A. H. EXTON & J. M. SHERRERD.

TOOTH FOR EXCAVATING BUCKETS OR SHOVELS.

APPLICATION FILED JUNE 23, 1908.

923,159. Patented June 1, 1909.

Fig. 1.

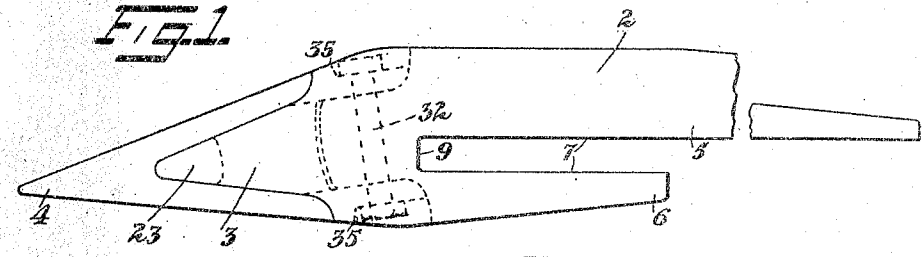


Fig. 2.

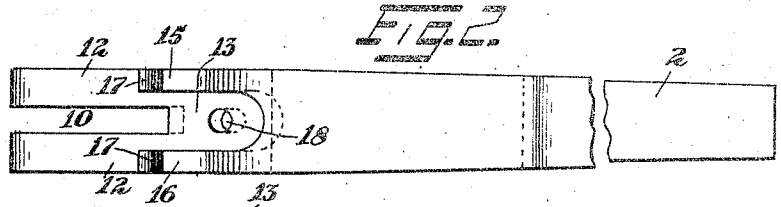


Fig. 3.

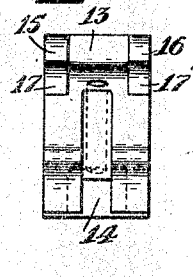


Fig. 4.

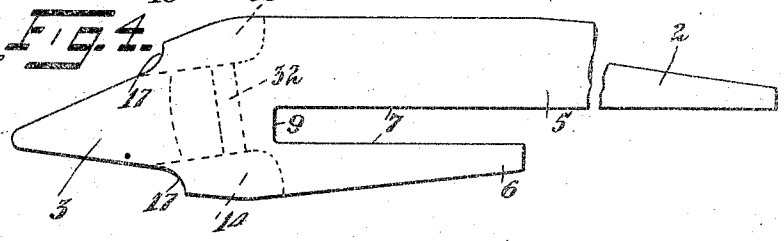


Fig. 5.

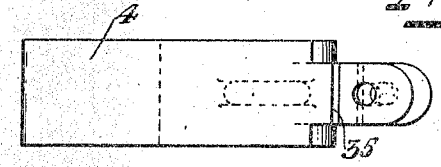


Fig. 6.

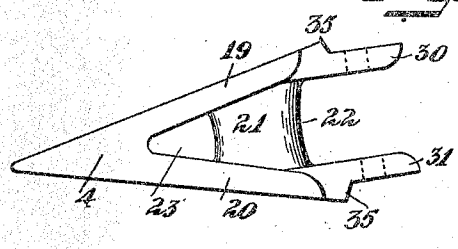
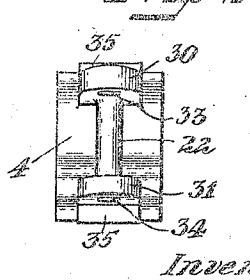


Fig. 7.



Witnesses:

C. C. Fuss.

H. D. Penny.

Inventors:

Alfred H. Exton.

John M. Sherrerd.

By their Attorney,

F. A. Richards

UNITED STATES PATENT OFFICE.

ALFRED H. EXTON, OF HIGHBRIDGE, NEW JERSEY, AND JOHN M. SHERRERD, OF EASTON, PENNSYLVANIA, ASSIGNORS TO TAYLOR IRON & STEEL COMPANY, OF HIGHBRIDGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TOOTH FOR EXCAVATING BUCKETS OR SHOVELS.

No. 923,159. Specification of Letters Patent. Patented June 1, 1909.

Application filed June 28, 1908. Serial No. 439,900.

To all whom it may concern:

Be it known that we, ALFRED H. EXTON, a citizen of the United States, residing at Highbridge, in the county of Hunterdon and State of New Jersey, and JOHN M. SHERRERD, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Teeth for Excavating Buckets or 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 point is connected to the body of the tooth in an improved manner, and which connection is of such construction that it may be utilized with any form of point, although it is particularly well adapted for a reversible point.

A further object of the invention is the provision of an improved reversible point.

The present invention is an improvement in part on that shown and described in Letters Patent to Thomas No. 887,984, in that by means of this improved connection of the point with the body of the tooth the necessity of extending the ends of the jaws to the rear of and past the end walls of the recess which engages the nose of the bucket lip in order to secure a relatively long engagement between the point and nose of the tooth for the reception of clamping means is avoided, while at the same time a somewhat more direct and therefore more rigid connection is obtained, as the clamping means can pass through the point and nose at a very much less angle than is possible in said patented device.

In the drawings accompanying and forming part of this specification, Figure 1 is a side view of this improved two-part tooth with a part of the tooth body broken away; Fig. 2 is a top view of the tooth body partly broken away; Fig. 3 is an end view thereof looking toward the right; Fig. 4 is a side view thereof also partly broken away; Fig. 5 is a top view of the point; Fig. 6 is a side view thereof; and Fig. 7 is a rear end view of such 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 2 having a forwardly extending tapered nose 3 and a detachable and reversible point 4. The tooth body is recessed, in the embodiment shown, to form a pair of shanks or jaws 5 and 6, one of which, as for instance the upper, is usually longer than the other. By means of these shanks the tooth is clamped to the edge or lip of the bucket, which fits within the recess 7 and is usually engaged by the forward or end wall 9 of the recess, so that thrust on the tooth is imparted directly to the bucket lip and not through the medium of the clamping means thereto.

The body of the tooth is, as stated, provided with a tapered nose 3, which is divided by a centrally located recess 10 into a pair of tapered parallel or spaced projections 12. Extending rearwardly of this nose, at the top and bottom of the tooth body, is a pair of recesses 13 and 14, the side walls 15 and 16 of which are shown, in the present embodiment, as parallel and extending forwardly and terminating adjacent to the rear of the spaced projections 12, the ends 17 of such side walls preferably being curved or concaved to receive the inner ends of the point jaws. The tooth body is provided with an opening 18 extending therethrough and communicating with both of said recesses 13 and 14 for the reception of the clamping means.

The detachable point 4, which in the present instance is shown as a reversible point, and which may be made reversible in any of the well known ways heretofore patented by John M. Sherrerd or by said Thomas, or in any other manner, is bifurcated to form a pair of jaws 19 and 20 connected by a web or rib 21 rigidly uniting the two jaws to each other, thereby preventing any tendency of the jaws to spread and also preventing lateral movement or play of the point relative to the tooth body when the parts are assembled. This point is made as an integral structure and the end 22 of the web which is toward the rear of the point may conform, if desired, to the shape of the end wall of the recess between the projections 12 of the tooth, but in the present form of two-part tooth this is not essential since the ends of the point jaws 19 and 20 conform to the shape of the ends 17 of the side walls 15 and 16, said ends 17 thus forming shoulders or

abutments with which the inner ends of the point jaws engage. Of course, it is obvious that the inner ends of the point jaws could be concave while the ends 17 could be convex instead of as shown in the present instance.

In practice the web of the point may be provided with an opening 23 to form a passage therethrough so that any accumulation of dirt or rust which may interfere with the proper fitting of the point on its tooth may be removed.

Extending rearwardly of the point jaws 19 and 20 and of the web connecting such jaws, and shown one forming a part of each jaw, is a pair of parallel ears or lugs 30 and 31 which project into and may snugly fit, if preferred, the recesses 13 and 14, these lugs being provided with openings 33, 34 for the passage of clamping means, such as a rivet or bolt, a bolt 32 being shown in the present instance.

From the foregoing it will be observed that the tooth body is provided with a plurality of recesses, one located in the tapered nose itself while a pair thereof extend rearwardly of such nose recess, so that while the web of the point fits within the recess of the tapered nose the rearwardly projecting lugs thereof also fit into the recesses which extend rearwardly of such nose recess, so that when the point and tooth body are clamped together by means of a bolt or rivet passing through such lugs and the tooth body, only one of which bolts or rivets need be used in the present construction, they are very rigidly held together, movement of the point in any direction being prevented, as these parts are securely interlocked one with the other. In the present improvement, when the point becomes worn at the apex thereof it may be reversed. Thus the life of the point is very materially prolonged, since it is capable of any number of reversals until worn away.

It will be observed that in the present embodiment the web connected jaws of the point are inclined to the apex of the point, while the rearwardly extending lugs by means of which the point is bolted to the tooth body are, as hereinbefore stated, parallel; in other words, these lugs are not shown herein as extending in the same angular plane as the wedge-shaped point or the jaws thereof, in consequence of which the bottom walls of the recesses in the tooth body may be made parallel and so enable the recesses to have greater depth and thus permit the clamping bolt to be located entirely within the top and bottom surfaces of the tooth body without in any way weakening the structure of the point or the nose body. By locating the heads of the bolt within the top and bottom surfaces of the tooth body it will be observed that such heads are protected by offsets or shoulders 35 of the point from receiving the full force of impact from a rock or other material being excavated.

We claim as our invention:

1. A tooth of the class described comprising a body having a tapered and recessed nose and lug-receiving recesses at its top and bottom, a detachable point having a pair of web-connected jaws the web projecting into the recess of the nose and also having a pair of lugs rearwardly of said web and projecting into said lug-receiving recesses of the body, and clamping means projecting through said lugs and body.

2. A tooth of the class described comprising a body having a tapered and recessed nose and lug-receiving recesses at its top and bottom, a detachable and reversible point having a pair of web-connected jaws the web projecting into the recess of the nose and also having a pair of lugs rearwardly of said web and projecting into said lug-receiving recesses of the body, and clamping means projecting through said lugs and body.

3. A tooth body having a forwardly extending nose and provided at the rear thereof, at its top and bottom, with a pair of recesses.

4. A tooth body having a forwardly extending bifurcated nose provided at the rear of said bifurcation, at its top and bottom, with a pair of recesses.

5. A tooth body having a forwardly extending tapered and recessed nose and having at the rear of such recess, at its top and bottom, a pair of recesses, and an opening through such body communicating with said recesses.

6. A tooth body having a forwardly extending tapered and recessed nose and having at the rear of such recess, at its top and bottom, a pair of recesses, and an opening through such body communicating with said recesses, each of said recesses having parallelly located side walls.

7. A tooth body having a forwardly extending tapered and recessed nose and having at the rear of such recess, at its top and bottom, a pair of recesses, and an opening through such body communicating with said recesses, each of said recesses having parallelly located side walls the forward end walls of which terminate adjacent to the rear of the recess of said tapered nose.

8. A tooth body having a forwardly extending tapered nose terminating at the rear thereof in a pair of parallelly located recesses the bottom walls of which are located at an angle different from the angle of inclination of said tapered nose.

9. A detachable point comprising a pair of web-connected jaws provided with lugs or ears extending rearwardly of the web, each of less width than the jaws.

10. A detachable and reversible point

comprising a pair of web-connected jaws provided with a pair of lugs or ears extending rearwardly of such web, each of less width than the jaws.

11. A detachable point having a pair of jaws provided with a pair of rearwardly extending parallelly located lugs.

12. A detachable point comprising a pair of inclined jaws provided with a pair of parallelly located lugs.

13. A detachable point comprising a pair of web-connected inclined jaws provided with a pair of parallelly located lugs.

14. A detachable wedge-shaped point having inclined outer faces and provided with a pair of rearwardly extending bolt-receiving lugs located at an angle different from the angle of inclination of said outer faces.

15. A detachable and reversible wedge-shaped point having inclined outer faces and provided with a pair of rearwardly extending bolt-receiving lugs located at an angle different from the angle of inclination of said outer faces.

16. A detachable wedge-shaped point having a pair of bolt-receiving rearwardly extending lugs located at an angle different from the angle of inclination of said point.

17. A tooth of the class described comprising a body having a forwardly extending tapered nose and provided with lug-receiving recesses, a detachable wedge-shaped point having a pair of rearwardly extending lugs projecting into said recesses of the body and located at an angle different from the angle of inclination of said point, and means for clamping said point and body together.

18. A tooth of the class described comprising a body having a tapered and recessed nose and a pair of lug-receiving recesses the bottom walls of which are located at an angle different from the angle of inclination of said tapered nose, a detachable wedge-shaped point having a pair of rearwardly extending lugs projecting into said body recesses and likewise located at an angle different from the angle of inclination of said point, and means for clamping said point and body together.

19. A tooth of the class described comprising a body having a tapered and recessed nose and a pair of lug-receiving recesses the bottom walls of which are located at an angle different from the angle of inclination of said tapered nose, a detachable and reversible point having a pair of rearwardly extending lugs projecting into said body recesses and likewise located at an angle different from the angle of inclination of said point, and means for clamping said point and body together.

20. A tooth of the class described comprising a body having a forwardly extending tapered and recessed nose and a pair of lug-receiving recesses the bottom walls of which are located at an angle of inclination different from that of the tapered nose, a detachable wedge-shaped point comprising a pair of web-connected jaws having a pair of rearwardly extending lugs located at an angle different from the angle of inclination of said point, and means extending through said lugs and recessed body for clamping the same together.

21. A tooth of the class described comprising a body having a forwardly extending tapered and recessed nose and a pair of lug-receiving recesses the bottom walls of which are located at an angle different from the angle of inclination of the tapered nose, a detachable and reversible wedge-shaped point comprising a pair of web-connected jaws having a pair of rearwardly extending lugs also located at an angle different from the angle of inclination of said point, and means extending through said lugs and recessed body for clamping the same together.

22. A tooth of the class described comprising a body having a forwardly extending wedge-shaped and recessed nose and provided with a pair of lug-receiving recesses the top and bottom walls of which are located at an angle different from the angle of inclination of said wedge-shaped nose and the side walls of which recesses are parallel, a detachable wedge-shaped and reversible point having a pair of web-connected jaws provided with a pair of parallelly located lugs projecting into the lug-receiving recesses of the body, said lugs being located at an angle different from the angle of inclination of said wedge-shaped point, and clamping means extending through said lugs and recessed body for clamping the point and body together.

ALFRED H. EXTON.
JOHN M. SHERRERD.

Witnesses:
HARRY A. HUNT,
A. F. MURRAY.