



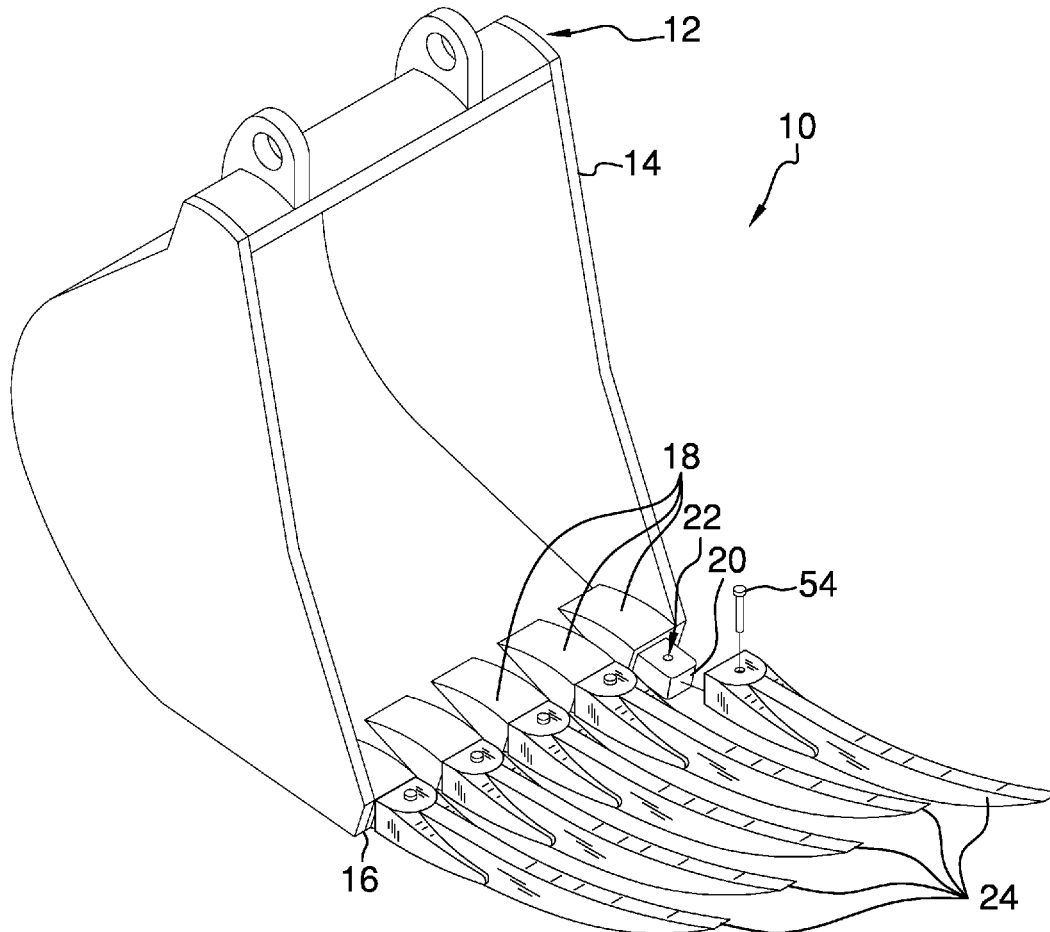
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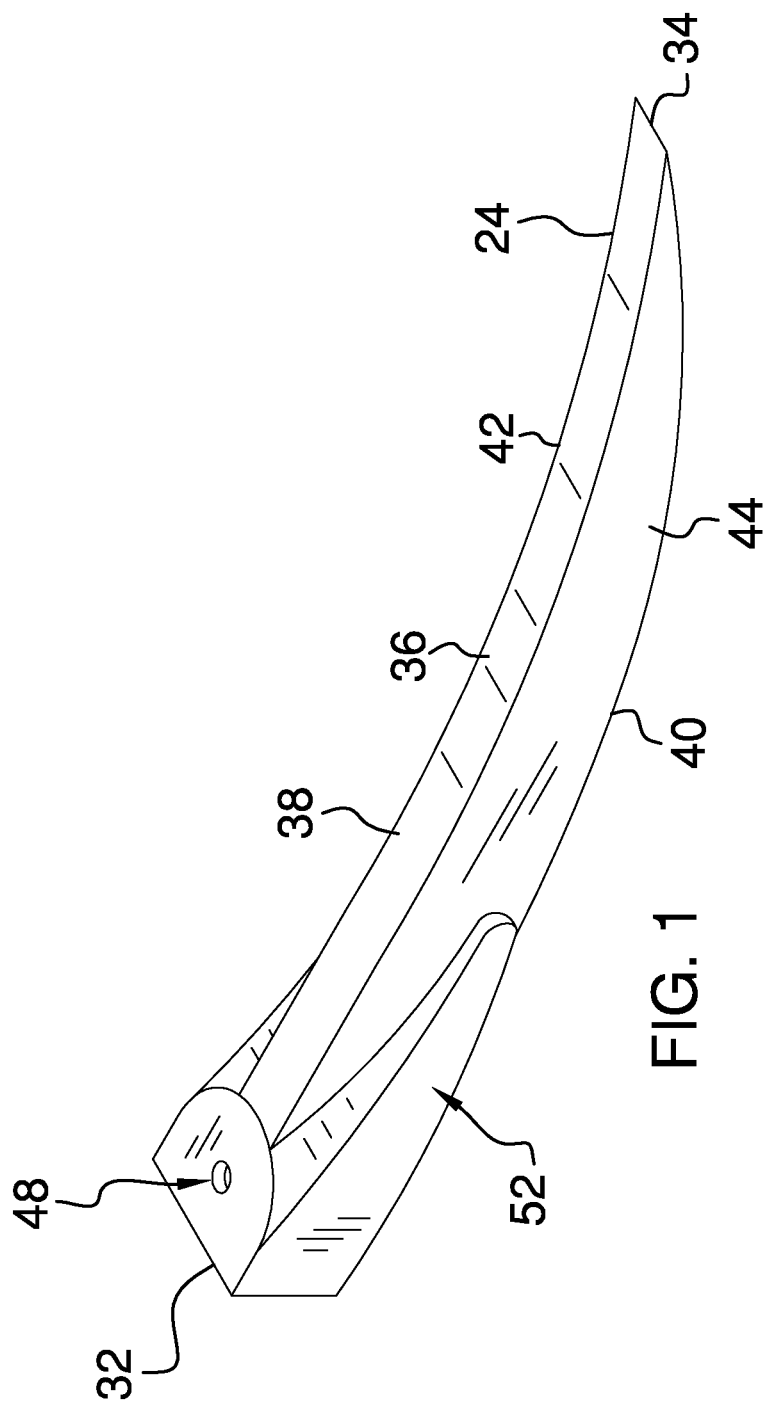
(19) **United States**(12) **Patent Application Publication**
Robbins(10) **Pub. No.: US 2017/0044741 A1**(43) **Pub. Date: Feb. 16, 2017**(54) **EXCAVATION SYSTEM**(52) **U.S. Cl.**(71) Applicant: **James Elton Robbins**, Colmesneil, TX
(US)CPC *E02F 9/2858* (2013.01); *E02F 9/2833*
(2013.01); *E02F 5/006* (2013.01)(72) Inventor: **James Elton Robbins**, Colmesneil, TX
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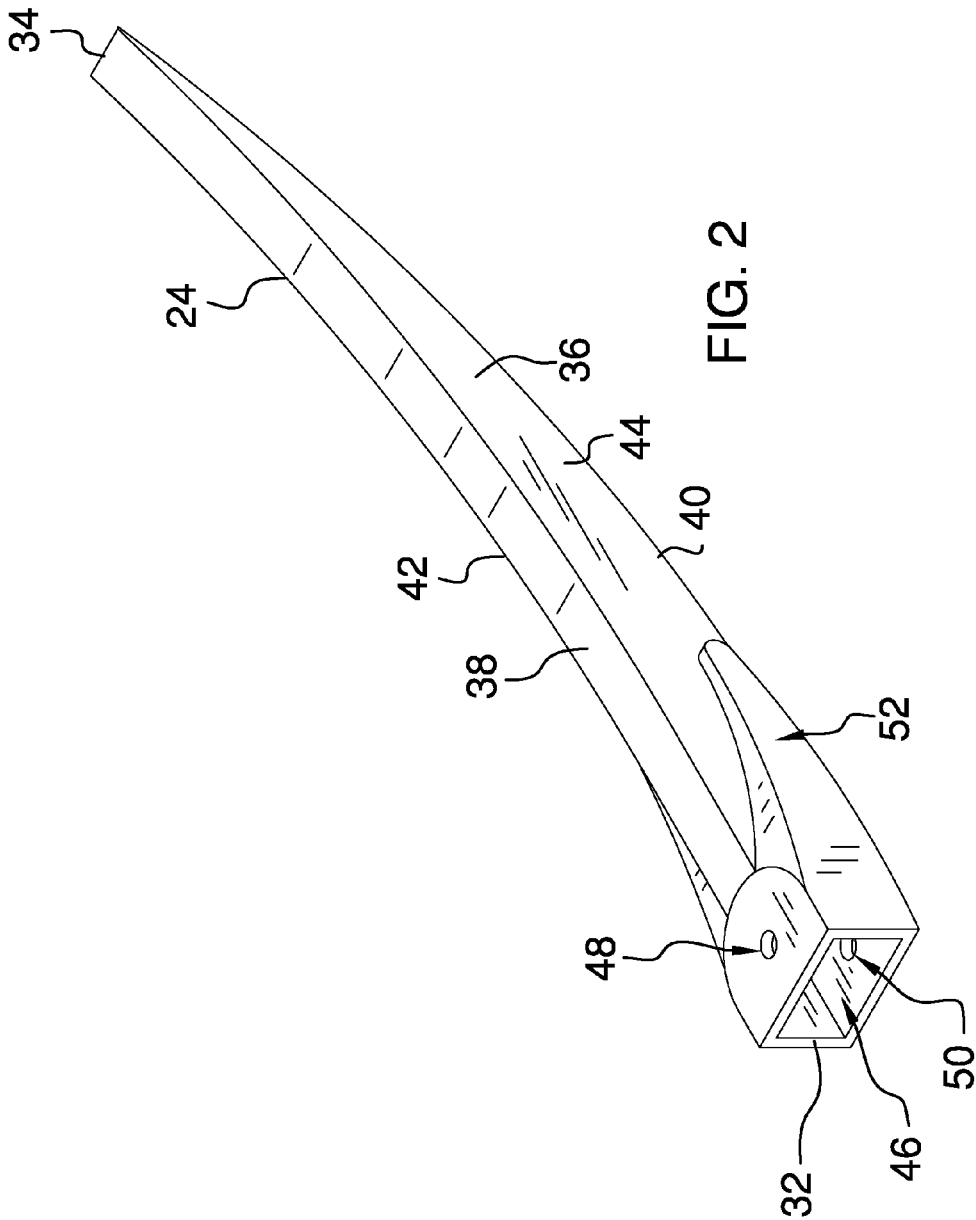
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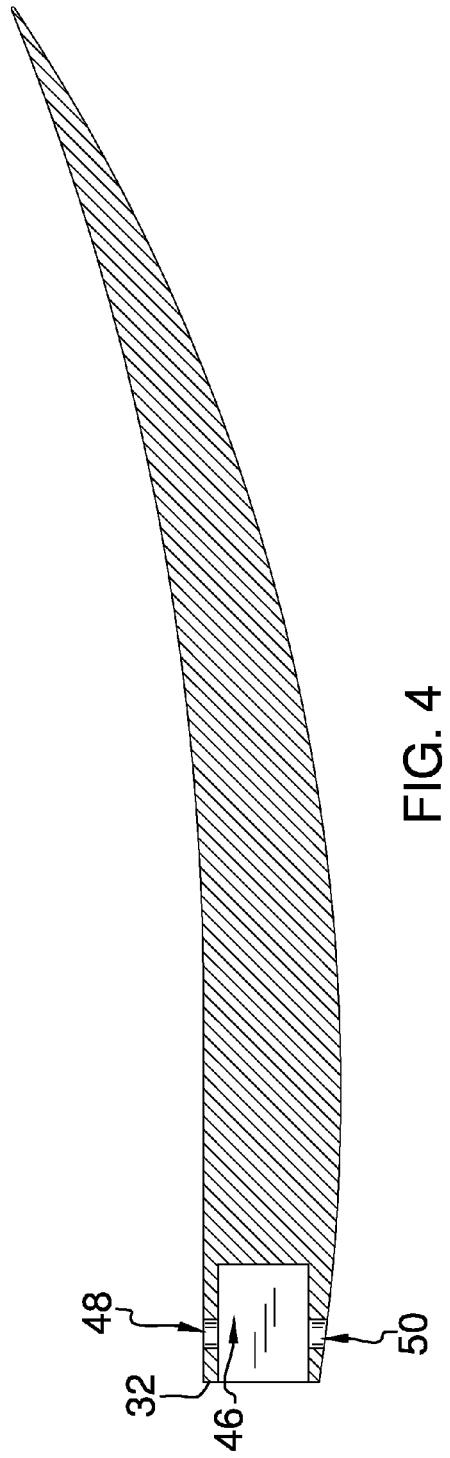
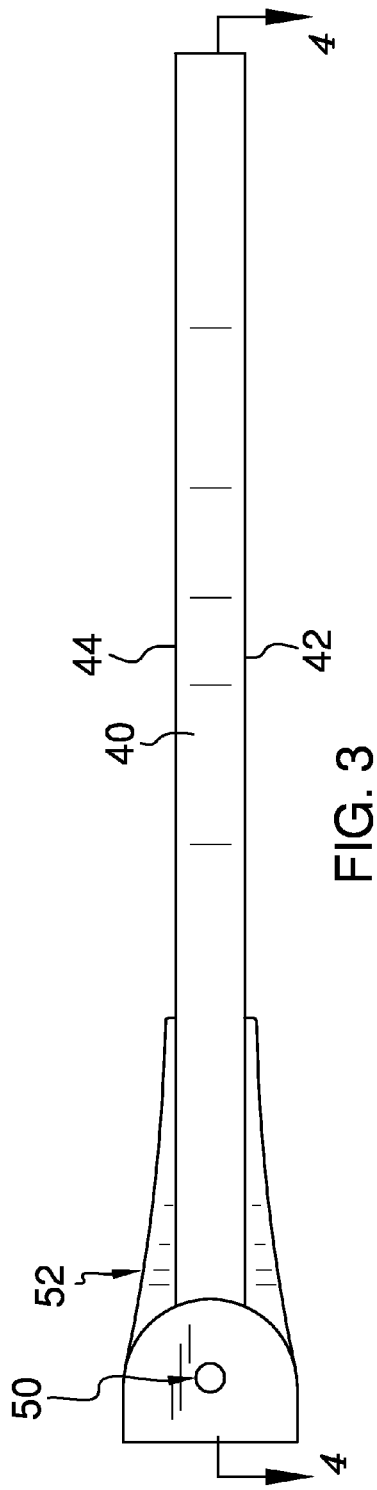
ABSTRACT(21) Appl. No.: **14/821,844**(22) Filed: **Aug. 10, 2015****Publication Classification**(51) **Int. Cl.***E02F 9/28* (2006.01)*E02F 5/00* (2006.01)

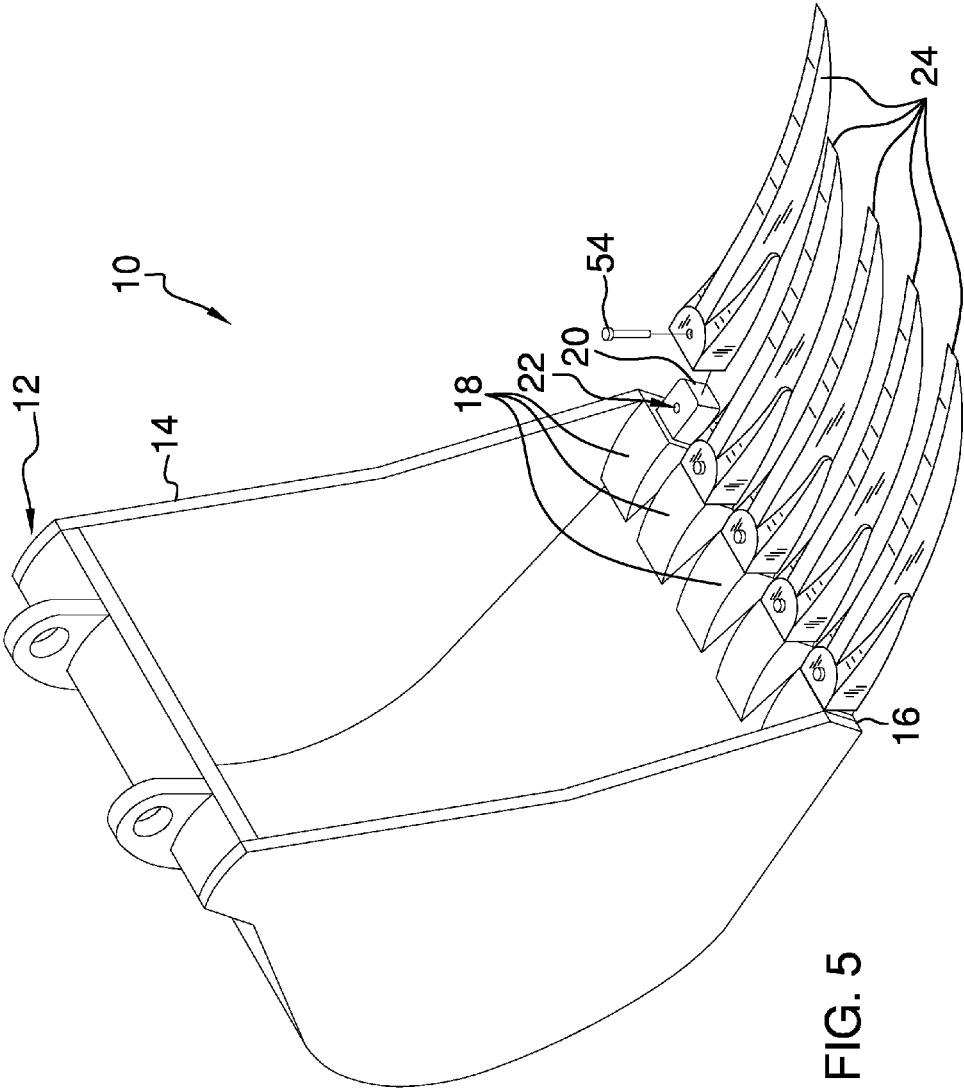
A excavation system includes an excavator that has a bucket and the bucket has a forward edge. A plurality of mounts is provided and each of the mounts is attached to the bucket. A plurality of gripping members is provided and each of the gripping members is removably attached to an associated one of the mounts. Thus, each of the gripping members may engage plant material in a body of water thereby facilitating the excavator to remove the plant material from the body of water.











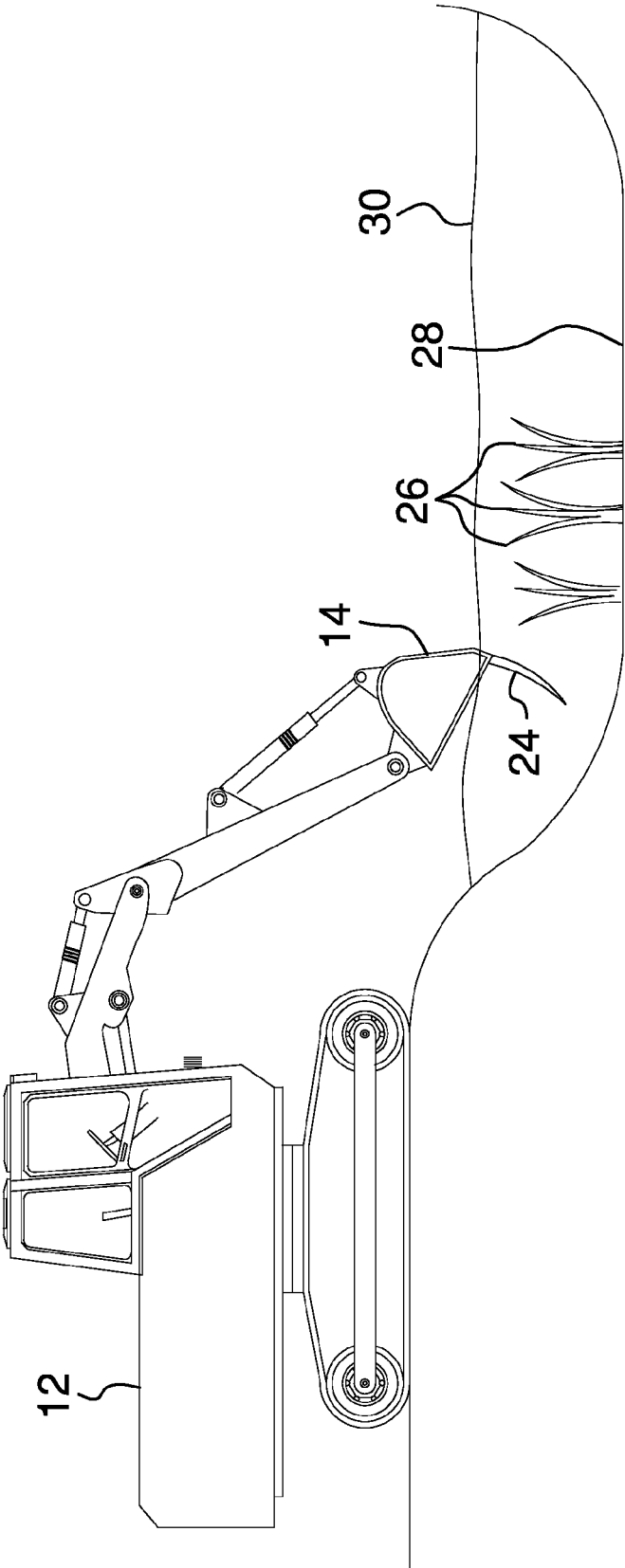


FIG. 6

EXCAVATION SYSTEM

BACKGROUND OF THE DISCLOSURE

Field of the Disclosure

[0001] The disclosure relates to excavation devices and more particularly pertains to a new excavation device for removing plant material from a body of water.

SUMMARY OF THE DISCLOSURE

[0002] An embodiment of the disclosure meets the needs presented above by generally comprising an excavator that has a bucket and the bucket has a forward edge. A plurality of mounts is provided and each of the mounts is attached to the bucket. A plurality of gripping members is provided and each of the gripping members is removably attached to an associated one of the mounts. Thus, each of the gripping members may engage plant material in a body of water thereby facilitating the excavator to remove the plant material from the body of water.

[0003] There has thus been outlined, rather broadly, the more important features of the disclosure in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the disclosure that will be described hereinafter and which will form the subject matter of the claims appended hereto.

[0004] The objects of the disclosure, along with the various features of novelty which characterize the disclosure, are pointed out with particularity in the claims annexed to and forming a part of this disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The disclosure will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0006] FIG. 1 is a perspective view of an excavation system according to an embodiment of the disclosure.

[0007] FIG. 2 is a rear perspective view of an embodiment of the disclosure.

[0008] FIG. 3 is a bottom view of an embodiment of the disclosure.

[0009] FIG. 4 is a cross sectional view taken along line 4-4 of FIG. 3 of an embodiment of the disclosure.

[0010] FIG. 5 is a side perspective view of an embodiment of the disclosure.

[0011] FIG. 6 is an in-use view of an embodiment of the disclosure.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0012] With reference now to the drawings, and in particular to FIGS. 1 through 6 thereof, a new excavation device embodying the principles and concepts of an embodiment of the disclosure and generally designated by the reference numeral 10 will be described.

[0013] As best illustrated in FIGS. 1 through 6, the excavation system 10 generally comprises an excavator 12 that has a bucket 14 and the bucket 14 has a forward edge 16. The excavator 12 may be an excavator 12 of any conventional design. A plurality of mounts 18 is provided and each of the

mounts 18 is attached to the bucket 14. Each of the mounts 18 extends forwardly from the forward edge 16 and each of the mounts 18 is spaced apart from each other and distributed along the forward edge 16. Each of the mounts 18 has a distal end 20 with respect to the forward edge 16 and each of the mounts 18 has an aperture 22 extending therethrough. The aperture 22 is positioned proximate the distal end 20 of each of the mounts 18.

[0014] A plurality of gripping members 24 is provided and each of the gripping members 24 is removably attached to an associated one of the mounts 18. Thus, each of the gripping members 24 may engage plant material 26 in a body of water 30 thereby facilitating the excavator 12 to remove the plant material 26 from the body of water 30. The plant material 26 may be located at the bottom 28 of the body of water or the surface 31 of the body of water 30. The plant material 26 may be aquatic plants of any species and the body of water 30 may be a lake, a pond, a river or the like.

[0015] Each of the gripping members 24 includes a first end 32, a second end 34 and a perimeter wall 36 extending between the first end 32 and the second end 34. The peripheral wall 36 has a top side 38, a bottom side 40, a first lateral side 42 and a second lateral side 44. The bottom side 40 curves upwardly toward the top side 38 between the first end 32 and the second end 34 such that each of the gripping members 24 tapers to a point at the second end 34. The top side 38 and the bottom side 40 are arcuate between the first end 32 and the second end 34 such that each of the gripping members 24 curves upwardly between the first end 32 and the second end 34. The upward curve of each of the gripping members 24 facilitates the plant material 26 to be retained on each of the gripping members 24 when the bucket 14 is manipulated.

[0016] Each of the gripping members 24 may have a length ranging between approximately eighteen inches and twenty four inches. Thus, the second end 34 of each of the gripping members 24 may engage the plant material 26 without having to position the bucket 14 within the body of water 30. Additionally, each of the gripping members 24 may have a width ranging between approximately three inches and six inches and a height ranging between approximately two inches and six inches.

[0017] The first end 32 has a well 46 extending therein toward the second end 34. The well 46 insertably receives the distal end 20 of an associated one of the mounts 18 such that each of the gripping members 24 extends forwardly from the bucket 14. The top side 38 has a first opening 48 extending therethrough and the first opening 48 is positioned adjacent to the first end 32. The bottom side 40 has a second opening 50 extending therethrough and the second opening 50 is positioned adjacent to the second end 34 such that the first opening 48 is aligned with the second opening 50. Each of the first lateral side 42 and the second lateral side 44 has a rear portion 52 extending between the first end 32 and a point that is closer to the first end 32 than the second end 34. The rear portion 52 flares outwardly toward the first end 32 such that the first end 32 has a width is greater than the second end 34.

[0018] A plurality of fasteners 54 is provided and each of the fasteners 54 extends through the first opening 48 and the second opening 50 of an associated one of the gripping members 24. Each of the fasteners 54 engages the aperture 22 in an associated one of the mounts 18 when the associated gripping member 24 is positioned on associated mount 18.

Thus, each of the gripping members **24** is removably retained on the bucket **14**. Each of the fasteners **54** may comprise a bolt or the like.

[0019] In use, the bucket **14** is manipulated to remove the plant material **26** from the body of water **30**. The second end **34** of each of the gripping members **24** is positioned to engage the plant material **26** in the body of water **30**. The bucket **14** is manipulated to remove the plant material **26** from the body of water **30**. The bucket **14** is repeatedly manipulated until a desired amount of the plant material **26** is removed from the body of water **30**.

[0020] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of an embodiment enabled by the disclosure, to include variations in size, materials, shape, form, function and manner of operation, system and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by an embodiment of the disclosure.

[0021] Therefore, the foregoing is considered as illustrative only of the principles of the disclosure. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the disclosure to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the disclosure. In this patent document, the word “comprising” is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article “a” does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be only one of the elements.

I claim:

1. An excavation system configured to facilitate removal of organic debris from a body of water, said system comprising:

- an excavator having a bucket, said bucket having a forward edge;
- a plurality of mounts, each of said mounts being attached to said bucket; and
- a plurality of gripping members, each of said gripping members being removably attached to an associated one of said mounts wherein each of said gripping members is configured to engage plant material in a body of water thereby facilitating said excavator to remove the plant material from the body of water.

2. The system according to claim 1, wherein each of said mounts extends forwardly from said forward edge, each of said mounts being spaced apart from each other and distributed along said forward edge, each of said mounts having a distal end with respect to said forward edge, each of said mounts having an aperture extending therethrough, said aperture being positioned proximate said distal end of each of said mounts.

3. The system according to claim 1, wherein each of said gripping member comprises a first end, a second end and a perimeter wall extending between said first end and said second end, said peripheral wall having a top side, a bottom side, a first lateral side and a second lateral side, said bottom side curving upwardly toward said top side between said first end and said second end such that each of said gripping members tapers to a point at said second end, said top side

and said bottom side being arcuate between said first end and said second end such that each of said gripping members curves upwardly between said first end and said second end.

4. The system according to claim 3, wherein:

- each of said mounts has a distal end; and
- said first end having a well extending therein toward said second end, said well insertably receiving said distal end of an associated one of said mounts such that each of said gripping members extends forwardly from said bucket.

5. The system according to claim 4, wherein said top side has a first opening extending therethrough, said first opening being positioned adjacent to said first end, said bottom side having a second opening extending therethrough, said second opening being positioned adjacent to said second end such that said first opening is aligned with said second opening.

6. The system according to claim 5, wherein each of said first lateral side and said second lateral side has a rear portion extending between said first end and a point being closer to said first end than said second end, said rear portion flaring outwardly toward said first end such that said first end has a width being greater than said second end.

7. The system according to claim 1, further comprising:

- each of said gripping members having a first opening and a second opening;

- each of said mounts having an aperture; and

- a plurality of fasteners, each of said fasteners extending through said first opening and said second opening of an associated one of said gripping members and engaging said aperture in an associated one of said mounts such that each of said gripping members is removably retained on said bucket.

8. An excavation system configured to facilitate removal of organic debris from a body of water, said system comprising:

- an excavator having a bucket, said bucket having a forward edge;

- a plurality of mounts, each of said mounts being attached to said bucket, each of said mounts extending forwardly from said forward edge, each of said mounts being spaced apart from each other and distributed along said forward edge, each of said mounts having a distal end with respect to said forward edge, each of said mounts having an aperture extending therethrough, said aperture being positioned proximate said distal end of each of said mounts;

- a plurality of gripping members, each of said gripping members being removably attached to an associated one of said mounts wherein each of said gripping members is configured to engage plant material in a body of water thereby facilitating said excavator to remove the plant material from the body of water, each of said gripping member comprising a first end, a second end and a perimeter wall extending between said first end and said second end, said peripheral wall having a top side, a bottom side, a first lateral side and a second lateral side, said bottom side curving upwardly toward said top side between said first end and said second end such that each of said gripping members tapers to a point at said second end, said top side and said bottom side being arcuate between said first end and said second end such that each of said gripping members curves upwardly between said first

end and said second end, said first end having a well extending therein toward said second end, said well insertably receiving said distal end of an associated one of said mounts such that each of said gripping members extends forwardly from said bucket, said top side having a first opening extending therethrough, said first opening being positioned adjacent to said first end, said bottom side having a second opening extending there-through, said second opening being positioned adjacent to said second end such that said first opening is aligned with said second opening, each of said first lateral side and said second lateral side having a rear portion extending between said first end and a point being closer to said first end than said second end, said rear portion flaring outwardly toward said first end such that said first end has a width being greater than said second end; and

a plurality of fasteners, each of said fasteners extending through said first opening and said second opening of an associated one of said gripping members and engaging said aperture in an associated one of said mounts such that each of said gripping members is removably retained on said bucket.

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