

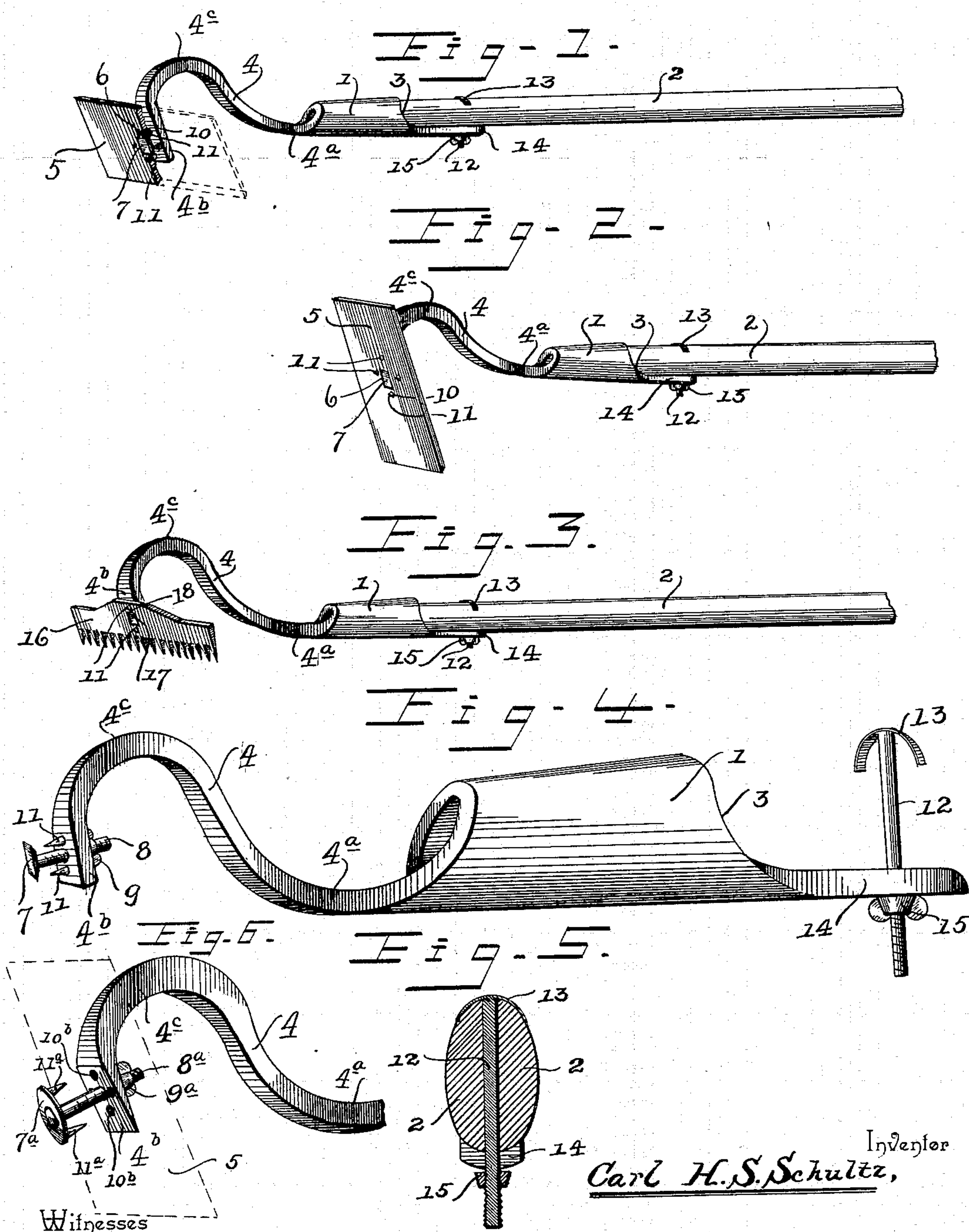
No. 612,179.

Patented Oct. 11, 1898.

C. H. S. SCHULTZ.
REVERSIBLE HOE.

(Application filed July 31, 1897.)

(No Model.)



Witnesses

C. J. Young,
[Signature]

By his Attorneys,

Carl H. S. Schultz,
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UNITED STATES PATENT OFFICE.

CARL HERMAN SEVERIN SCHÜLTZ, OF GRANBURY, TEXAS.

REVERSIBLE HOE.

SPECIFICATION forming part of Letters Patent No. 612,179, dated October 11, 1898.

Application filed July 31, 1897. Serial No. 646,665. (No model.)

To all whom it may concern:

Be it known that I, CARL HERMAN SEVERIN SCHÜLTZ, a citizen of the United States, residing at Granbury, in the county of Hood and State of Texas, have invented a new and useful Reversible Hoe, of which the following is a specification.

My invention relates to tools, and particularly to hoes; and the object in view is to provide a hoe with means for reversing the blade, whereby either edge thereof may be arranged in operative position, to provide a device of this class having improved means for detachably securing a blade in place, whereby either a hoe, rake, or analogous blade may be attached to the tool-handle, and to provide an improved construction of means for attaching a handle to a tool socket or holder.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a tool constructed in accordance with my invention, showing a hoe-blade in operative position. Fig. 2 is a similar view showing a different adjustment of the hoe-blade. Fig. 3 is a similar view showing a rake-blade applied to the neck of the handle-socket. Fig. 4 is a detail view in perspective of the neck and handle-socket detached. Fig. 5 is a detail transverse section of the handle in the plane of the handle-securing bolt. Fig. 6 is a detail view of a portion of the neck, showing a slightly-modified construction of means for securing a tool-blade thereto.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a neck or tool-socket designed for connecting a tool-handle 2 to a tool-blade and consisting, essentially, of a tapered open-ended handle-socket 3, into which the tapered extremity of the tool-handle is adapted to be fitted, and an integral reduced tongue 4, preferably of cross-sectionally angular construction, with its inner and outer extremities

transversely flattened, as shown at 4^a and 4^b, respectively, and with its intermediate upwardly-bowed portion 4^c vertically flattened to give stiffness to the tongue contiguous to its point of attachment to the blade.

In the construction illustrated in Figs. 1 and 2 a hoe-blade 5 is attached to the tongue, the same consisting of a flat plate of metal, preferably rectangular in plan, provided at the center of its area with a bolt-opening 6, adapted to receive the beveled head 7 of a blade-securing bolt 8. This bolt extends through a suitable opening in the transversely-flattened or seat portion 4^b of the tongue and is fitted with a thumb-nut 9 or its equivalent. The blade is also provided with a plurality of perforations 10, spaced at equal distances upon different sides of the opening 6 to receive retaining-spurs 11, formed on the seat portion of the tongue, and it is obvious that by engaging the spurs respectively with different perforations in the blade the position of the blade with relation to the tongue may be varied to arrange different edges of the blade in operative position. In Fig. 1 the long edge of an oblong hoe-blade is shown exposed for use, while in Fig. 2 the blade is adjusted to arrange one of the short or end edges in operative position, and it is obvious that either of the remaining edges of the blade may be likewise arranged in operative position to enable the blade to be reversed, and thus evenly worn at all edges. Furthermore, the detachability of the blade facilitates the operation of sharpening the same and enables the blade in sharpening to be beveled at its inner surface instead of at its outer surface, as when the blade is fixed to the handle-socket. It will be seen, furthermore, that the peculiar construction of the tongue, with a flattened inner portion 4^a contiguous to the handle-socket 3, provides for a sufficient amount of elasticity, the device being constructed of stiff spring metal to prevent severe strains from breaking or otherwise injuring the neck, and thus increases the durability of the tool.

In addition to being tapered the handle-

socket 3 is preferably made of cross-sectionally oval or egg shape, with its major axis in the plane of the arch of the tongue 4, and the handle 2 is of corresponding cross-sectional construction, as I have found this shape to be more convenient and to enable the operator to obtain a more comfortable and firm hold of the handle. In order to facilitate the fixing of the handle in the handle-socket, and thus facilitate the replacement of a broken handle, I provide a handle-securing bolt 12, adapted to pass through a diametrical perforation in the handle in the plane of the major cross-sectional axis thereof and having at its upper end a segmental bearing-plate 13, which rests upon the back or upper surface of the handle in a transverse position, the lower end of the bolt being extended through a longitudinal extension 14 of the handle-socket and being fitted with a thumb-nut 15, which bears upon the outer surface of said extension. The segmental bearing-plate 13, in addition to distributing the pressure of the handle-securing bolt 12, serves to prevent the splitting of the handle at this point.

In the construction illustrated in the drawings the seat portion 4^b of the tongue 4 is provided with only two spurs 11 for engagement with diametrically opposite perforations 10 in the tool-blade, whereas a hoe-blade, as shown in Figs. 1 and 2, is preferably provided with a number of perforations corresponding with the number of its operative edges; but it will be understood that the number of spurs may be varied and may, if preferred, be equal to the number of openings in the blade.

In Fig. 3 I have shown the application of a rake-blade 16 to the neck, embodying the essential feature of my invention, the same being provided with a bolt-opening 17 and diametrically opposite perforations 18 to receive the spurs on the seat portion of the tongue 4. In the same way any other tool-blade may be applied to the neck. Thus the tool-neck, as above described, is adapted to form the connection between a tool-handle and a plurality of interchangeable tool-blades, the application of a blade to the neck being accomplished with facility and the connection being rigid by reason of the tool-securing bolt and the plurality of spurs employed for engaging spaced perforations in the blade.

In the modified construction illustrated in Fig. 6 the head 7^a on the bolt 8^a is provided with the spurs 11^a for engaging perforations 10^b in the neck and also corresponding openings in the tool-blade.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit

or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A tool-neck provided with means for attachment to a tool-handle, and having a reduced arched spring-tongue terminating in a tool-blade seat, approximately perpendicular to an attached handle and means for securing a tool-blade in contact with said seat, substantially as specified.

2. A tool-neck provided with means for attaching a tool-handle thereto, and having a reduced spring-metal extension terminating in a transversely-flattened tool-blade seat, the inner portion of the tongue being transversely flattened to give a yielding spring action, and means for attaching a tool-blade to said seat, substantially as specified.

3. A tool-neck having a tool-handle socket and an integral arched tongue terminating in a transversely-flattened tool-blade seat, approximately perpendicular to the axis of said socket and means, including a securing-bolt 8 and contiguous spaced spurs 11 for engaging and securing a tool-blade detachably to said seat, substantially as specified.

4. A tool-neck having a tool-handle socket, a reduced arched tongue terminally provided with means for engaging a tool-blade, and a reduced extension projecting in the opposite direction from said tongue to lie in contact with a tool-handle seated in said socket, and handle-securing means consisting of a bolt adapted to diametrically pass through the handle, provided at one end with a segmental bearing-plate to embrace the back or upper side of the handle, and fitted at the opposite end, in contact with the outer surface of said extension, with a thumb-nut, substantially as specified.

5. The combination of a tool-neck provided with means for attachment to a tool-handle, and having a reduced extension provided with a terminal tool-blade seat, a tool-blade-engaging bolt, and spaced spurs arranged at equal distances upon different sides of said bolt, of a reversible tool-blade consisting of a plate provided at the center of its area with a bolt-opening, and, at equal distances upon different sides of said opening, with perforations to receive said spurs on the tool-blade seat of the tongue, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CARL HERMAN SEVERIN SCHÜLTZ.

Witnesses:

J. F. AHRENS,
A. H. IVERSON.