Oct. 7, 1969 T. J. MPAKARAKES 3,471,129

RETRACTABLE FENCE

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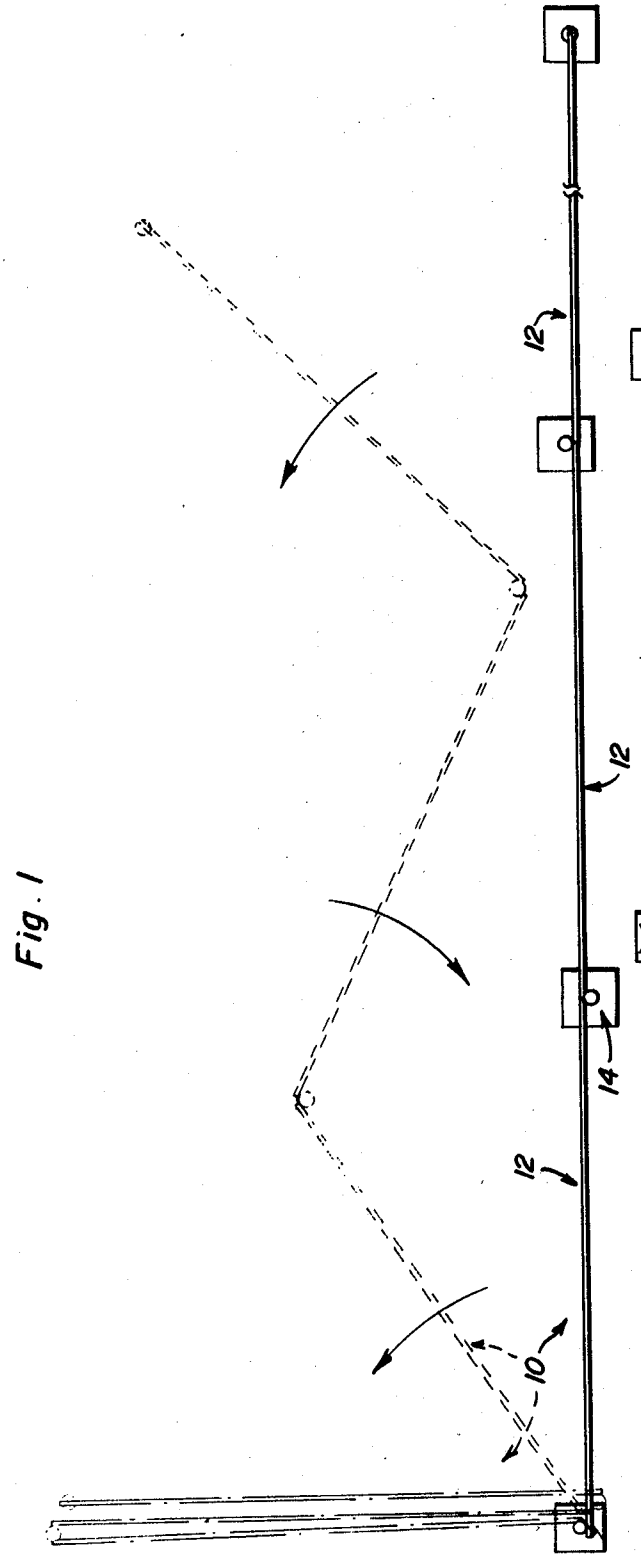

Fig. 1

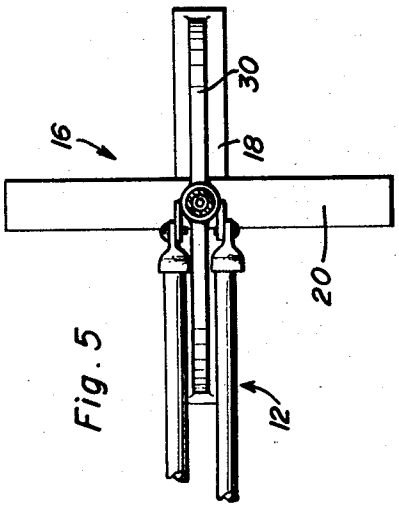

Fig. 5

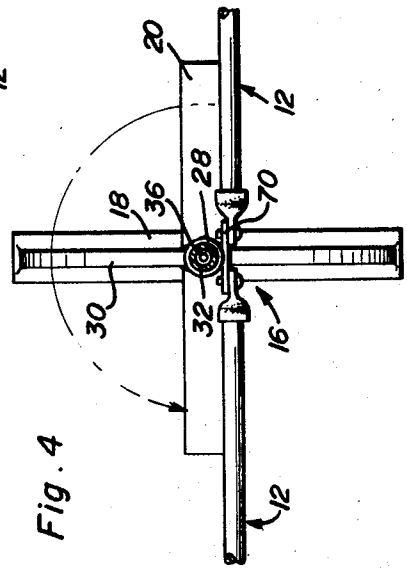

Fig. 4

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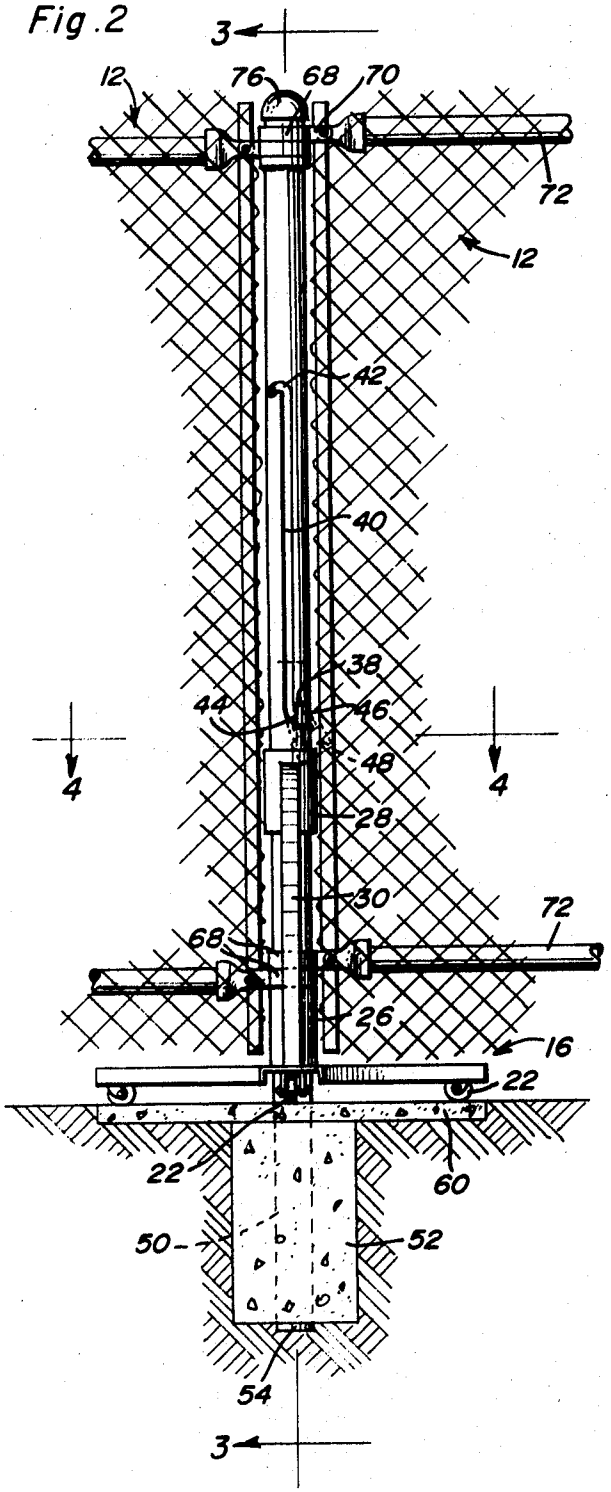
Fig. 2



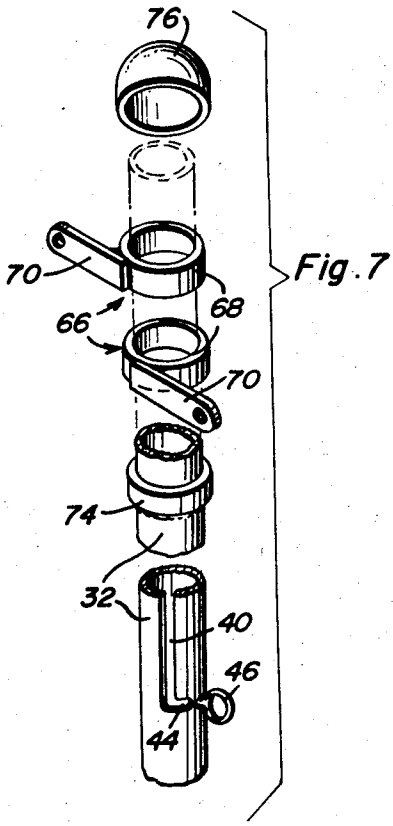


Fig. 7

Fig. 8

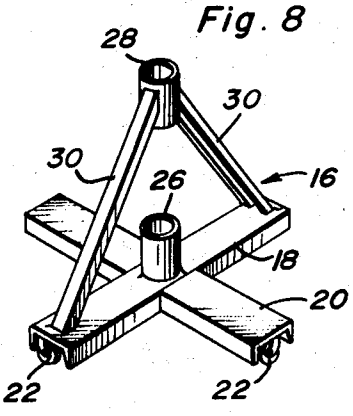


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Fig. 3

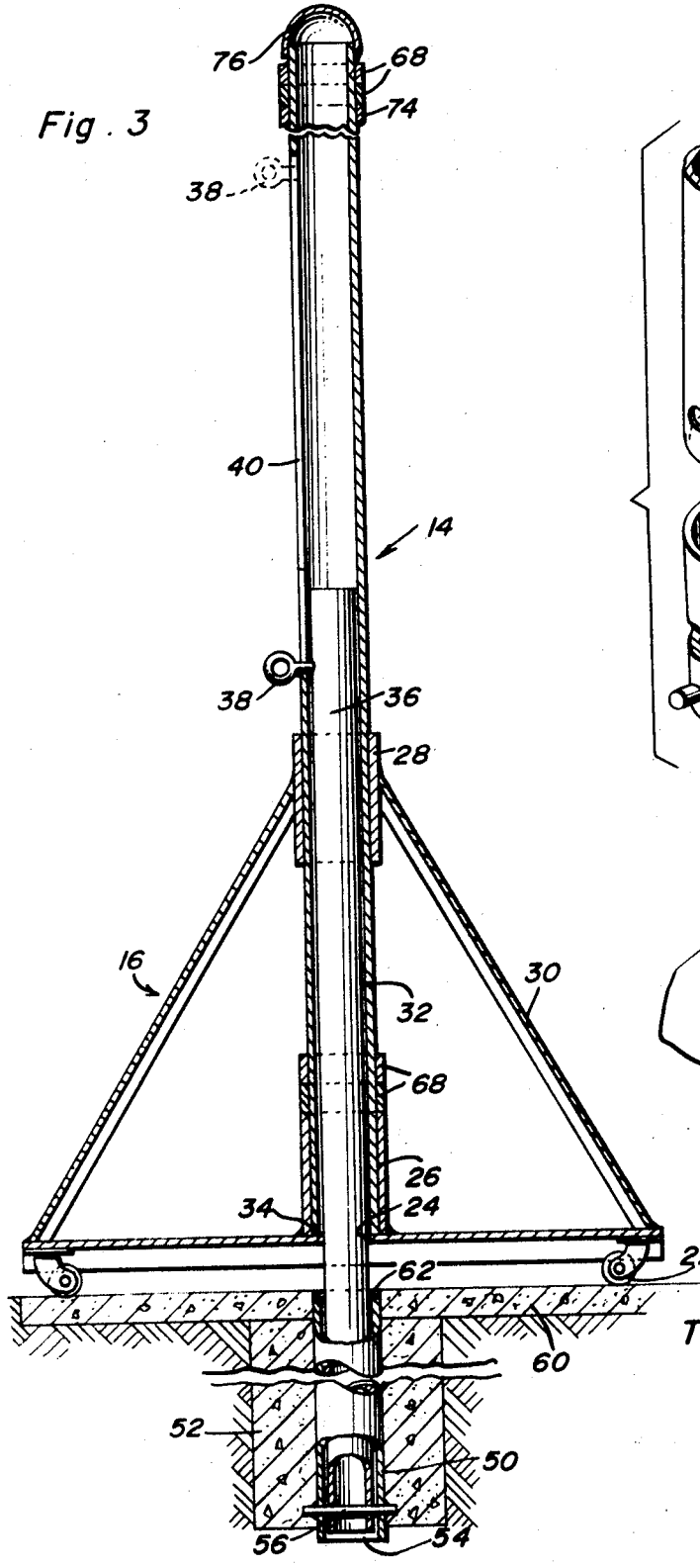


Fig. 6

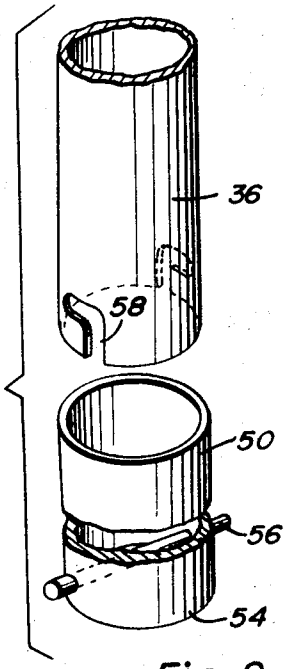
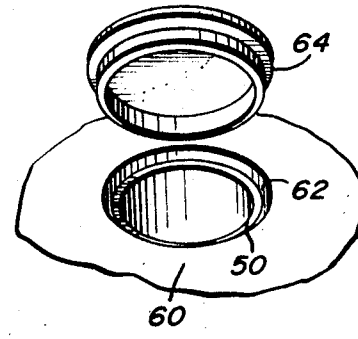


Fig. 9



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RETRACTABLE FENCE

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U.S. Cl. 256—24 13 Claims

ABSTRACT OF THE DISCLOSURE

A fence-like barrier including a plurality of sections hingedly joined by releasably anchorable fence posts for movement between an extended barrier forming position and a retracted position. A ground embedded pipe is associated with each fence post for the selective reception of a sliding pipe associated with the fence post for effecting a temporary anchoring of the fence post in the extending position of the fence.

The instant invention generally relates to fences or fence-like barriers, and is more particularly concerned with a unique folding fence construction which can be longitudinally collapsed and expanded through a folding of the sections thereof on each other about intermediate posts.

It is a primary object of the instant invention to provide a fence which, in addition to incorporating the stability, permanence, and protective features of a conventional fence, also is capable of being quickly collapsed or folded, this making it uniquely adapted for use as a temporary barrier at construction sites, airports, and the like, as well as for use in the manner of an enlarged gate in those instances wherein a large access is to be provided into normally fenced in areas.

In conjunction with the above object, it is a significant object of the instant invention to provide a retractable fence which can be permanently locked in its expanded barrier forming position so as to constitute a permanent fence or the like.

Likewise, it is a significant object of the instant invention to provide a fence which is highly stable in nature and self-sustaining in both the expanded and collapsed positions thereof.

In summary, the above objects are achieved through the provision of a portable barrier utilizing fence sections hingedly interlocked by vertical fence posts for a selective extension and folding of the sections relative to each other. The fence posts incorporate selectively extensible inner pipes which extend into locked engagement with specifically located ground embedded anchors. In addition, the fence posts include four-wheeled mobile bases supporting the posts themselves both during the movement thereof and when stationary.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a plan view illustrating the fence-like barrier of the instant invention in both the two extreme positions and an intermediate position;

FIGURE 2 is an enlarged elevational view of one of the movable fence posts and portions of the adjacent connected fence sections;

FIGURE 3 is an enlarged cross-sectional view taken substantially on a plane passing along line 3—3 in FIGURE 2;

FIGURE 4 is a horizontal cross-sectional view taken substantially on a plane passing along line 4—4 in FIGURE 2;

FIGURE 5 is a cross-sectional view similar to FIGURE 4 illustrating the collapsed position of the adjoining fence sections and the intermediate base;

FIGURE 6 is an exploded perspective view of the fence post ground lock;

FIGURE 7 is an exploded perspective view illustrating details of the fence post and the fence section mounting elements associated therewith;

FIGURE 8 is a perspective view of a post base; and

FIGURE 9 is a perspective detail of the anchoring hole and the cover cap provided therefor.

Referring now more specifically to the drawings, reference numeral **10** is used to generally designate the retractable or collapsible fence-like barrier of the instant invention which shall hereinafter, for purposes of convenience, be referred to as a fence with it being understood that this term is to also encompass gates and the like.

The fence **10** is formed of a plurality of fence sections **12** hingedly interconnected by a fence post **14** orientated between each pair of adjacent sections **12**. The posts **14** are to be mobile, and hence include, in each instance, a roller base **16** comprising a pair of rigidly interconnected cross arms or base members **18** and **20**. These base members **18** and **20**, orientated at right angles to each other, will normally be formed of inverted channel bars and have, at the opposed outer end portions thereof, depending swivelly mounted caster wheels **22** which are partially and thus protectively housed within the downwardly directed channel bars. Projecting vertically upward from the center of the crossed members **18** and **20**, and rigidly welded thereto in surrounding relation to an opening **24** formed therethrough, is a tubular sleeve **26**. Located in coaxial vertically spaced relation above the sleeve **26** is a tubular collar **28** generally corresponding in size to the sleeve **26**, fixedly positioned by a pair of opposed diagonal channel bar braces **30** which extend from welded engagement with diametrically opposed portions of the collar **28** to the outer end portions of the base member **18**.

A vertically elongated tubular outer pipe **32** is received through the axially aligned sleeve **26** and collar **28** and rests on an annular shoulder **34** formed at the center of the crossed base members **18** and **20** about the hole **24** therethrough, the sleeve **26** having an internal diameter slightly greater than that of the base hole **24** so as to provide this pipe receiving shoulder **34**. The engagement of the outer pipe **32** within the aligned collar and sleeve is such so as to allow for relative rotation therebetween while at the same time providing for a stable vertical positioning of the outer pipe **32** in order to effect a hanging of the adjacent fence sections **12** therefrom in a manner which shall be described presently.

An elongated tubular inner pipe **36** is to be slidably mounted within the outer pipe **32** and selectively extensible, from a first retracted position completely received within the outer pipe **32**, to a second extended position projecting vertically therebelow. The vertical adjustment of the inner pipe **36** is controlled by a laterally projecting eye-bolt **38** affixed thereto near the upper end thereof and extending through a vertically elongated slot **40** in the outer pipe **32**. The upper end of the slot **40** is provided with a laterally directed branch **42** within which the eye-bolt **38** can seat upon a rotation of the inner pipe **36** so as to retain the inner pipe **36** in its raised or completely retracted position within the outer pipe **32**. By the same token, the lower end of the slot **40** is also provided with a laterally directed branch or portion **44** within which the eye-bolt **38** seats when it is desirable to lock the inner pipe **36** in its extended position with a substantial portion thereof projecting below the base **16**. If so desired, a

similar eye-bolt 46 can be provided on the outer pipe 32 immediately adjacent the slot branch 44 so as to align with the inner pipe eye-bolt 38 in its lowermost position for the reception of a padlock or the like 48 should a more permanent locking of the extended inner pipe 36 be desired.

From the drawings, it will be appreciated that the inner pipe 36, when extended, is to be received within a ground socket defined by an embedded ground pipe 50. This ground pipe 50 will normally be anchored within a poured concrete foundation 52 and actually extend below the poured foundation 52 so as to provide for drainage of any collected water through the open lower end 54 thereof. A locking rod 56 is fixed diametrically across the ground pipe 50 toward the lower end therof, the lower end of the inner pipe 36 in turn having a pair of diametrically opposed bayonet slots 58 defined therein for locking engagement with a rod 56 upon a reception of the rod 56 within the slots 58 through an initial vertical movement of the inner pipe 36 and a subsequent rotation thereof. The rotation necessary to engage the ground pipe rod 56 within the bayonet slot 58 will correspond to the movement effected by moving the inner pipe eye-bolt 38 into the outer pipe slot branch 44, thus simultaneously locking the inner pipe in an anchored position in the ground and the outer pipe 32 to the inner pipe 36. With reference to FIGURES 3 and 9, it will be appreciated that the ground pipe 50 terminates slightly below the upper surface upon which the base wheels 22 sit, such being, if so desired, a concrete slab 60, so as to define a slight recess 62 for the flush accommodation of an appropriate hole cap 64 utilized to seal the socket defined by the ground pipe 50 when not in use. Incidentally, with reference to FIGURE 1, it will be appreciated that the above described ground anchoring units will be provided at fixed points along the proposed position of the expanded fence 10 these points corresponding to the location of the fence posts 14 which will be positioned in vertically projecting relation thereover and locked thereto. When not in use, as upon a retracting of the fence 10, the sockets will be covered by the flush caps 64.

In order to hingedly affix the adjacent fence sections 12 to an intermediate fence post 14, upper and lower sets of hinges 66 are provided, each hinge consisting of a pipe encircling ring 68 and a tangentially directed leaf 70 welded thereto and projecting therefrom for locking engagement with the adjacent fence section 12 at an appropriate point thereon, for example the horizontal support rails 72 on the illustrated chain link fence sections. The lower hinge rings 68 are rotatably positioned on the outer pipe 32 and rest, one on top of the other, on the upper end of the base sleeve 26, while the upper hinge rings 68 are similarly supported for rotation about the outer pipe 32 by a ring 74 circling and affixed to the outer pipe 32 toward the upper end thereof, the upper hinge rings 68 being retained on the outer pipe 32 by a pipe end cap 76. In this manner, the mounting of the adjacent fence sections 12 is achieved.

With reference to FIGURE 1, which illustrates a typical installation, it will be noted that the sections 12 are to be folded in an accordion fashion, swinging about the adjacent posts alternately clockwise and counterclockwise until a completely collapsed position is reached, as at the left-hand end of FIGURE 1. Further, if so desired the fence post toward which the fence sections are to be collapsed can be a permanently installed post.

As will be appreciated from FIGURE 4, the mobile base 16 associated with each fence post 14 is to normally be orientated with the braces 30 perpendicular to the fence for providing maximum lateral stability thereto. Upon a collapsing of the adjacent sections, noting FIGURE 5, the section 12 being swung will initially contact one of the braces 30 and rotate the base 16 so as to position the contacted brace between the adjoining folded sections 12, thus allowing a greater compacting of the sections 12 on each other. Because of the rotatable nature of the base, it will be appreciated that the base, in the expanded fence, can actually be rotated so as to reduce the lateral projection thereof, and especially the lateral projection of the braces 30 should that be desirable.

The basic construction of the fence makes it particularly adaptable for prefabrication with the final erection being simply effected in the field. By the same token, the construction thereof enables the use of a wide range of fence materials, including decorative plastic, wood, wire mesh, chain link, etc. Along the same lines, an electrified fence can also be provided. In doing so, a non-conductive pipe would be used for the inner pipe 36 which, in conjunction with rubber caster wheels, would provide the necessary insulation to avoid grounding.

In the actual use of the fence, one needs merely swing the sections to the desired expanded position and drop the fence post inner pipes through the pre-positioned ground pipes for a subsequent locking thereto. It will be appreciated that through the utilization of different arrangements of ground pipes 50, a single fence can alternately assume a plurality of configurations as might be required to meet different situations. By the same token, the supporting nature of each of the mobile bases 16 allows for the assumption of any temporary fence layout within the limitations of the sections in that the mobile bases 16 will support a free standing fence.

What is claimed as new is as follows:

1. An adjustable barrier comprising a plurality of fence-like sections, post means hingedly interconnecting each adjacent pair of sections for movement of the adjacent sections between a first position generally overlying each other and a second position extending outwardly from each other, each post means including a mobile ground engaging base forming an independent support for the associated post means and the adjacent sections, positioning means for releasably locking each mobile base at a predetermined fixed location, said post means including a main post member, said positioning means comprising a secondary post member engaged with the main post member and selectively movable between a first position retracted above the ground engaging portion of the mobile base and a second position wherein a portion of the secondary member depends below the base for anchoring engagement with the ground, said main post member being hollow and open at the lower end thereof, said secondary post member being telescopically received within and projectable from the hollow main post member, a vertically elongated slot through said hollow main post member, a manipulating member affixed to the secondary post member and projecting through said slot for enabling a manipulation of the secondary member, said slot including means at vertically spaced points therein for releasably retaining the manipulating element for effecting a retention of the movable secondary member selectively in the first and second positions thereof, a ground embedded ground pipe for the telescopic reception of the extended portion of the secondary post member of an associated post means, and lock means within said ground pipe for a selective engagement and retention of said extended secondary member against longitudinal withdrawal therefrom.

2. The barrier of claim 1 wherein said lock means comprises a rigid rod fixed diametrically across said ground pipe toward the lower end thereof, the lower end of said secondary post member including a pair of opposed bayonet slots therein lockably engageable with said rod upon a rotation of said secondary member.

3. The barrier of claim 2 wherein said mobile base comprises crossed rigid base members, depending roller means mounted on the outer end portions of the base members for rolling engagement with the ground, a collar positioned in spaced relation above the center of said crossed base members for engagement about said main post member, and inclined braces affixed between said

collar and the outer portions of selected ones of said base members.

4. The barrier of claim 3 including a hollow sleeve fixed to and projecting vertically from the central portion of said crossed base members in coaxial spaced relation below said collar for a reception of the lower end of said main post member.

5. The barrier of claim 4 wherein said main post member is rotatably received within the axially aligned base collar and sleeve.

6. The barrier of claim 5 including rings rotatably encircling said main post member at the upper and lower end portions thereof, each ring including a projecting member fixed thereto and to an adjacent fence-like section for a hinged mounting of the section on the post means.

7. An adjustable barrier comprising a plurality of fence-like sections, post means hingedly interconnecting each adjacent pair of sections for movement of the sections relative to each other between a first generally collapsed position and a second generally outwardly extending position, each post means including a mobile ground engaging base forming a support for the associated post means and the adjacent sections, positioning means for releasably locking each mobile base at a predetermined fixed location, said post means including a main post member, said positioning means comprising a secondary post member engaged with the main post member and selectively movable between a first position retracted above the ground engaging portion of the mobile base and a second position wherein a portion of the secondary member depends below the base for anchoring engagement with the ground, a ground embedded ground pipe for the telescopic reception of the extended portion of the secondary post member of an associated post means, and lock means within said ground pipe for a selective engagement and retention of said extended secondary member against longitudinal withdrawal therefrom.

8. The barrier of claim 7 wherein said lock means comprises a rigid rod fixed diametrically across said ground pipe toward the lower end thereof, the lower end of said secondary post member including a pair of opposed bayonet slots therein lockably engageable with said rod upon a rotation of said secondary member.

9. The barrier of claim 7 wherein said mobile base comprises crossed rigid base members, depending roller means mounted on the outer end portions of the base members for rolling engagement with the ground, a collar positioned in spaced relation above the center of said crossed base members for engagement about said main post member, and inclined braces affixed between said collar and the outer portions of selected ones of said base members.

10. The barrier of claim 9 wherein said crossed base members define four outer end portions orientated in a common horizontal plane at approximately 90° to each other, said depending roller means comprising a ground engaging roller depending from each of the outer end portions whereby a four point rolling support is provided.

11. The barrier of claim 7 including a vertically elongated slot through said hollow main post member, a manipulating member affixed to the secondary post member and projecting through said slot for enabling a manipulation of the secondary member, said slot including means at vertically spaced points therein for releasably retaining the manipulating element for effecting a retention of the movable secondary member selectively in the first and second positions thereof, said manipulating member including an eye portion therein, a rigid element fixed to the main post member adjacent the lower of said means at vertically spaced points on said slot, said element also including an eye portion therein alignable with the first eye portion for the reception of a locking member through both.

12. The barrier of claim 11 wherein said main post member is hollow and open at the lower end thereof, said secondary post member being telescopically received within and projectable from the hollow main post member.

13. A movable barrier comprising at least one post, a fence-like section connected to said post, said post including a mobile ground engaging base forming an independent self-sustaining support for the associated post and the adjacent section, positioning means for releasably locking the mobile base at a predetermined fixed location, said post including a main post member, said positioning means comprising a secondary post member engaged with the main post member and selectively movable between a first position retracted above the ground engaging portion of the mobile base and a second position wherein a portion of the secondary member depends below the base for anchoring engagement with the ground, a ground embedded ground pipe for the telescopic reception of the extended portion of the secondary post member, and lock means within said ground pipe for a selective engagement and retention of said extended secondary member against longitudinal withdrawal therefrom.

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DENNIS L. TAYLOR, Primary Examiner

U.S. Cl. X.R.

52—298; 256—25