Nov. 20, 1928. 1,692,501

G. R. HANKS

DIPPER TOOTH

Filed March 25, 1926

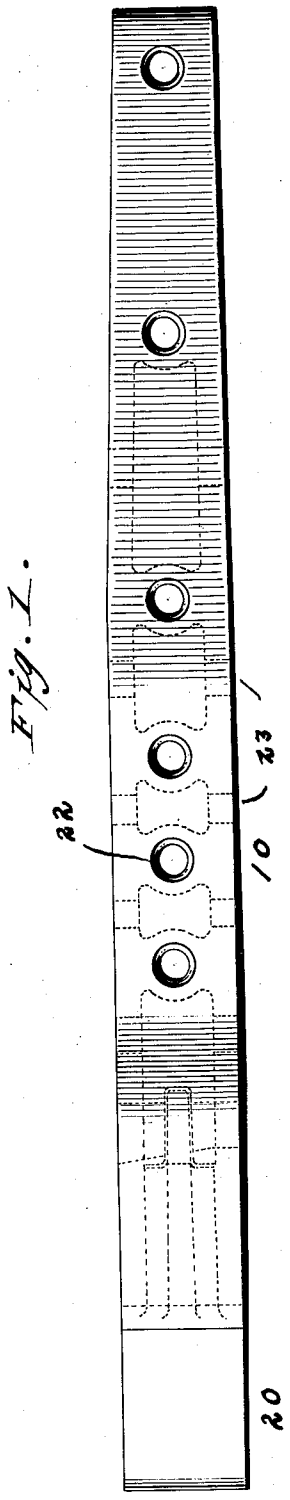


Fig. 1.

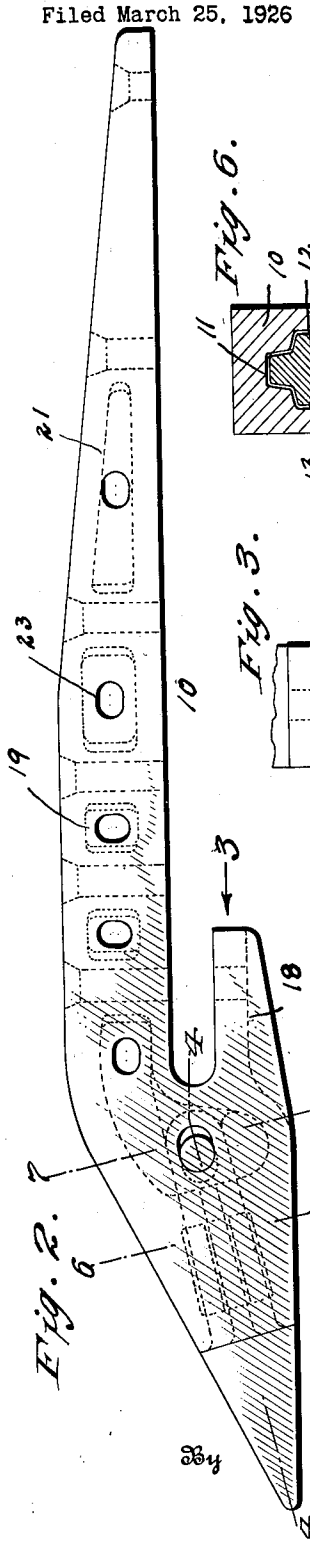


Fig. 2.

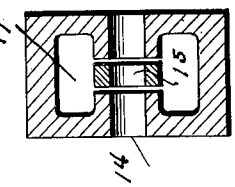


Fig. 7.

Fig. 6.

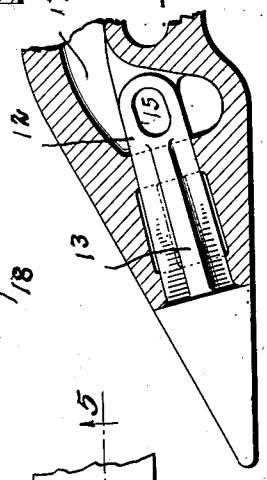


Fig. 5.

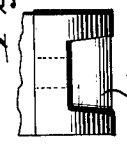


Fig. 3.

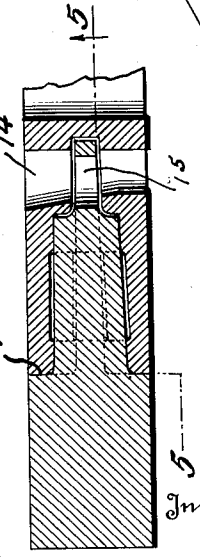


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE R. HANKS, OF HIGH BRIDGE, NEW JERSEY, ASSIGNOR TO TAYLOR-WHARTON IRON AND STEEL COMPANY, OF HIGH BRIDGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

DIPPER TOOTH.

Application filed March 25, 1926. Serial No 97,270.

My invention relates more particularly to dipper teeth of the type embodying a base and a detachable point. For many years it has been standard practice to bifurcate the nose of the base to provide for reversible application of the point. This practice, in the main, has been eminently satisfactory, but under severe digging strain, developing considerable side thrust, there have been instances of serious spreading and breakage of the jaws of the base. It has been heretofore proposed to eliminate the slot by providing the point with a pocket to envelop the nose of the base. That proposal is inherently faulty for the reason that metal is massed in the nose of the base to such an extent as to hamper the production of uniformly sound castings and to make it impossible or in any event exceedingly difficult to properly heat treat. The proposal suffers the further disadvantage of lack of proper means for tightening the point and under the circumstance of stretching of the relatively thin walls of the pocket this is a serious drawback and hastens the destruction of the point. It is a fact, however, that rid of the defects mentioned the box-section design will rate better than the standard two-part tooth in competitive service. And it is the purpose of my invention to overcome those defects.

In achieving that purpose I have strengthened the base by a novel uniform distribution of the metal and in providing for interchangeability of point and base I have devised an efficient lock and have overcome the tendency of angular movement or rotation of the point.

The invention in its preferred embodiment is illustrated in the accompanying drawings, wherein

Figure 1 is a plan view of the complete assembly;

Fig. 2 is a side elevational view of the same;

Fig. 3 is a section of the bottom lug looking in the direction of the arrow 3, Fig. 2;

Fig. 4 is a section on line 4—4, Fig. 2;

Fig. 5 is a section on line 5—5, Fig. 4;

Fig. 6 is a section on line 6—6, Fig. 2; and

Fig. 7 is a section on line 7—7, Fig. 2.

In the drawings, 10 represents the base and 20 represents the point. The nose of the base has a central longitudinally ranging socket that is cruciform in cross section, the diametrically disposed depressions 11 giving rise to that shape. The shank 12 of the point has ribs 13 which mate with the longitudinal ways or depressions 11. There is thus established a spline connection which precludes angular or rotary movement of the point. The base is provided with a cored opening 14 and the shank of the point has a hollow boss or eye 15 for cooperation with an appropriate tightening device to cause the shoulder 16 of the point to fit flush with the rim of the socket.

The socket provides for substantial uniformity of metal section. Further provision of this kind is afforded by the cored area or cavity 17, and by the channel section 18 of the bottom lug. And in the main body of the base and between the rivet holes I core out the metal variously as indicated at 19 and 21. The effect of this is substantial uniformity of metal section throughout the base and the establishment of substantially tubular rivet-receiving pockets 22. In further extension of the metal-reducing thought it will be observed that the entries 23 are directed laterally or at right angles to the direction of the rivet openings or pockets 22.

Having described my invention, I claim:

1. A solid base having rivet openings and intervening metal reducing cavities whereof the entries are at right angles to the rivet openings, whereby provision is made for uniform heat treatment without weakening the structure of the base.

2. A base having a socket in part of cruciform and in part of other and reduced section, in combination with a point capable of reversible application thereto and whereof the construction and arrangement are such that a spline connection is established the effective length of the cruciform section to secure the point against angular or rotative movement with relation to the base, said point having a shank adapted to fit the reduced section, and a lock for the shank.

3. A dipper tooth adapted for uniformity of heat treatment and hence long life and of the box section base and point assembly type, comprising, in combination, a solid base of the underlug type having rivet openings and intervening metal reducing cavities to provide substantially for uniform heat treatment without weakening the structure, uniformity of metal section being continued by a point-seating socket of box section, and a point having a spline fit in said socket to overcome tendency to angular movement.

In testimony whereof I affix my signature.

GEORGE R. HANKS.