



(22) Date de dépôt/Filing Date: 2001/07/27

(41) Mise à la disp. pub./Open to Public Insp.: 2003/01/27

(45) Date de délivrance/Issue Date: 2004/06/15

(51) Cl.Int.⁷/Int.Cl.⁷ A01B 35/00

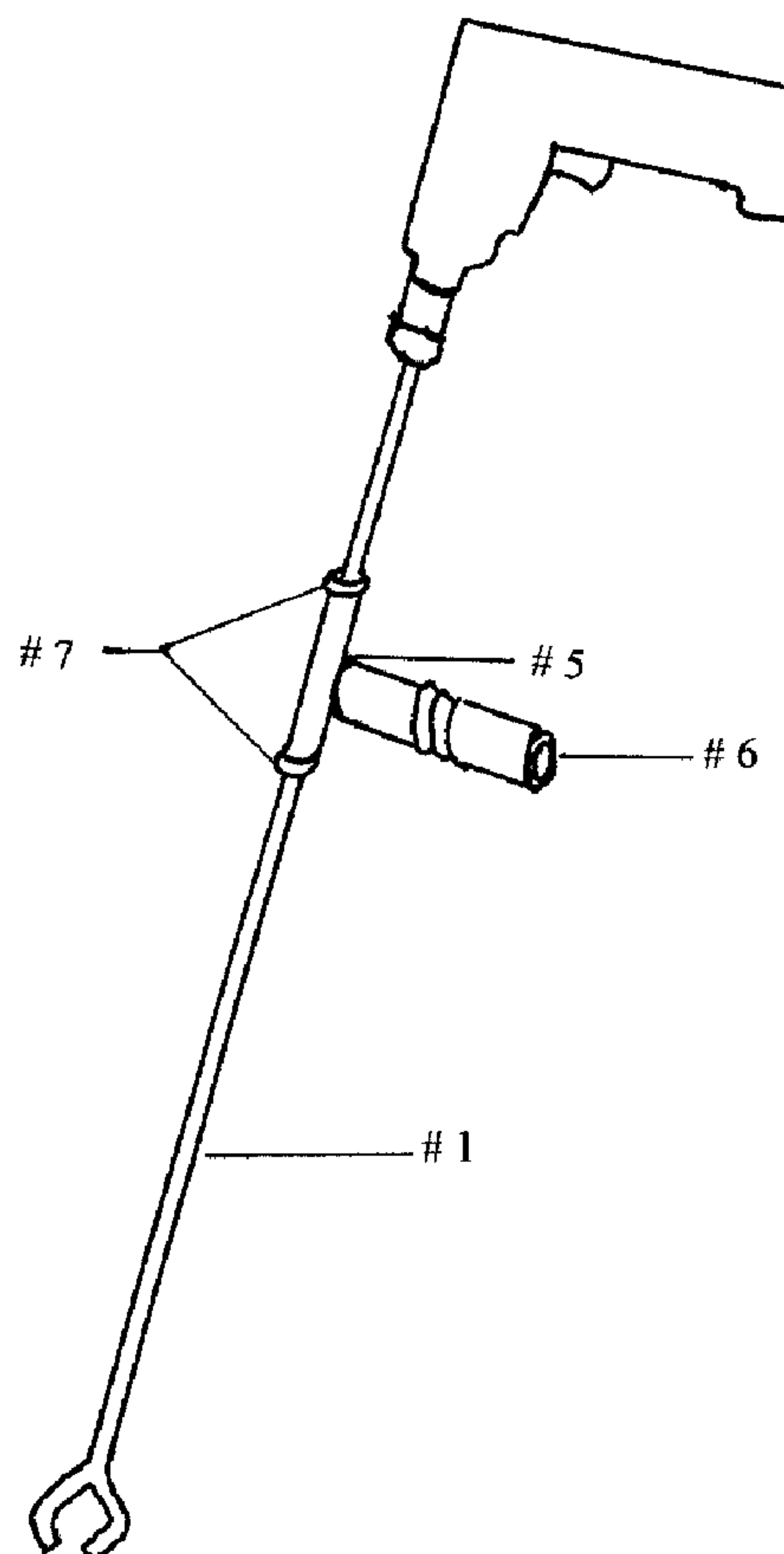
(72) Inventeur/Inventor:
MCKILL, ROBERT, CA

(73) Propriétaire/Owner:
ROTO-MAJIC INC., CA

(74) Agent: RIDOUT & MAYBEE LLP

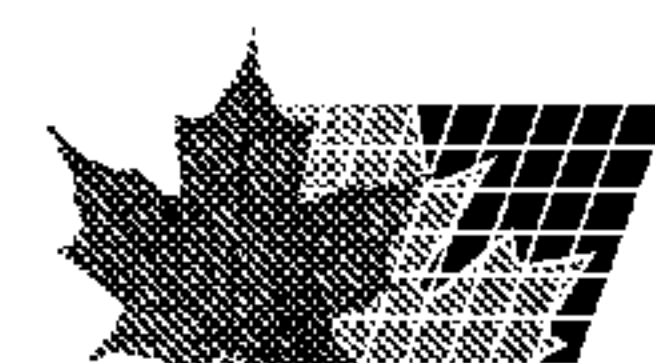
(54) Titre : DISPOSITIF MANUEL ROTATIF DE LABOUR ET POUR ENLEVER LES MAUVAISES HERBES

(54) Title: ROTARY HAND-HELD TILLING AND WEED REMOVING DEVICE



(57) Abrégé/Abstract:

A rotary hand-held tilling and weed removing device comprises a shaft; a "T" shaped handle and two lock collars and is attachable to the chuck of a power drill. The shaft is provided with rotary arms which allow tilling and weed removal in very confined areas and precision control from the shaft handle adds to the ease of use. This gardening tool has a simple design and does not require blade or tiller bar replacement making it very cost effective.



ABSTRACT

A rotary hand-held tilling and weed removing device comprises a shaft; a "T" shaped handle and two lock collars and is attachable to the chuck of a power drill. The shaft is provided with rotary arms which allow tilling and weed removal in very confined areas and precision control from the shaft handle adds to the ease of use. This gardening tool has a simple design and does not require blade or tiller bar replacement making it very cost effective.

ROTARY HAND-HELD TILLING AND WEED REMOVING DEVICE

FIELD OF THE INVENTION

[0001] This invention relates to a multi-purpose gardening device consisting of a one-piece shaft with a control handle.

BACKGROUND OF THE INVENTION

[0002] In the past, powered garden tools have been very complicated and expensive by design, not to mention bulky or heavy. These devices have gas powered engines or self contained electrical motors that require fuel or hydro from other sources. Today's newer battery powered hand drills make it easier to power garden tools.

[0003] Previous garden tool attachments have been implemented for a specific application, therefore, start one gardening job -- stop and change a blade or tool to the shaft -- on to the next application.

[0004] Many of the powered garden tools known in the prior art are over engineered, costly and complicated. A significant disadvantage of previous garden tools is that the shaft is contained in a sleeve and parts are welded or screwed to the end of the shaft. This results in high cost of manufacturing and more chances of breakage or malfunction.

[0005] To date, a gardening tool compatible with a hand-held drill has not been accessible at a reasonable cost.

SUMMARY OF THE INVENTION

[0006] The present invention overcomes the above-described problems by providing a powered garden tool, one end of which attaches to a power drill chuck, and the other end of which comprises prongs which perform tilling and weed

removal. The simplicity of design of the present invention allows ease of use and virtually eliminates maintenance. In particular, the present invention permits cultivation of garden plants in close proximity.

[0007] Furthermore, the diverse functions of the present invention permits the user to perform a variety of tasks with a single tool, whether it be cultivation of random flowers or vegetable rows. The tool according to the invention permits a user to roto-till, aerate, mulch and weed in close proximity to all plants, walls and borders.

[0008] According to one aspect, the present invention provides a rotary hand-held tilling and weed removing device, comprising: (a) a rotatable shaft having an upper end and a lower end, the upper end being rotatably attachable to a chuck of a rotary power drill; (b) a control handle comprising a first portion extending along the shaft, and a second portion extending from the first portion, wherein the shaft is received inside the first portion and is freely rotatable therein, and wherein the second portion is provided with a handle grip; and (c) a pair of prongs provided on the lower end of the shaft.

[0009] According to another aspect, the present invention provides a rotary hand-held tilling and weed removing device, comprising: (a) a rotatable shaft having an upper end and a lower end, the upper end being rotatably attachable to a chuck of a rotary power drill; and (b) a pair of prongs provided on the lower end of the shaft, the prongs being bent to an angular shape, wherein each prong has an upper portion, a central portion and a lower portion, with the upper portions of both prongs being attached to the lower end of the shaft, and the lower portions of the

prongs tapering inward toward one another such that a distance between the central portions of the prongs is greater than a distance between the lower end portions of the prongs, and wherein the lower end of the shaft terminates at the upper end of the prongs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Figure 1 is a split length view of the steel shaft with one end divided and the prongs bent to a specific angle.

[0011] Figure 2 is a full length view of the steel shaft with the control handle attached and the upper end inserted into the chuck of a rotary drill.

DETAILED DESCRIPTION OF THE INVENTION

[0012] The key to the rotary hand-held tilling and weed removing device according to the invention is simplicity. The three part design consisting of a shaft, a "T" shaped handle and two lock collars and weighs only 1.5 pounds, makes the gardening tool of the invention a multi purpose garden tool for use with any 3/8" household drill. Easily attached to the drill chuck, the 2 inch wide rotary arms allow tilling and weed removal in very confined areas and precision control from the shaft handle adds to the ease of use. This simple design does not require blade or tiller bar replacement, making it very cost effective. A low carbon, one piece, steel shaft requires no maintenance.

[0013] A preferred gardening tool according to the invention is illustrated in Figures 1 and 2. The gardening tool comprises a low carbon, one piece, steel shaft 1 which is 3/8 inch in diameter and 35-3/4 or 36 inches in length. The lower end 2 of shaft 1 has been split three inches up the centre of the shaft 1, and the split has been configured to form two prongs 3. The outside edges of the prongs 3 are half

rounded while the inside edges are flat. The outside edges of prongs 3 are opened to a width of 2-1/2 inches "A" at two inches from the inner split of the shaft #1. The outer ends of the prongs 3 are tapered inward to one inch "B" apart to acquire the specific desired shape.

[0014] The upper end 4 of shaft 1 is stamped or machined inch down the shaft to form three or six flat sides for easy non-slip attachment to the chuck of a 3/8 inch power rotary drill.

[0015] Figure 2 depicts the nylon 'T' shape handle of the gardening tool. The shaft 1 rotates freely inside the vertical part of the handle 5 while the horizontal part of the handle 5 is held by the user. The horizontal part of the handle 5 has a foam-rubber handle grip 6 for control and comfort. The adjustable 'T' shaped handle 5 is locked in place by two lock collars 7. These lock collars 7 may be loosened with an Allen Key and adjusted to the user's desired position of the nylon 'T' shape handle 5.

[0016] In conclusion, the gardening tool according to the invention comprises a 3/8 inch steel shaft 36 inches in length, split and bent in a triangular direction. The simplicity of the gardening tool is such that it does not require any attachments. The control handle is adjustable to the user's height and arm length. Once the user becomes familiar with the tool, on average about one hour, the ease of operation of the garden tool will become apparent to the user. The gardening tool according to the invention is simple, light weight, performs a number of tasks, and will cut down on the time the user will require to do gardening maintenance.

WHAT IS CLAIMED IS:

1. A rotary hand-held tilling and weed removing device, comprising:
 - (a) a rotatable shaft having an upper end and a lower end, the upper end being rotatably attachable to a chuck of a rotary power drill; and
 - (b) a pair of prongs provided on the lower end of the shaft, the prongs being coplanar with the shaft and having an angular shape, wherein each prong has an upper portion, a central portion and a lower portion, with the upper portions of both prongs extending downwardly from the lower end of the shaft and outwardly away from one another toward the central portion, the lower portions of the prongs extending downwardly from the central portion and inwardly toward one another, the lower portions each having a tip distal from the central portion such that a distance between the central portions is greater than a distance between the distal tips, and wherein the lower end of the shaft terminates at the upper portions of the prongs.
 2. The rotary hand-held tilling and weed removing device according to claim 1, wherein each of the prongs has a length of about 3 inches measured along the prong from the distal tip to the lower end of the shaft.
 3. The rotary hand-held tilling and weed removing device according to claim 1 or 2, wherein the prongs each have a semi-circular cross-section along their entire
-

length, such that each prong has a half-rounded outward-facing surface along its entire length and a flat inward-facing surface along its entire length.

4. The rotary hand-held tilling and weed removing device according to any one of claims 1 to 3, wherein the distance between the central portions of the prongs is 2.5 inches.

5. The rotary hand-held tilling and weed removing device according to any one of claims 1 to 4, wherein the distance between the distal tips of the lower portions of the prongs is 1 inch.

6. The rotary hand-held tilling and weed removing device according to claim 3, wherein the semi-circular cross section of the prongs is configured to correspond in shape and in area to a cross-section of the shaft split along its center.

7. The rotary hand-held tilling and weed removing device according to any one of claims 1 to 6, wherein the angular shape of each prong comprises a V-shape, with the central portion of each prong comprising an apex of the V-shape, such that the distance between the central portions comprises a maximum distance between the prongs.

8. The rotary hand-held tilling and weed removing device according to claim 7, wherein a distance between the upper portions of the prongs increases continuously between the lower end of the shaft and the central portions of the prongs; and wherein a distance between the lower portions of the prongs decreases continuously between the central portions of the prongs and the distal tips of the lower portions.

9. The rotary hand-held tilling and weed removing device according to claim 8, wherein the upper portions and lower portions of the prongs are straight.

10. The rotary hand-held tilling and weed removing device according to any one of claims 1 to 9, further comprising:

(c) a control handle comprising a first portion extending along the shaft, and a second portion extending from the first portion, wherein the shaft is received inside the first portion and is freely rotatable therein, and wherein the second portion is provided with a handle grip.

11. The rotary hand-held tilling and weed removing device according to claim 10, wherein the handle is T-shaped.

12. The rotary hand-held tilling and weed removing device according to claim 10 or 11, wherein the first portion of the control handle is slidable along the shaft.

13. The rotary hand-held tilling and weed removing device according to any one of claims 10 to 12, wherein the first portion of the control handle is releasably secured between the upper and lower ends of the shaft by a pair of lock collars.

14. The rotary hand-held tilling and weed removing device according to any one of claims 10 to 13, wherein the handle comprises nylon.

15. The rotary hand-held tilling and weed removing device according to any one of claims 10 to 14, wherein the upper end of the shaft is machined for non-slip attachment to the chuck of said rotary power drill.

FIG. 1

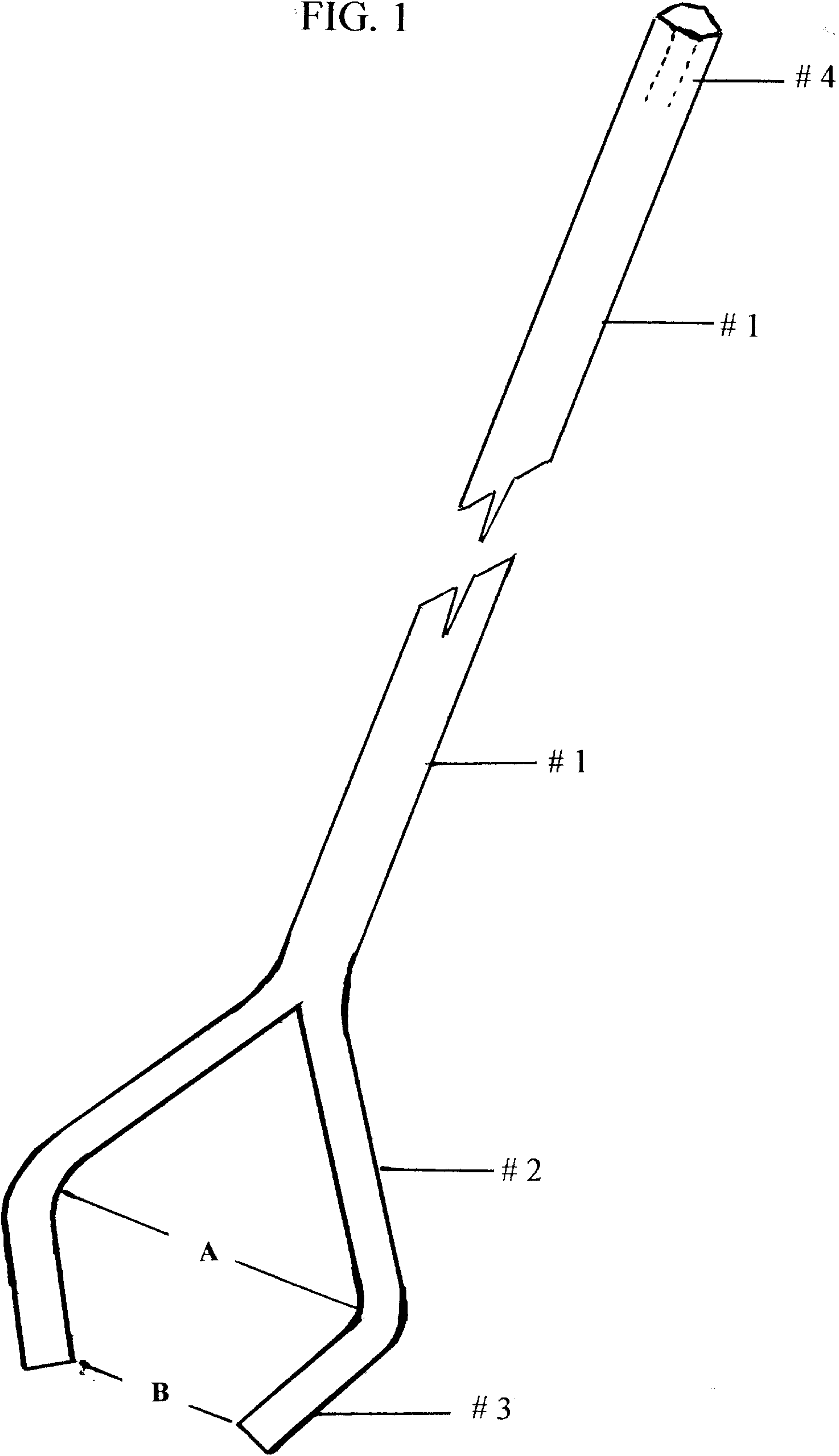


FIG. 2

