

608974

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APPLICATION FOR A STANDARD PATENT

WE FLEX STAKE, INC. of 625 Profit Street, Azle, Texas 76020, United States of America hereby apply for the grant of a standard patent for an invention entitled **BENDABLE MARKER AND METHOD OF MARKING** which is described in the accompanying complete specification.

The actual inventor of the said invention is: Robert K. HUGHES

OUR address for service is SMITH SHELSTON BEADLE, 207 Riversdale Road (P.O. Box 410), Hawthorn, Victoria, 3122 (Attorney Code SA)

Details of basic application:-

Number of Basic Application: 07/190,482

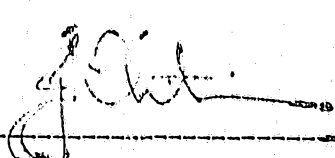
Convention Country in which

Basic Application was filed: United States of America

Date of Basic Application: 5th May, 1988

ISO Code: US

DATED THIS 4th DAY OF May, 1989.


SMITH SHELSTON BEADLE

Patent Attorneys for the Applicants

TO: The Commissioner of Patents

Our Ref: #3287 PS:WB 17file

APPLICATION ACCEPTED AND AMENDMENTS

ALLOWED

22.1.91

PATENT DECLARATION FORM
(CONVENTION OR NON-CONVENTION)

DECLARATION IN SUPPORT OF APPLICATION FOR A PATENT

Insert name of
applicant.

In support of the application made by FLEX STAKE, INC.

Insert title of
invention.

for a patent for an invention entitled: BENDABLE MARKER AND METHOD OF MARKING

Insert full name(s)
and address(es) of
person(s) making
declaration. If
applicant a company
person must be
authorised to make
declaration.

I/We Robert K. Hughes
7143 So. Brentwood Rd.
Ft. Myers, Fl. 33919

* Delete alternatives
which do not apply

do solemnly and sincerely declare as follows:

- * 1. (a) ~~I am/We are the applicant(s) for the patent.~~
OR (b) I am authorized by the abovementioned applicant to make this declaration on its behalf.
- * 2. (a) ~~I am/We are the actual inventor(s) of the invention.~~
OR (b) _____

Insert name(s) and
address(es) of actual
inventor(s).

~~is/are the actual inventor(s) of the invention~~ and the facts upon which the applicant(s) ~~is/are~~ entitled to make the application are as follows:—

APPLICANT IS ASSIGNEE OF INVENTOR.

Insert details of
entitlement to apply,
e.g. Applicant is
assignee of inventor(s)

3. The basic application ~~is~~ as defined by Section 141 of the Act was ~~was~~ made in the following country or countries on the following date ~~(s)~~ by the following applicant ~~(s)~~ in the United States of America on 5th May, 1988 by Robert K. HUGHES
- in _____ on _____ 19 _____
by _____
in _____ on _____ 19 _____
by _____
in _____ on _____ 19 _____
by _____

Delete 3 and 4 if
application non-
convention.
Otherwise insert
details of basic
application(s).

4. The basic application ~~is~~ referred to in paragraph 3 of this Declaration was ~~was~~ the first application ~~is~~ made in a Convention country in respect of the invention the subject of the application.

Place and date of
Signature.

Declared at Azle, Texas this 24th day of May 19 89

FLEX STAKE, INC.

NO ATTESTATION
OR SEAL

Robert K. Hughes

Signature(s) of declarant(s).

To: The Commissioner of Patents,
Australia

(12) PATENT ABRIDGMENT (11) Document No. AU-B-34019/89
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 608974

(54) Title
BENDABLE MARKER AND METHOD OF MARKING

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(56) Prior Art Documents
US 4702639
'S 4571118
US 4341488

(57) Claim

1. A marker supported in the ground which allows a reel-type mower to cut grass around the marker without removing the member, comprising:
 - a substantially rigid shaft having a lower end;
 - a substantially rigid stake for insertion into said ground, having an upper end; and
 - a flexible elastomeric element coupled between said lower end of said substantially rigid shaft and said upper end of said substantially rigid stake for urging said substantially rigid shaft into axial alignment with said substantially rigid stake and for allowing a reel-type grass mower to bend said substantially rigid shaft over at said elastomeric element to a position substantially flat with the ground.

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COMPLETE SPECIFICATION

FOR OFFICE USE

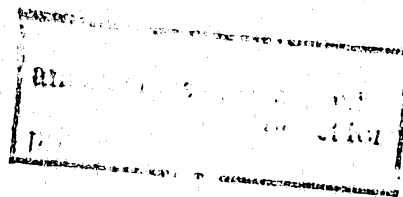
Application Number:
Lodged:

Class

Int. Class

Complete Specification - Lodged:
Accepted:
Published:

Priority:



Related Art:

TO BE COMPLETED BY APPLICANT

Name of Applicant: FLEX STAKE, INC.

Address of Applicant: 625 Profit Street, Azle, Texas 76020, United States
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Actual Inventor: Robert K. HUGHES

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207 Riversdale Road (P.O. Box 410)
Hawthorn, Victoria, Australia

Complete Specification for the invention entitled:

BENDABLE MARKER AND METHOD OF MARKING

The following statement is a full description of this invention, including
the best method of performing it known to us:

1
2
3 **1. Field of the Invention:**

4 This invention relates generally to markers used on a grass areas, and
5 specifically to markers for use on grass areas which allow a reel-type grass
6 mower to cut grass around the marker without damaging the marker, or
7 requiring the removal of said marker prior to mowing.
8

9 **2. Description of the Prior Art:**

10 Markers are widely used on playing fields, earthen fields, and grassy
11 areas to mark boundaries, mark locations, or provide information. They may
12 be used on football fields, soccer fields, baseball fields, golf courses, running
13 tracks and trails, public parks, and private lawns. While having substantial
14 utility, markers do present an impediment to the mowing of the grass on said
15 grassy areas. Specifically, the markers must be removed prior to mowing.
16

17 This often slows down the mowing operation, resulting in a loss of
18 productive time and greater mowing expense. In addition, removed markers
19 may be replaced in an incorrect location or orientation subsequent to
20 mowing. The misplacing of markers is quite probable considering that most
21 mower operators will often be pressed for time, concentrating upon the task
22 at hand, rather than the exact location from which a marker has been
23 removed.

1
2 The present invention is a marker supported in the ground which
3 allows a reel-type grass mower to cut grass around the marker without
4 requiring the removal of the marker prior to the mowing of the grass. In the
5 preferred embodiment, the marker consists of a substantially rigid flat sign
6 member coupled to a substantially rigid shaft having a lower end, a
7 substantially rigid stake for anchoring the marker in the ground, and a
8 flexible elastomeric element coupled between the substantially rigid shaft and
9 the substantially rigid stake for urging the rigid shaft into axial alignment with
10 the rigid stake, while allowing a reel-type grass mower to bend the rigid shaft
11 over at the elastomeric element to a position with the sign member
12 substantially flat with the ground. Thus, the grass around a marker may be
13 mowed with a reel-type grass mower while the marker remains in the selected
14 location.

15
16 The present invention also consists of a method of marking a selected
17 location on a grass area allowing the grass to be mowed with a reel-type grass
18 mower without affecting the marking. The following elements are provided: a
19 shaft, substantially rigid flat sign member on the shaft, a stake, and a flexible
20 element with an upper end and a lower end. The flexible element is coupled
21 to the shaft and to the stake. The stake is inserted into the grass area at a
22 selected location. Then a reel-type grass mower is passed over the stake,
23 bending the stake downward at the flexible element into a substantially
24 orthogonal position relative to the stake with the sign member substantially
25 flat on the grass area.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of the preferred embodiment of the bendable marker.

Figure 2 is a front view of the preferred embodiment of the bendable marker anchored in the ground of a grassy area, with the flexible element shown in longitudinal section.

Figure 3 is perspective view of the preferred embodiment of the bendable marker with the sign member urged downward by the blades of a reel-type grass mower (shown in phantom) into substantially planar contact with the ground.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 is a perspective view of the preferred embodiment of the bendable marker of the present invention. Sign member 11 is a thin, rigid, planar surface adapted to receive gummed labels, engraving, or direct printing and the like. The side of sign member 11 depicted in Figure 1 is hereinafter referred to as the "face" of sign member 11. In the preferred embodiment, sign member 11 comprises a thin sign plate 13 having information 15 secured thereto. Sign plate 13 has a raised edge 17 around its outer periphery. Raised edge 17 provides structural strength to sign member 11. An eyelet 19 is integrally formed on the top region of raised edge 17 of sign member 11. This eyelet 19 is provided to allow one to pass a rope or cord through the marker, and is useful in the event one desires to rope off an area to discourage passage therethrough.

Sign member 11 is coupled to a substantially rigid shaft 20, which has an upper end 21 and a lower end 47 of Figure 2 that is obscured in Figure 1 by flexible elastomeric element 29. Rigid shaft 20 is substantially rectangular in traverse cross-section, having a shaft width that exceeds shaft thickness. Shaft 20 has a central channel 27 axially disposed along its entire length from upper end 21 to lower end 47 of Figure 2. In the preferred embodiment, the central channel 27 is approximately 1/2" wide and 1/4" deep. Central channel 27 is disposed between two ribs 23, 25 which are approximately 1/4" wide and 3/4" thick. Ribs 23, 25 run the entire length of substantially rigid shaft 20 from upper end 21 to lower end 47 of Figure 2. Ribs 23, 25 and channel 27 serve to provide structural strength to substantially rigid shaft 20.

Substantially rigid stake 31 is similar in many respects to substantially rigid shaft 20. It has an upper end 45 of Figure 2, and a lower end 38 which forms a point 39, which is useful for lodging the marker in the earth or ground of the grassy area or playing field. Upper end 45 is obscured in Figure 1 by flexible elastomeric element 29. Like shaft 20, stake 31 is substantially rectangular in traverse cross-section, having a stake width that exceeds stake thickness. In addition, stake 31 has a central channel 37

1 disposed between the two ribs 33, 35 which serve to add structural strength to
2 the stake 31. The dimensions of the central channel 37, and ribs 33, 35 of
3 stake 31 are identical to those of the substantially rigid shaft 20, with the
4 exception of lower end 38 of stake 31 in which ribs 33, 35 converge to form a
5 point 39.
6

7 A flexible elastomeric element 29 is provided to couple shaft 20 and
8 stake 31. In the preferred embodiment, flexible elastomeric element 29 is a
9 flexible elastomeric tubular sleeve having an upper end 24 and a lower end
10 26 joined by an annular bore 28.
11

12 In the preferred embodiment, lower end 47 of Figure 2 of the shaft 20
13 is concentrically disposed in upper end 24 of the flexible elastomeric element
14 29, while upper end 45 of Figure 2 of stake 31 is concentrically disposed in
15 lower end 26 of flexible elastomeric element 29. In the preferred
16 embodiment, annular bore 28 of flexible elastomeric element 29 is adapted in
17 size and shape to accommodate shaft 20 and stake 31. Specifically, the width
18 of annular bore 28 exceeds the thickness of the annular bore 28, while
19 annular bore 28 is of a size selected to firmly grasp both shaft 20 and stake 31
20 and inhibit the removal of said shaft 20 and stake 31. Lower end 47 and
21 upper end 45 may be further secured within flexible elastomeric element 29
22 by any means for securing such as adhesives, staples, and fasteners.
23

24 Figure 2 is a view of the preferred embodiment of the bendable
25 marker apparatus with flexible elastomeric element 29 shown in longitudinal
26 section. In this figure, stake 31 is disposed in ground 41, anchoring the
27 marker in an area covered with grass 43. Flexible elastomeric element 29 is
28 disposed in part in ground 41 along with stake 31. Lower end 47 of shaft 20 is
29 concentrically disposed in flexible elastomeric element 29 in close physical
30 proximity to upper end 45 of stake 31 which is concentrically disposed in
31 lower end 26 of flexible elastomeric element 29. Upper end 45 of stake 31
32 and lower end 47 of shaft 20 are separated by a small gap 49.
33

1 An adjustable elastomeric element 29 serves to urge shaft 20 and
2 stake 31 into axial alignment. Thus, shaft 20 and stake 31 are held in an
3 upright position substantially normal to the surface of the ground 41 into
4 which stake 31 is anchored.

5
6 While shaft 20 and stake 31 are ordinarily in axial alignment, flexible
7 elastomeric element 29, and gap 49 serve to allow shaft 20 to move into
8 angular alignment with stake 31 in response to lateral forces. Specifically,
9 flexible elastomeric element 29 urges shaft 20 into axial alignment with stake
10 31, but allows a reel-type grass mower 51 of Figure 3 to bend said shaft 20
11 over at said elastomeric element 29 to a position substantially orthogonal to
12 stake 31, placing sign member 11 and shaft 20 into contact with the surface of
13 ground 41.

14
15 In the preferred embodiment, sign member 11 is in substantially the
16 same plane as the shaft width and the stake width. Since the width of shaft 20
17 and stake 31 exceed the thickness of shaft 20 and stake 31, it is significantly
18 easier to bend the marker at flexible elastomeric element 29 in a single plane.
19 Specifically, shaft 20 is free to move in substantially only one plane defined by
20 a 180° arc normal to the plane defined by sign member 11. At one extreme,
21 sign member 11 is placed in substantially planar contact with the ground 41
22 with the face of the sign plate 13 downward. This configuration is designated
23 hereinafter as the "forward" position. At the opposite extreme, sign member
24 11 is placed in substantial planar contact with ground 41 with the face of sign
25 plate 13 upward. This position is hereinafter referred to as the "rearward"
26 position.

27
28 In both "forward" and "rearward" positions, shaft 20 is in a
29 substantially orthogonal relation to the stake 31. Since shaft 20 width and
30 stake 31 width exceed thickness, it is significantly easier to bend the marker
31 so that the shaft 20 width and stake 31 width are interfacing as discussed
32 above. This feature restricts movement to a single plane and ensures that
33 sign member 11 is urged into planar contact with ground 41 in response to
34 lateral forces from reel-type grass mower 51. However, if the shaft 20 width

1 equals the shaft 20 thickness and the stake 31 width equals the stake 31
2 thickness, the marker may be bent with equal ease in any direction (360°)
3 from the upright position. When the sign member 11 is substantially flat,
4 however, it is important that it be disposed either face-up or face-down on
5 the surface of the earth 41. In any other configuration, the reel-type mower
6 51 may damage sign member 11 during the mowing process.

7
8 Figure 3 depicts the marker deflected in the "forward" position in
9 response to the lateral force supplied by reel-type mower 51, which is shown
10 in phantom. Reel-type grass mower 51 is of the conventional type having a
11 plurality of slightly turned cutting blades substantially defining a cylindrical
12 shape. As reel-type grass mower 51 is advanced in the direction of arrows 53,
13 the blades are brought forward to cut grass 43. In Figure 3, sign member 11 is
14 shown urged downward into substantially parallel alignment with the ground
15 41. This forward movement is allowed by flexible elastomeric element 29
16 which bends in response to force from reel-type mower 51. Arrow 55 shows
17 the direction of movement of the sign member 11 in response to lateral force
18 from reel-type mower 51. In this configuration, reel-type grass mower 51 may
19 pass over the marker without damaging it, while effectively cutting the grass
20 43 around the marker.

21
22 For some uses, sign member 11 is not required, since information may
23 be conveyed through the mere presence or location of shaft 20 on a grassy
24 area. This is particularly true when the marker is employed as a boundary
25 marker. The marker shaft 20 may be color coded to impart additional
26 information.

27
28 When sign member 11 is not required, the bendable marker comprises
29 shaft 20, stake 31, and flexible elastomeric element 29 as described above,
30 and the movement of shaft 20 may be restricted to a single plane or
31 unrestricted allowing movement in any direction (360°).

32
33 The present invention also comprises a method of marking a selected
34 location on a grass area, allowing said grass to be mowed with a reel-type

1 grass mower 51 without affecting the marking. The steps include providing a
2 shaft 20 with an upper end 21 and a lower end 47, providing a stake 31 with
3 an upper end 45, providing a flexible element 29 with an upper end 24 and a
4 lower end 26. Then the lower end 47 of the shaft 20 is coupled to the upper
5 end 24 of the flexible element 29, and the upper end 45 of the stake 31 is
6 coupled to the lower end 26 of the flexible element 29. Next, stake 31 is
7 inserted into the grass area at a selected location. Finally, a reel-type grass
8 mower 51 is passed over the shaft 20, bending the shaft 20 downward at said
9 flexible element 29 into a substantially orthogonal position relative to the
10 stake 31 with the sign member 11 substantially flat on the grass area.

11
12 In operation, a selected location on a field, yard, or grass area may be
13 marked with the marker of the present invention. Stake 31 is anchored in
14 ground 41, and a portion of flexible elastomeric element 29 is also disposed
15 in the ground 41. Flexible elastomeric element 29 urges shaft 20 and
16 integrally connected sign member 11 into axial alignment with stake 31.
17 Thus, if sign member 11 is employed, it is visible from a distance on the yard,
18 field, or grassy area. The shaft 20 or sign member 11 can serve as a tee
19 marker, yardage marker, or location marker. In addition, the marker of the
20 present invention may be used to provide certain selected information. For
21 example, sign plate 13 may contain mileage information, maps, instructions,
22 warnings, political messages, and the like.

23
24 Grass growing around the marker may be mowed with a reel-type
25 grass mower without the removal of the marker. This is true because the
26 flexible elastomeric element 29 serves to allow the marker to bend so that the
27 sign member 11 is in substantially planar contact with the surface of the
28 ground 41 in response to reel-type grass mower 51.

29
30 The present invention has several advantages over the prior art
31 system. First, a grassy area containing one or more markers may be mowed
32 without requiring the removal of the markers. Thus, a considerable
33 inconvenience is eliminated, and time savings are realized. Second, the
34 grassy area may be mowed without the risk of incorrect replacement of the

1 marker after the mowing is accomplished. This is particularly helpful when
2 the marker serves to measure distance, or set boundaries.

3

4 While the invention has been described in only one of its forms, it
5 should be apparent to those skilled in the art that it is not so limited, but is
6 susceptible to various changes and modifications without departing from the
7 spirit thereof.

The claims form part of the disclosure of this specification

1 ~~XXXXXX~~ The claims defining the invention are as follows:

2 1. A marker supported in the ground which allows a reel-type mower to
3 cut grass around the marker without removing the member, comprising:
4 a substantially rigid shaft having a lower end;
5 a substantially rigid stake for insertion into said ground, having an
6 upper end; and
7 a flexible elastomeric element coupled between said lower end of said
8 substantially rigid shaft and said upper end of said substantially rigid stake for
9 urging said substantially rigid shaft into axial alignment with said substantially
10 rigid stake and for allowing a reel-type grass mower to bend said substantially
11 rigid shaft over at said elastomeric element to a position substantially flat
12 with the ground.

1 2. A marker according to claim 1 wherein said substantially rigid shaft
2 may assume any position between said axial alignment and a position
3 substantially flat with said ground in any direction from said axial alignment
4 in response to said reel-type grass mower.

1 3. A field marker for indicating position on the surface of an earthen
2 field adapted to yield to lateral forces applied thereto by a reel-type grass
3 mower, allowing grass to be cut around said field marker without removing
4 said field marker, comprising:
5 a substantially rigid shaft having an upper end and a lower end;
6 a substantially rigid flat sign member coupled to said upper end of said
7 substantially rigid shaft visible from a distance on said earthen field for
8 marking a selected position thereon;
9 a substantially rigid stake for insertion into said earthen field, having
10 an upper end disposed substantially at the surface of said earthen field when
11 said rigid stake is inserted therein;
12 an elastomeric sleeve disposed between said substantially rigid shaft
13 and said substantially rigid stake and having an upper end concentrically
14 coupled to said lower end of said substantially rigid shaft and a lower end
15 concentrically coupled to said upper end of said substantially rigid stake,
16 urging said substantially rigid shaft to an upright position substantially normal
17 to the surface of said earthen field and allowing said substantially rigid shaft
18 to bend and assume any position between said upright position and a position
19 substantially parallel to said surface of said earthen field in response to said
20 lateral forces applied by said reel-type grass mower.

- 1 4. A field marker according to claim 3 wherein said substantially rigid
2 shaft and said sign member are integrally formed.
- 1 5. A field marker according to claim 3 wherein said substantially rigid
2 shaft may assume any position between said upright position and a position
3 substantially parallel to said surface of said ground in any direction from said
4 upright position in response to said lateral forces.
- 1 6. A field marker according to claim 3 wherein said elastomeric sleeve
2 comprises a flexible tube with a central bore.
- 1 7. A field marker according to claim 3 wherein said lower end of said
2 substantially rigid shaft is disposed in said upper end of said elastomeric
3 sleeve, and said upper end of said substantially rigid stake is disposed in said
4 lower end of said elastomeric sleeve.
- 1 8. A field marker according to claim 3 wherein said substantially rigid
2 shaft may assume any position in a 180° arc in substantially one plane in
3 response to said lateral forces.
- 1 9. A field marker according to claim 3 further comprising:
2 means for securing said elastomeric sleeve to said lower end of said
3 substantially rigid shaft and said upper end of said substantially rigid stake.

1 10. A marker supported in the ground which allows a reel-type grass
2 mower to cut grass around the marker without removing the marker,
3 comprising:

4 a substantially rigid shaft having an upper end and a lower end, with a
5 shaft width exceeding shaft thickness;

6 a substantially rigid planar sign member coupled to said upper end of
7 said substantially rigid shaft and aligned in substantially the same plane as the
8 shaft width for providing information;

9 a substantially rigid stake for insertion into said ground, having an
10 upper end with a stake width exceeding stake thickness, wherein said stake
11 width is aligned in substantially the same plane with said shaft width and said
12 substantially rigid planar sign member; and

13 an elastomeric tubular sleeve having an upper end and a lower end
14 joined by an annular bore, having said lower end of said substantially rigid
15 shaft disposed within said annular bore at said upper end and said upper end
16 of said substantially rigid stake disposed within said lower end, wherein said
17 elastomeric tubular sleeve urges said substantially rigid shaft and said
18 substantially rigid stake into vertical alignment while allowing said
19 substantially rigid shaft to be urged into substantially orthogonal alignment
20 with said substantially rigid stake when passed over by said reel-type grass
21 mower, placing said substantially rigid planar sign member in planar contact
22 with said ground.

1 11. A marker according to claim 10 wherein said substantially rigid shaft
2 is rectangular in transverse cross-section.

1 12. A marker according to claim 10 wherein said substantially rigid planar
2 sign member and said substantially rigid shaft are integrally formed with each
3 other.

1 13. A marker according to claim 10 wherein said tubular sleeve has a
2 width exceeding its thickness.

1 14. A marker according to claim 10 wherein said substantially rigid shaft
2 may be urged into substantially orthogonal alignment with said substantially
3 rigid stake in both forward and rearward directions relative to said
4 substantially rigid stake in substantially one plane only.

1 15. A method of marking a selected location on a grass area allowing said
2 grass to be mowed with a reel-type grass mower without affecting the
3 marking, comprising the steps of:

4 providing a shaft with an upper end and a lower end;

5 providing a stake with an upper end;

6 providing a flexible element with an upper end and a lower end;

7 coupling said lower end of said shaft to said upper end of said flexible
8 element;

9 coupling said upper end of said stake to said lower end of said flexible
10 element;

11 inserting said stake into said grass area at said selected location; and

12 passing said reel-type grass mower over said stake, bending said stake
13 downward at said flexible element into a substantially orthogonal position
14 relative to said stake substantially flat on the grass area.

16. A method of marking substantially as hereinbefore described.

17. A marker substantially as hereinbefore described with reference to the accompanying drawings.

~~18. The articles, things, parts, elements, steps, features, methods, processes, compounds and compositions referred to or indicated in the specification and/or claims of the application individually or collectively, and any and all combinations of any two or more of such.~~

DATED THIS 4th May, 1989

SMITH SHELSTON BEADLE

Fellows Institute of Patent

Attorneys of Australia.

Patent Attorneys for the Applicant

FLEY STAKE, INC.

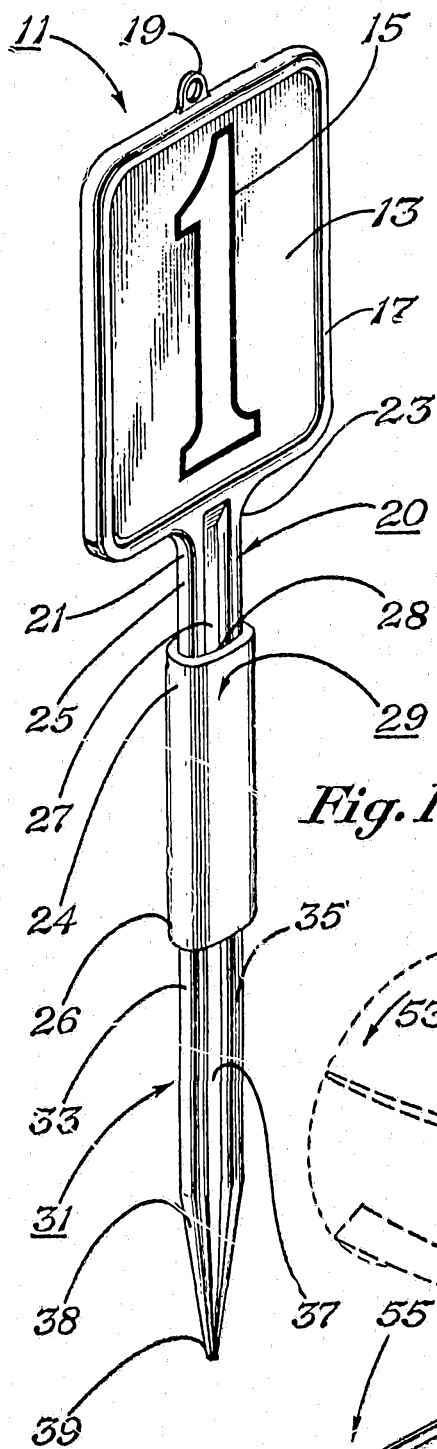


Fig. 1

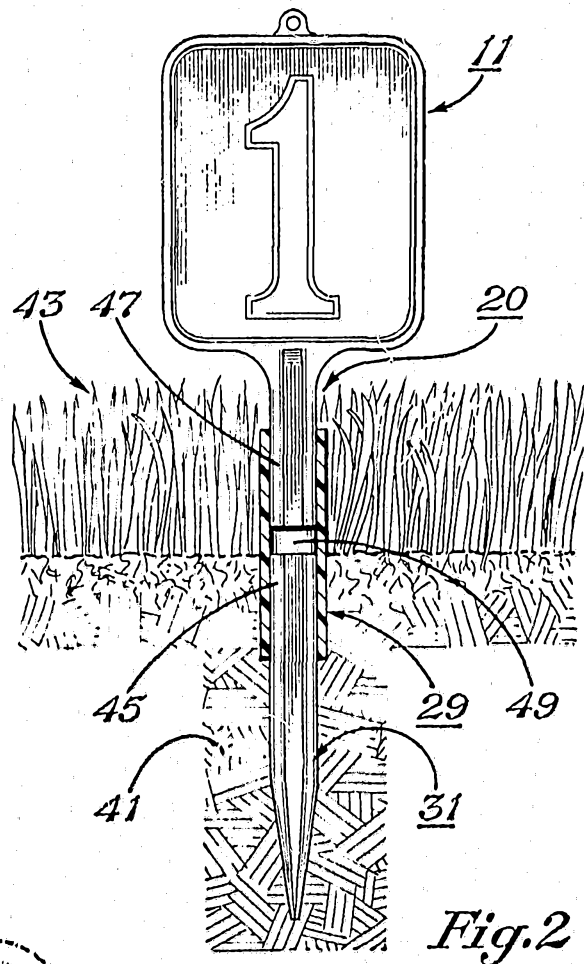


Fig. 2

Fig. 3

