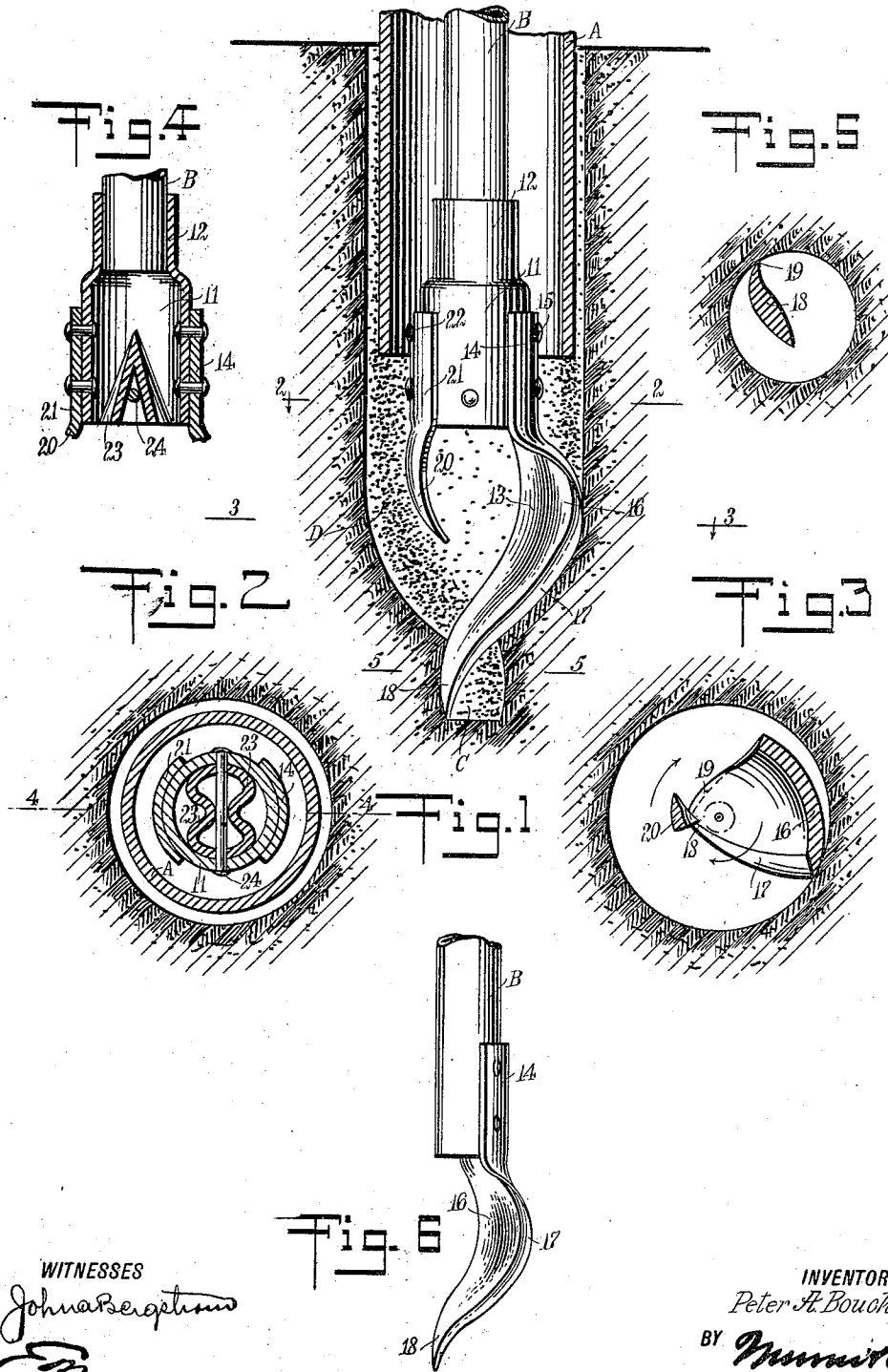


P. A. BOUCHET.
EARTH BORING AUGER CUTTER HEAD.
APPLICATION FILED OCT. 20, 1910.

996,450.

Patented June 27, 1911.



WITNESSES
John A. Bergstrom
Edmundson

INVENTOR
Peter H. Bouchet
BY *Mumma & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

PETER ANTONE BOUCHET, OF MERCED, CALIFORNIA.

EARTH-BORING-AUGER CUTTER-HEAD.

996,450.

Specification of Letters Patent. Patented June 27, 1911.

Application filed October 20, 1910. Serial No. 588,093.

To all whom it may concern:

Be it known that I, PETER A. BOUCHET, a citizen of the United States, and a resident of Merced, in the county of Merced and State of California, have invented a new and Improved Earth-Boring-Auger Cutter-Head, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a cutter head for augers, having a cutting blade shaped and arranged to form a small centering bore in advance of the main bore; to provide in connection with a cutting blade adapted to form the main bore, a second or disintegrating blade or member whereby the cuttings from the main blade are broken into smaller particles for the freer delivery from the bored hole; to provide means for dividing and guiding the washing water delivered to the bottom of the bored hole between the said blades to elevate the cuttings from the bottom of the bored hole; and to provide a head, the cutters whereof are shaped to be sharpened with facility and ease.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side view of an auger bar having applied thereto a cutter head constructed and arranged in accordance with the present invention, the well casing and surrounding earth being shown in section; Fig. 2 is a cross section of the boring casing and cutter head, the section being taken on the line 2—2 in Fig. 1; Fig. 3 is a similar section taken on the line 3—3 in Fig. 1; Fig. 4 is a cross section taken on the line 4—4 in Fig. 2; Fig. 5 is a cross section, on an enlarged scale, taken on the line 5—5 in Fig. 1; and Fig. 6 is a detail view in perspective, showing a modified form of the invention.

The casing A and the driving rod B are similar to those used in the art of the present day, and may be of any approved construction. The rod B is of the rotary type, and is a hollow tube. At the lower end of the said rod is fixedly connected a head 11, the neck 12 thereof being contracted upon and fixedly attached to the said rod B. The lower section of the head 11 is provided with a cutter blade 13. The blade 13 is

shaped substantially as shown in the drawings, having a neck portion 14 fixedly attached by means of rivets 15 to the head 11. Below the neck portion 14 the blade is extended to form a scoop portion 16. The curvature of the scoop portion 16 lends added strength to the blade structure, thereby making it possible to employ a thinner or more fragile material in the construction of the said blade. The blade is leaf-like in shape, being contracted from the broad cross section at the bilge of the scoop portion 16 to a point at the lower end of the blade, and the lines of the vertical cross section being shaped to a reverse curve. The blade is so shaped that the lower extension or point thereof passes the center axial line of the rod B to the side of the said line opposite that on which is extended the scoop portion 16.

It will be observed that the leaf-like sections extending on opposite sides of the axial line will present the opposite edges to the earth to be cut. It is for that reason that the forward edge of the scoop 16 is provided with a bevel cutting edge 17, while the forward edge of the point 18 is provided with a cutting edge 19, the said edges 17 and 19 being disposed in the same rotary path, but on opposite sides of the said blade, as is best shown in Fig. 3 of the drawings, the dotted line wherein shows the limit of the bevel forming the cutting edge on the point 18.

In the operation of an auger having a cutting head constructed and arranged in accordance with the present invention, the point 18 forms a distinct boring C in advance of the casing boring D, as shown in Fig. 1 of the drawings. The boring C in this manner forms a guide for the larger boring of the scoop 16.

The head 11 is provided with a second and shorter blade 20. The blade 20 is provided with a neck portion 21, which is secured by means of rivets 22 to the head 11. The plate 20 extends only on one side of the axial center of the rod B, and is not extended to the path of the scoop 16. As and when the cuttings of the blade 13 are delivered toward the center of the auger they are broken up or cut into small pieces by the blade 20.

In the modified form of the invention shown in Fig. 6 of the drawings, the blade 20 is omitted. The blade 20 is thus shown

not to be essential to the operation of the present invention, but advantageous.

The cuttings of the blade 13 are elevated through the casing A by means of water 5 which is driven through the tubular rod B. Disposed within the larger chamber of the head 11 is a deflector 23. The deflector 23 is supported in the head 11 by a pin 24, 10 which is extended between the sides of the head 11, in the manner best shown in Figs. 2 and 4 of the drawings. The deflectors 23, 23 are so disposed as to divide the column of water descending through the rod B and to deflect the same radially against the inner 15 surface of the blades 13 and 20, thereby washing the surface of the said blades, preventing the adhesion of clay soil thereto.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. An earth boring auger cutter head, comprising a tubular rotary boring rod; a cutting blade connected with said rod, 25 shaped in its longitudinal extension to a reverse curve, the end section of said blade being extended to the side of the axial center of said rod opposite that to which is extended the body portion of said blade, said

body portion and said end section being sharpened on opposite sides of the longitudinal 30 center of said blade; and a deflector member, the sides whereof are outwardly inclined mounted in the lower end of said boring rod to divide the water descending therein to deliver the same against the inner 35 surface of said blade.

2. An earth boring auger cutter head, comprising a tubular rotary rod; a cutting blade connected with said rod having a 40 scoop-like laterally disposed body portion and a point extended from said body portion to the side of the axial line of the said boring rod opposite that to which is extended the scoop-like body portion; and a deflector 45 member, the sides whereof are outwardly inclined mounted in the lower end of said boring rod to divide the water descending therein to deliver the same against the inner surface of said blade.

In testimony whereof I have signed this 50 specification in the presence of two subscribing witnesses.

PETER ANTONE BOUCHET.

Witnesses:

J. T. GANDER,
E. V. DAY.