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ROTARY SOD CORING DEVICE

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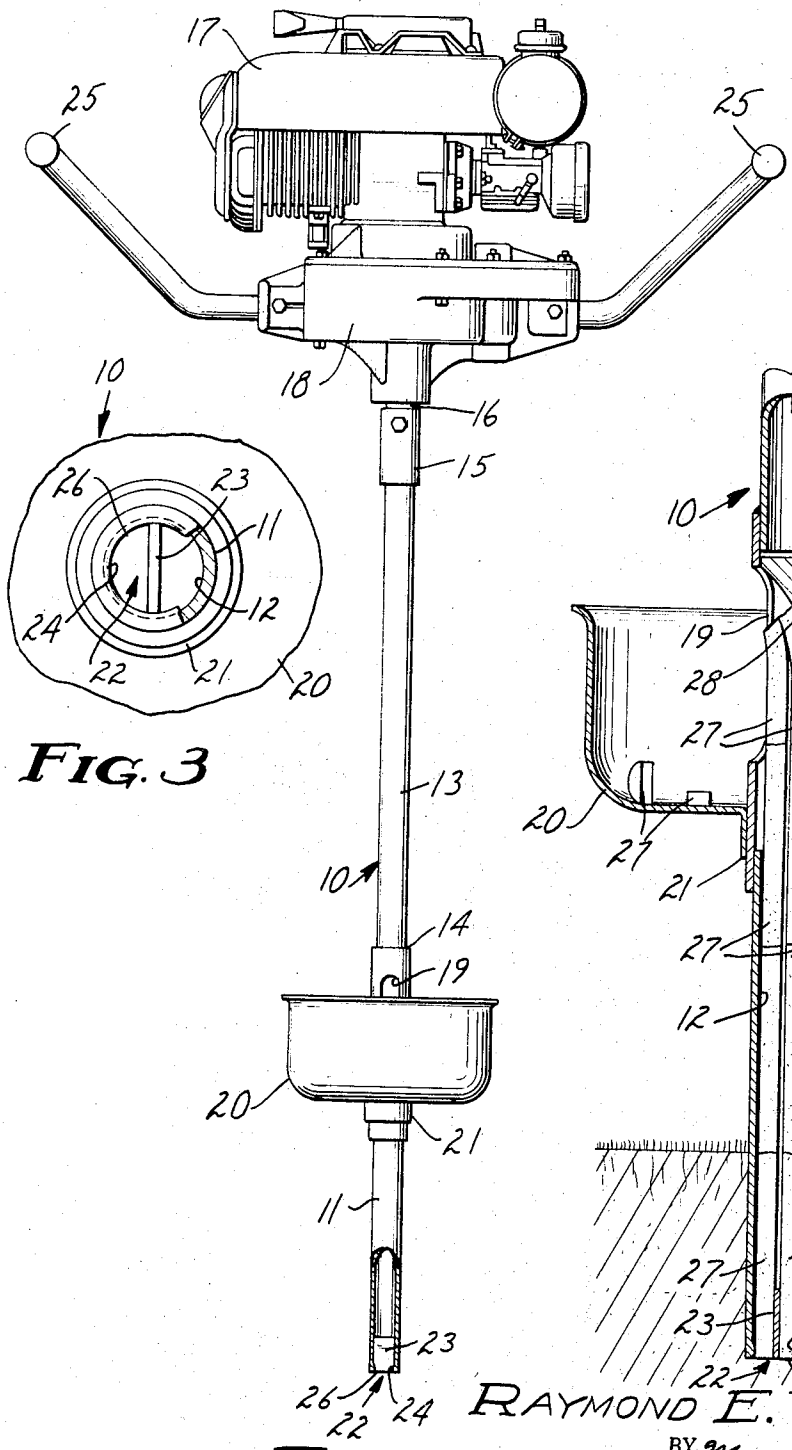


FIG. 3

FIG. 1

FIG. 2

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ROTARY SOD CORING DEVICE

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My invention relates generally to rotary tools, and more particularly to a rotary coring device.

Still more particularly, my invention relates to a rotary coring device for removing plugs of earthen material for purposes of refilling the opening left thereby with fertilizer material.

Normally in the care of golf greens, or other such well cared for areas, much care is taken to maintain the grass thereof in as near perfect condition as possible. One way to assure such a condition is to provide the proper nutrition therefor by periodically fertilizing the root systems of such grass. An example of one procedure for applying fertilizer to such areas is to drill or core a plurality of small openings in a desired pattern over the surface of the area to be fertilized. Understandably, such coring or drilling should be accomplished without disturbing the surface contour of the area immediately surrounding each opening and without depositing the earthen material removed by the coring device on the surrounding surface.

To this end I provide a tubular shaft which defines an axially extended bore. The upper end of the shaft is provided with means for coupling same to the rotary shaft of a power head. The bore of said shaft terminates at its upper end in a radial outlet and at its lower end in an axially outwardly opening mouth having a diametrically extended wall portion bisecting same. Said shaft is further provided with an upwardly opening, cup-like catch basin concentrically mounted thereon adjacent said radial opening and adapted to catch core pieces emanating from said radial opening.

The primary object of my invention is the provision of a device of the class above described in which a core piece or plug may be removed from a golf green or other such well cared for area for the purpose of subsequently fertilizing same without deforming the immediately surrounding ground surface or depositing removed core pieces thereon.

It is another object of my invention to provide a device of the character above described which requires but a minimum of time, effort and skill to operate.

It is a still further object of my invention to provide a device of the class above described which is relatively simple and inexpensive to manufacture and which is extremely rugged and durable in use.

These and other highly important objects will become apparent when taken in consideration with the following specification, appended claims and attached drawings.

With reference to the drawings, wherein like reference characters indicate like parts throughout the several views:

FIG. 1 is a side elevational view of the present invention mounted on a rotary power head;

FIG. 2 is an enlarged fragmentary view partly in elevation and partly in axial section showing the present invention in an operative position; and

FIG. 3 is an enlarged view in bottom plan of the present invention, portions thereof being broken away and portions thereof shown in section.

With further reference to the drawings, there is shown a power operated rotary coring device indicated in its entirety by the numeral **10**. Coring device **10** comprises a tubular shaft **11** which defines an axially extended bore **12**. A coupling element **13**, in the nature of a tubular extension of shaft **11**, has its lower end connected to the

shaft **11** by welding or the like, as at **14**, and its upper end detachably connected, as at **15**, to a rotary output shaft **16** of a power head **17**. Power head **17** is equipped with a speed reduction power transmission **18** which is adapted to impart a suitable speed of rotation to the shaft **11**.

As shown particularly in FIG. 2, the upper end of the bore **12** terminates adjacent the upper end of the shaft **11** and is formed thereat to define a radial opening which provides an outlet **19** for bore **12**. Outlet **19** opens into an upwardly opening, cup-like catch basin **20** that is concentrically mounted on the shaft **11** immediately below outlet **19**, as at **21**. The reason for the catch basin **20** will become apparent hereinafter during a description of the operation.

The other or lower end of shaft **11** defines an axially downwardly opening mouth **22** which communicates with the bore **12**. Mouth **22**, as shown, is bisected by means of a diametrically extended wall portion **23** which terminates axially within the bore **12** in closely spaced relationship to the mouth **22**. Mouth **22** is further formed with the circumferentially extended lip portion **24** which serves to reduce the diametric dimension of the mouth **22** with respect to the bore **12**.

As above described, when it becomes necessary to apply fertilizer to a golf green or other similar area, an operator grasps the handles **25** carried by the transmission **18**. Thereafter, with the power head **17** operating, the lower end or mouth **22** of shaft **11** is lowered into engagement with an underlying sod-covered surface A. When the lower cutting edge **26** of shaft **11** engages the surface A, the lower edge of partition **23** shaves or breaks away that portion of the earth underlying same. Subsequent downward movement of the shaft **11** forces such earth into the mouth **22** on opposite sides of the partition **23** and forms the semicylindrical core pieces **27**.

It will be here noted that the exterior diametric dimension of the shaft **11** along a major portion of the length thereof, that is from the lower end of shaft **11** to a point immediately below the catch basin **20**, is not greater than that of the lower end of shaft **11**. Consequently, as the shaft **11** progresses into the earth, no displacement or distortion of the earth radially of the shaft takes place. As a result the upper surface A, adjacent the shaft **11**, is left in the same condition as it was prior to the coring operation. It will also be seen that, during removal of the shaft **11** from the cored out opening, the coring device need not be tipped to the side to break the core pieces **27** free at their base. This, of course, has already been accomplished by the rotating partition **23** causing the core pieces **27** to rotate therewith.

As the core pieces **27** pass through the mouth **22** of shaft **11**, the diametrically reduced lip portion **24** together with the partition **23** cause the combined diametric dimension of the core pieces **27** to be less than the diametric dimension of the bore **12** above the lip **24** and partition **23**. With this arrangement it will be seen that the core pieces **27** are easily moved axially within the bore **12** by incoming core pieces **27**, during subsequent coring operations, until they reach a point where they pass through the outlet **19** into the catch basin **20**. As shown, particularly in FIG. 2, the upper end of the bore **12** is formed with the curved surface **28** which directs the core pieces **27** through the radial outlet **19**. With the curved surface **28**, it will be seen that core pieces **27** have no chance of plugging the bore **12** and rendering the coring device **10** inoperative.

My invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above-noted objects; and while I have shown and described a preferred embodiment, I wish it to be specifically understood that the same is capable of modification

without departure from the spirit and scope of the appended claims.

What is claimed is:

1. A coring device for use with a power head having a rotary output shaft projecting therefrom comprising:
   (a) a tubular shaft defining an axially extended bore;
   (b) means for coupling one end of said shaft to the extended end of the rotary output shaft;
   (c) said bore terminating adjacent said one end and defining thereat a radial outlet opening in said tubular shaft;
   (d) said tubular shaft adjacent said other end defining an axially outwardly and downwardly opening mouth communicating with said bore; and
   (e) a diametrically extended wall portion carried by said tubular shaft and bisecting said mouth.

2. The structure of claim 1 in further combination with a cup-like catch basin concentrically mounted on said shaft adjacent said opening and adapted to catch core pieces from said radial outlet opening.

3. The structure of claim 1 in which said mouth includes a circumferentially extended, diametrically reduced lip portion.

4. The structure of claim 2 in which the outside diametric dimension of said shaft extending along a major portion thereof from said other end to said catch basin is not greater than that of said other end.

5. The structure of claim 1 in which the diametric dimension of said bore between said lip and said radial opening is not less than that of said bore adjacent said lip.

6. The structure of claim 1 in which said wall portion bisecting said mouth terminates axially within said bore in closely spaced relationship to said mouth.

7. The structure of claim 1 in which said bore at said one end is formed to direct the passage of core pieces in said bore toward said outlet opening.

8. A coring device for use with a power head having a rotary output shaft projecting therefrom comprising:
   (a) a tubular shaft defining an axially extended bore;
   (b) means for coupling one end of said shaft to the extended end of the rotary output shaft;
   (c) said bore terminating adjacent said one end and defining thereat a radial outlet opening in said tubular shaft;
   (d) said tubular shaft adjacent said other end defining an axially outwardly and downwardly opening mouth communicating with said bore; and
   (e) means adjacent said other end for dividing said bore into at least two sections.

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