No. 868,066. PATENTED OCT. 15, 1907.

H. J. BARNHART.

TOOTH FOR EXCAVATING DIPPERS.

APPLICATION FILED MAR. 19, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

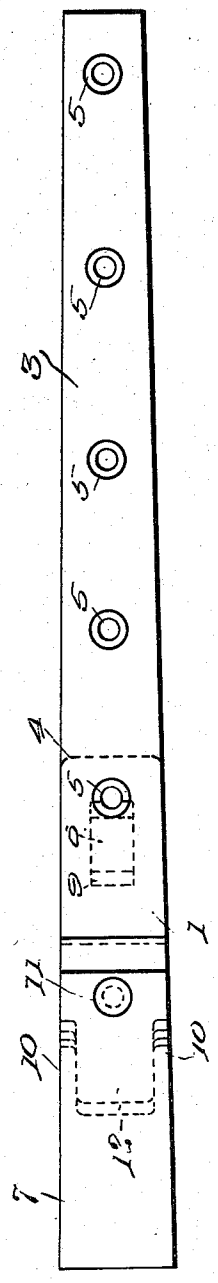
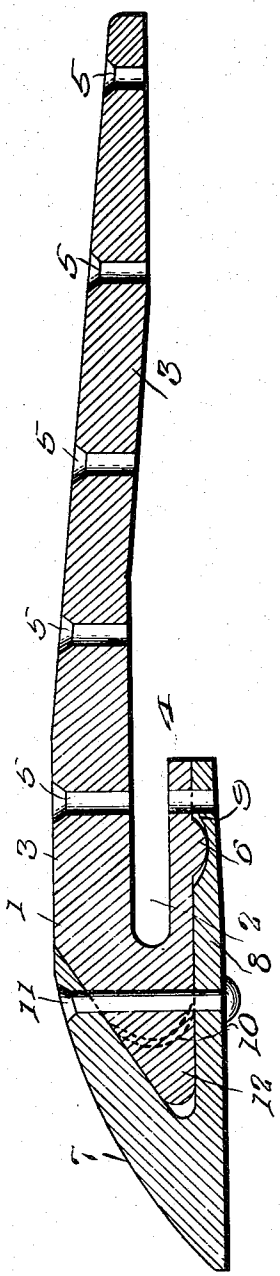


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

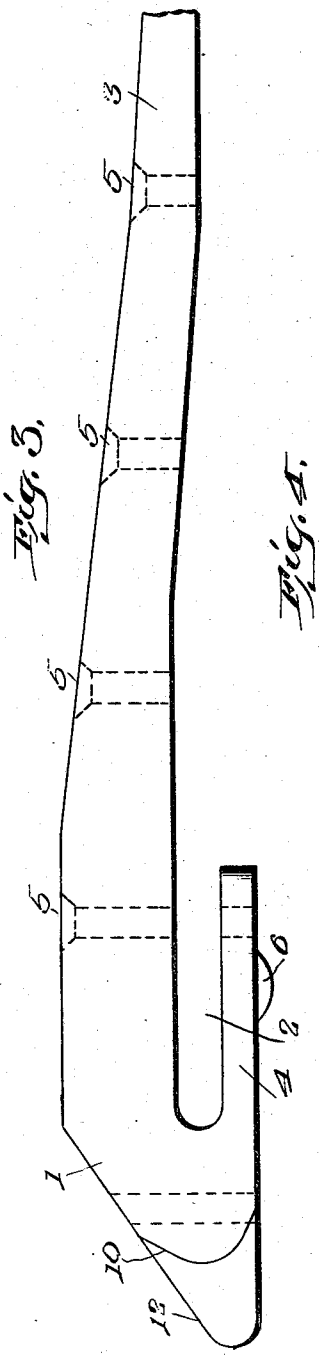


Fig. 4.

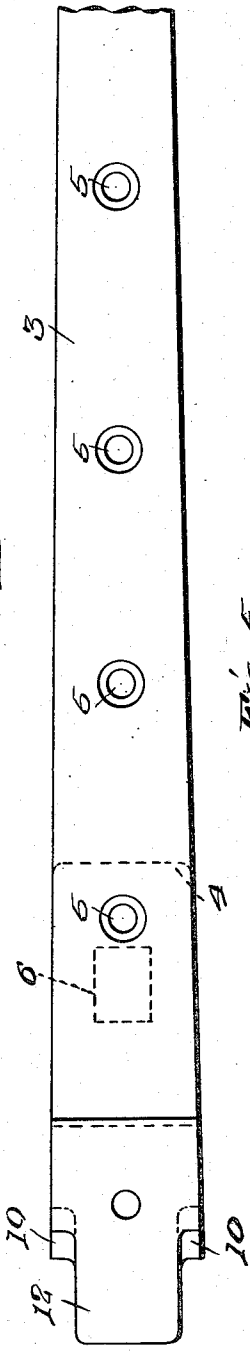


Fig. 5.

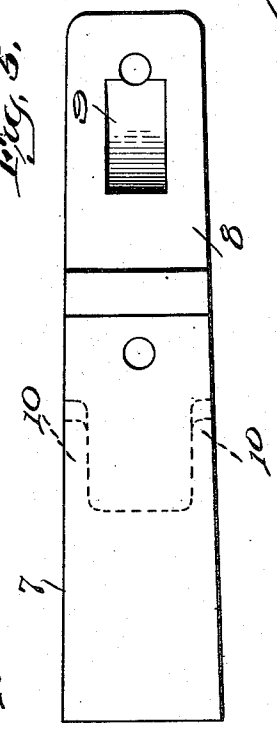
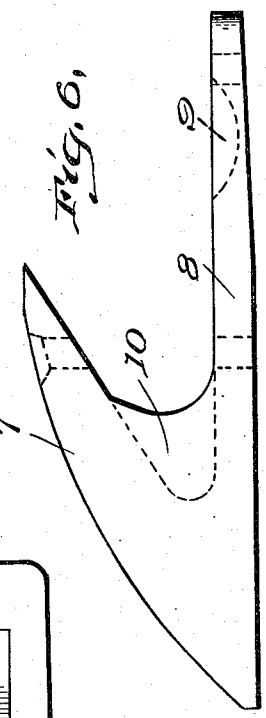


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY J. BARNHART, OF MARION, OHIO, ASSIGNOR TO THE MARION STEAM SHOVEL COMPANY, OF MARION, OHIO, A CORPORATION OF OHIO.

TOOTH FOR EXCAVATING-DIPPERS.

No. 868,066. Specification of Letters Patent. Patented Oct. 15, 1907.

Application filed March 19, 1907. Serial No. 363,262.

To all whom it may concern.

Be it known that I, HARRY J. BARNHART, a citizen of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Teeth for Excavating-Dippers, of which the following is a specification, reference being had therein to the accompanying drawings.

The present invention relates to teeth for excavating dippers and implements of a similar character.

The object of the invention is to provide a tooth of this character on which the cutting point can be renewed from time to time as it becomes worn or broken without the necessity of discarding the entire tooth. To accomplish this I provide the body portion of the tooth with a removable cutting point which receives the greater part of the wear to which the tooth is subjected and which, when worn or broken, can be readily removed and replaced.

A further object of the invention is to provide means for securing such a removable cutting point rigidly to the body portion of the tooth and holding the same against all movement relatively thereto.

With these objects in view my invention consists of certain novel features of construction to be hereinafter described, and then more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a tooth embodying my invention; Fig. 2 is a longitudinal, sectional view taken vertically of such a tooth; Fig. 3 is a side elevation of the body portion of such a tooth; Fig. 4 is a top plan view of Fig. 3; Fig. 5 is a top plan view of the removable point, detached; and Fig. 6 is a side elevation of Fig. 5.

In these drawings I have illustrated the preferred form of my invention and have shown the same as embodied in a tooth designed for attachment to an excavating dipper.

The reference numeral 1 indicates the body portion of the tooth which may be formed of any suitable material, and, as the same is subjected to a comparatively small amount of wear, this material need not necessarily be of the same high quality which is required for the cutting point. This body portion is provided at its rear end with a longitudinal slot 2, adapted to engage the forward edge of the front wall of the dipper, which divides the body portion into two portions or shanks 3 and 4. These shanks may be of any suitable thickness and length relatively one to the other and to the front wall of the dipper, but, as the greater amount of strain and wear comes upon the shank 3 which is located on the inner face of the dipper front, this shank is preferably made much heavier than the shank 4 and is here shown of a length substantially equal to the depth of the dipper front and having its inner surface shaped to correspond to the shape of the dipper front. The shank 3 is provided with a series of holes 5 adapted to receive suitable bolts or rivets for securing the body portion to the dipper front. The outer shank 4 is, as stated, of less thickness than the shank 3 and extends only a short distance beyond the first bolt hole in the shank 3. The shank 4 is provided on its lower surface with a projection 6.

The extreme forward end of the body portion is cut away or rabbeted on its opposite sides to form a reduced portion 12 of less width than the body portion of the tooth. The cutting point 7 of the tooth, which is formed of a high grade of hard tough steel adapted both to resist wear and to prevent breaking, has its forward end inclined or tapered to form a point and is bifurcated or cut away on its rear side to correspond to the inclined forward end of the body portion which is adapted to fit within said cut-away portion. The lower arm 8 of the bifurcated portion of the point is of a length sufficient to bring the rear end thereof substantially flush with the rear end of the shank 4 of the body portion and is provided with a recess 9 adapted to receive the projection 6 carried by the lower surface of that shank. Suitable projections or ears 10, carried by the cutting point, extend on opposite sides of the reduced end of the body portion, and, engaging the same, serve to coöperate with the recess 9 and projection 6 to hold the point against all movement relatively to the body portion. A rivet or bolt 11 extending through both the cutting point and body portion of the tooth serves to secure the two parts together and can be readily removed when it is desired to detach the point from the body portion. The projection 6 and recess 9 may be arranged in any suitable manner, but I prefer the arrangement herein shown, with the recess in the point and the projection on the body portion of the tooth. The projection fits within the recess in such a manner as to prevent all lateral movement of the point relatively to the body portion and serves to relieve the rivets of all lateral strain, thus avoiding the shearing of the same.

Thus it will be seen that I have provided a tooth for excavating dippers and the like, the cutting point of which can be renewed as frequently as it becomes worn or broken without the necessity of discarding or renewing the body portion of the tooth, one such body portion being equal in length of service to a large number of the cutting points. This construction enables me to make the cutting point of the tooth, which receives by far the largest part of the wear and strain, of a very high grade of hard tough steel adapted to resist wear and prevent breaking, while the body portion of the tooth, which receives a comparatively small amount of wear and strain, may be of a cheaper grade of material, if so desired, and whether made of a cheap grade of material or of the same grade of which the point is made, the life of the body portion of the tooth is greatly lengthened. Thus, I am

enabled to reduce both the cost of manufacture, by enabling a cheaper grade of material to be used for the largest portion of the tooth, and to reduce the cost of renewing these teeth and maintaining the excavating dipper in operative condition, by enabling the cutting point to be renewed without discarding the body portion of the tooth, thus greatly lengthening the life of the latter. It will further be seen that I have provided such a tooth in which the cutting point is so mounted on the body portion as to be held against all movement relatively thereto, thus providing a tooth which is practically integral and has all the qualities of an integral tooth.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A tooth of the character described comprising a body portion having a projection on one side thereof, and a cutting point adapted to be secured to said body portion and having a recess adapted to receive said projection.

2. A tooth of the character described comprising a body portion having a projection on one side thereof and having its forward end reduced, a cutting point having a recess adapted to receive the forward end of said body portion and provided with projections extending on either side of said reduced portion, and having a second recess adapted to receive the projection on said body portion.

In testimony whereof, I affix my signature in presence of two witnesses.

HARRY J. BARNHART.

Witnesses:
W. R. WADDELL,
E. J. WITTHOFF.