

R. HOE, JR.
SAW.

APPLICATION FILED DEC. 10, 1907.

941,455.

Patented Nov. 30, 1909.

Fig. 1.

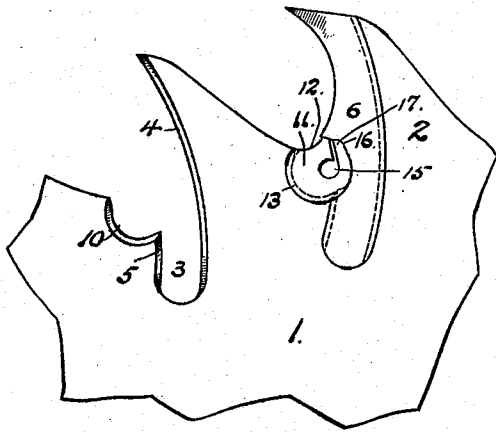


Fig. 5.

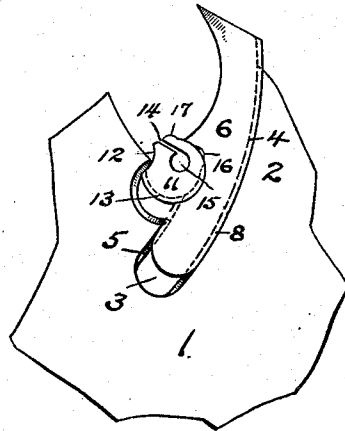


Fig. 6.

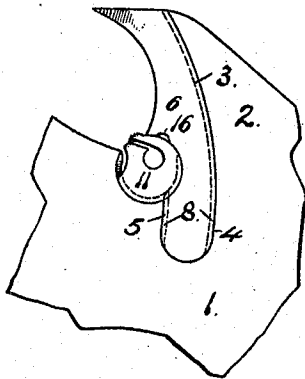


Fig. 2.

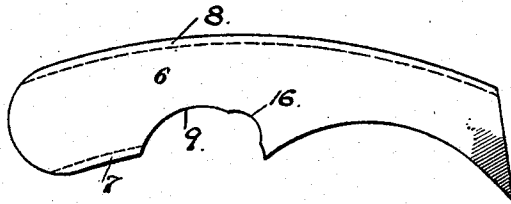


Fig. 3.

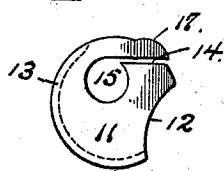
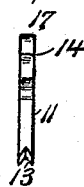


Fig. 4.



WITNESSES.

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941,455.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT HOE, Jr., a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Saws, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in inserted tooth saws.

This invention has for its object to produce an inserted tooth saw which shall be capacitated to receive a large number of teeth for a given diameter or length of saw-blade, and in which the teeth, when in position, shall have a firm bearing in the saw and yet can be readily placed in position and removed when required.

With this and other objects in view, the invention consists in certain constructions and improvements as will be hereinafter fully described and then specifically pointed out in the claims.

Referring to the accompanying drawings: Figure 1 illustrates a portion of a saw-blade provided with the improved inserted teeth. Fig. 2 is an enlarged detail view of the tooth. Fig. 3 is an enlarged detail view of the locking device. Fig. 4 is an edge view of the construction shown in Fig. 3. Fig. 5 is a detail view showing one of the teeth and the locking device partly inserted in the saw. Fig. 6 is a similar view showing the tooth and locking device fully inserted, but the locking device not in locking position.

Referring to the drawings, 1 illustrates a part of a saw-blade, said blade being provided with the usual shoulders 2. The teeth hereinafter described are located in sockets which are formed by recessing out the blade, the sockets thus formed being marked 3. The rear wall of the socket is formed by the front side 4 of the shoulder 2 and the front wall of the socket is formed by the wall 5. The teeth will be made of a width so as to fit snugly in the sockets and to find a bearing against the front and rear walls thereof. In the best constructions, the wall 5 will, however, be made shorter than the wall 4. The tooth is illustrated at 6. As usual in inserted tooth saws, the front and rear wall of the socket may be made V-shaped, as shown, these V-shaped walls engaging

grooves 7, 8 on the front and rear of the tooth.

In order to hold the tooth firmly in position, a locking device is provided which may be varied in construction. In the best constructions, this locking device will be rotatable and will be located in a locking opening formed by cutting a recess 9 in the front of the tooth and a recess 10 in the wall of the plate. The recess 10 may be cut in the blade just above the end of the wall 5 and as this wall is shorter, this recess may be brought well toward the bottom of the tooth, so that the locking device does not interfere with the throat room for the tooth. In the best constructions, furthermore, the rotatable locking device, indicated at 11, will be generally circular in outline. It will be provided, however, with a reëntrant curve, as 12, for a purpose which will hereinafter appear. This locking device may be provided on its edge with a groove 13 which groove is arranged to engage the wall of the recess 10 which may be made V-shape for this purpose. The locking member may be slotted, as shown at 14, and this slot may terminate in a circular opening, as 15, which forms a bearing for a projection on the wrench employed for inserting and removing the locking device of inserted saw teeth. It will be observed that when the tooth is in position the locking opening formed by the recesses 9, 10 is in open communication with the throat room for the tooth.

In order to insert the tooth, the locking member is placed in the tooth and the two are then slid into position, the reëntrant curve on the locking member permitting it to pass the projection formed by cutting the recess 10 in the plate. The position of the parts when the tooth has been inserted far enough, so that the locking member has passed this shoulder, is illustrated in Fig. 5. In Fig. 6, the tooth is shown as fully seated but the locking member is not shown in locking position. To firmly lock the tooth in place, the locking member 11 is rotated from the position shown in Fig. 5 to the position shown in Fig. 1.

To assist in holding the locking member in position, retaining means may be provided. These means may be formed by providing either the locking member or the wall of the opening in which it lies with a notch, and the other member with a corre-

sponding projection. As shown, the wall of the recess 9 is provided with a notch 16 and the member is provided with a projection 17 which interlocks with the notch, as is clearly shown in Fig. 1.

It will be seen that the construction described provides an exceedingly firm bearing for the tooth. The strains set up on the point of the tooth during the cutting operation will not tend to loosen the tooth, for the reason that the strains are taken up in part by the base of the tooth bearing against the bottom of the socket, and in part by the bearing of the front wall of the tooth against the front wall 5 of the socket, which though shorter than the rear wall 4 of the socket has still sufficient extent to firmly hold the tooth. By making this wall short, as illustrated, room is provided for the insertion of the locking device and this without interfering to any appreciable extent with the throat room which, in saws constructed in accordance with the invention for the purpose of cutting wood, may be large, thereby taking care of the saw-dust and preventing the saw-dust from choking in the opening. The locking member has a very firm seat so that it prevents the tooth from being displaced laterally and at the same time it can be readily inserted and removed.

The inserted tooth construction is adapted for use in saws for cutting various materials, such as wood, metal and stone, and has the further advantage that it may be applied to very thin blades. Further, the tooth can be made very narrow, so that a large number of teeth can be inserted in a saw and yet provide for a liberal amount of material in the supporting shoulders and a large throat room where such throat room is desirable. It will be understood, of course, that the shape of the teeth will be varied according to the particular purpose for which the saw is designed to be used.

The invention may be carried into effect by constructions which vary from that described and illustrated, and the invention is not, therefore, to be limited to the precise construction herein described and shown in the drawings.

What is claimed is:—

1. In an inserted tooth saw, the combination with a blade having a series of sockets, each socket having a back bearing wall and a shorter front wall, of a series of teeth fitting in said sockets, each tooth being in

bearing contact with the front and back wall of the socket, each tooth and the part of the blade opposite the tooth being provided with arc-shaped recesses, the arcs being struck from the same center and together forming a circular locking opening the circumference of which is somewhat more than half a circle, said opening being in open communication with the throat room for the tooth, a series of circular rotatable spring locking devices lying in said openings, and means for positively retaining the locking devices in their locking position.

2. In an inserted tooth saw, the combination with a blade having a series of sockets, each socket having a back bearing wall and a shorter front wall, of a series of teeth fitting in said sockets, each tooth being in bearing contact with the front and back wall of the socket, each tooth and the part of the blade opposite the tooth being provided with arc-shaped recesses, the arcs being struck from the same center and together forming a circular locking opening the circumference of which is somewhat more than half a circle, said opening being in open communication with the throat room for the tooth, and a series of circular rotatable spring locking devices in said openings, each locking device and the opening in which it lies being provided with an interlocking projection and a retaining notch.

3. In an inserted tooth saw, the combination with a blade having a socket therein, of a tooth lying in the socket, the tooth and blade being provided with arc-shaped recesses struck from the same center which face each other to provide a locking opening which is somewhat more than half a circle, said opening being in open communication with the throat room of the tooth, and a rotatable spring locking member of general circular outline lying in said opening, said member having a reentrant curve whereby it may be inserted into the locking opening, each locking device and the opening in which it lies being provided with an interlocking projection and a retaining notch.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses.

ROBERT HOE, JR.

Witnesses:

P. B. PHILIPP,
A. WHITE.