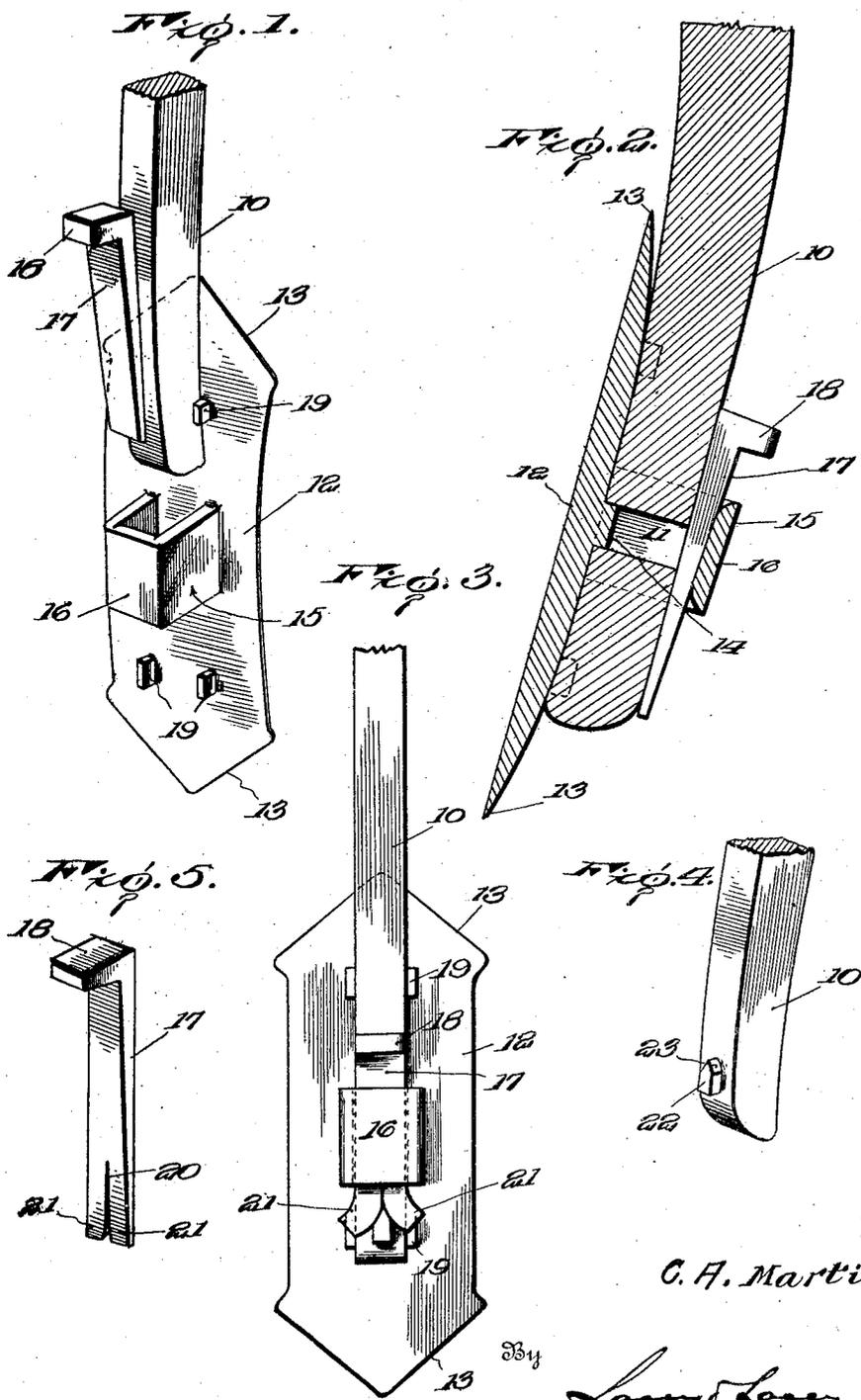


C. A. MARTIN.
CULTIVATOR TOOTH.
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CULTIVATOR-TOOTH.

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To all whom it may concern:

Be it known that I, CHARLES A. MARTIN, a citizen of the United States, residing at Congress Heights, District of Columbia, have invented certain new and useful Improvements in Cultivator-Teeth, of which the following is a specification.

This invention relates to improvements in cultivators and more particularly to the fastening means for the teeth thereof.

Briefly stated, this invention aims to provide improved means for connecting a cultivator tooth to its shoe in a highly efficient and expeditious manner. In certain cultivators now in use, the teeth are secured to the shoes by fastening bolts extending through the teeth and the shoe, and as the result of continued use the fastening bolts become rusted and consequently difficult to remove. Also the round heads of the fastening bolts do not effectively grip the cultivator teeth thereby allowing the bolt to turn with the nut when a wrench is applied to the nut for the purpose of removing the same. Under such conditions it is frequently necessary to break the bolt and the tooth when it is desired to remove the tooth preparatory to replacing the same.

An important object of this invention is therefore to provide means whereby the cultivator teeth may be securely attached to the shoe without the necessity of employing bolts.

A further object of the invention is to provide a cultivator tooth having means whereby the same may be detachably connected to the shoe of a cultivator without the necessity of altering the construction of the shoe.

A further object of this invention is to provide a cultivator tooth having its rear side provided with a U-shaped shackle adapted to receive the forward portion of the cultivator shoe and novel means for directing the shoe into said shackle.

A further object of the invention is to provide a cultivator tooth having novel means whereby the same may be detachably secured to the shoe in such a manner that the same may be readily reversed or removed when the active blade of the tooth becomes worn or otherwise unfit for further use.

A further object of the invention is to provide a cultivator tooth and fastening

means therefor, which are simple, desirable in use and cheap to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing forming a part of this application and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a perspective of the improved cultivator blade and fastening means therefor.

Fig. 2 is a vertical transverse section through the improved cultivator tooth applied,

Fig. 3 is a rear elevation of a slightly modified form of the improved tooth applied,

Fig. 4 is a fragmentary perspective of the shoe adapted for use in connection with the form of the invention illustrated in Fig. 3, and

Fig. 5 is a perspective of a wedge or locking key adapted for use in connection with the form of the invention illustrated in Fig. 3.

In the drawing wherein for the purpose of illustration are shown several preferred embodiments of the invention, the numeral 10 generally designates the shoe or standard of a cultivator and which is longitudinally curved toward its free end, as illustrated in Fig. 2. The lower portion of the shoe is provided with a transverse opening 11 which in the ordinary cultivator receives a fastening bolt adapted for securing the cultivator tooth to the shoe. The tooth herein shown is designated generally by the numeral 12 and has its end portions tapered and beveled, as indicated at 13, so as to provide penetrating elements at each of its ends whereby the tooth may be reversed when one of the ends becomes worn or otherwise unfit for further use. The rear side of the cultivator tooth is provided with a squared lug 14 located intermediate its ends and adapted to be received within the opening 11 of the shoe. With particular reference to Figs. 1 and 2, it will be best observed that the U-shaped shackle or retaining member 15 is provided with a pair of spaced parallel side arms welded to the rear side of the tooth and a transverse connecting or bight portion 16 arranged outwardly from the lug 14.

When the forward portion of the shoe

is received within the U-shaped shackle 16, the lug 14 is inserted into the transverse opening 11 so that the rear side of the cultivator tooth is brought flatly into contact with the front side of the shoe. When the tooth and the shoe have been positioned as illustrated in Fig. 2, a longitudinally tapered wedge 17 is driven between the rear side of the shoe and the connecting portion 16 of the shackle for securely connecting the tooth to the shoe. The connecting portion 16 has its inner wall curved outwardly at its ends for forming an enlarged entrance opening for the wedge. The rear end portion of the wedge 17 is provided with a head or striking element 18 which is adapted to be engaged by a hammer or the like when the wedge is driven into position. The head 18 which projects outwardly from the shank of the wedge may also be engaged by a hammer when it is desired to remove the wedge and therefore it is not necessary to strike and possibly flatten the lower end of the wedge upon removing the same.

The rear side of the cultivator tooth is provided at points spaced outwardly from the lug 14 with pairs of guiding lugs 19 preferably welded to the tooth. The lugs 19 serve to guide the forward portion of the shoe into the shackle, thereby resulting in the expeditious attachment of the tooth to the lower portion of the shoe. The lugs 19 also serve to take up the side thrust on the tooth so as not to impart any great amount of strain to the parallel arms of the U-shaped shackle. With reference to Fig. 3, it will be observed that the space between the lugs of each pair of lugs is somewhat less than the space between the parallel arms of the U-shaped shackle so that when the tooth is applied to the shoe the parallel arms of the shackle will be spaced from the adjacent sides of the shoe. This allows air to enter the space between the adjacent sides of the parallel arms and the shoe with the result that erosion and rusting of the parts are prevented.

In the form of the invention illustrated in Figs. 3, 4 and 5, the lower portion of the tapered wedge 17 is provided with a longitudinal incision 20 which forms a pair of partly severed tongues 21. The lower portion of the shoe 10 is formed on its lower side with an outwardly extending shoulder 22 having its upper side tapered to a point, as indicated at 23. During the downward movement of the wedge the tongues 21 of the same are spread laterally by the tapered upper portion of the outstanding shoulder 22 for preventing the accidental loss or displacement of the wedge and the cultivator tooth.

In applying the tooth to the shoe, the tooth is moved upwardly so that the lower portion of the shoe will be received within

the shackle. By a slight rearward movement of the tooth, the lug 14 may be inserted within the transverse opening 11 and as set forth above, the guide lugs 19 serve to direct the lower portion of the shoe into the shackle for facilitating the attachment of the tooth to the shoe. When the lug 14 has been received within the transverse opening 11, the tapered wedge 17 is driven to the limit of its movement into the opening formed between the rear side of the shoe and the adjacent side of the shackle. By reason of the frictional contact between the tooth and the shoe, the tooth will not be likely to become loosened as the result of continued use. The pairs of spaced lugs 19 also strengthen the connection between the tooth and the shoe since they serve to take up the side thrust on the tooth. By employing a wedge having the tongues 21 the accidental displacement or loss of the wedge is rendered extremely unlikely. With particular reference to Fig. 3, it will be noted that after being spread laterally the tongues 21 engage the under side of the shackle 15.

With reference to the foregoing description and the accompanying drawing it will be observed that the blade may be readily removed when desired for the purpose of reversing or replacing the same. It will also be noted that the necessity of employing bolts for securing the tooth to the shoe is absolutely dispensed with so that the tooth may at any time be removed without inconvenience or excessive work.

It is to be understood that the forms of the invention herewith shown and described are to be taken as preferred embodiments of the same and that such minor changes in construction and arrangement of parts may be made as will remain within the spirit of the invention and the scope of what is claimed.

Having thus described the invention, what is claimed as new is:

1. In a cultivator; the combination with a tooth having a lug and a U-shaped shackle provided with parallel side arms arranged on opposite sides of said lug, of a support extended through said shackle and having an opening receiving said lug, and a wedge engaged with said shackle and said support, said tooth being provided with means for guiding said support into said shackle.
2. In a cultivator, the combination with a tooth having a U-shaped shackle on its rear face and pairs of spaced guide and bracing lugs on opposite sides of said shackle at points spaced from the same, of a support extended through said shackle and engaged by said lugs, and means for detachably securing said support in engagement with said shackle.

3. A cultivator tooth including a body, a lug arranged on the rear side of the body,

a U-shaped shackle secured to the rear side of the body and provided with parallel side arms arranged on opposite sides of said lug in spaced relation to the same, and pairs of guide and bracing lugs formed on the rear side of said tooth at points spaced from said shackle whereby said pairs of lugs will engage the sides of the shoe upon being inserted through said shackle for spacing said sides from the arms of said shackle.

4. In a cultivator, the combination with a tooth having a lug and a U-shaped shackle arranged on its rear side, said U-shaped shackle comprising a pair of parallel side arms and a connecting portion having its inner side curved at its ends, of a shoe extending through said shackle and in contact with the rear side of said blade, and a longitudinally tapered wedge arranged between the rear side of said shoe and the

connecting portion of said shackle, said tooth being provided with pairs of spaced lugs adapted to engage the sides of said shoe for spacing the same from the sides of said shackle.

5. In a cultivator, the combination with a tooth having a U-shaped shackle on its rear side and pairs of spaced lugs arranged adjacent the ends of said tooth, of a support extending through said shackle and engaged by said lugs, a wedge inserted between the lower portion of said support and said shackle and having its lower portion provided with a pair of tongues, and an outstanding shoulder formed on the lower portion of said support and adapted to be engaged by said tongues for spreading the same.

In testimony whereof I affix my signature.
CHARLES A. MARTIN. [L. s.]