W. G. NICHOLS & A. H. EXTON.

DIPPER TOOTH.

APPLICATION FILED NOV. 14, 1916.

1,246,644. Patented Nov. 13, 1917.

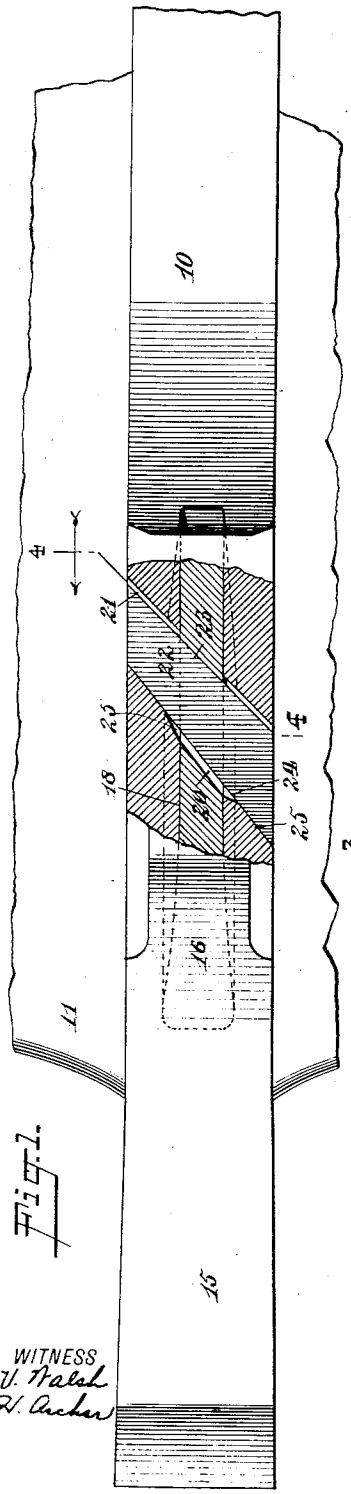


Fig. 1.

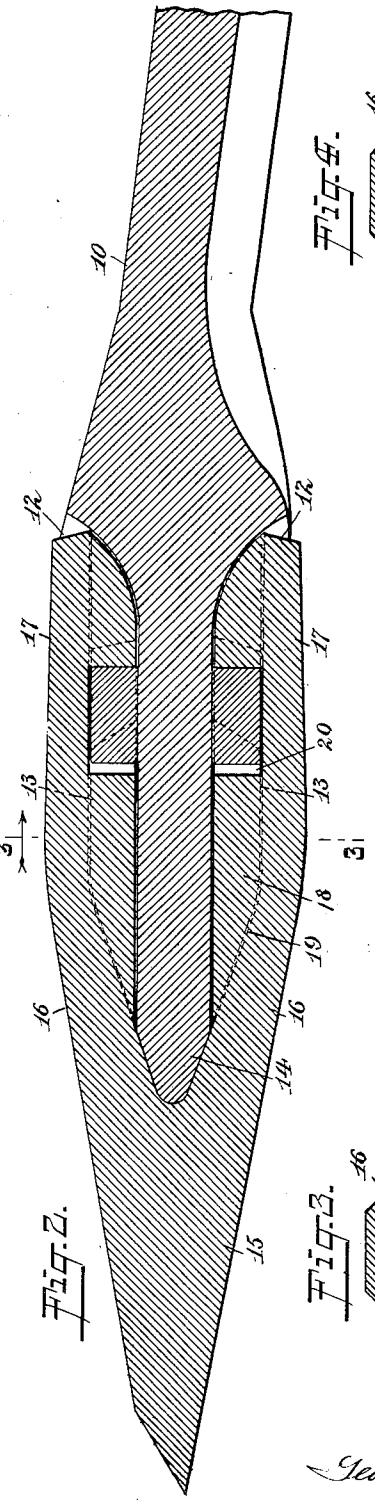


Fig. 2.

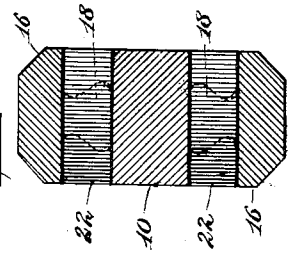


Fig. 4.

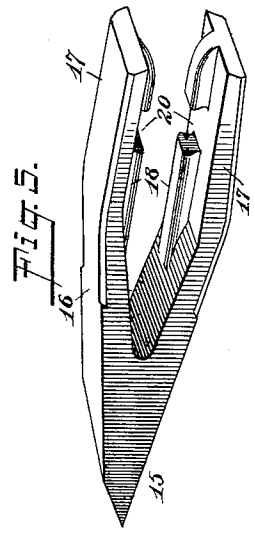


Fig. 5.

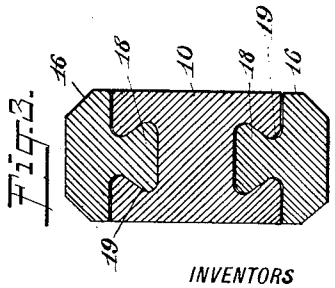


Fig. 3.

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DIPPER-TOOTH.

1,246,644. Specification of Letters Patent. Patented Nov. 13, 1917.

Application filed November 14, 1916. Serial No. 131,213.

To all whom it may concern:

Be it known that we, WESLEY G. NICHOLS, a citizen of the United States, and a resident of Chicago Heights, in the county of Cook and State of Illinois, and ALFRED H. EXTON, a citizen of the United States, and a resident of Chicago Heights, in the county of Cook and State of Illinois, have made and invented certain new and useful Improvements in Dipper-Teeth, of which the following is a specification.

Our invention relates to dipper teeth, as used in connection with dipper buckets of steam shovels, dredges, and excavating machines.

An object of the present invention is to provide a dipper tooth especially adapted for use upon dipper buckets, wherein the tooth base is formed integral with the dipper front, although the invention is equally applicable to dipper teeth wherein the tooth base is secured to the dipper front by bolts, rivets, or other fastening means.

In that type of dipper tooth containing a web between the jaws of the point, considerable trouble has been experienced, due to the spreading of the sides of the base, as the same is weakened by the slot which is provided for the reception of the web. In order to overcome this, the jaws of the point have been provided with dovetail lugs which interlock in correspondingly shaped grooves in the base, and it is to this particular type of dipper tooth construction that our invention relates.

The omission of the web between the jaws of the point, renders necessary the provision of fastening means engaging the jaws of the point itself, and with this in view we have provided the undercut or dove-tail lugs of the jaws of the point with transversely extending slots, so that the said lugs not only hold the jaws of the point from spreading, but also prevent the point from becoming detached from the base, the desired end being thereby obtained without weakening the point or interfering with the requisite strength of the base.

Other objects and advantages will appear as the description proceeds, wherein it is to be understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit thereof.

The preferred embodiment of our invention is disclosed in the accompanying drawings, wherein:

Figure 1 is a plan view, and partially in section, of a dipper tooth including a detachable point and base, embodying the characteristic features of our invention;

Fig. 2 is a view in longitudinal vertical section thereof;

Fig. 3 is a view in section taken on the line 3—3 of Fig. 2;

Fig. 4 is a view in section taken on the line 4—4 of Fig. 1; and

Fig. 5 is a detail view in perspective of our improved dipper tooth point.

Referring specifically to the several views, the base 10 is illustrated in the present drawings as being formed integral with the front wall or lip 11 of a dipper bucket, although it is to be understood that in our improved dipper tooth construction, the base can be formed separate from, and attached to, the front wall of the dipper bucket, should it be so desired.

The base 10 is provided with the outstanding ledges 12, in front of which project the substantially parallel surfaces 13, converging at their front extremities to form the usual type of pointed nose 14. A removable tooth point 15, substantially wedge-shape, is provided with the rearwardly diverging jaws 16, to the rear of which project the securing arms 17, the jaws and arms fitting against the corresponding surfaces 13—13 of the base of the tooth. The jaws and arms are preferably formed symmetrical about a central axis, so that the point is reversible, as well as renewable. Located upon the confronting surfaces of the jaws and arms of the point, are the undercut or dovetail lugs 18, which fit within the correspondingly shaped grooves 19 formed in the base 10. In order that the lugs 18 which hold the jaws and arms from spreading, may also act to secure the point upon the base, the said lugs are provided with the laterally extending slots 20, and the base is provided with corresponding recesses 21, the recesses and slots being arranged to receive locking keys 22 therein, preferably extending at a slight angle to the transverse, as illustrated in Fig. 1. The recesses, slots, and keys are so formed that the rear surface 23 of the key contacts with the rear wall of the slot 20, and the front surface 24 of the key contacts with the front wall 25 of the re-

cesses of the base, so that as the keys 22 are driven to their seated positions, the point is wedgedly secured in place and locked in such position. The undercut lugs 18, therefore, not only brace the point against spreading, but also lock the same upon the base, the point being in no wise weakened by such construction, nor the strength of the base materially diminished by the presence of the recesses 21. The rear extremities of the arms of the point seat against the outstanding ledges 12 of the base.

What we claim is:—

1. In a dipper tooth the combination of a base having substantially dove-tail shape grooves extending along the upper and lower surfaces thereof, a tooth point with rearwardly extending arms provided with substantially dove-tail shape lugs extending along the confronting surfaces of said arms, fitting within and interlocking with the grooves of said base, said base and lugs provided with laterally extending alined slots, and wedge-shaped keys fitting within said slots wedgedly holding the point upon said base.

2. A tooth base provided with substantially dove-tail shape grooves extending along the upper and lower surfaces thereof and provided with laterally extending recesses intersecting said dove-tail shape grooves.

3. A dipper tooth point provided with rearwardly extending arms, substantially dove-tail shape lugs projecting along the confronting surfaces thereof, said lugs provided with laterally extending slots.

Signed at Chicago Heights, in the county of Cook and State of Illinois, this sixth day of November, A. D. 1916.

WESLEY G. NICHOLS.

Witnesses:
M. I. La Zelle,
Charles Fahlstrom.

Signed at Chicago Heights, in the county of Cook and State of Illinois, this first day of November, A. D. 1916.

ALFRED H. EXTON.

Witnesses:
C. J. Marcuson,
H. E. Ostin.

Copies of this patent may be obtained for five cents each, by addressing the "Com-