

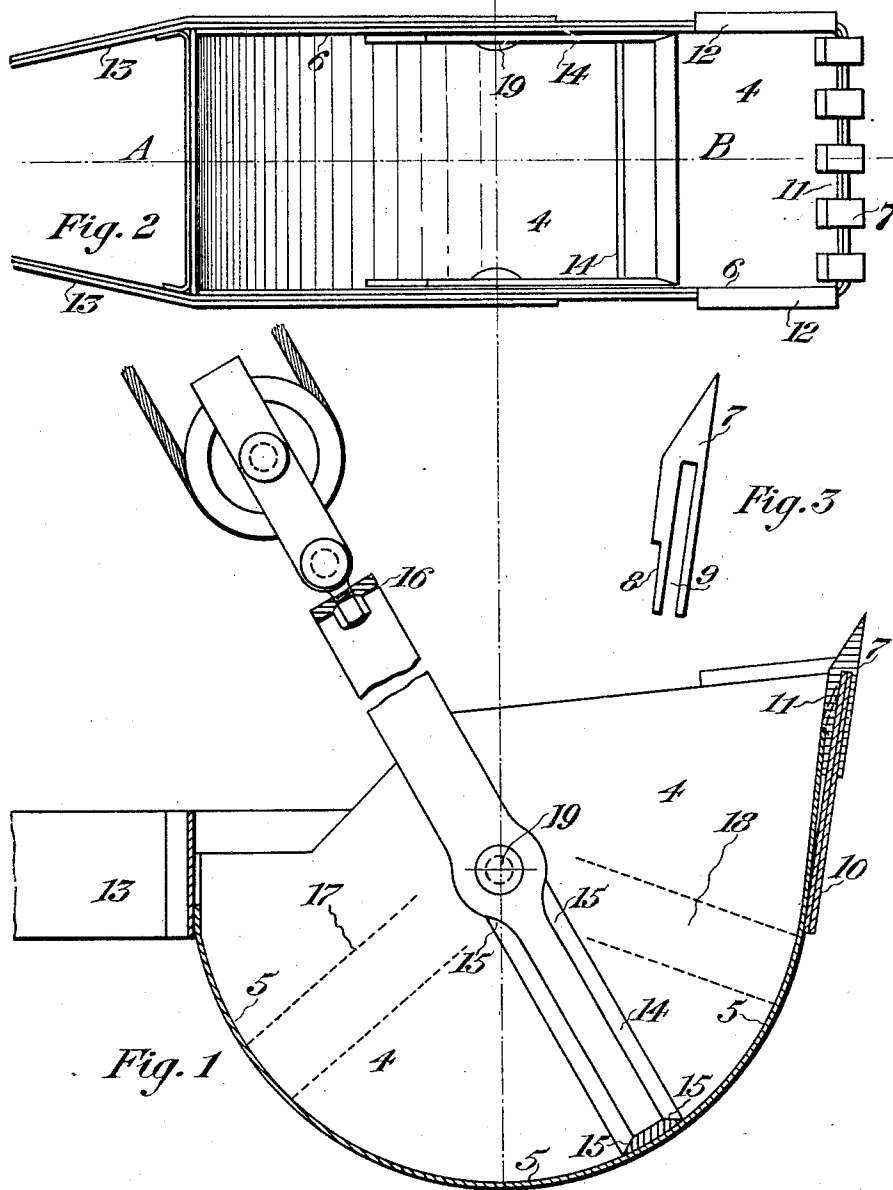
Dec. 27, 1927.

C. HARRISON

1,653,905

SELF CLEARING, DREDGING, AND EXCAVATING BUCKET

Filed Oct. 25, 1926



C. Harrison.
Inventor.
by T. L. Boydson
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES HARRISON, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

SELF-CLEARING, DREDGING, AND EXCAVATING BUCKET.

Application filed October 25, 1926. Serial No. 144,029.

This invention relates to self-clearing, dredging, and excavating buckets. Its object is to provide a bucket which will be effective over a wide range of variety of material whether a thin liquid or a tough clay, and by securing a complete evacuation of the bucket at each operation to present a clean working surface constantly to the material and so considerably improve the time efficiency of all classes of excavation work.

With these and other objects in view I adopt the construction shown in the drawings herewith which form part of this application. Fig. 1 is a side elevational section on line A—B of Fig. 2. Fig. 2 is a plan view and Fig. 3, an enlarged detail of one of the bucket teeth.

Taking the drawings in detail the main cavity of the bucket is marked 4; this is bounded by the semicircular portion 5, forming the bottom of the bucket, and the flat sides 6. The working or excavating edge of the bucket terminates in a series of projecting teeth 7, the inner surface of the teeth being flush with the interior surface of the semi-circular plate 5, a rebate or recess 8 being provided on the inner surface of the teeth 7 to effect this.

The teeth are slotted as shown at 9, to receive the reinforcing plates 10, the former being riveted to the latter and the latter being riveted to the exterior of the bucket plate 5.

In order to preserve a smooth contour for the entering material at the working edge of the bucket, the plate 5 is curved downwards between the several teeth as shown at 11. A lateral cutting edge 12 is provided on each side of the bucket adjacent the teeth, for the purpose of affording lateral clearance to the bucket in its progression through the excavation. The bucket is secured to and carried by any convenient form of arm as at 13.

A further important feature of the invention, apart from the particular construction of the working edge and the bottom contour of the cavity as herein-before described, relates to the pivotable clearing device for the load.

This consists of a rectangular loop 14 supported by a bearing at 19 in the sides 6 and provided with right and left-handed cutting edges 15 which sweep the entire curved surface of the bucket as the bail 16 is pulled over from the dotted position shown at 17,

to the opposite corresponding position at 18, the lateral members of the loop engaging at the same time both the flat surfaces 6, forming the sides of the bucket, as the loop member pivots about the centre 19, due to the manipulation required by the work.

In order to facilitate the evacuation of the bucket it is made slightly wider at the top the clearing member 14 carrying the cutting edges 15 being made slightly tapered at the sides to suit.

It is to be noted that in operation as the working edge carrying the teeth 7 is raised to make the scoop the clearing member 14 swings over to the position 17, and after the bucket has been filled and immediately prior to its evacuation is brought over to the opposite position at 18, the contents being free to slide past the teeth without impediment.

Having now particularly described my invention what I desire to be protected in by Letters Patent, is:—

1. A dredging and excavating bucket having a semi-circular bottom and straight sides, an approximately rectangular loop within said bucket, said loop being supported from the sides of said bucket and being pivotable from and about the same centre as that from which the said semi-circular bottom is struck, the said loop being adapted to contact an arcuate portion of the interior surface of said bucket.

2. A self-clearing, dredging, and excavating bucket comprising, a bottom plate having approximately parallel edges, the said edges being secured to straight side plates, the relation of the two said plates being approximately rectangular, the said bottom plate forming in part a semi-circle, a rectangular loop-member engaging the interior surface of said bucket, the said member being supported from the said side plates and pivotable from the centre of the said semi-circle, cutting edges formed upon the said loop member adapted to engage the interior surface of the said bucket with a scraping action as the said member is oscillated.

3. A self-clearing, dredging, and excavating bucket comprising, a bottom plate having approximately parallel edges, the said edges being secured to straight side plates, the relation of the two said plates being approximately rectangular, the said bottom plate forming in part a semi-circle, a rectangular loop-member engaging the interior

surface of said bucket, the said member being supported from the said side plates and pivotable from the centre of the said semicircle, cutting edges formed upon the said
 5 loop-member adapted to engage the interior surface of the said bucket with a scraping action as the said member is oscillated, the teeth forming the cutting edge of the said
 10 bucket having shallow recesses on their interior faces and thereby adapted to receive the extremity of an extension of the said semicircular plate whereby the interior surfaces of the said teeth and plate are maintained flush with each other and so reducing
 15 the interior frictional resistance of the said bucket.

4. A dredging and excavating bucket having a semi-circular bottom and straight sides, an approximately rectangular loop
 20 within said bucket, said loop being supported from the sides of said bucket and being pivotable from and about the same centre as that from which the said semicircular bottom is struck, the said loop being
 25 adapted to contact an arcuate portion of the interior surface of said bucket, the teeth forming the cutting edge of the said bucket having shallow recesses on their interior faces and thereby adapted to receive
 30 the extremity of an extension of the said semicircular plate whereby the interior surfaces of the said teeth and plate are maintained flush with each other and so reducing the interior frictional resistance of the

said bucket, the teeth forming the cutting
 35 edge of the said bucket being slotted laterally, a reinforcing plate engaging the said slot and being secured to the underside of the said bucket bottom plate.

5. A dredging and excavating bucket having a semi-circular bottom and straight
 40 sides, an approximately rectangular loop within said bucket, said loop being supported from the sides of said bucket and being pivotable from and about the same
 45 centre as that from which the said semicircular bottom is struck, the said loop being adapted to contact an arcuate portion of the interior surface of said bucket, the teeth forming the cutting edge of the said
 50 bucket having shallow recesses on their interior faces and thereby adapted to receive the extremity of an extension of the said semicircular plate whereby the interior surfaces of the said teeth and plate are maintained
 55 flush with each other and so reducing the interior frictional resistance of the said bucket, the teeth forming the cutting edge of the said bucket being slotted laterally, a reinforcing plate engaging the said slot and
 60 being secured to the underside of the said bucket bottom plate, the front extension of the said semicircular bottom plate between the teeth forming the working edge of the said bucket being bent downwardly to meet
 65 the said reinforcing plate.

In testimony whereof I affix my signature.
 CHARLES HARRISON.