

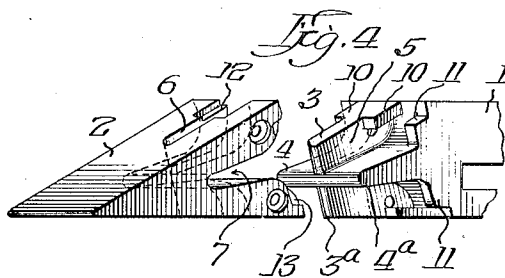
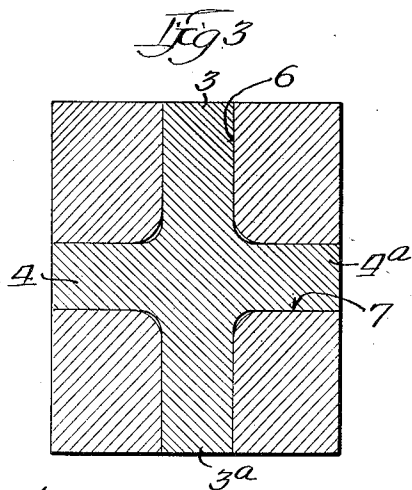
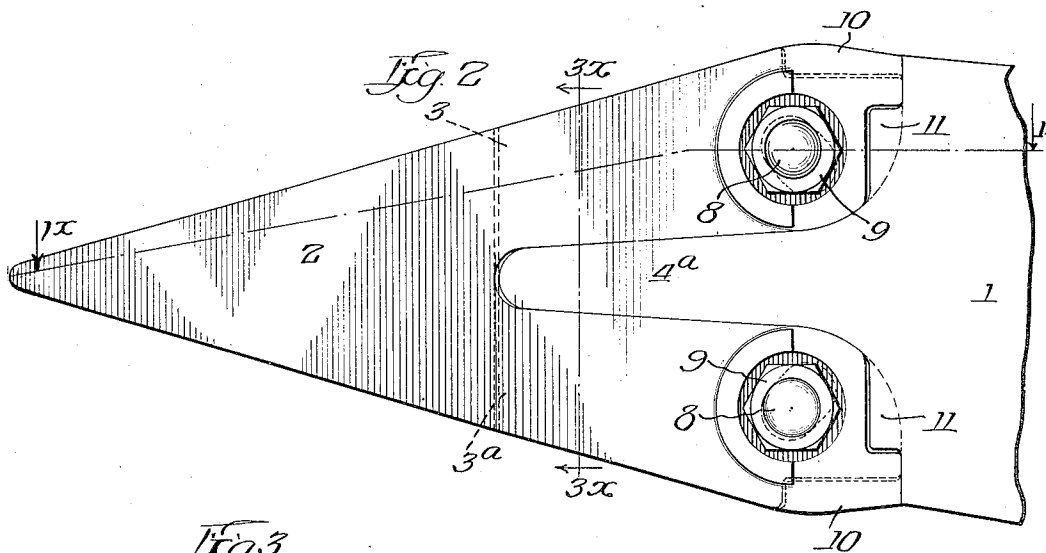
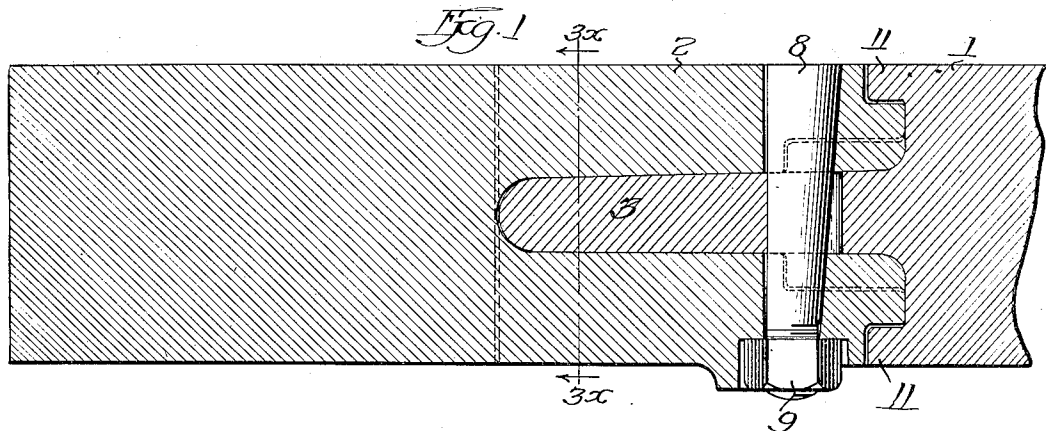
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1,548,374

W. J. MULLALLY

EXCAVATING TEETH

Filed Aug. 2, 1923



Witness:

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UNITED STATES PATENT OFFICE.

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EXCAVATING TEETH.

Application filed August 2, 1923. Serial No. 655,217.

To all whom it may concern:

Be it known that I, WALTER J. MULLALLY, a citizen of the United States, residing at Chicago Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Excavating Teeth, of which the following is a specification.

This invention relates to teeth applied to excavating implements for the purpose of facilitating penetration into the material to be excavated, and particularly to teeth that are separately formed and replaceably mounted upon the implement or upon a base member that is in turn mounted upon the implement, either of which, for the purposes of the present invention, may be regarded as a base member upon which the penetrating member is mounted.

The object of the invention is to provide an improved construction of the means through which the penetrating member is assembled with the base member, and one in which stresses transmitted from the one member to the other will be distributed in a manner to avoid deteriorating strains upon each member.

In carrying out the invention, the members are constructed the one with a recess and the other with a shank mating with said recess, the recess comprising two slots extending through from side to side of the member in which it is formed (preferably the penetrating member) in intersecting planes, while the shank comprises flanges intersecting in planes corresponding with those of the slots which form the recess, so that the members may be assembled by sliding one upon the other in the direction of the axis of penetration, and stresses which tend to deflect either member relatively to the other in any direction can be taken care of by a plurality of the flanges and their corresponding bearing faces. In the preferred embodiment of the invention, the faces of the slots and flanges are inclined to the axis of assembly, so that the members seat one against the other through wedging surfaces, and when drawn together firmly in the direction of assembly, as, for instance, by means of wedging bolts, important fractions of the deflecting stresses will be taken up by the wedging action of flanges and slots that are in the plane of the stress, and those flanges which are transverse to the direction of stress

will be proportionately relieved. Moreover, shoulders projecting from each flange of the shank, preferably near the base of the shank, each substantially parallel with but spaced from an intersecting flange and entering supplemental recesses in the slotted member, enter into engagement with the outer walls of the slots in the several transverse directions and thus take up a substantial proportion of transverse stresses which would otherwise be imposed in each instance mainly upon the flange intersecting the line of stress. The shoulders which thus reinforce the connection are additionally advantageous in an assembly involving wedging action of the intersecting flanges since the shoulders sustain the walls of the slotted member against spreading under the wedging action.

In the accompanying drawing, in which the preferred embodiment of the invention is shown by way of illustration—

Figure 1 is a longitudinal section through a penetrating member and a portion of the base member in which the invention is embodied, the plane of section being indicated by the line 1^x—1^x in Figure 2.

Figure 2 is a side elevation of parts shown in Figure 1, but in a direction at right angles to the plane of Figure 1.

Figure 3 is a section on the line 3^x—3^x of Figures 1 and 2.

Figure 4 is a perspective view showing the two members of the assembly segregated.

1 represents a base member such, for instance, as a tang through means of which a tooth is attached to an excavating dipper or bucket, and 2 represents a separately formed penetrating member or tooth proper which is to be assembled with said base member through means constituting the subject-matter of the present invention.

As shown in Figure 4, base member 1 is provided with intersecting flanges, 3, 3^a and 4, 4^a, which are preferably developed with seating faces 5 at an angle to the medial planes of the flanges; and the penetrating member 2 is provided with a correspondingly formed recess comprising slots 6 and 7 extending through the member from side to side and intersecting in the same planes, and having walls with the same inclination as the flanges which form the shank. The members 1 and 2 are assembled by relative movement in the direction of the axis of

penetration, and they are retained in assembled relation and drawn to a firm seating one upon the other by means of wedging bolts 8 passing each through the walls of one slot and through the members of one intersecting flange, and having nuts 9 by which they are moved longitudinally in drawing the members to a firm seating. Each of the flanges 3, 3^a and 4, 4^a, has a shoulder 10 or 11 projecting therefrom near its base, parallel with but spaced from the flange which intersects its carrying flange, and these shoulders mate with supplemental recesses 12 and 13 in the outer faces of the slotted member, so that as the members are drawn tightly together, tendency to spread the walls of the slots by the wedging action is opposed in each instance by the appropriate shoulder.

With a tooth assembly constructed as above described, stresses in lines intersecting the axis of penetration will be taken up in every instance by at least two flange members intersected by said line, and also by one flange member parallel to said line and which tends to wedge more tightly into its corresponding slot under such stress. Furthermore, such stresses will be taken up not only by the slot walls on the sides of the flanges from which the stress proceeds, but also by slot walls on the remote sides of the flanges, which are in bearing upon the shoulders 10 or 11, and even that portion of the stress which is absorbed by the wedging action of a flange parallel with the direction of stress will be absorbed by the shoulders which resist the spreading of the slot walls under such wedging action.

I claim:

1. In an excavating implement, a base member, and a separately formed penetrating member mounted thereon; said members being constructed the one with a recess and the other with a shank entering said recess; said recess comprising slots in intersecting planes, each slot extending through the member from side to side, and said shank comprising flanges intersecting in planes corresponding with those of the slots and substantially coextensive with the slots both longitudinally and transversely.

2. In an excavating implement, a base member, and a separately formed penetrat-

ing member mounted thereon; said members being constructed the one with a recess and the other with a shank entering said recess; said recess comprising slots in intersecting planes, each slot extending through the member from side to side, and said shank comprising flanges intersecting in planes corresponding with those of the slots and substantially coextensive with the slots transversely of the member; said slots and flanges having assembly faces which are tapered to the axis of penetration; and said members having means for drawing them together to a wedging fit.

3. In an excavating implement, a base member, and a separately formed penetrating member mounted thereon; said members being constructed the one with a recess and the other with a shank entering said recess; said recess comprising slots in intersecting planes, each extending through the member from side to side, and said shank comprising flanges intersecting in planes corresponding with those of the slots; said members also having, respectively, upon their flanges and the outer faces of their slot walls, reinforcing shoulders and supplemental recesses mating with said shoulders and sustaining said outer walls.

4. In an excavating implement, a base member, and a separately formed penetrating member mounted thereon; said members being constructed the one with a recess and the other with a shank entering said recess; said recess comprising slots in intersecting planes, each extending through the member from side to side, and said shank comprising flanges intersecting in planes corresponding with those of the slots; said members also having, respectively, upon their flanges and the outer faces of their slot walls, reinforcing shoulders and supplemental recesses mating with said shoulders and sustaining said outer walls; and said shoulders being located near the bases of the flanges which carry them and each projecting substantially parallel with but at a distance from a flange intersecting the flange which carries it.

Signed at Chicago Hts., Illinois, this 19th day of July, 1923.

WALTER J. MULLALLY.