No. 888,047. PATENTED MAY 19, 1908.

J. M. SHERRERD.

TOOTH FOR EXCAVATING SHOVELS.

APPLICATION FILED APR. 1, 1907. RENEWED DEC. 27, 1907.

Fig. 1.

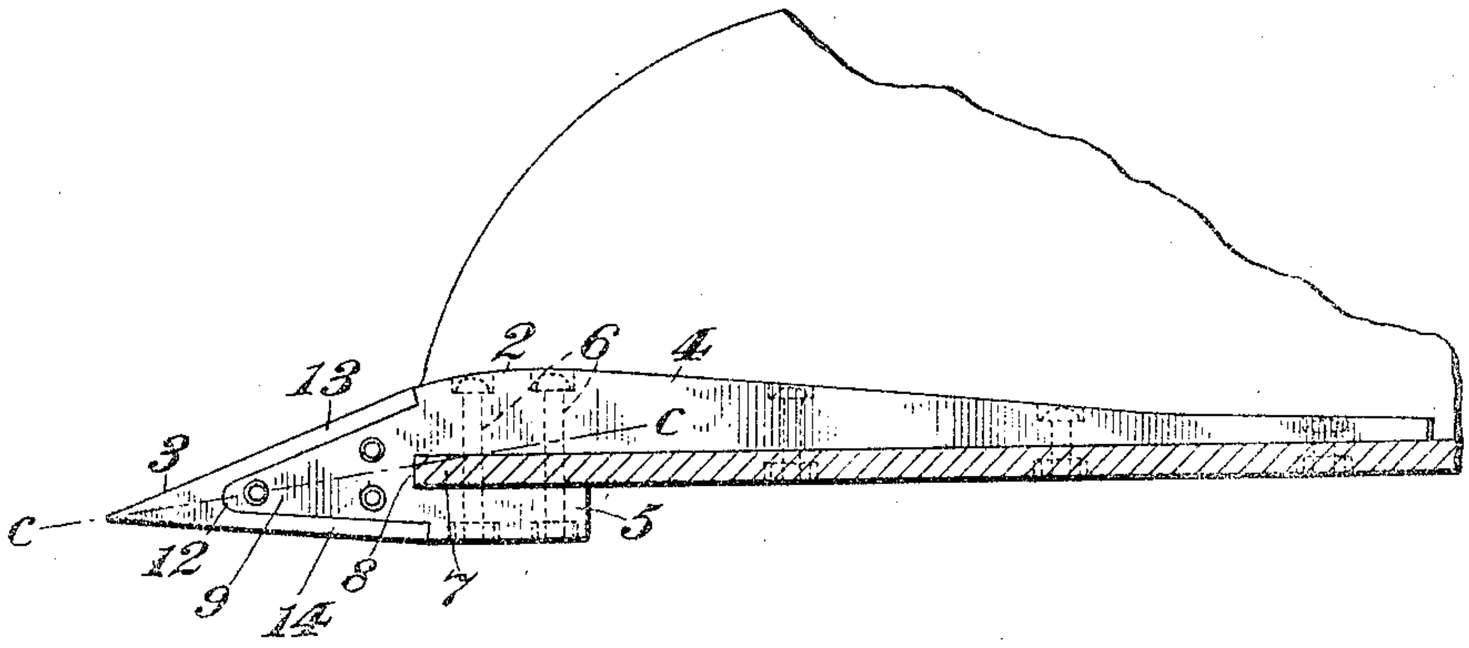


Fig. 2.

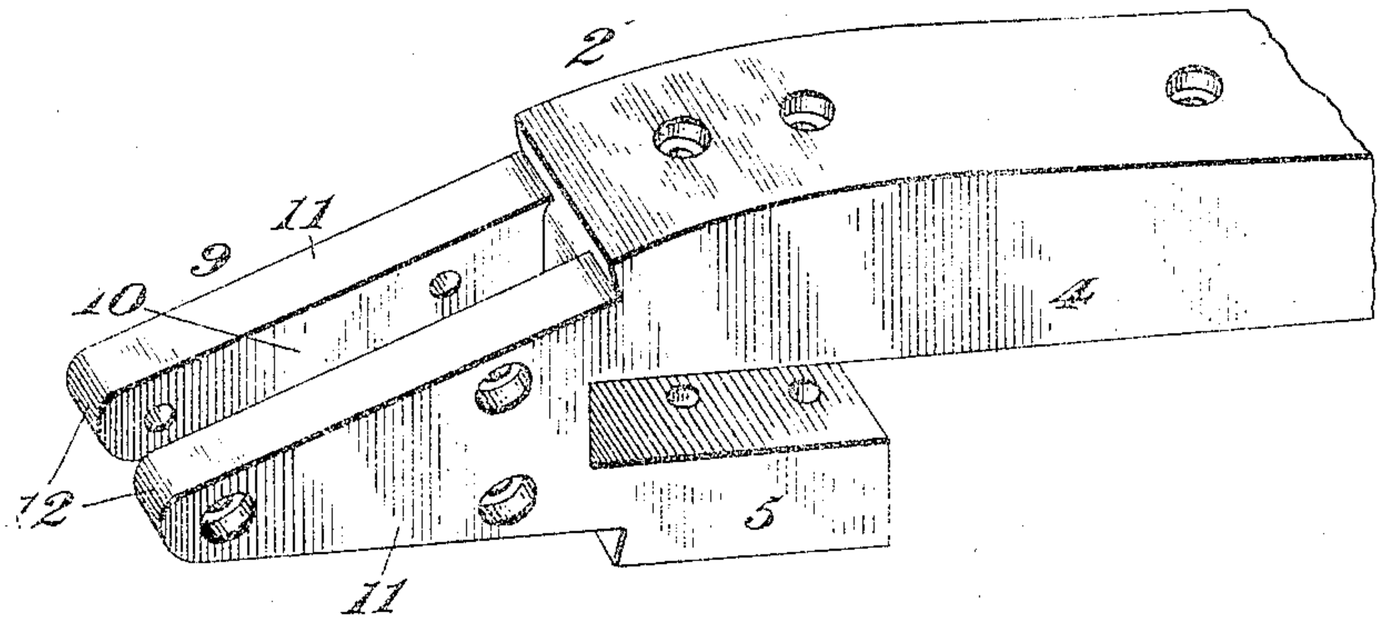
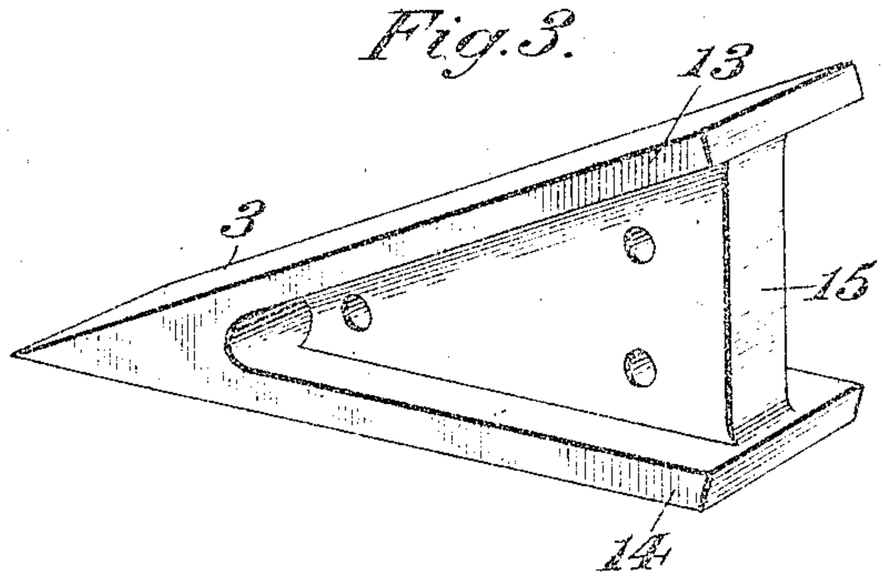


Fig. 3.



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TOOTH FOR EXCAVATING-SHOVELS.

No. 888,047. Specification of Letters Patent. Patented May 19, 1908.

Application filed April 1, 1907, Serial No. 365,672. Renewed December 27, 1907. Serial No. 408,269

To whom it may concern:

Be it known that I, JOHN M. SHERRERD, a citizen of the United States, residing in Easton, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Teeth for Excavating-Shovels, of which the following is a specification.

This invention relates to teeth for excavating buckets or shovels, the object of the invention being to provide an improved two-part tooth in which the detachable and reversible point is connecteed to the tooth in an improved manner.

In the drawings accompanying and forming part of this specification, Figure 1 is a side view of this improved two-part tooth attached to an excavator shovel, which latter is shown partly in section and broken away; Fig. 2 is a perspective view of the tooth portion or base of this two-part tooth; and Fig. 3 is a perspective view of the point.

Similar characters of reference indicate corresponding parts throughout the different figures of the drawings.

This improved two-part tooth comprises a tooth or body portion or base 2 and a detachable point 3. The tooth portion is recessed to form a pair of jaws 4 and 5, one of which, as for instance the upper, is usually longer than the other, and which jaws are bolted to the bucket by suitable bolts 6, the forward edge or lip 7 of the bucket fitting snugly in said recess, being engaged by the forward or end wall 8 of such recess, so that thrust on the tooth is imparted directly to the bucket lip, and not through the medium of bolts thereto. The body of the tooth is provided with a tapered nose 9, which is divided by a centrally located recess 10 into a pair of tapered or spaced lugs 11 provided with rounded ends 12. The detachable and reversible wedge-shaped point 3 is bifurcated to form a pair of jaws 13 and 14 connected by a centrally located web or rib 15, which rigidly unites the two jaws together, thereby preventing any tendency of the jaws to spread, and which web or rib is located in the recess of the nose and prevents lateral movement or play of the point relative to the tooth portion or base. In the present instance the rear surface of the web is shown straight, conforming to the shape of the wall forming the rear wall of the nose recess. The web may also be provided, if desired, with an opening for the passage of a cleaning tool.

For securing the point to the nose, rivets or bolts extend laterally through the nose lugs and the centrally located web, thus obviating the necessity of bolts passing perpendicularly through the jaws and the nose, which is not always practicable unless one of the jaws is extended rearwardly beyond the other to a considerable extent for the reception of the same bolts which ordinarily bolt the shank of the tooth to the bucket, and which construction is not practicable with a reversible point, since in such a point the bifurcated jaws must be of substantially the same length, or unless the web of the point is materially shortened to permit a portion of the metal of the nose to be left between the bifurcated lugs thereof for the passage of the bolt therethrough, in which case it is not always practicable to leave sufficient stock in front of the bolt opening. And furthermore, the bolt must be angularly located, all of which is avoided by riveting or bolting the point to the nose by means of bolts or rivets which extend laterally through the nose and the web of the point, while at the same time it enables the web to connect the bifurcated jaws of the point throughout substantially their entire length.

The tooth portion or base is provided with a pair of transversely located shoulders which are preferably located in rear of the wall 8 of the recess for the reception of the shovel lip or blade, whereby a relatively long bearing of the jaws on the nose is provided, and also the shoulder may be located at a point where there is considerable stock. The bifurcated nose and the centrally located web of the point, together with the bifurcated jaws of that point, constitute a means of interlocking the point with the nose against vertical as well as lateral play.

The points are preferably made of steel castings, such for instance as manganese steel, a number being preferably supplied with each shovel.

In practice the work which these teeth have to do wears away the point, the major part of each wear being on the underside of the point, so that their efficiency is gradually lessened until they become unfit for use owing to the bluntness of the points. With two-part teeth it has been the usual practice when the point has been worn to such a blunt

condition that it is not efficient to do proper work, to remove the point and re-shape it or supply a new one. But by providing a reversible point the life thereof is very materially prolonged. The point, however, in order to be reversible in a practicable manner, must have its cutting or penetrating part when reversed in substantially the same plane as this part was in prior to its reversal, and to accomplish this it must have both of its jaws terminating in about the same position with relation to the nose of the tooth, and must also have each of its jaws engage the nose at about the same distance from the center line of such nose. This is accomplished by so locating the jaws with relation to a line (see *c*—*c*) intersecting the apex of the point and the juncture point of the jaws that each jaw will have its free end at about the same distance from that line when continued through the nose of the tooth, and the nose of the tooth must be correspondingly so formed that when the point is reversed this point will have the same position with relation to the bucket or shovel lip and will always be in the same cutting plane, with its thrust substantially in line with the lip or wall of the bucket to which the tooth is connected. In other words, the relation of the tapered nose of the tooth to the bucket lip must be such that the working end of the point will be substantially in line with such lip and therefore in line with the strain, whereby liability of pulling off the point is prevented, and this is obtained by so locating the nose that the end thereof is substantially in the same plane as the bucket lip, while the working end of the point is not very materially above the plane of the underside of the tooth at the rear of its nose.

This improved point and its carrying member or body portion are so made, as hereinbefore set forth, that the point can be assembled with either side up, the point thus being constructed as a reversible point, so that such point is reversible not only after it has become worn into that condition, but is reversible prior to any wear thereon. This avoids the necessity of its always being attached to the nose of the body in one particular manner to enable it to properly do its work. Since the point can be attached, because of its mode of construction, with either side up, as both sides terminate in the preferred construction in the same formation at the point, it follows that the present improved point is reversible in the broadest sense of that term, since, as stated, before it has become worn at all it is reversible, so that it may be considered as a preformed or reversibly constructed point, that is, one constructed or formed reversible at the time of its manufacture and before it is attached to the nose, thus permitting it, as stated, to be attached with either side up. Thus, the term "reversibly constructed" as used herein is intended to cover a point which is not only reversible after it is worn into that condition, but in its preferred form is reversible prior to its being worn into that condition.

I claim as my invention:

1. A detachable two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extending bifurcated nose, a point attachable to said nose and comprising a pair of jaws, a web uniting said jaws, and a plurality of means passing laterally through the nose and web for connecting the point to the nose.

2. A detachable and reversible wedge-shaped point bifurcated to form a pair of jaws and a centrally located web uniting said jaws, and having a plurality of bolt or rivet openings extending laterally therethrough.

3. A detachable and reversible wedge-shaped point bifurcated to form a pair of jaws of substantially the same length, and a centrally located web uniting said jaws throughout substantially the length thereof, said web having an opening therethrough for the passage of a cleaning tool.

4. A detachable and reversible wedge-shaped point bifurcated to form a pair of jaws of substantially the same length, and a centrally located web uniting said jaws throughout substantially the length thereof, said web having openings therethrough for the reception of rivets or bolts.

5. A two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extended bifurcated nose, and a point attachable to said nose and comprising a pair of jaws of substantially the same length, a centrally located web uniting said jaws throughout substantially the length thereof, and a plurality of means passing laterally through the nose and web for connecting the point to the nose.

6. A two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extended bifurcated nose, and a point attachable to said nose and comprising a pair of jaws of substantially the same length, a centrally located web uniting said jaws throughout substantially the length thereof, and means passing laterally through the nose and web for connecting the point to the nose, said tooth having a pair of transversely located shoulders extending from side to side and at the rear of said nose with which the rear ends of the point jaws engage.

7. A two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extended bifurcated nose, and a point attachable to said nose and comprising a pair of jaws of substantially the same length,

a centrally located web uniting said jaws throughout substantially the length thereof, and means passing laterally through the nose and web for connecting the point to the nose, said tooth having a pair of transversely located shoulders at the rear of said nose with which the rear ends of the point jaws engage, said shoulders being located in the rear of the front edge of the shovel lip when the two-part tooth is attached thereto.

8. A two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extended bifurcated nose, and a point attachable to said nose and comprising a pair of jaws of substantially the same length, a centrally located web uniting said jaws throughout substantially the length thereof, and a plurality of means passing laterally through the nose and web for connecting the point to the nose, said nose and point having substantially the same amount of metal located at each side of a line intersecting the apices of the nose and point, whereby the point is reversible.

9. A detachable and reversibly constructed point bifurcated to form a pair of jaws, each located at substantially the same distance from a line intersecting the apex and the juncture points of said jaws, and a centrally located web uniting said jaws throughout substantially the length thereof.

10. A tooth of the class specified, having means for attachment to a bucket or shovel and comprising a forwardly extended tapered nose bifurcated to form a pair of projecting portions, and having openings located in said projections transversely thereof.

11. A shovel tooth comprising a body portion having a recess, and a tapering nose portion projecting forwardly from said body portion and bifurcated to form a pair of lugs, said nose portion terminating in a shoulder located transversely thereof and in the rear of the front wall of said recess, and said lugs having openings extending transversely therethrough for the reception of bolts or rivets.

12. A two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extending bifurcated nose, a reversible point attachable to said nose and comprising a pair of jaws and a web uniting said jaws, and a plurality of means passing laterally through the nose and web for connecting the point to the nose.

13. A two-part shovel tooth, comprising a body portion having means for attachment to a shovel or bucket and provided with a forwardly extending bifurcated nose, a reversibly constructed point attachable to said nose and comprising a pair of jaws and a web uniting said jaws, and a plurality of means passing laterally through the nose and web for connecting the point to the nose.

Signed at 9–15 Murray st., New York, N.Y.

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