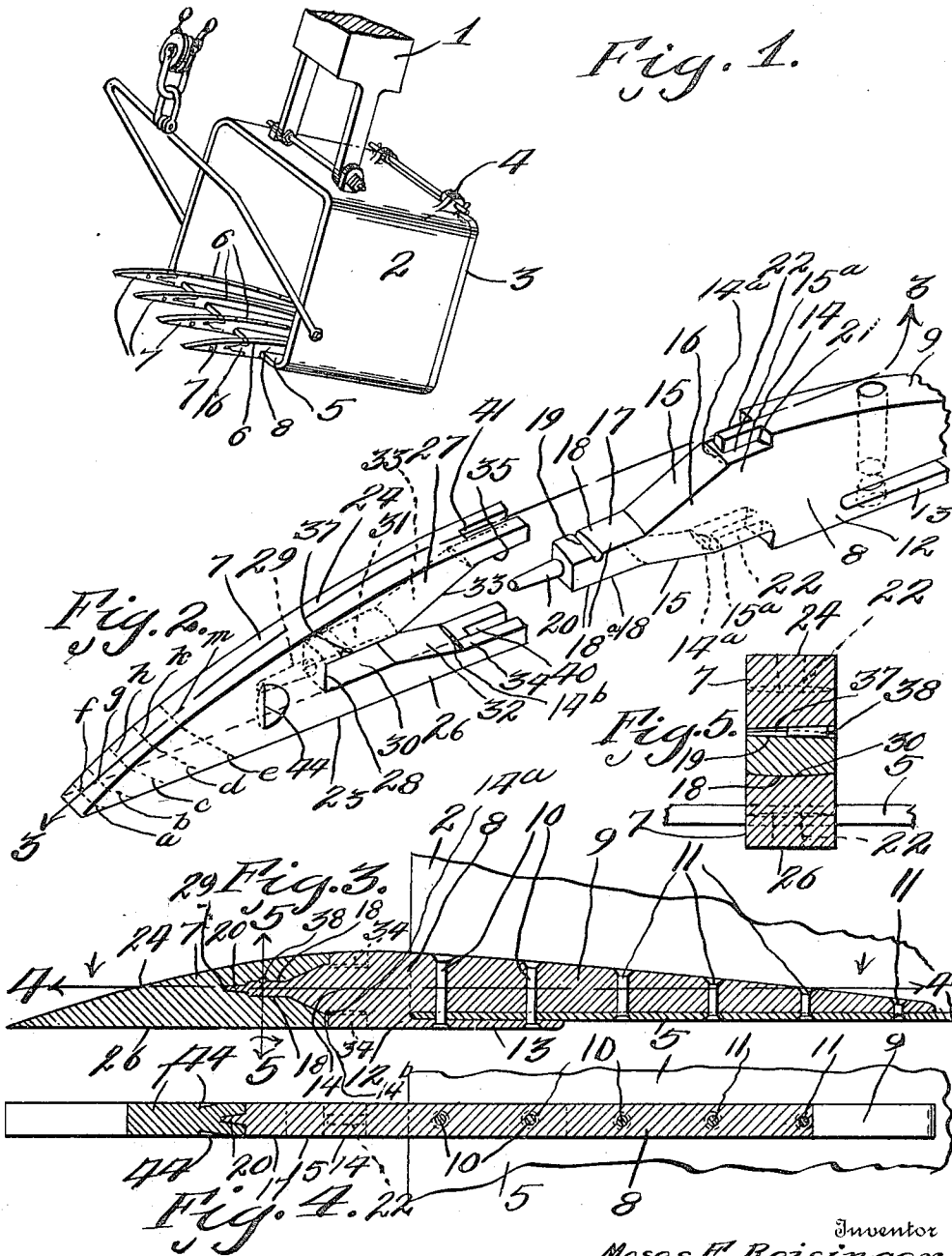


1,210,366.

Patented Dec. 26, 1916.



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UNITED STATES PATENT OFFICE.

MOSES E. REISINGER, OF OLIVEBRIDGE, NEW YORK.

DIPPER-TOOTH.

1,210,366.

Specification of Letters Patent.

Patented Dec. 26, 1916.

Application filed April 14, 1915. Serial No. 21,347.

To all whom it may concern:

Be it known that I, MOSES E. REISINGER, a citizen of the United States, residing at Olivebridge, in the county of Ulster and State of New York, have invented a new and useful Dipper-Tooth; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the art of dipper and buckets for excavating machines, and particularly to an improved tooth, which not only acts as the means of cutting into the earth or the material to be excavated, but also serves to protect the lip or biting edge of the bucket or dipper against wear.

Another object of the invention is to provide a renewable detachable tooth, the lower or under edge of which is straight, while the upper edge is gradually curved downwardly toward the lower straight edge of the tooth, thereby forming a tooth, which, in side elevation, is tapering, so that the dipper or bucket in lowering at a substantially 45 degree angle, causes the tooth to continually wear to a point, as indicated by the dotted lines in Fig. 2, *a, b, c, d* and *e*.

Another object of the invention is to provide a renewable detachable tooth point having an improved joint or connection with the tooth body, of such construction, as will obviate the use of bolts and considerable hammering of the parts, in joining the tooth point and the tooth body.

Another object of the invention is to provide an improved joint between the tooth body and the renewable tooth point, so that the parts will wedge securely together, there being means at both ends of the joint to prevent lateral distortion or displacement of the part.

A further object of the invention is to provide a key, preferably in the form of a tapering pin to engage correspondingly constructed or shaped recesses of adjacent faces of the engaging parts, to prevent displacement of the renewable detachable tooth point.

In practical fields the details of construction may necessitate alterations, falling within the scope of what is claimed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings:—Fig. 1 is a view in perspective of a dipper or bucket of an excavating machine or the like. Fig. 2 is an enlarged detail perspective view of the renewable detachable tooth point, showing the same about to be connected to the tooth body. Fig. 3 is a longitudinal sectional view on line 3—3 of Fig. 2, showing the renewable or detachable tooth point connected to the tooth body. Fig. 4 is a sectional view on line 4—4 of Fig. 3. Fig. 5 is a transverse sectional view on line 5—5 of Fig. 3.

Referring more especially to the drawings, 1 designates a portion of a conventional form of dipper stick or boom of an excavating machine (not shown), and connected to the stick or boom is a conventional form of excavating dipper or bucket 2 provided with the usual opening closure 3 hinged at 4. Carried by the portion 5 of the dipper or bucket, for not only cutting into the earth, but also for protecting the lip or biting edge of the shovel, dipper or bucket, is a plurality of teeth 6, each of which consists of the renewable or detachable tooth point 7 and the tooth body 8.

The tooth body 8 comprises an elongated tapering shank 9, which is fastened to the inner face of the portion 5 of the dipper, by virtue of the rivets 10 and 11. Forming an integral part of the tooth body adjacent its under edge as shown at 12 is an extension 13, which is spaced apart from the shank 9 sufficiently as shown, so that the portion 5 of the dipper may engage between the extension and the shank 9. In other words, the extension 13 engages the under surface of the portion 5 of the dipper or bucket, and is riveted in place by the rivets 10.

The forward portion of the body of the tooth is reduced as shown at 14, which reduced portion 14 has edges 15 which taper or converge toward each other. This tapering part 16 of the reduced portion 14 merges forwardly into an extension 17 having upper and lower faces 18, which are opposite one another and substantially in parallelism. The upper face 18 of the extension 17 is provided with a transverse tapering groove 19, which is substantially semi-circular in cross section. Beyond the extension 17 and forming an integral part thereof is an auxiliary tapering extension or pin 20. Adjacent the origin (as indicated at 21) of the reduced part 14 of the body and being oppo-

sitely disposed are tongues or ribs 22. The tooth point is elongated in contour, and its lower surface or edge 23 is perfectly straight, whereas its upper edge or face 24 curves forwardly and downwardly toward the lower face 23, thereby forming a tooth point, which, in side elevation, is tapering. As indicated by the dotted lines *a*, *b*, *c*, *d*, and *e* in Fig. 2, it is to be noted that the tooth point enters the ground or earth substantially at a 45 degree angle, in which case the tapered end of the tooth point will always wear to a sharp cutting edge, as indicated by the dotted lines, *f*, *g*, *h*, *k* and *m* in Fig. 2. This tooth point, as shown is bifurcated, thereby forming the forks 26 and 27, and the wall 28 of the crotch of the bifurcation is provided with a tapering socket 29, to receive the correspondingly tapered auxiliary extension 20 of the extension 17. The adjacent faces 30 and 31 of the forks 26 and 27 adjoining the wall 28 of the crotch of the bifurcation are opposite each other and are in parallelism substantially. These faces 30 and 31 merge into the faces 32 and 33, which diverge, and merge into additional faces 34 and 35, directly opposite each other and substantially in parallelism. These faces 30 and 31, 32 and 33, and 34 and 35 correspond to and fit the faces or edges 18, 15, and 15^a of the reduced portion 14 of the tooth body, and these faces wedge together, not only to obviate lateral movement of the joined parts, but to a great degree to prevent longitudinal movement of the joined parts. The face 31 of the upper fork of the tooth point is provided with a transverse groove 37, tapering corresponding to the groove 19 and substantially semicircular in cross section, so that when the grooves 19 and 37 are in registration, they will form a tapering aperture, to receive a correspondingly tapered key or pin 38, to assist materially in locking the tooth point to the tooth body. The forks 26 and 27 at their free ends are provided with recesses 40 and 41, to receive the tongues or ribs 22 of the reduced portion 14 of the toothed body, thereby further preventing lateral displacement of the forks of the tooth point.

The faces 15^a of the reduced portion 14 are concaved slightly and the faces 15 are slightly convexed, in order to form the shoulders 14^a. In the drawings the shoulders 14^a are exaggerated, but in reality or in practice are extremely slight, almost hardly noticeable, owing to the convexity and concavity of the surfaces or faces 15^a and 15 being extremely slight. The faces 32, 33, 34 and 35 are correspondingly extremely slight, so that the shoulders 14^b are likewise extremely slight, so that when the tooth point is connected to the tooth body, the forks of the tooth point will wedge yieldably apart sufficiently, that is, when the surfaces 15, and

32 and 33 contact, so that the shoulders 14^a and 14^b will interengage. To cause the shoulders to interengage, it is necessary to force or drive the tooth point sufficiently, to cause the forks to spread yieldably apart to engage the upper and lower portions of the reduced part of the body, whereby the shoulders will interengage. The interengagement of the shoulders prevents longitudinal movement or displacement of the tooth point in case the key or pin 38 may become temporarily moved or detached. The interengaging concavities and convexities of the upper and lower faces of said reduced portion 14 and the adjacent faces of said forks, constitute means to also prevent lateral movement of said forks, provided the tongues and the bifurcations of said forks are dispensed with.

In order to remove the tooth point when worn or broken the opposite side faces thereof are provided with depressions 44, in which one end of a tool may engage, so that the tooth point may be hammered or forced off the tooth body.

From the foregoing in connection with the accompanying drawings, it is to be noted that there has been devised a simple, efficient and desirable renewable detachable tooth point, which may be constructed of any suitable tempered metal, and one which has been found durable and practical in use, and inexpensive to manufacture.

The invention having been set forth, what is claimed as new and useful is:—

1. A dipper tooth, comprising a tooth body connected to the dipper, said body having a reduced portion, the upper and lower faces of the reduced portion being concaved, forming shoulders, a tooth point bifurcated correspondingly to and fitting the reduced part of the body, to provide oppositely disposed forks, the adjacent faces of said forks being convexed to form shoulders to interengage with the shoulders of the reduced portion of the body to hold the tooth point to the body and to prevent longitudinal movement of the point, and a cross key fastening between one of the inner faces of one of the forks and one of the outer faces of the reduced portions to additionally hold the tooth point to the reduced portion.

2. A dipper tooth, comprising a tooth body having a reduced portion, the upper and lower faces of which are concaved, forming shoulders, a tooth point bifurcated correspondingly to and fitting the reduced part of the body, to provide oppositely disposed forks, the adjacent faces of said forks being convexed, forming shoulders to interengage with the shoulders of the reduced portions of the body to hold the tooth point to the body and to prevent longitudinal movement of the point, said upper and lower faces of the reduced portion of the body and

the extremities of the forks having interengaging means to prevent lateral movements of said forks.

5 3. A dipper tooth, comprising a tooth body having a reduced portion, the upper and lower faces of which are concaved, forming shoulders, a tooth point bifurcated correspondingly to and fitting the reduced part of the body, to provide oppositely disposed
10 forks, the adjacent faces of said forks being convexed, forming shoulders to interengage with the shoulders of the reduced portions of the body to hold the tooth point to the body and to prevent longitudinal movement

of the point, said concavities and convexities preventing lateral movement of said forks, the outer end of the reduced portion and the crotch of the bifurcation of the tooth point having interengaging means to prevent lateral movement of the outer end of
15 the reduced portion.
20

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MOSES E. REISINGER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."