

(No Model.)

A. KRIEGER.
DETACHABLE SAW TOOTH.

No. 555,517.

Patented Mar. 3, 1896

Fig. 1.

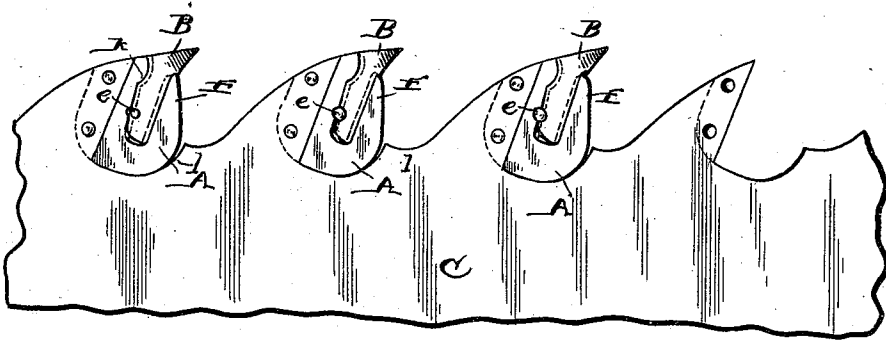


Fig. 5.

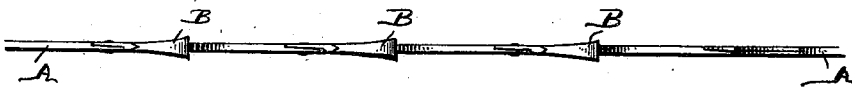


Fig. 2.

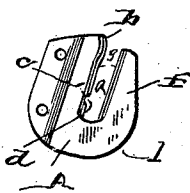


Fig. 3.

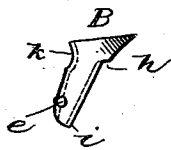
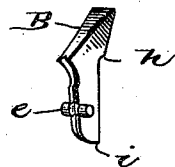


Fig. 4.



Witnesses

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DETACHABLE SAW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 555,517, dated March 3, 1896.

Application filed April 24, 1895. Serial No. 547,059. (No model.)

To all whom it may concern:

Be it known that I, ANDREW KRIEGER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Detachable Saw-Teeth; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in detachable saw-teeth, and has reference to Patent No. 292,659, dated January 29, 1884; and it consists of a detachable saddle provided with projection, recess and clamp, forming a socket, a cutting-tooth provided with a locking-pin, the whole fastened to a saw-blade by suitable means, as will be fully described hereinafter.

The accompanying drawings represent my invention.

Figure 1 is a side elevation of a section of a saw-blade with saddle and tooth attached. Fig. 2 is a side view of detached saddle. Fig. 3 is a side view of saw-tooth, and Fig. 4 is a back view of same. Fig. 5 is a view of edge of saw-blade, including saddles and teeth, and showing saddle-splice.

Heretofore tooth-sockets have been cut into saw-blades, but in some cases are not practicable on account of too great expense and occupying too much space. The usual manner of construction of such sockets also subjects the saw-blades to undue strain and disturbs the tension thereof. It also does not admit of sufficient accuracy for interchangeability, except by special and laborious care in fitting and adjusting. To avoid and eliminate these objectionable features, I have constructed a saddle which is a self-contained fastening and support for the saw-tooth of such design as to admit of positive interchangeability of teeth, a greater number in a given space, and adjustability of the tooth to the socket, the tooth being secured by means of the peculiar shape and formation of the same without requiring special fitting

after being forged in a die, thus reducing the cost of producing them to the minimum.

The saddle A, Figs. 1 and 2, containing the tooth-socket is made of steel and forged in a die. On its rear portion, or where it is joined to the jaw of saw-blade, is forged a taper-splice corresponding in shape to a similar splice on jaw of saw-blade and is secured to same by rivets, solder or other suitable means, and need be renewed only in case of accidental breakage. The saddle A contains a tooth-socket *a*, provided with a projection *b*, recess *c* below same, and a depression *d* in the recess to receive the locking-pin *e* of the tooth B. The clamp *f* is formed by that part of the saddle opposite the projection and recess. The whole of the inside edges *g* of the socket, except the bottom, have forged thereon a V-shaped tongue to correspond with the V-shaped groove of the tooth.

The tooth B, made of tool-steel, is forged in a die. Its cutting-edge is of the usual form, the under side of which terminates in a shoulder *h*, and from this point down its front runs preferably in a straight line to its base *i* and is in contact with a like-shaped clamp. In the back of the tooth is a semi-circular recess *k*, into which enters the projection *b* of the socket of similar contour, forming together a ball-joint. Continuing from this point downward to its base the back extends in a straight line. The tooth is grooved in the recess of back, straight portion below through the exposed side of middle portion of locking-pin, and on the front from the shoulder down, to correspond to the tongue in socket. On the straight portion of the back is a notch, which has pressed into it when tooth is cold-pressed a locking-pin *e*, which becomes a fixed part of said tooth, of greater length than the thickness of tooth, made of softer material than the tooth, preferably soft iron or copper, and which, after the tooth has been inserted into the socket, is compressed longitudinally and expanded into the depression *d* of the recess *c*, thus forcing the bottom of tooth against the clamp *f*, the top of tooth finding its bearing between the ball-joint and top of clamp *f* and is there securely held by pressure exerted by the spring-action of the clamp *f*, while the lower

end of tooth is free from contact with base of socket. The tooth is inserted into the socket by a slight force until the projection *b* and recess *k* are in contact. The protruding ends of the locking-pin *e* are compressed to the thickness of the tooth by a suitable tool, thereby completing the locking operation. The locking-pin may also be inserted in the forward edge of the tooth without departing from the intent and purpose of my invention. The tooth is easily removed for replacement by a slight pressure on the locking-pin, exerted by a suitable tool, forcing it out of the notch, thereby releasing the tooth from the pressure of clamp *f* and projection *b*, allowing the tooth to be withdrawn from socket. At the recess *c* the back of tooth does not come in contact except through the locking-pin and is designed for the purpose of permitting teeth of slight variation of dimensions to adjust themselves by the pressure of the clamp.

The manner of securing the saddle to the saw-blade provides for a slight space at its lower front edge *l* between it and the blade and below and back of the throat formed by the saddle and saw-blade.

I am aware that patents have been granted for saddle, holder, socket and locking-pin, and I do not claim such broadly; but

What I do claim as new and novel, and do desire to secure by Letters Patent, is—

1. In combination with a detachable-tooth saw, the saddle or tooth-holder *A* having the socket *a* and being capable of supporting a cutting-tooth when the rear part of said saddle is attached to the jaw of a saw while the suspended forward and bottom edges of saddle are not in contact with the saw-blade, substantially as shown and described.

2. The combination, in a saw-saddle or tooth-holder, of a tooth-socket having a projection *b* of convex contour near upper part of the back side of socket, a small semicircular depression *d* to receive locking-pin, a clamp forming the forward wall of said socket and which is integral with said saddle, a detachable tooth having a recess or depression *k* of concave contour near upper part of the back side of tooth-shank, said tooth-shank conforming to the bearing-surfaces of said socket, a locking-pin *e* of round section slightly longer than thickness of said tooth-shank and pressed into and securely embedded in a U-shaped depression in the front or preferably rear edge of tooth-shank so as to admit of teeth being roughly handled without

danger of locking-pin becoming detached, said locking-pin having a groove pressed deeply into it across its middle part to conform to the longitudinal groove in edge of tooth-shank, said groove across middle of pin permitting the compression of the protruding ends of pin into it until ends of pin are flush with sides of tooth-shank, substantially and for the purpose shown and described.

3. The combination, in a detachable saw-tooth socket, of the semicircular bearing-surface at upper portion of socket where same receives the thrust of a cutting-bit when in contact with the heel of bit near upper part of the back of a tooth, a detachable saw-tooth having near the upper part of its back a semicircular bearing-surface coinciding in contour with the bearing-surface at upper rear portion of said socket, the said bearing-surfaces together comprising in effect a ball-and-socket contact, a tooth-shank provided with a permanently-fixed locking-pin *e* that is forcibly pressed into a U-shaped notch in the back of shank, thus being integrally a part of said shank, a groove across the middle part of said pin in depth and shape to agree with the longitudinal groove in edge of tooth-shank, a spring-clamp *f* combining in its function the front of a tooth-socket and capable of exerting automatically a pressure toward the back wall of socket when opposed by an inserted tooth which conforms to semicircular bearing-contact at back of said socket, all substantially as shown, and for the purpose set forth and described.

4. In a detachable tooth and socket having the usual tongued and grooved guides at forward and back walls of socket and corresponding bearing-surfaces of tooth-shank and notch across wall of socket, the combination with the tooth-shank, of a locking-pin *e* securely contained in a U-shaped depression in one of the edges of said tooth-shank, said pin being in all intents and purposes integral with said shank, is of plain round section except in its middle portion where it is grooved crosswise of a depth equal to and agreeing with the guiding-groove in edge of shank, and is slightly longer than the thickness of said shank, substantially as shown, for the purpose specified.

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

ANDREW KRIEGER.

Witnesses:

JAMES C. BARNES,
E. B. GRIFFITH.