May 19, 1931. VAN CORTRIGHT MEKEEL 1,805,527

REVERSIBLE DIPPER TOOTH

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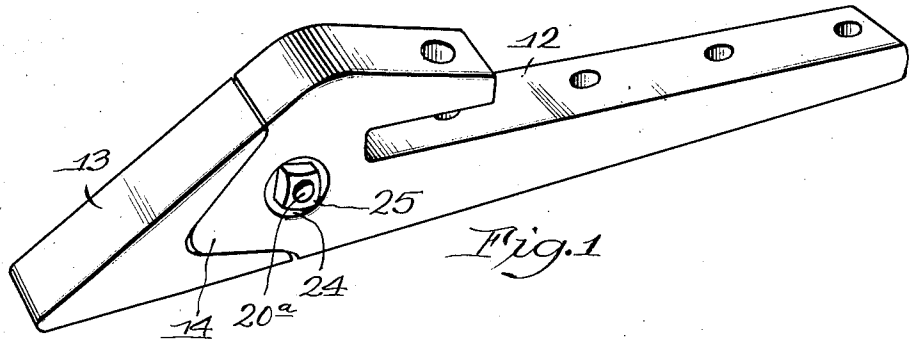


Fig. 1

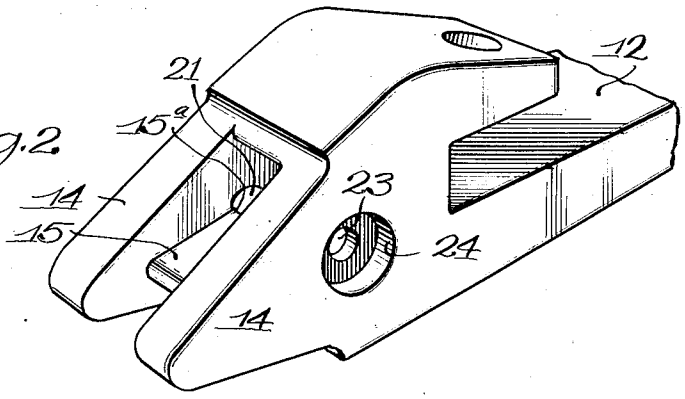


Fig. 2

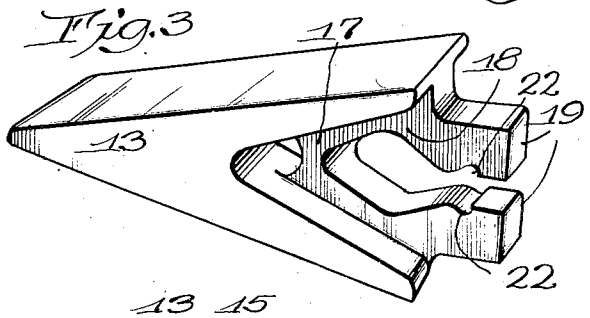


Fig. 3

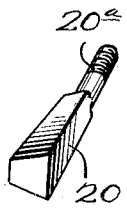


Fig. 4

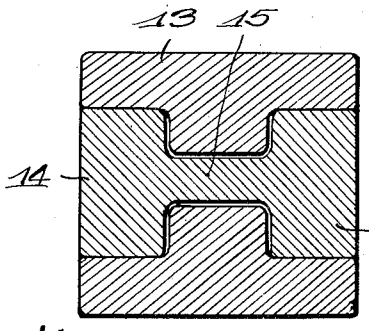


Fig. 5

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Fig. 6

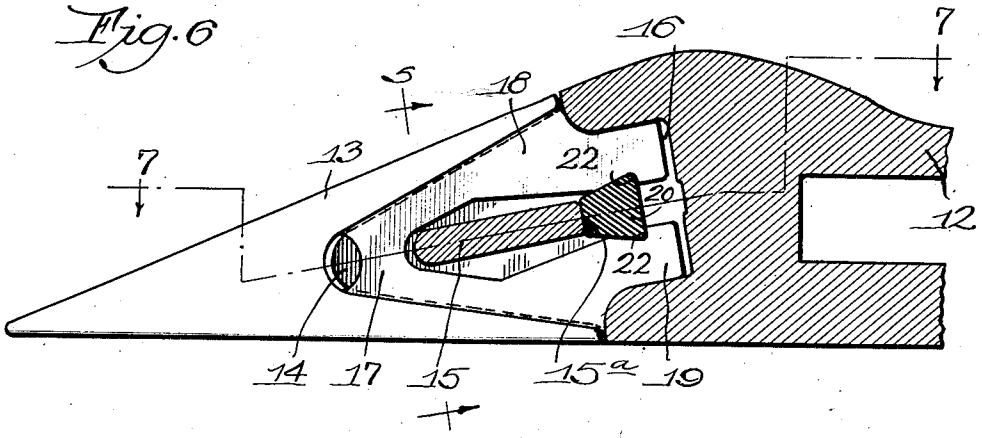
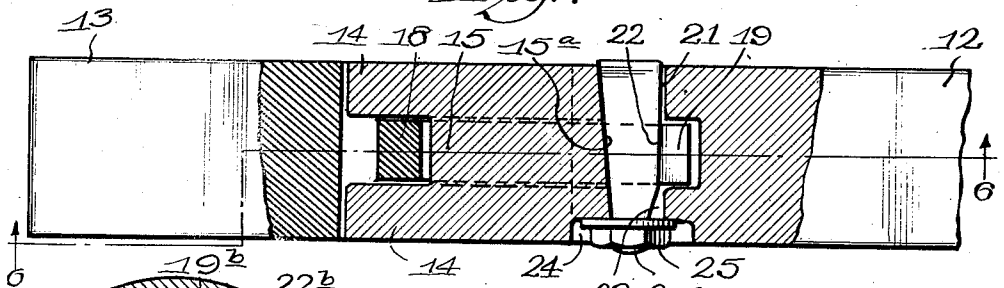


Fig. 7



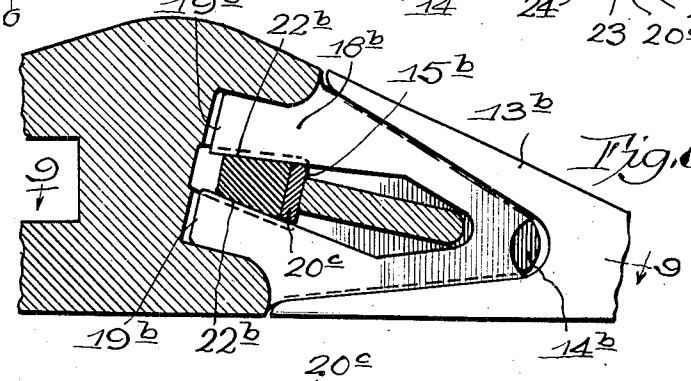


Fig. 8

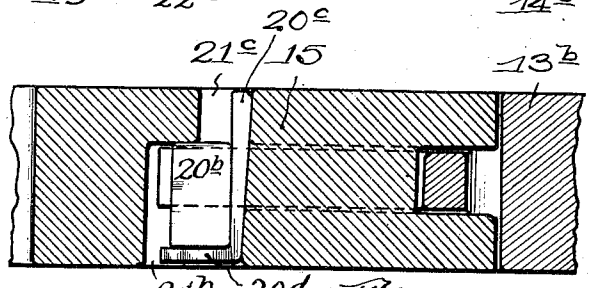


Fig. 9

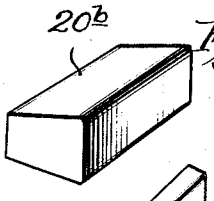


Fig. 10

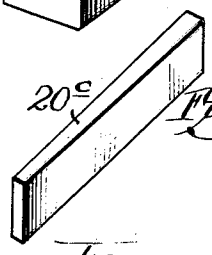


Fig. 11

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Patented May 19, 1931 1,805,527

UNITED STATES PATENT OFFICE

VAN CORTRIGHT MEKEEL, OF OAK PARK, ILLINOIS

REVERSIBLE DIPPER TOOTH

Application filed March 9, 1929. Serial No. 345,718.

This invention relates to improvements in a reversible dipper tooth and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The dipper tooth is of the two-part reversible type, consisting of a point and of a base, and the object of the invention is to produce a construction of the kind which will present a close fit between its two component parts, so as to give a maximum of strength under the most severe service and prevent side distortion under the high working strains normal to the direction of digging as when operating in large rock formations.

Another object of the invention is to provide a construction of this type in which there will be a maximum of contact between the two component parts of the assembly to resist direct and side strains, with the additional advantage that the two parts are easily assembled or disassembled.

The advantages of my invention will appear more fully as I proceed with my specification.

In the drawings:—

Figure 1 is a perspective view of my improved two-part reversible dipper tooth.

Figure 2 is a perspective view, on an enlarged scale, of the front end of the base with the point removed.

Figure 3 is a perspective view of the point.

Figure 4 is a perspective view of a wedge-pin by means of which the two parts are held in assembled relation.

Figure 5 is a transverse section through the assembly, on an enlarged scale, in a plane indicated by the line 5—5 of Figure 6.

Figure 6 is a sectional elevation of the assembly in a plane indicated by the line 6—6 of Figure 7.

Figure 7 is a sectional view in a plane indicated by the line 7—7 of Figure 6.

Figure 8 is a view in section and side elevation, showing a somewhat modified form of construction.

Figure 9 is a view representing a transverse section through Figure 8 in a plane indicated by the line 9—9 of Figure 8.

Figures 10 and 11 are perspective views of wedge parts used to hold the combination in assembled relation.

Referring now to that embodiment of my invention, illustrated in Figures 1 to 7, inclusive:—

12 indicates the base and 13 the point of my improved two-part reversible dipper tooth. The nose of the base is bifurcated to provide spaced nibs 14. Said nibs 14 are connected together by an integral transverse web 15, which rigidly holds them against spreading. Back of the web 15 the base is cored to provide a recess 16 to receive the connecting member of the point now to be described.

The point 13 is of the usual wedge-shaped section and is provided with recesses 17 on its side faces to receive and to be closely engaged by the nibs 14, 14 of the nose of the base 12. 18 indicates an interior gusset cut-out at the center, as indicated at 19, to clear the transverse web 15, when the two parts are assembled, with rear extensions 19, 19, which project beyond the base of the point and are adapted to be inserted into the recess 16 in the base to the rear of the bifurcated nose nibs 14, 14. The said extensions 19 of the gusset, when the two parts are assembled, as shown in Figure 6, prevent distortion of the point in service. In addition they provide means for locking the parts together by a taper wedge bolt 20, which is inserted through a hole 21 in one side of the base casting and through notches in the sides of the cut-out of the gusset, which present abutments 22, 22 for engagement with said wedge on its rear side. The rear edge 15ª of the transverse web 15 is in line with the forward side of the hole 21 provided for the wedge-pin, so that the forward side of the wedge-pin has full contact with the base casting throughout its length. Thus the point casting is locked to the base casting by driving the taper wedge bolt 20 home to a tight seat. At the smaller end of the wedge bolt is a reduced, rounded and threaded end 20ª. This is adapted for engagement through a small hole 23 in the nib of the nose of the base casting opposite to the side from which the wedge is driven. An enlarged recess 24

about this hole permits the application of a nut 25 (see Figure 7), which may be drawn up so as to be below or flush with the side surface of the base and thus free from wear and interference when digging.

It will be obvious from the foregoing how readily and easily the two parts of the combination may be assembled or disassembled. The rigid connection of the nibs of the nose of the base by the integral transverse web 15, holds said nibs positively against spreading under the enormous leverage of the point in side digging or other operation tending to bend the point in a direction normal to the plane or direction of digging. It will also be obvious that there is a maximum of contact between the parts of the tooth and the parts of the base and nose, since the gusset engages the inside faces of the nibs 14, 14 clear into the limits of the pocket 16 in the base.

In Figures 8 to 11 inclusive, I have shown a construction modified as to the means for locking the two parts together. In this case, like parts are indicated by like numerals with the superscript "b".

The construction is the same as heretofore described, except that in this case the gusset projections 19^b of the point are not notched as in the previous case, but are provided on their proximate edges with converging inclined faces 22^b. In the space between these converging inclined faces is inserted through a slot 21^b, a wedge block 20^b. A wedge-pin 20^c inserted from the other side of the base casting through a smaller opening 21^c, is driven back of said wedge block 20^b, as shown in Figures 8 and 9, and then, after being driven home, is bent over at one end, as indicated at 20^d, against the outer face of the wedge block 20^b, so as to hold it against an abutment adjacent the opening 21^c on the other face of the base casting.

It will be noted that in both types of construction hereinabove described, the retaining bolt or pin has full contact throughout with the base casting,—this being made possible by the use of the transverse web 15 connecting the nibs 14, the rear edge 15^a, 15^b of which web presents a face in line with the openings in which the wedge-pin or bolt engages. Thus the bolt or pin has full contact from one side of the base casting to the other. This is a very important feature of the invention since, obviously, any shearing or bending action on the bolt or pin is eliminated.

I claim as my invention:

1. A two-part reversible dipper tooth, comprising a base casting with a bifurcated nose presenting spaced nibs, a transverse integral web connecting said nibs, said base being provided with a pocket located at the rear of said nibs, and a point having recesses on its sides to receive said nibs with an interior gusset cut-out at the center to clear said web and having projections adapted for engagement in the pocket in said base, and means for locking said gusset projections within said pocket in the base.

2. A two-part reversible dipper tooth, comprising a base casting with a bifurcated nose presenting spaced nibs, and a transverse integral web connecting said nibs, and a point having recesses on its side faces to receive said nibs and provide locking engagement therewith substantially throughout their length, with an interior gusset cut-out at the center to clear said web, and means for locking said point and base together.

3. A two-part reversible dipper tooth, comprising a base casting with a bifurcated nose presenting spaced nibs and a transverse integral web connecting said nibs, and a point having recesses on its side faces to receive said nibs, with an interior gusset cut-out to clear said web, and a wedge member for locking the point and base together, the base member being provided with openings to receive said wedge member, one side of said openings being in line with the rear edge of said connecting web, whereby said wedge member has full contact with said base casting substantially throughout its length.

In testimony whereof I claim the foregoing as my invention, I affix my signature this 5th day of March, A. D. 1929.

VAN CORTRIGHT MEKEEL.