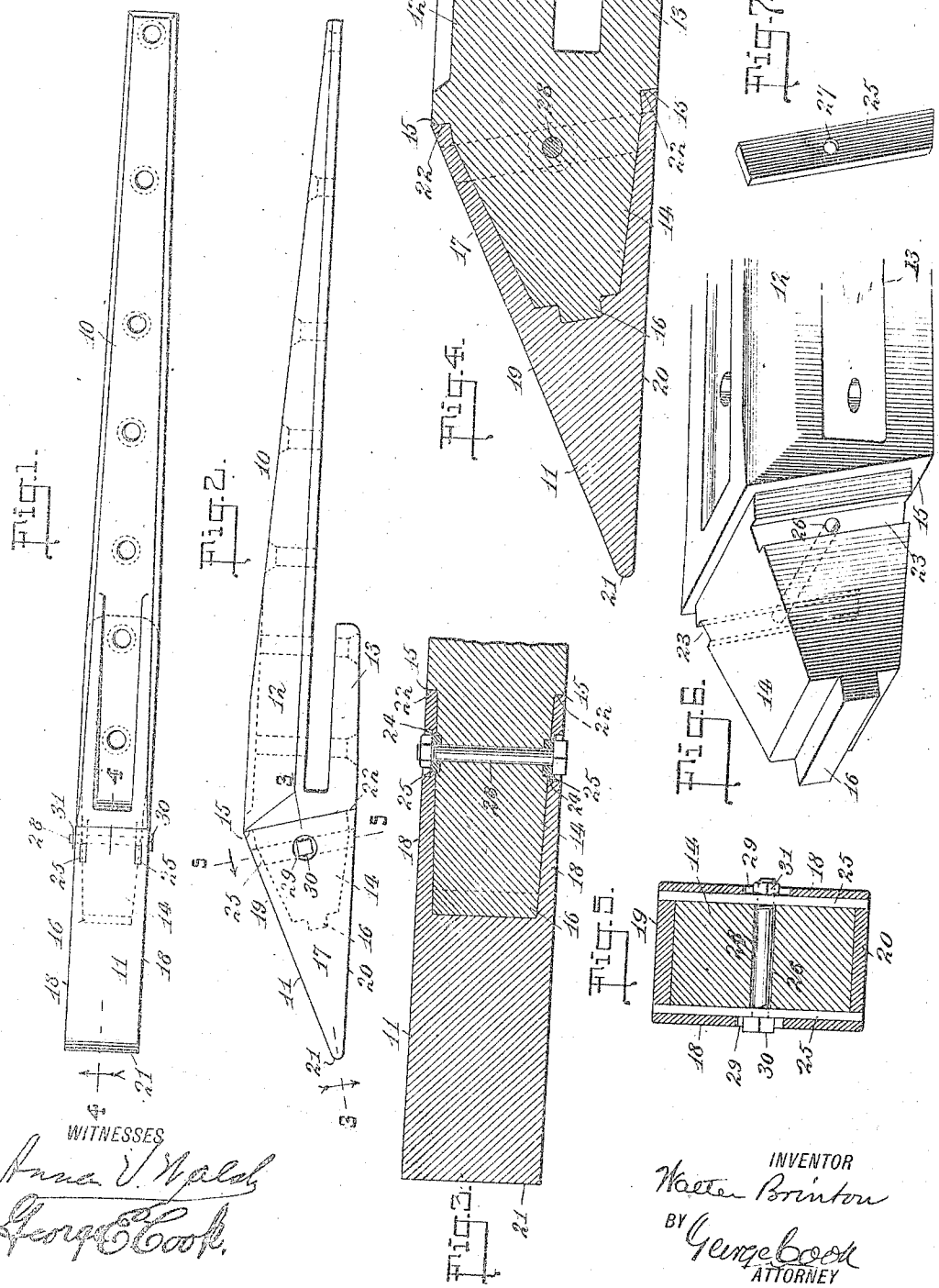
W. BRINTON.

DIPPER TOOTH.

APPLICATION FILED JULY 18, 1914.

1,205,969.

Patented Nov. 28, 1916.



WITNESSES

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DIPPER-TOOTH.

1,205,969. Specification of Letters Patent. Patented Nov. 28, 1916.

Application filed July 18, 1914. Serial No. 851,686.

To all whom it may concern:

Be it known that I, WALTER BRINTON, a citizen of the United States, and a resident of 1602 Washington street, Wilmington, in the county of New Castle and State of Delaware, have made and invented certain new and useful Improvements in Dipper-Teeth, of which the following is a specification.

My invention relates to an improvement in dipper teeth for use in connection with steam shovels and the like, the object being to produce a tooth having an interchangeable and reversible type of point so constructed and assembled with the body or shank as to prevent any possible wear occurring at those places where the two parts of the tooth are fitted together.

A further object of the invention is to provide a tooth wherein the removable point shall be provided with smooth and unbroken wearing surfaces, in order to reduce the frictional resistance, offered by such while in service, to a minimum, the point, and the nose of the shank to which the point is fitted, being possessed of the necessary strength to withstand the enormous strains imposed thereon.

A further object of the invention is to construct the tooth so that the provision of a slot in the nose of the shank for the reception of the detachable point is obviated, and with these and other ends in view consists in certain novel features of construction and combinations of parts as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a tooth constructed in accordance with my invention. Fig. 2 is a view in side elevation thereof. Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2 looking in the direction as indicated by the arrow. Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 1, looking in the direction as indicated by the arrow. Fig. 5 is a sectional view taken on the line 5—5 of Fig. 2. Fig. 6 is a view in perspective showing the formation of the nose or forward end of the body or shank of the tooth. Fig. 7 is a detached view in perspective of one of the keys for securing the point to the body of the tooth.

By reference to the drawings, it will be seen that the tooth, as usual, comprises two parts, a body or shank 10 and a detachable point 11, the former being bifurcated to form the two jaws 12, 13, between which fits the edge of the bucket or shovel (not shown).

As clearly shown in Fig. 6, the forward end of the shank is formed with a nose 14, the four sides of which slightly converge toward the extreme forward end, giving to the nose the shape or form of a truncated pyramid, the base thereof being somewhat smaller in diameter than the forward end of the shank, thereby providing a shoulder or wall 15 around the four sides of the nose, against which abuts the extreme rear end of the reversible point as hereinafter described. Across the smaller or forward end of the nose 14 extends the rib or projection 16 adapted to fit into a recess of corresponding size formed in the detachable point 11, for the purpose of assisting in holding the parts in their proper relative positions and avoiding any vertical play or movement of the point upon the shank when the tooth is in service.

The detachable point 11 is constructed with a forward or solid wearing portion, the rear portion being hollowed out to form a shroud or housing 17 for the nose 14, the sides 18 of the point being parallel, while the upper and lower sides 19—20 converge toward the extreme sharpened or digging edge 21 thereof, said point being symmetrical about its longitudinal axis in order to render the same reversible on the shank, the inner surfaces of the walls of the housing 17 diminishing in thickness toward the rear edge to conform to the shape of the nose 14, said rear edge 22 of the housing abutting or impinging against the wall or shoulder 15 as clearly illustrated in Figs. 3 and 4 of the drawing. By thus tightly fitting the solidly formed nose 14 in the housing 17, and causing the forward end of the nose and rib 16 formed integrally thereon to snugly fit against the solid forward portion of the point, and by causing the rear end of the point to abut or impinge against the wall or shoulder 15, any strain imposed upon the point where the tooth is in service will be imparted directly to the shank 10, the same result being obtained as though the two parts were made integral, and avoiding the objections heretofore raised against the ordinary form of tooth wherein much of the strain was imparted to the bolts or other fastening means

employed to hold the body and point together. Furthermore, it will be understood that by thus constructing and assembling the parts, the wearing surfaces of the detachable point 11 are left smooth and unbroken, overcoming to a great extent the frictional resistance offered by the point when the device is in use.

For the purpose of preventing the disengagement of the point from the shank, I provide the latter with the vertical grooves or recesses 23, Fig. 6, and similar grooves 24 in the sides of the housing 17, the grooves 23 formed in the nose of the shank being slightly offset from those formed in the housing, in order to receive keys 25, which, when driven into the grooves or recesses, will have a tendency to draw or force the point into its proper position on the nose 14, and there firmly hold it against disengagement or movement, the ends of the keys 25 extending out flush with the upper and lower sides 19—20 of the housing as illustrated in Fig. 5; or, if desired, slightly below the outer surfaces of such sides.

It will be understood that by reason of the locking rib or key 16 being formed at the extreme forward end of the nose to prevent any movement of the point at that place, I prefer to form the slots or recesses 23 in the nose near the rear end or base thereof; in other words, to separate the locking or fastening means so far as may be possible, and thereby more securely hold the several parts in their proper positions.

While there is but little or no danger of the keys 25 becoming disengaged from the housing 17 and nose 14, yet, in order to positively lock them in place, and to avoid all danger of their accidental disengagement, I form a hole or opening 26 transversely through the nose 14, the ends of such hole or opening registering with openings 27 formed in the keys 25, and through these openings pass a bolt 28, countersunk recesses 29 being formed in the housing 17 for the reception of the head 30 of the bolt and nut 31, thereby securely locking all of the parts in their proper relative positions, the ends of the bolt lying substantially flush with the outer sides of the housing and presenting no obstruction whatever when the point is assembled with the base.

From the foregoing it will be understood that when the base and point are properly made and fitted as above described, all danger of any movement or play of the point upon the base or shank, either in a vertical or lateral direction, is overcome, the parts being retained firmly in position by means of the keys, and the latter in turn held in position by the lock bolt; furthermore, it will be seen that by reason of this construction, the nose of the shank is left practically solid, and containing, as it does, a comparatively large amount of stock, may be made much shorter in length than in those instances where the nose is slotted or bifurcated, thus enabling a larger amount of metal to be employed in the wearing point. Furthermore, it will be obvious from the above description that those parts or portions of the tooth designed to be tightly and accurately fitted, are completely housed, and thus protected against wear, insuring a much longer life to the tooth than would otherwise be the case.

What I claim is:—

1. A dipper tooth consisting of a shank with rearwardly extending upper and lower jaws and a forwardly extending nose in the form of a truncated pyramid with a flat outer end, a rectangular-shape rib extending across the flat outer end of the nose with the axis thereof lying in a plane substantially parallel to the plane of the bottom wall of the said jaws, and a wedge-shape detachable point provided with an opening therein, receiving the nose of the said shank therein, the bottom wall of the opening of the point provided with a rectangular-shape recess extending thereacross, in a plane substantially parallel to the plane of the tapering surfaces of the said point, and receiving the rib of the nose therein, and means for holding said point assembled upon said nose.

2. A dipper tooth comprising a base with a forwardly extending tapered nose, a detachable tapered point with rearwardly diverging top, bottom and side walls forming a box-shape housing receiving the nose of the base therein, the top and bottom walls of said point provided with alined openings therein adjacent their rear extremities, the side walls of said nose provided with recesses extending thereacross and alining with the said openings of the point, and keys fitting within the alined openings and recesses of the point and nose, said keys provided with alined openings adjacent their center, said nose provided with an opening extending thereacross communicating with the afore-mentioned recesses approximate their center and alining with the openings in said keys, and a fastening member extending through the alined openings of the keys and the nose.

Signed at Wilmington, in the county of New Castle and State of Delaware, this 15 day of July A. D. 1914.

WALTER BRINTON.

Witnesses:
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ELIZABETH E. BRINTON.