TOOL TO CLEAN OUT VEGETATION FROM AROUND SPRINKLER HEADS

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References Cited
UNITED STATES PATENTS
542,584 7/1895 Carter............................... 172/25
2,583,113 1/1952 Mogel............................... 30/276

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ABSTRACT

This tool comprises a handle having, at its lower end, a plurality of cutter members which extend beyond the end of the handle and are disposed in a circular path around the projected axis of the handle so the tool can be lowered over a sprinkler head and will be guided by said head and the cutter members can be moved around the sprinkler head by rotating the handle, causing the cutter members to cut the vegetation around and close to the sprinkler head and to pick up the cut vegetation when the tool is lifted clear of the sprinkler head.

4 Claims, 8 Drawing Figures
TOOL TO CLEAN OUT VEGETATION FROM AROUND SPRINKLER HEADS

REFERENCE TO PRIOR RELATED APPLICATIONS

The tool herein disclosed is in the nature of an improvement in tools of the type disclosed in my prior patent application Ser. No. 044,422, filed June 8, 1970 now U.S. Pat. No. 3,657,814.

SUMMARY OF THE INVENTION

An object of this invention is to improve and simplify the construction and reduce the manufacturing cost of tools of the type disclosed in my prior application hereinbefore identified.

Another object is to provide a tool of this type comprising a handle adapted to be rotatively moved about an axis and having a plurality of cutter members supported from its normally lowermost end, said cutter members being of approximately U-shape and extending beyond the lowermost end of the handle and being positioned in angularly spaced relation outwardly from the projected axis of the handle so they can be fitted over a sprinkler head and moved in a circular path around the sprinkler head by rotating the handle and, when so moved, will cut the vegetation around and close to the sprinkler head and will remove the cut vegetation when the tool is lifted clear of the sprinkler head.

Other objects of my invention will be apparent from the following description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of a tool embodying my invention, the handle being shown in section and the upper part of said handle being omitted.

FIG. 2 is a view in side elevation of said tool, part of the handle being broken away.

FIG. 3 is a fragmentary plan view illustrative of a modification of the tool shown in FIGS. 1 and 2.

FIG. 4 is a fragmentary view, partly in elevation and partly in cross section looking in the direction indicated by line 4—4 of FIG. 2.

FIG. 5 is a fragmentary plan view illustrative of another modified form of this tool.

FIG. 6 is a fragmentary view partly in elevation and partly in section taken substantially on line 6—6 of FIG. 5.

FIG. 7 is a plan view of another modified form of this invention.

FIG. 8 is a fragmentary view in elevation of the tool shown in FIG. 7.

Like reference numerals refer to like parts throughout the several views.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The tool shown in FIGS. 1 and 2 comprises a handle 10, only a fragment of which is shown, but which preferably is substantially straight and of any desired length and has a hand hole 11 rigid with its upper end. A tool head formed of two relatively crossed flat metal bars, indicated generally in FIG. 1 by numerals 12 and 13, is secured to the normally lowermost end of the handle 10. Said crossed bars 12 and 13 are herein shown to be substantially duplicates but obviously their shape and dimensions can be varied.

Each bar 12 and 13 comprises a medial frame part 14 rigid with the lower end of the handle 10 and extending outwardly and terminating in a U-shaped cutting member formed of an inner cutter part 15, an outer cutter part 16 and a lower or bottom cutter part 17 which extends between and connects the two cutter parts 15 and 16. The inner and outer cutter parts 15 and 16 are substantially parallel and are spaced a substantial distance apart and are substantially upright when the tool is in use.

The lower cutter part 17 is substantially horizontal and rests on or digs into the ground when the tool is in use.

Preferably the two bars 12 and 13 are positioned approximately at right angles to each other and are welded to the normally lowermost end of the handle 10 at the location where they cross. Also preferably, but not essentially, both edges of each cutter part 15, 16 and 17 are sharpened so the tool will cut when it is rotated in either direction but obviously they may be sharpened on one edge only. The U-shaped cutter parts 15, 16, 17 protrude beyond the normally lowermost end of the handle 10 and are spaced outwardly from the projected axis of said handle. When the tool is applied to a sprinkler head the inner cutter parts 15 lie close to and fit over the sprinkler head and cooperate in forming a receptacle which receives the sprinkler head in such a manner that the tool is guided for rotary movement around the sprinkler head.

When the tool is applied to a sprinkler head and pressed down firmly and rotated the U-shaped cutter members will cut a circular path around and close to the sprinkler head and when the tool is lifted clear of the sprinkler head most of the cut vegetation will be lifted with it and can easily be shaken clear of the tool.

In the modified form of this invention shown in FIGS. 3 and 4 the parts 10, 14, 15, 16 and 17 are the same as the similarly numbered parts in FIGS. 1 and 2. In addition, FIGS. 3 and 4 show a reinforcing ring 20 rigidly secured, preferably by welding, to the inner cutting parts 15 and another reinforcing ring 21 rigidly secured to the outer cutter parts 16. The lower edge 20 of the ring 20 is sharpened and is shown to be positioned flush with the lowermost cutter parts 17 but this ring 20 can extend below the cutter parts 17 or it can be positioned with its lower edge above the level of said cutter parts 17.

The tool of modified form shown in FIGS. 5 and 6 comprises a handle 22, a frame part 23 herein shown to be a disc of flat metal welded to the normally lowermost end of the handle 22 and disposed in a plane at right angles to the axis of said handle 22, and three U-shaped cutter members each composed of cutter parts 15', 16' and 17'. The U-shaped cutter members, each formed of parts 15', 16' and 17' are radially disposed and spaced at about equal angular to the frame part 23 and are rigidly secured to said frame part 23 as by welding the uppermost end of each inside cutter part 15' to the peripheral part of the frame member 23. Obviously the frame part 23 and cutter members 15', 16' and 17' can be stamped from a single plate or otherwise formed as an integral piece. The tool shown in FIGS. 5 and 6 operates in substantially the same manner as the previously described tool shown in FIGS. 1 and 2.

FIGS. 7 and 8 show a modified form of the invention comprising a handle 25, a flat metal frame part 26 welded or otherwise rigidly secured to the lower end of said handle 25, a ring 27 of flat metal positioned coaxially...
ally of the handle 25, and welded or otherwise rigidly secured to the frame part 26 and extending beyond the end of the handle. A plurality of L-shaped cutter members formed of flat metal and each composed of two arms or parts 28 and 29 disposed at right angles to each other and each having a sharpened leading edge 30 are secured to the periphery of the ring 27. Three of the cutter members 28, 29, spaced at equal intervals around the ring 27, are preferred but it will be understood that the tool will be operable if only one or two or if more than three cutter members 28, 29 are provided on it. Preferably the end of the part 28 of each L-shaped cutter member is positioned against and welded to the peripheral portion of the ring 27 with its sharpened edge substantially flush with the sharpened lower edge 30 of said ring and in a position so that it lies in a plane at an angle in the order of 40° relative to the plane of the lower cutting edge 30 of the ring 27. This gives the part 28 of each cutter member a pitch so it will tend to cut into the material it contacts when the tool is rotated in one direction and will tend to ride over and pack said material down when the tool is rotated in the opposite direction. It will be noted that the sharpened leading edge of the outermost part 29 of each L-shaped cutter member is forwardly inclined from bottom to top as respects the direction the tool will be moved for ordinary cutting purposes and this will tend to press vegetation being cut down against the ground and make possible easier and more efficient cutting.

The operation of the tool shown in FIGS. 7 and 8 is similar to the operation of the tool shown in the previously described FIGS. except that the ring 27 will cut the vegetation around and close to a sprinkler head if the tool is pressed down firmly when it is applied to the sprinkler head and the incline of the blade part 28 will tend to cause it to dig into the ground when the tool is turned in one direction and to ride over and pack cut vegetation and dirt when the tool is rotated in the opposite direction. Also the action of the cutting edge of parts 29 are different in that they tend to press the vegetation down and cut it against the ground. In all forms of the invention damage to plastic or other pipes which supply water to the sprinkler heads will be prevented by contact with the sprinkler heads or parts of the tool with which the tool handle is connected.

I claim:

1. A tool for clearing out vegetation from an area around and close to a sprinkler head comprising a handle; frame means rigid with the normally lowermost end of said handle and extending outwardly therefrom; and a plurality of U-shaped cutting members carried by said frame means and positioned beyond the end of the handle and in a circular path outwardly from the projected axis of the handle, each U-shaped cutting member comprising an inner cutter and tool guiding part rigidly secured to the outer portion of said frame member and extending downwardly therefrom in outwardly spaced approximately parallel relation to the projected axis of said handle and a bottom cutter part rigid with the lower end of said inner cutter part and extending approximately radially outward therefrom and an outer cutter part rigid with the outer end of said bottom cutter part and extending upwardly therefrom in approximately parallel outwardly spaced relation from said inner cutter part, whereby the tool can be applied to the sprinkler head with the U-shaped cutting members disposed around and in close tool guiding relation to the sprinkler head and rotation imparted to said tool in moving the cutting members in a substantially circular path around the sprinkler head.

2. The tool as claimed in claim 1 in which the frame means that is secured to the normally lowermost end of the handle is composed of two relatively crossed bars of flat metal extending across the normally lowermost end of the handle and welded to each other and to the handle at the location where they are relatively crossed and in which one of said U-shaped cutting members is integral with each end portion of each of said bars.

3. The tool as claimed in claim 1 in which the frame means that is secured to the normally lowermost end of said handle is a frame plate extending crosswise of the handle and in which the U-shaped cutting members are positioned in angularly spaced relation around said frame plate and the normally uppermost end of an inner cutter part of each cutting member is welded to the marginal portion of said frame plate.

4. A tool for clearing out vegetation from around and close to a sprinkler head that is positioned substantially at ground level comprising an approximately straight handle having on its normally uppermost end a handle member by which it can be rotatively moved; a cylindrical cutter member positioned coaxially said handle and rigid with and extending beyond the normally lowermost end of said handle and having a sharpened lower edge; and a plurality of angularly spaced apart flat metal L-shaped cutting members each having a sharpened leading edge and each having an inner end of one arm of the L-shaped cutting member rigidly secured to the peripheral portion of said cylindrical cutting member and extending outwardly therefrom and operable in normal horizontal cutting, the other arm of said L-shaped cutting member being spaced outwardly from said cylindrical cutting member and being positioned for upright cutting when the tool is in normal use.