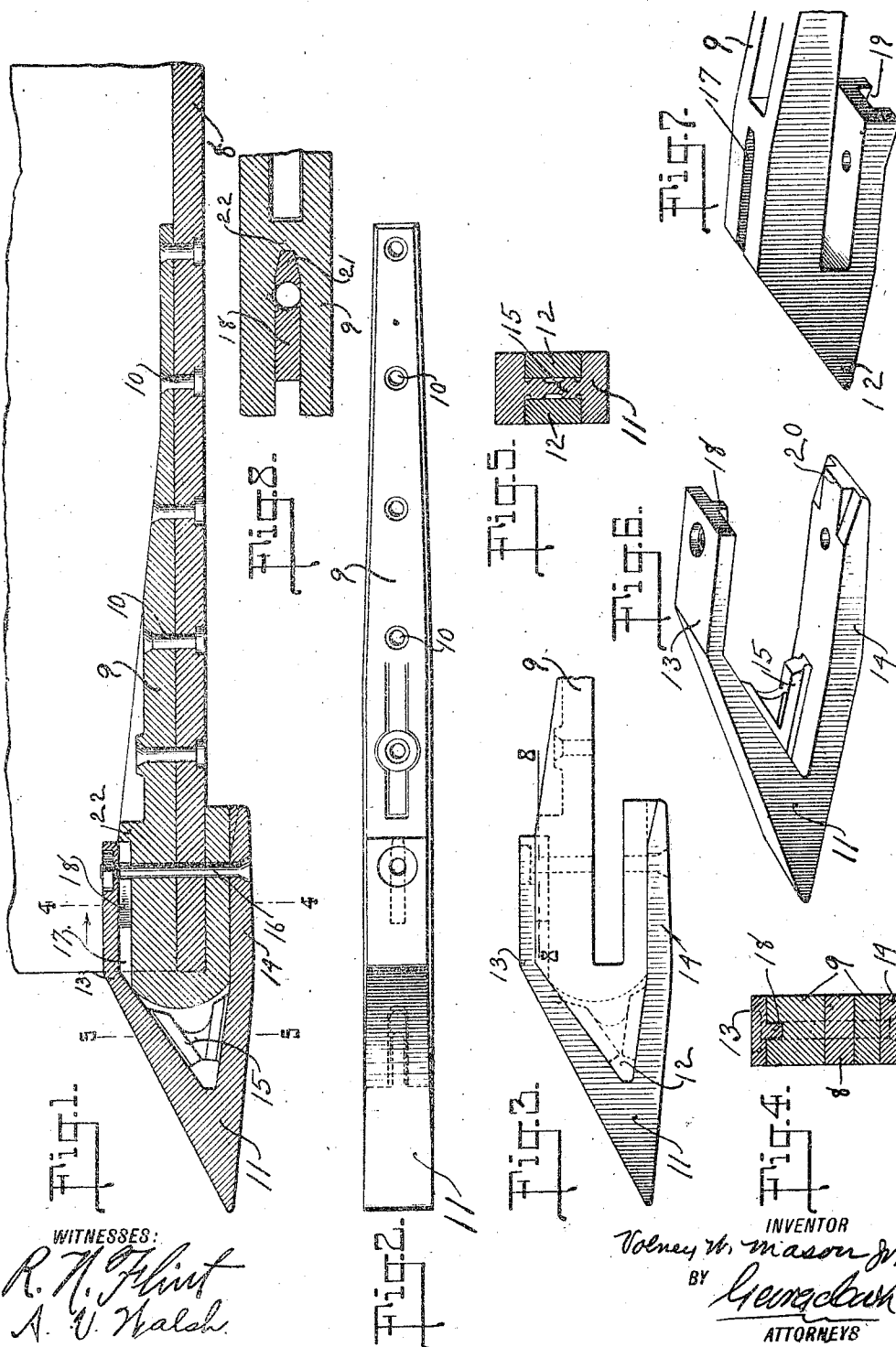


DIPPER TOOTE.

APPLICATION FILED OCT, 20, 1910,

Patented Jan. 17, 1911.



UNITED STATES PATENT OFFICE.

VOLNEY W. MASON, JR., OF NEW YORK, N. Y., ASSIGNOR TO EDGAR ALLEN AMERICAN MANGANESE STEEL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DIPPER-TOOTH.

981,666.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed October 20, 1910. Serial No. 568,156.

To all whom it may concern:

Be it known that I, VOLNEY W. MASON, Jr., a citizen of the United States, and a resident of New York, borough of Manhattan, in the county of New York and State of New York, have made and invented certain new and useful Improvements in Dipper-Teeth, of which the following is a specification.

My invention relates to teeth designed for use with the dippers of dipper type excavating or dredging machines and also capable of use with clam shell or other types of buckets used in excavating and digging machines, or with buckets used in machines for scooping up and transporting loose materials generally; and the object thereof is to provide the tooth with a detachable point which may be readily and conveniently removed and replaced by another when it becomes worn out and which point will be more securely held in position and will be better adapted to withstand the strains met with in use than has usually been the case with detachable points for dipper teeth.

With the above mentioned objects in view my invention consists in the improved dipper tooth illustrated in the accompanying drawing, described in the following specification, and particularly claimed in the clauses of the concluding claim.

In the drawing; Figure 1 is a view showing a section of my improved dipper tooth upon a central plane, extending longitudinally thereof; Fig. 2 is a view showing the tooth in plan; Fig. 3 is a view showing the end portion of the tooth in side elevation; Fig. 4 is a view showing a section taken upon a transverse plane indicated by the line 4—4, Fig. 1; Fig. 5 is a similar view upon a plane indicated by the line 5—5, Fig. 1; Fig. 6 is a view showing the detachable point of my improved tooth in perspective; Fig. 7 is a view showing the forward portion only, in perspective, of the base portion of my improved tooth, and; Fig. 8 is a fragmentary view illustrating a detail of construction.

Referring to the drawing 8 represents a portion of the wall of a dipper equipped with my improved dipper tooth; and 9 is the base portion of my improved tooth, the same being permanently secured to the dipper as by means of bolts or rivets 10.

11 is the detachable point section of my improved dipper tooth, the same being secured to the base portion 9 and used until worn out, whereupon it is replaced by a new detachable point.

The end of the base portion 9 to which the detachable point section 11 is secured is provided with a slot whereby the extremity of the base is divided and two lugs 12 are secured and the detachable point section is formed with upper and lower portions 13, 14 which extend along the upper and lower sides of the forward end of the base portion as shown in Fig. 3 wherein the base portion is shown unshaded and the detachable point section shaded.

The detachable point section is provided with a web at 15 connecting the upper and lower portions of the detachable point the width or thickness of which web is such that it will fit closely in the slot between the lugs 12—12, whereby the point is strengthened near its end and the upper and lower extending portions, 13—14 of the point prevented from spreading, and whereby also transverse movement of the point is prevented by the lugs 12 in engagement with the sides of the web. Thrust of the point in a direction along the base portion 9 is taken up by the ends of the lugs 12 which correspond in form with the space included between the upper and lower portions of the removable point, this force being a force acting longitudinally of the lugs, while stresses which tend to move the point in a transverse direction and to shear the lugs are transmitted to them through the web 15. The rear ends of the extensions 13—14 of the removable point are drawn toward one another and against the base member 9 by means of a bolt or equivalent securing means 16 extending through them and the base member.

It will be understood from the construction thus far disclosed that a force tending to move the point transverse to the plane upon which the view shown in Fig. 1 is taken, will rock the point about a vertical axis the location of which will be somewhat indefinite but which may be defined roughly as extending between the lugs 12 and adjacent their extremities, which action will tend to move the rear ends of the extensions 13—14 from side to side thus resulting in a shearing action at the bolt 16 which, if not properly guarded against, will shear the bolt

in a comparatively short time. In order, therefore, to guard against this shearing action I provide the upper surface of the end of the base member 9 with a longitudinally extending recess or keyway 17, and the under surface of the upper extension 13 of the point with a projecting lug or key 18 designed to fit closely in and slide along said slot as the removable point is removed or replaced. The under side of the base member is also provided with a slot or recess at 19, and the rear end of the lower extending portion 14 with a lug 20 adapted to fit together. These lugs 18 and 20 or either of them, in connection with the recess which they engage, will obviously prevent transverse or lateral movement of the rear ends of the extending portions of the removable point, and, as a consequence, prevent the shearing action upon the bolt above referred to.

The rear end of the lug or projection 18 is preferably formed tapering as shown at 21 Fig. 8, and stock is left in the base member 9 immediately to the rear of the lug as shown at 22, whereby as the detachable point 11 is placed upon the base member and driven into its final position the rear end of the upper extension 13 becomes wedged in position. The stock at 22 takes up a certain part of the longitudinal thrust to which the base member is subjected and also strengthens the base at this point.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. In a dipper tooth, a base adapted to be secured to a dipper and the forward end of which base is slotted whereby two lugs are formed at its extremity; a detachable point provided with portions extending along the upper and lower faces of the outer end of said base and having also a web adapted to fit within the slot aforesaid; a bolt extending through the rear ends of said extending portion and said base; a keyway formed in the upper face of said base beneath the upper of said extending members; and a key upon the under side of the upper of said extending members, said key being of less width than said extending member and adapted to fit within the keyway aforesaid when the point is in place.

2. In a dipper tooth, a base adapted to

be secured to a dipper and the forward end of which base is slotted whereby two lugs are formed at its extremity; a detachable point provided with portions extending along the upper and lower faces of the outer end, of said base, and having also a web adapted to fit within the slot aforesaid; a bolt extending through the rear ends of said extending portions and said base; a keyway formed in the upper face of said base; and a key upon the under side of the upper of said extending members and adapted to fit within the keyway aforesaid when the point is in place, the rear portion of said key and a corresponding portion of said keyway having tapering side walls.

3. In a dipper tooth, a base adapted to be secured to a dipper and the forward end of which base is slotted whereby two lugs are formed at its extremity; a detachable point provided with portions extending along the upper and lower faces of the outer end of said base, and having also a web adapted to fit within the slot aforesaid; a bolt extending through the rear ends of said extending portion and said base; a lug adjacent the rear end of one of said extending portions; and a recess formed in said base and into which the lug aforesaid enters when the point is in place.

4. In a dipper tooth, a base adapted to be secured to a dipper and the forward end of which base is slotted whereby two lugs are formed at its extremity; a detachable point provided with portions extending along the upper and lower faces of the outer end of said base, and having also a web adapted to fit within the slot aforesaid; a bolt extending through the rear ends of said extending portion and said base; a lug adjacent the rear end of the upper and of the lower extending portion of said detachable point, and two recesses formed in said base and into which said lugs enter when the point is in place.

Signed at New York borough of Manhattan in the county of New York and State of New York this 15th day of October A. D. 1910.

VOLNEY W. MASON, JR.

Witnesses:

R. N. FLINT,
A. V. WALSH