position and to lower from the extended position. The user may use any number of the devices to designate a parking or display area.

15 An advantage of the present invention is that it physically blocks the entrance to a parking space.

Another advantage of the present invention is that it can be collapsed to a position that is flush with the parking surface, thereby requiring no storage space.

A still further advantage of the present invention is that it provides security for a car parked in a space blocked by the device.

20 Another advantage of the present invention is that it may be constructed to any size desired by the user.

A further advantage of the present invention is that it can be actuated by the user without requiring the user to leave his car.

These and other objects and advantages of the present invention will become

apparent to those skilled in the art in view of the description of the best presently known mode of carrying out the invention as described herein and as illustrated in the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of the parking space holder of the present invention installed in a parking lot.

Fig. 2 is a cross section view of the parking space holder in the collapsed position.

Fig. 3 is a cross section view of the parking space holder in the extended position.

Fig. 4 is a perspective view of the remote controlled parking space holder of the present invention in its extended position.

Fig. 5 is a perspective view of the remote controlled parking space holder in the retracted position.

Fig. 6 is a cross section view of the remote controlled parking space holder installed in a parking area.

Fig. 7 is an enlarged broken cross section view of the remote controlled parking space holder detailing the sealing areas.

Fig. 8 is a further enlarged cross section view of the remote controlled parking space holder detailing the upper joint areas.

Fig. 9 is a further enlarged cross section view of the remote controlled parking space holder detailing the lower joint areas.

MODES FOR CARRYING OUT THE INVENTION

The present invention is a parking space holder 10. The device is constructed from multiple telescoping sections 12. While any shape and number of sections 12 can be utilized, it is envisioned that in the preferred embodiment, the sections 12 will most often be cylindrical, and will be two in number. The cylindrical sections 12 are closed at a lower end. The preferred embodiment includes a lower section 14 and an upper section 16.

A mounting fixture 18 is installed in a parking surface so that a top edge of the mounting fixture 18 is flush with the top of the parking surface. A hole must be cut into the parking surface of sufficient size to receive the parking space holder 10 when it is collapsed. A sleeve may be inserted into the hole if desired by the user, and may be required depending on the composition of the parking surface.

The sections 12 are fixed in place when the space holder 10 is extended by a locking rod 20. The locking rod 20 is also constructed from telescoping segments to mirror the construction of the sections 12. The locking rod 20 passes through openings in the lower ends of the sections 12.

In the preferred embodiment, the locking rod 20 is formed from square hollow tubing. The sizes of the segments of the locking rod 20 are chosen so that they nest together when the space holder 10 is collapsed.

The number of segments of the locking rod 20 will usually be equal to the numbers of sections 12. In the preferred embodiment, there will be at least a lower segment 22 and an upper segment 24 of the locking rod 20. Each segment of the locking rod 20 includes near a lower end a locking tab 26. Gaskets 27 ensure a snug fit between the segments so that slippage does not occur.

A key lock 30 is inserted into a cap plate 32 at an upper end of the device. The key lock 30 must be activated to allow rotation of the locking rod 20.

In order to inhibit the free rotation of the device and to provide additional stability when the device is extended, a fixing rod 34 is installed in a base 36 of the lower section 14. The fixing rod 34 is polygonal, so that it cannot rotate within a similarly shaped receiving socket 38 which is installed in a base 40 of the upper section 16.

Near a lower end of the fixing rod 34 is a lower receiving notch 42 which is utilized to lock the space holder 10 in its collapsed position. The locking rod is rotated so that the lowermost locking tab 26 is received in the notch 42.

Operation of the parking space holder from the collapsed position is as follows:

A user inserts his key into the key lock 30, rotating the locking rod 20 so that the locking tab 26 in the lower segment 22 rotates out of the notch 42 in the fixing rod 34.

The user then lifts the device by a handle 44 in the cap plate 32. When the device is fully extended, the locking rod 20 is rotated so that the lower locking tab 26 is received in an upper receiving notch 44, and the upper locking tab 26 rests on a stop 28 on the fixing rod 34. The key is then removed, and the holder 10 is fixed in its extended position.

To lower the holder 10, the process is reversed. The user inserts the key into the key lock 30 to rotate the locking rod 20. The locking rod 20 is rotated until the locking tabs 26 are disengaged from the fixing rod 34. The upper section 16 can then be lowered into the lower section 14, which in turn is lowered beneath the parking surface until the cap plate 30 rests directly on the parking surface.

The locking rod 20 is again rotated until the lower locking tab 26 on the lower

segment 22 is received in the receiving notch 42 of the fixing rod 34. The user removes the key, and the parking space holder 10 is locked in its collapsed position.

It is envisioned that a user will use the upper surface of the cap plate as a handy spot to apply identifying information, personalization, or advertising material. It is further envisioned that a user may group multiples of the space holders together, by connecting them with a rope or a chain, to designate large blocks of parking areas.

Another embodiment of the present invention is a remote controlled parking space holder 110, illustrated in Figs. 4-9. The device is constructed from multiple telescoping sections 112. While any shape and number of sections 112 can be utilized, it is envisioned that in the preferred embodiment, the sections 112 will most often be cylindrical, and will be two in number. Thus, the remote controlled embodiment includes a first central telescoping section 114 and a terminal telescoping section 116. The terminal telescoping section 116 is sealed at a top end to maintain an airtight enclosure. A fixed base section 118 is installed in the ground, and is closed at the bottom end. The base section 118 receives the telescoping sections 112.

In order to maintain airtight seals between the telescoping sections 112 and the base 118, each of the central telescoping section 114 includes an enlarged upper flange 120 at an upper end, and a lower flange 122 at its lower end. The terminal telescoping section includes a lower flange 122 at its lower end. The flanges 120, 122 secure sealing rings 124 that ensure the joints of the device are airtight. Upper joint area 150 is shown in detail in Fig. 8, and lower joint area 152 is shown in detail in Fig. 9.

A circumferential ring of air holes 126 near the upper end of section 114 allows

air to flow into a space defined between the exterior of section 116 and the interior of section 114. This air flow is essential to the retraction process, which is described in detail below.

A casing 130 is installed in a hole cut into a parking surface so that a surface plate 132 of the casing 130 is flush with the parking surface. The casing 130 receives sections of the remote controlled parking space holder 110. The upper end of the casing 130 is affixed to the surface plate 132.

The device is air powered, so an air and electrical power conduit 134 must be provided with the device. It is envisioned that in use, a single power conduit 134 will service multiple units of the remote controlled parking space holder 110.

A four-way air supply valve 136 is connected to the conduit 134 to supply air to the device. A first air inlet valve 138 near a lower end of the base section 118 allows the flow of air from the conduit 134 into the bottom of base section 118, and is used in extending the device. A second air inlet valve 140 near an upper end of base section 118 allows the flow of air into the top end of base section 118, and is utilized in the retraction of the device. A quick dump valve 142 is used to quickly release air pressure from the device.

The space holder 110 further includes on its terminal telescoping section 116 a cap plate 144. To increase visibility of the space holder, a gap is provided above the sealed end of the uppermost telescoping section and the cap plate 144 to accommodate a light bulb 138. If the lighting aspect is desired, the cap plate 144 will be constructed from a light-passing material. The bulb 138 is powered from the electric power source contained in the conduit 124. A coiled power cord 140 extends and retracts with the device.

Operation of the remote controlled parking space holder from the collapsed position is as follows:

A user activates his designated space holder 110 by remote means. It is envisioned that devices known in the art, such as garage door openers, will be utilized as the triggering means. When triggered, the four-way valve 136 causes air to flow out through the first air inlet valve 138 through the open base of the first central telescoping section 114, and into the interior of the terminal telescoping section 116.

When the interior region of terminal section 116 builds sufficient air pressure, section 116 is raised. As the air pressure in the interior of the device continues to build, section 114 is also raised, until the device reaches its full extended position as shown in Fig. 4.

To retract the device, the quick dump valve 142 is opened to release the air pressure in the interior of the device. Gravity will then tend to retract the device, but the downward motion is inhibited by the tight fit of the sealing rings 124. To aid the retraction, the second air inlet valve 140 is activated so that air flows into the space defined on the sides by the upper interior of the base section 118 and the lower exterior of section 114, on the top by the sealing ring 124 at the top of base section 118, and at the bottom by the sealing ring 124 on the bottom of first central telescoping section 114. This small area is quickly pressurized, and drives section 114 downward.

When section 114 is lowered sufficiently, the air holes 126 are exposed as they pass the sealing ring 124 on the top of the base section 118. The space receiving the air from the second air inlet valve 140 will now be defined on its inner side by the

lower exterior of section 116, the terminal section. As with section 114, the air pressure will drive section 116 downward until the device reaches the fully retracted position illustrated in Fig. 5.

-5 The above disclosure is not intended as limiting. Those skilled in the art will readily observe that numerous modifications and alterations of the device may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and bounds of the appended claims.

**CLAIMS**

We claim:

1. A remote controlled parking space holder comprising:

a fixed base section,

a plurality of tubular telescoping sections, with upper telescoping sections fitting inside of lower telescoping sections, each of the telescoping and base sections including flanges that support sealing rings, said flanges being situated at each end of said section that forms a joint with another of said sections, at least one central telescoping section including at least one air hole near a lower end of said central telescoping section,

a first means to supply air to a lower end of said base section, a second means to supply air to an upper end of said base section, and a means of releasing air from an interior of said space holder, and

means to activate said air supply means and said air releasing means from a remote location; wherein

said space holder is mounted in a casing in a hole dug in a parking surface so that the space holder, when in a collapsed position, is contained in said hole beneath the parking surface with only a top surface of said space holder that is flush with said parking surface is exposed; such that

when said first air supply means is activated, said interior of said parking space holder is filled with air, thus raising said space holder to an extended position, and

when said air releasing means and said second air supply means are activated, an air space defined on its sides by an upper interior wall of the base section and a lower exterior wall of the central telescoping section, on its top by the sealing ring at



23 a top end of the base section, and at its bottom by the sealing ring on a bottom end
24 of the first central telescoping section is quickly pressurized, thereby driving the
25 central telescoping section downward, and

26 when the central telescoping section is lowered sufficiently, air holes near the
27 upper end of the central telescoping section are exposed as they pass the sealing
28 ring on the top end of the base section, thus allowing air to enter a space defined on
29 its inner side by a lower wall of the terminal section, said space being closed at a top
30 end by the sealing ring at the top end of the central telescoping section, thereby
31 driving the terminal section downward until the parking space holder reaches a fully
32 retracted position.

1 2. The parking space holder of claim 1 wherein:

2 said terminal section includes a space sufficient to receive a light bulb at a top
3 end thereof, said space being covered by a cap plate, said cap plate allowing light
4 to pass therethrough.

1 3. The parking space holder of claim 1 wherein:

2 the sections are round in cross section.

1 4. The parking space holder of claim 1 wherein:

2 the telescoping sections are polygonal in cross section.

3 5. A parking space holder comprising:

4 a plurality of tubular telescoping sections, with upper telescoping sections fitting



5 inside of lower telescoping sections,

6 a locking rod with locking tabs thereon, the locking rod comprising a number of
7 sections equal to the number of telescoping sections,

8 a fixing rod fixed in a base of a lowermost telescoping section, said fixing rod
9 being polygonal in shape so as to inhibit rotation of the space holder when received
10 in a receiving socket in a base of upper telescoping sections, and

11 a cap plate affixed to a top end of an uppermost telescoping section; wherein

12 said space holder is mounted in a mounting fixture in a hole dug in a parking
13 surface so that the space holder, when in a collapsed position, is contained in said
14 hole beneath the parking surface, with only the cap plate exposed; such that

15 the parking space holder is maneuvered into an extended position by a user
16 rotating said locking rod to disengage a lower locking tab on said lowermost
17 telescoping section from a receiving notch in said fixing rod,

18 the user then pulls the space holder upward, and thereafter rotates the locking
19 rod so that the lower locking tab engages with an upper receiving notch and an upper
20 locking tab rests on a stop on the fixing rod.

1 6. The parking space holder of claim 5 wherein:

2 the number of telescoping sections is two.

1 7. The parking space holder of claim 5 wherein:

2 the telescoping sections are round in cross section.

1 8. The parking space holder of claim 5 wherein:



2 the telescoping sections are polygonal in cross section.