

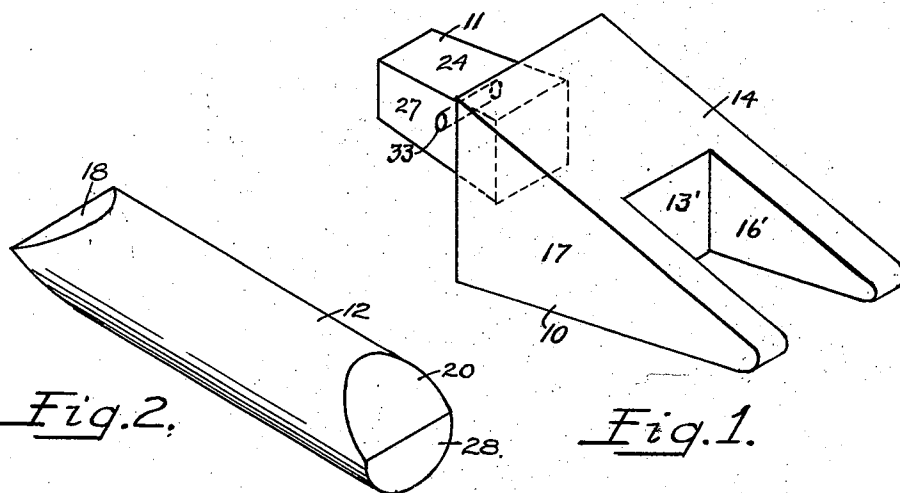
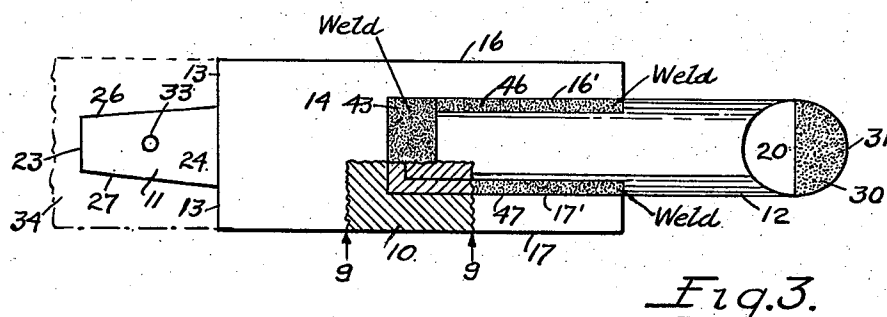
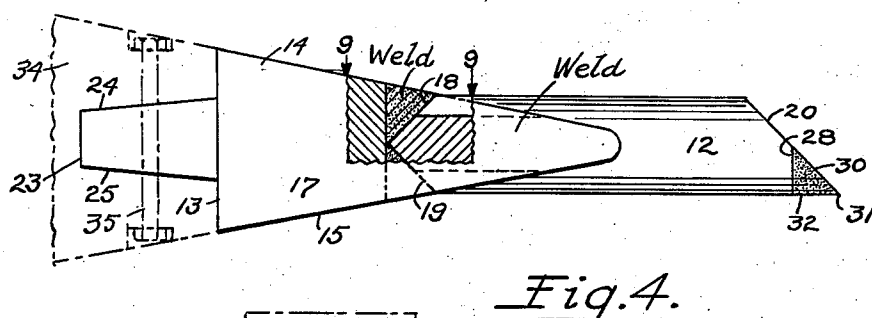
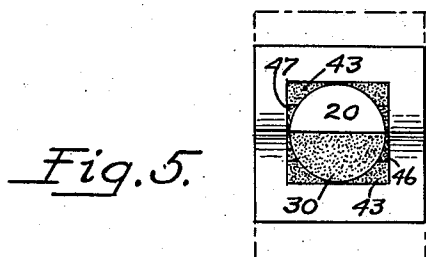
June 9, 1942.

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2,285,455

EXCAVATOR TOOTH

Filed Oct. 3, 1940



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UNITED STATES PATENT OFFICE

2,285,455

EXCAVATOR TOOTH

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Application October 3, 1940, Serial No. 359,502

5 Claims. (Cl. 37-142)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates generally to excavating implements, but more particularly to the design and production of teeth such as are used on buckets, dippers, dredges, and similar devices.

One object of the invention is to provide an excavator tooth which is of simple and economical construction, both strong and durable, and one provided with a chisel-shaped cutting blade or point which may be easily and inexpensively renewed.

Another object of the invention is to provide a tooth for excavating implements which is especially suitable for penetrating hard materials.

Another object of the invention is to provide an excavator tooth which is resistant to excessive wear, or breakage when used in hard earth, due to its cutting qualities and its form of construction.

Another object of the invention is to provide a tooth which can be quickly resharpened and reinstalled on an excavating implement.

Another object is to provide an excavating tooth provided with a chisel portion which can be sharpened or renewed quickly and at minimum cost.

Another object of the invention is to provide a method for easily and economically producing excavator teeth having the above stated qualities.

With these and other objects in view, this invention consists in certain details of construction, combination and arrangement of parts to be more fully hereinafter described and claimed.

Referring more particularly to the accompanying drawing in which corresponding parts are indicated by similar reference characters:

Fig. 1 is a perspective of the base portion of the tooth;

Fig. 2 is a perspective of the chisel, showing the shape of its extremities for attachment to an adapter and affixing a cutting edge;

Fig. 3 is a top plan view of the tooth illustrating its means of attachment to an adapter, and showing the base broken away to illustrate the manner of welding the chisel thereto;

Fig. 4 is a side elevation of the tooth and adapter as shown in Fig. 3; and

Fig. 5 is an end elevation of the tooth and adapter shown in Figs. 3 and 4.

The tooth comprises a central base portion 10 provided with a shank 11 and a chisel or cutting

portion 12 which is welded to the base, as will further be explained.

The base 10 is wedge-shaped, having a rectangular rear surface 13, converging upper and lower surfaces 14 and 15, and parallel lateral surfaces 16 and 17.

The wedge-shaped base is slotted centrally for the reception of the chisel 12, the slot forming an interior rear surface 13' parallel to the rear surface 13, and interior lateral surfaces 16' and 17' parallel to the exterior surfaces 16 and 17.

From the exterior rear surface 13 projects the shank 11, which has the form of a frustum of a pyramid, with upper and lower converging surfaces 24 and 25, lateral converging surfaces 26 and 27 and an end or rear surface 23.

Within the central slot is securely welded the chisel member 12. This chisel 12 is an elongated member of circular cross-section formed from a piece of high carbon steel shafting, cut to the desired length and tapered at its rear extremity by cutting converging surfaces 18 and 19 at about 45 degrees to its central axis.

A hole 33 is drilled through the shank for reception of a bolt 35 for attachment of the tooth to an adapter member 34 which in turn is attached to an excavating implement such as a dipper or shovel (not shown). The forward end of the chisel is cut to form an upper surface 20 at 45° to the center of the bar and then across the bar at 90° to its axis, the latter cut forming a base 28 for a tip or point 31 built up by electric welding. This welded point 31 has a circular surface 32 which conforms with the circular longitudinal surface of the shafting from which the chisel 12 is formed and an upper surface 30 which conforms with the surface 20 formed by the 45° cut across the forward end of the shaft.

The converging surfaces 18 and 19 at the rear of the chisel as well as its circular longitudinal surface are welded to the interior rear and lateral surfaces 13', 16' and 17' of the base as indicated by the numerals 43, 46 and 47.

In the construction of the tooth the base is formed as illustrated, and the chisel is cut from a piece of high carbon steel shafting and shaped as described. The chisel member 12 is welded within the base 10 and provided with a cutting edge or point by forming on the base 28 an electrically welded tip.

The point of the chisel may be welded to other shapes than the one shown, depending on the function which it is required to perform, and the base of the tooth may be attached to an adapter

as shown or to any other retaining member which may be adapted for the purpose.

Although in the foregoing certain elements have been described as best adapted to perform the functions allotted to them, nevertheless it is to be understood that various changes may be made therein without departing from the spirit or scope of the invention.

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

1. A tooth for excavating implements comprising, a base provided with a slot having rear and lateral surfaces, a cylindrical chisel member fitted within said slot and attached to said base by welding to the rear surface of said slot and along the lines of tangency of said chisel with the lateral surfaces of said slot.
2. A tooth for excavating implements comprising, a base provided with a slot having rear and lateral surfaces, a cylindrical chisel member provided with a welded tip, fitted within said slot and attached to said base by welding to the rear surface of said slot and continuing the weld along the lines of tangency of said chisel with the lateral surfaces of said slot.
3. A tooth for excavating implements comprising, a base provided with a slot having rear and lateral surfaces, a cylindrical member provided

with a welded tip and wedge-shaped at its opposite extremity, fitted within said slot and attached to said base by welding to the rear surface of said slot and along the lines of tangency of said chisel member with the lateral surfaces of said slot.

4. A tooth for excavating implements comprising, a base provided with a slot having rear and lateral surfaces, a cylindrical chisel member provided with a welded tip and formed with converging surfaces at its other extremity, fitted within said slot to form wedge-shaped upper and lower spaces with said surface, and welds formed within said spaces for the attachment of said chisel to the base.

5. A tooth for excavating implements comprising, a base provided with a slot having rear and lateral surfaces, a cylindrical chisel member sloped to a diameter at its forward end to meet a perpendicular end surface on which a welded tip is formed, the surfaces of which conform with said sloped and cylindrical surfaces of the chisel member, said chisel member being fitted within said slot and attached to said base by welding to the rear surface of said slot and along the lines of tangency of said chisel with the lateral surfaces of said slot.

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