

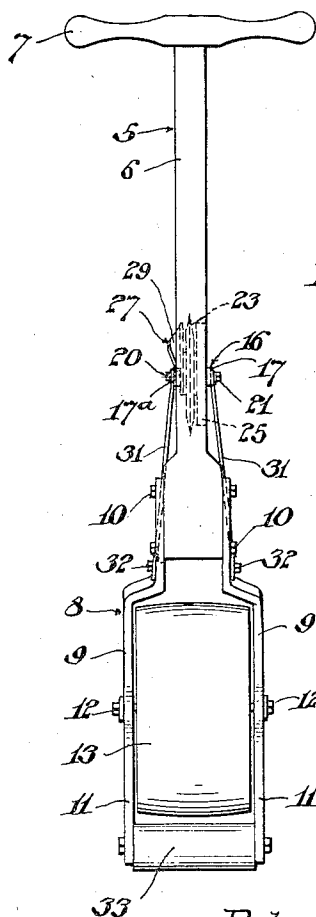
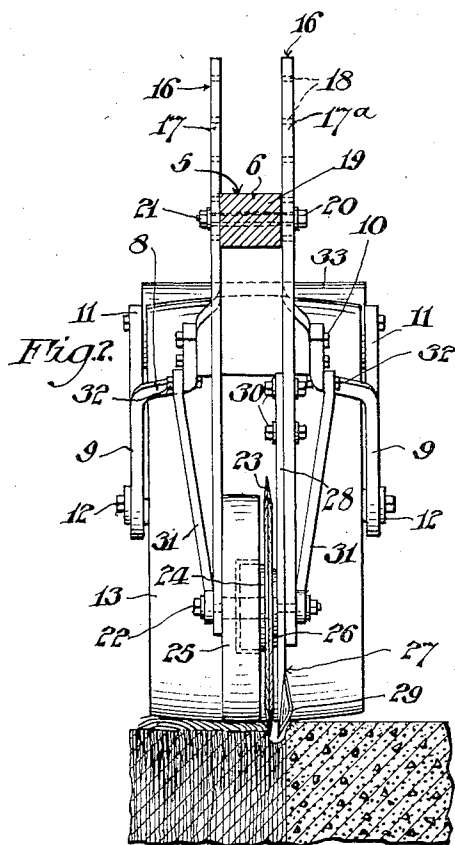
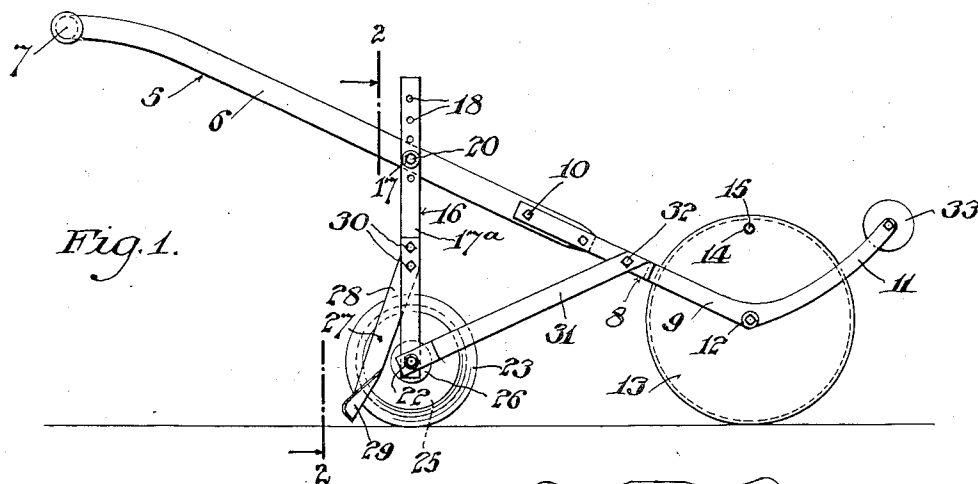
March 3, 1936.

R. F. BURKE

2,032,467

BORDER EDGER

Filed Oct. 20, 1934



Inventor:
Robert F. Burke
By W. W. Williams
Attorney

UNITED STATES PATENT OFFICE

2,032,467

BORDER EDGER

Robert F. Burke, Phoenixville, Pa.

Application October 20, 1934, Serial No. 749,226

10 Claims. (Cl. 97—227)

My invention relates to new and useful improvements in a border edger and particularly a device for cutting the grass, sod and soil along sidewalks, roadways, paths, flower beds and the like, and especially where such areas are paved or have a curb along them, and removing the debris.

One of the objects of the present invention is to construct a rugged device of the character outlined above that will be relatively inexpensive in the cost of manufacture and exceedingly efficient in operation.

Another object of this invention is to provide a mobile machine including a frame supported on a weighted roller and carrying a revolvable disc cutter so located relative to said roller and the frame handles that said cutter may be readily pressed into the ground.

Another object of the invention is to provide for adding extra weight on the front of the machine or for regulating the amount of weight used independently of the weighted roller.

Another object of the invention is to provide a drag or plow for removing the debris severed by the rotary or revolvable disc cutter.

Another object of the invention is to arrange the cutter and plow close to each other whereby they will co-operate to clear one another of the debris during operation of the machine.

A further object of the invention is to loosely and adjustably connect the cutter supports to the handle elements whereby the cutter may follow a crack or furrow or an edging or curb having a curve thereto during such time when the roller will not be in a straight line relative to the cutter.

A still further object of the invention is to provide means for limiting the depth of the cutting action of the cutter.

With these and other objects in view, this invention consists of the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in details, referring by numerals to the accompanying drawing forming a part of the application, in which:—

Fig. 1 is a side elevation of a border edger constructed in accordance with my invention.

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a top plan view of Fig. 1.

In carrying out my invention as herein em-

bodied, 5 represents a handle element which, for purposes of illustration, is shown as including a stock 6 and a handle bar 7. The inner or lower end of the stock carries a fork 8 which is illustrated as consisting of two suitably fashioned metal strips or arms 9 secured to said stock by fastening devices 10, such as bolts and nuts, and said arms may have extensions 11 connected therewith, either formed as parts thereof or fastened thereto as will be obvious.

An axle 12 is mounted on the arms 9 of the fork 8 and a weighted roller 13 is journaled on said axle to support the handle element and component parts constituting the frame of the machine. The weighted roller 13 may be produced from heavy solid material as is well known but preferably it is formed hollow so that it can be weighted with water, sand, grit or other heavy substances, placed therein through a filling opening 14 having a removable closure 15, such as a screw plug. The circumference of the roller 13 may have a transverse convex tread or crown if desired, the advantages of which are well understood.

A bracket 16, preferably including two substantially vertical bars 17 and 17a with longitudinally spaced rows of holes 18, is adjustably connected to the handle stock 6 rearwardly of the weighted roller 13. As this connection must be a loose one I provide a bushing 19 which is longer than the combined widths of the handle stock 6 and the bars 17 and 17a of the bracket 16. This bushing passes through a hole in handle stock and aligned ones in the bracket bars 17 and 17a and in order to fasten the parts in the desired adjusted position, a bolt 20 or the equivalent is projected through the bushing with the head of said bolt engaging one end of the bushing and a nut 21 is then screwed on to the projecting threaded end of the bolt and moved into engagement with the other end of the bushing. The holes 18 being larger than the bushing and the latter preventing the bars 17 and 17a from being bound tightly against the handle stock, the bracket 16, or the bars 17 and 17a thereof will have limited rocking or swaying motion.

Mounted in the lower ends of the bracket bars 17 and 17a is an axle 22 on which is journaled a rotary disc cutter 23 provided at one side with a hub 24 projecting into a socket in one face of the pilot or depth regulating wheel 25 for limiting the depth of the cut to be made by the rotary cutter 23. A washer 26 is located between the face of said rotary cutter opposite the hub 24 and the bar 17a for spacing said rotary cutter

from said bar to permit the assembly of the drag or plow 27 on the inside of said bar 17a. The plow is preferably formed from an oblong strip of flat metal with one corner bent over at approximately right angles on a diagonal line to produce a beam 28 and a share 29. The beam is attached to the bar 17a by fastenings 30 and projects downwardly and rearwardly at an angle to its supporting bar 17a and the point or lower end of the plow share terminates adjacent the circumference of the disc cutter.

The bracket bars 17 and 17a are propped by the braces 31 connected to the axle 22 and to any suitable part of the machine frame, as the arms 9, by bolts 32 or equivalent fastening devices. The connections between the braces and the frame of the machine must be loose ones so that said braces will have considerable "play" to permit the cutter to run out of line with the weighted roller when working on curved borders.

Where the arms 9 are provided with extensions 11 an extra weight 33 may be suspended between said extensions and this is especially advantageous whenever the ground that is being cleaned is very hard or if the machine is used in a locality where it is difficult to obtain material for filling the weighted roller 13. Should the machine be manufactured with a weighted roller of definite or fixed weight, the extra weight 33 can be added at any time for the purpose above mentioned.

Particular attention is called to the location of the plow relative to the cutter. They are to be mounted very close together so that the plow will function as a scraper or cleaner to the rotary cutter for removing any debris adhering to said rotary cutter and the movements of said cutter will have a tendency to loosen any substance that clings to the plow.

In practice, the rotary cutter and plow are usually placed beside the edge of a paved walk or driveway or along side of a border marker or curb and said cutter and plow then caused to penetrate the grass sod or ground. This is accomplished by pressing down on the handle element and is possible due to the heft of the weighted roller. Now by propelling the device forward, the rotary cutter will cut the edge of the grass plot and sever the sod as well as the soil beneath to a depth equal to the distance between the periphery of the rotary cutter and the pilot or depth regulating wheel and the plow will remove the debris leaving a clean cut or groove about the border. Because of the loose connections of the bracket arms and braces with the machine frame, the rotary cutter and plow may follow around a curved border since said cutter and plow will remain at the border even though the weighted roller is several inches out of the straight line.

Of course I do not wish to be limited to the exact details of construction herein shown and described as these may be varied within the limits of the appended claims, without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is:—

1. A border edger comprising a frame including a handle element, a cutter supporting bracket carried by said frame, braces connected with said bracket and frame for strengthening said bracket, a rotary disc cutter journaled in said bracket, a plow attached to said bracket and located to the rear of the vertical center of the

cutter with the point of the plow located above a horizontal plane tangent to the lowermost part of the circumference of said cutter, and a weighted roller on which the frame is mounted, said roller having sufficient heft to permit the cutter to be forced into the ground by pressure applied to the handle element of the frame.

2. The structure in claim 1 characterized by loose connections of the bracket and its braces with the frame to permit the cutter to swing out of alignment relative to the weighted roller.

3. A border edger comprising a weighted roller, a frame including a handle element supported by said roller, a pair of bracket arms, means to loosely and adjustably attach said bracket arms to the frame between the roller and the outer end of the handle element, braces having one end of each connected to a separate bracket arm, means to loosely connect said braces to the frame, a rotary cutter supported by said bracket arms, and a plow attached to one of the bracket arms and extending to a point to the rear of the vertical center of the cutter adjacent the circumference thereof.

4. The structure in claim 3, in combination with a pilot or depth regulating wheel journaled beside but free from the rotary cutter.

5. In a border edger, a frame including a handle element, a weighted roller supporting said frame, a bracket adjustably connected to the frame, means to brace said bracket, an axle mounted in the bracket, a rotary disc cutter journaled on said axle, a hub projecting from one face of said cutter, and a depth regulating wheel journaled on said axle independent of the cutter and having a socket in its inner face to receive the hub of said cutter.

6. The structure in claim 5 in combination with a plow attached to the inside of the bracket and projecting downwardly and rearwardly to a point beyond the circumference of the cutter and lying in close proximity to the face of said cutter opposite the hub whereby the cutter and plow will have a tendency to clear each other of any adhering debris.

7. In a border edger, a handle element, a fork attached to one end of said handle element and with it constituting a frame, a pair of bracket arms having rows of vertically spaced holes, one of said arms being disposed on each side of the handle element, a fastening means passing through any one of the holes in each bracket arm and through the handle element to selectively adjustably attach said arms to the handle element, a bushing surrounding a portion of the fastening means to provide loose or flexible connection between the arms and handle element, an axle mounted in the lower ends of the bracket arms, braces attached to said axle, means to loosely connect said braces to the fork, a depth regulating wheel journaled on said axle between the bracket arms and having a socket in its inner face, a rotary disc cutter journaled on said axle between the depth regulating wheel and a bracket arm and having a socket in its inner face, a hub on the inner face of the cutter registering with the socket in the depth regulating wheel, a washer disposed between the outer face of the cutter and the adjacent bracket arm, a plow attached to the inside of said adjacent bracket arm and projecting downwardly and rearwardly beyond the circumference of the cutter and in front of the outer face thereof in close proximity thereto, and a weighted roller to which the fork is

connected, said roller having sufficient heft to permit the cutter to be forced into the ground by pressure applied to the handle element.

8. The structure in claim 7, in combination with extensions formed on the fork arms, and a weight carried by said extensions.

9. In a border edger, a frame including a handle element, a rotary disc cutter, means to support said cutter from the frame, a plow attached to said cutter supporting means and positioned adjacent said cutter to remove debris severed by the cutter, and a weighted roller functioning as a fulcrum for the frame to permit the cutter to be forced into the ground when pressure is ap-

plied to the frame on the end opposite the roller.

10. In a border edger, a frame including a handle element and a fork, said fork being secured to the lower end of the handle element and projecting therefrom in a generally outwardly and forwardly direction, a disc cutter attached to the frame and directly underlying a position intermediate the ends of the handle element, and a heavy roller connected to the fork and having sufficient heft to permit an operator to force the cutter into the ground by bearing down on the handle element.

ROBERT F. BURKE.