Dec. 13, 1966 A. E. KAMMER 3,291,231

POST HOLE DIGGER

Filed Dec. 29, 1964

Fig. 1

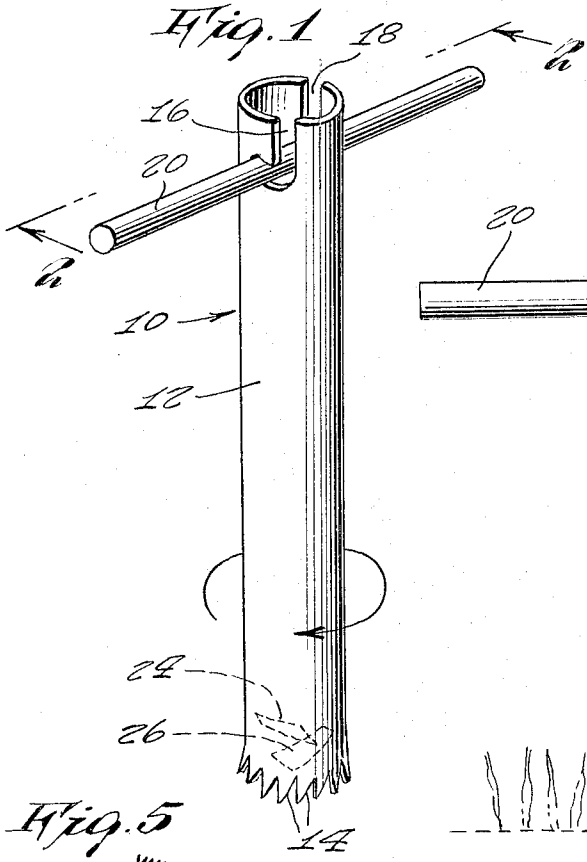


Fig. 2

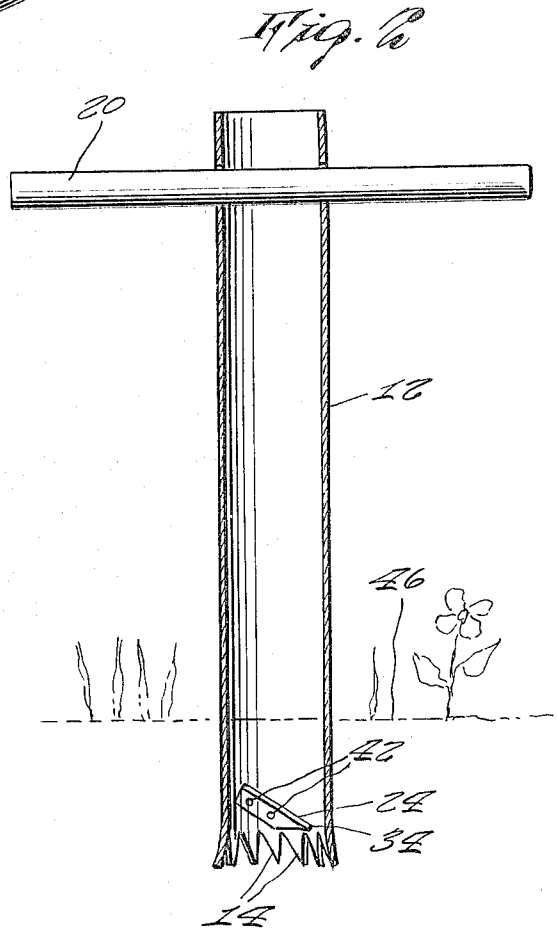


Fig. 5

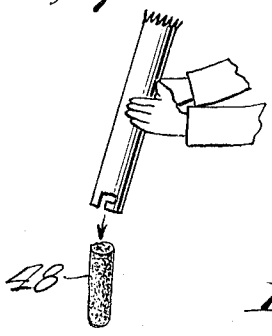


Fig. 4

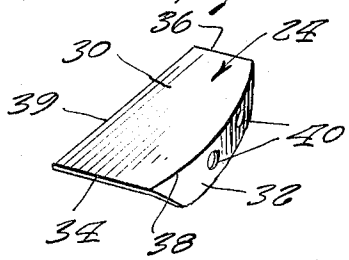
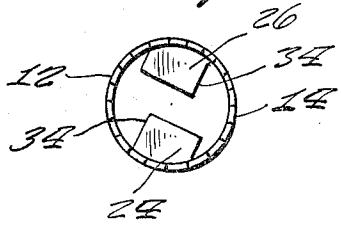


Fig. 3



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POST HOLE DIGGER

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This invention relates to a device for digging holes in the ground, particularly post holes or the like.

It is the principal object of this invention to provide a tool of improved design for forming cylindrical holes to a desired depth of desired proportions with ease and a minimum of labor, which does not pack the earth and which provides a post receiving hole of optimum dimensions with a minimum of soil handling.

Another object of this invention is to form the tool device as a cylindrical metal sleeve provided with a circumferential row of earth cutting teeth at the lower edge of the sleeve, the upper end of the sleeve having formed therein diametrically opposed reverse bayonet-slots to removably receive a handle bar for operating the sleeve by rotating the same clockwise to effect its cutting function.

A further object of the invention is to provide interiorly of the sleeve and adjacent the cutting teeth a pair of diametrically opposed angularly related cutting blades that function to cut-out and support the earth core that is cut out by the device.

A still further object of the invention relates to the removal of the cut out earth core by the simple expedient of turning the sleeve upside down on its removal from the earth upon completion of its cutting operation by a counter-clockwise rotation, with the earth core contained therein, and simply dropping the earth core therefrom.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific construction illustrated and described within the scope of the appended claims.

FIGURE 1 is a perspective view of the digging device with handle bar positioned thereon.

FIGURE 2 is a vertical sectional view of the digging device taken on line 2—2, FIGURE 1, showing the same in use.

FIGURE 3 is a bottom view of the digging device.

FIGURE 4 is a perspective view of one of the cutting blades.

FIGURE 5 illustrates the manner of discharging the earth core from the digging device.

Referring to the drawings, the post hole digging device **10** consists of a cylindrical metal sleeve **12** having an outside diameter corresponding to the diameter of the post selected for use, it being understood that the digging device **10** may come in a variety of sizes each corresponding to the size of post used. Preferably the sleeve **12** is formed of sheet steel of a thickness of ⅛ inch, and may be of any desired length. For general purposes, a length of 30 to 36 inches has been formed to be satisfactory for the sleeve **12**, as well as diameters of 4, 5 and 6 inches.

The sleeve **12**, at its lower terminal end, is provided with a circumferential row of teeth **14** of a size and shape that will readily cut into the earth. Preferably the teeth **14** are deflected slightly radially outwardly, as shown, so as to cut a kerf in the soil of a diameter slightly greater than the diameter of the sleeve **12**. This will prevent binding of the sleeve in the soil and will facilitate the easy removal of the sleeve from the soil upon the completion of the cutting operation.

The upper end of the sleeve **12** has formed therein a pair of bayonet slots **16** and **18**, arranged diametrically opposite each other and reversely related, that is, the bottom horizontal portions of the bayonet slots extend in opposite directions. Adapted to removably fit within the bayonet slots **16**, **18** in a handle bar **20**, the intermediate portion thereof being engageable within the bayonet slots, as shown in FIGURES 1 and 2.

A pair of like cutter blades **24**, **26**, are located interiorly of the sleeve **12** adjacent the teeth **14**. Referring to FIGURE 4, it is seen that the blade **24** consists of a blade portion **30** and a flanged or bracket portion **32**. The blade portion **30** is formed flat and is provided with a transverse cutting edge **34** at its forward end. The rear end **36** of the blade is narrower than the front end. The outer side **38** of the blade **24** is curved to correspond with the cylindrical curvature of the sleeve **12**, and depending from the curved side is the bracket portion **32** which is also correspondingly curved. Provided in the bracket portion **32** are openings **40** for receiving fastener elements such as rivets. The blade **26** is formed similar to the blade **24**. Both blades **24** and **26** are positioned substantially diametrically opposite each other and are each inclined downwardly towards the teeth **14** along a helical path in order to facilitate their entry and downward movement through the earth on clockwise rotation of the sleeve **12**.

The blades **24**, **26** are so positioned that their leading cutting edges **34** are located slightly (not more than ¾ inch) above the base of the saw teeth **14** as shown in FIGURE 2. Referring to FIGURE 3, it will be seen that the straight side edge **39** of each blade opposite its curved bracket portion **32** will in the attachment of the cutting blades to the sleeve lie parallel to each other and that the vertical plane of the cutting edge **34** of each blade will intersect the straight side edge of the other blade. The transverse cutting edge **34** of each blade provides the leading edge thereof as shown in FIGURE 3. The blades **24**, **26** are each secured to the inside wall of the sleeve **12** by rivets **43**. If desired, the blades **24**, **26** may be welded direct to the sleeve **12**.

With the handle bar **20** in position on the sleeve **12**, a post hole is dug by the sleeve **12** when placed on the soil **46**, see FIGURE 2. Rotation of the sleeve in a clockwise direction and the application of downward pressure on the handle bar **20** will cause the saw teeth **14** to cut a kerf in the soil. Downward movement of the sleeve **12** thus effected will subsequently cause the blades **24**, **26** to enter the soil and progress downwardly in a helical path until the desired depth of hole is reached. The blades **24** and **26** function to break off the bottom of the core or plug of earth formed in the sleeve such that removal of the sleeve **12** with its core is easily effected by an upward pull on the handle bar accompanied if necessary, by rotating the sleeve counter-clockwise. On complete removal of the sleeve **12** from the soil, there is left therein a cylindrical hole for the reception of the post, and the core or plug **48** is simply dropped out of the sleeve **12** when it is turned up-side-down as shown in FIGURE 5.

While certain novel features of my invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing from the spirit of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A post hole digger device comprising:
   (a) a cylindrical sleeve for coring, retaining and releasing soil,
   (b) a circumferential row of cutting teeth on the lower terminal end of said sleeve,

(c) at least one cutting blade interiorly of said sleeve having a cutting edge adjacent the base of said cutting teeth,
(d) a handle bar removably connected to the upper end of said sleeve,
(e) said cutting teeth are each deflected outwardly of the outer cylindrical surface of said sleeve, and
(f) the removable connection of said handle bar with said sleeve comprising a pair of diametrically positioned reverse bayonet slots formed in the upper end of said sleeve and opening into the upper terminal end of said sleeve, whereby said handle bar is inserted horizontally simultaneously into both bayonet slots and retained therein by a slight turning movement,
(g) a flat blade portion,
(h) a curved bracket portion corresponding in curvature to the inside cylindrical wall curvature of said sleeve,
(i) a leading cutting edge on said blade portion extending transversely thereof, and
(j) means rigidly securing the bracket portion of said cutting blade to the inside wall of said sleeve.

2. The post hole digger of claim **1**, wherein:
(a) The flat blade portion o fthe cutting blade is inclined downwardly towards the cutting teeth such as to move downwardly into the soil along a helical path on clockwise rotative movement of said sleeve,
(b) said cutting blade being operative to cut the bottom of the earth core from the earth whereby to permit removal of the sleeve and core from the soil.

3. The post hole digger of claim **2**, wherein:
(a) a pair of cutting blades are located within said sleeve and disposed in diametrically opposed relation with the leading cutting edge of each facing opposite portion of the inside wall surface of said sleeve,
(b) the rear edge of each blade portion being narrower than the leading cutting edge thereof, and
(c) the side edge of each blade opposite the curved bracket portion thereof being straight,
(d) whereby in the attachment of said cutting blades to the inside wall of said sleeve, said straight side edges of said blades will lie opposite each other in parallel relationship and the vertical plane of the leading cutting edge of each blade will intersect the straight side edge of the other blade.

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