H. VOLCKMANN.

SICKLE.

APPLICATION FILED NOV. 25, 1907.

898,535. Patented Sept. 15, 1908.

Fig. 1.

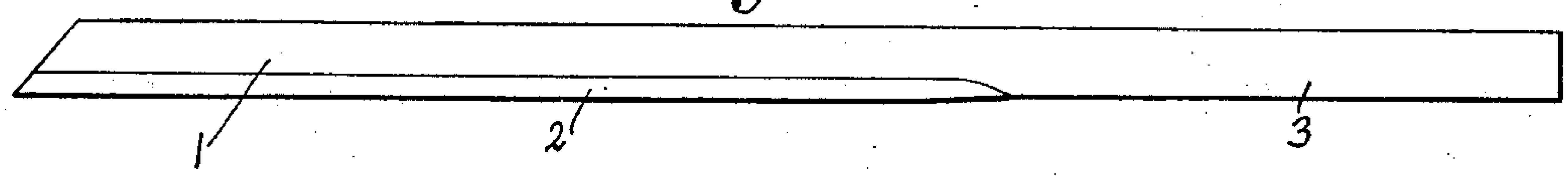


Fig. 2.

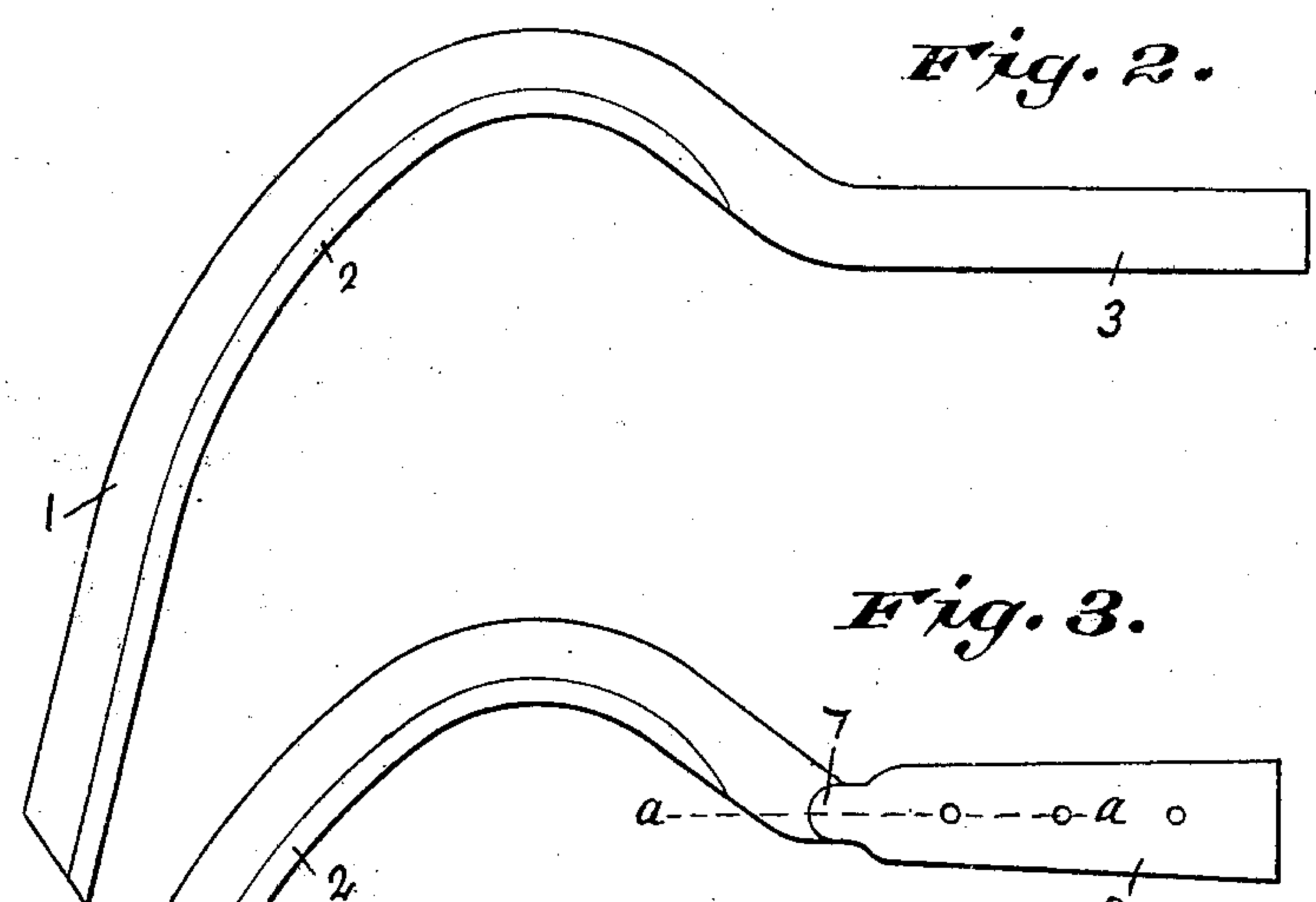


Fig. 3.

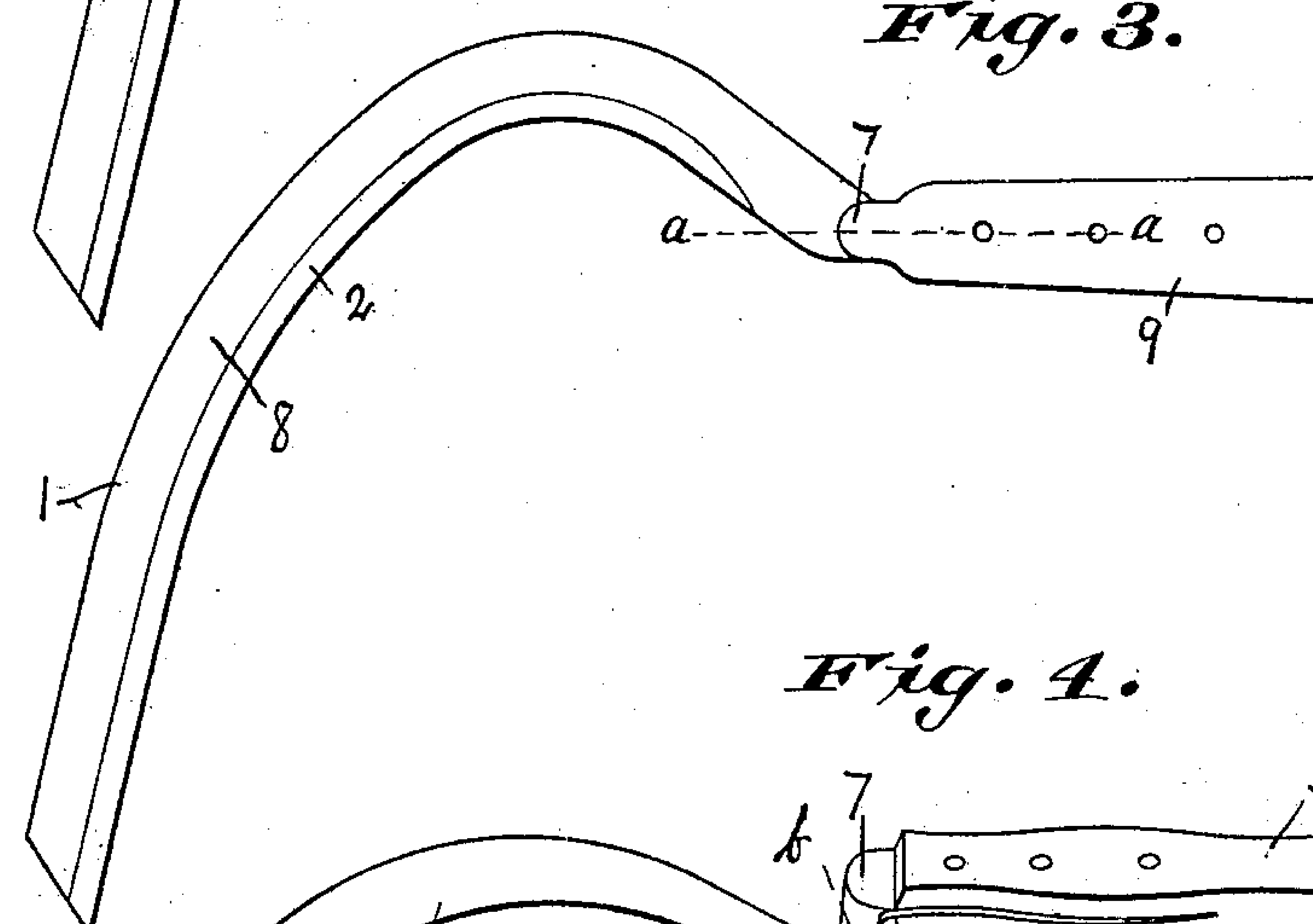


Fig. 4.

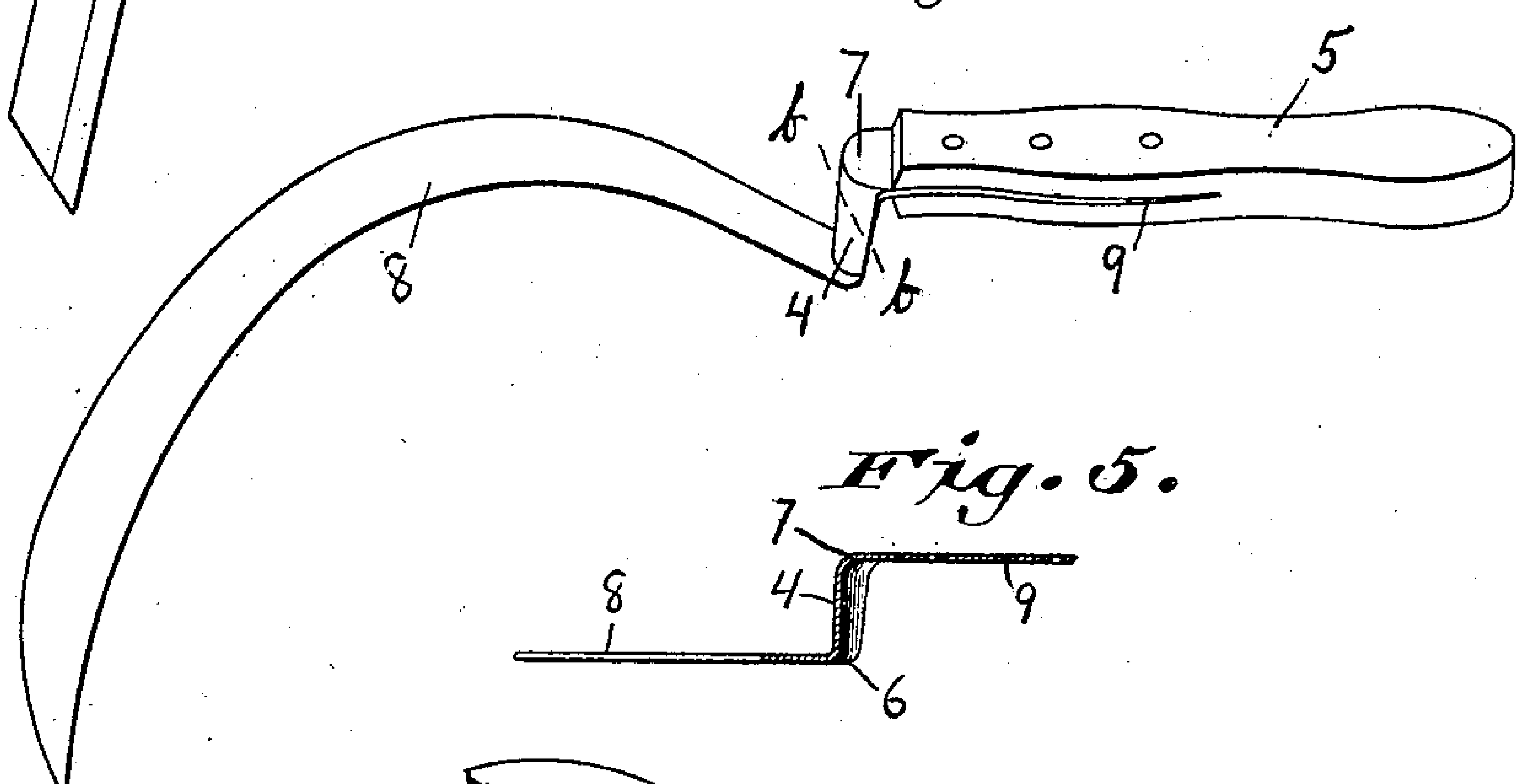
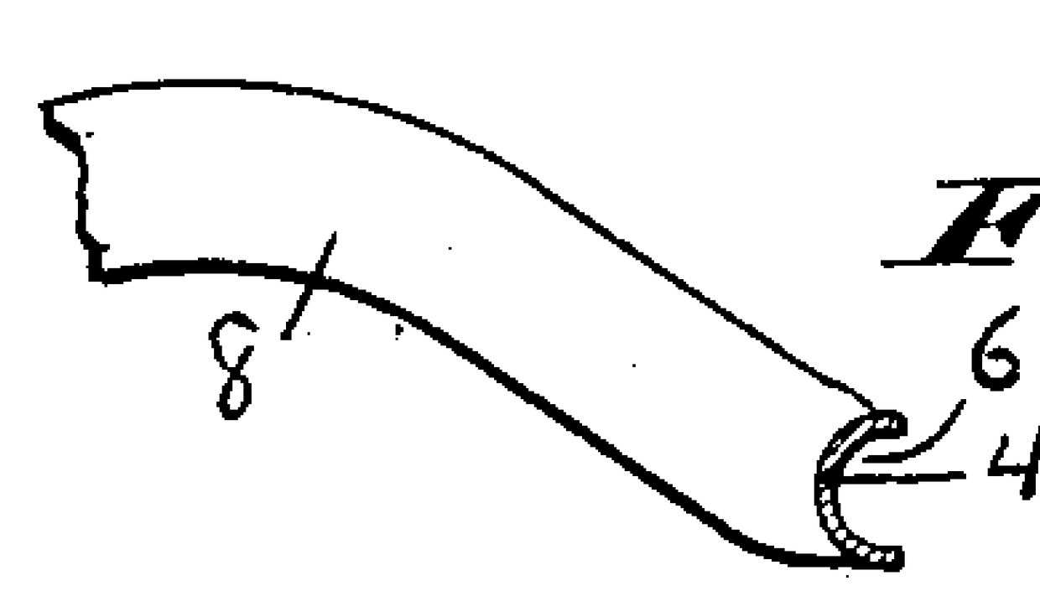


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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SICKLE.

No. 898,535. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed November 25, 1907. Serial No. 403,597.

To all whom it may concern:

Be it known that I, HUGO VOLCKMANN, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Sickles, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to sickles or implements for cutting grass, grain, etc., of that general type which are of a suitable size to be wielded by single hand, and specifically this invention comprises certain improvements in the structure and arrangement of the parts of a sickle whereby more specifically a sickle may be formed from a single blank possessed of sufficient strength and rigidity to withstand the strains and stresses to which it is subjected in use.

Referring to the drawings which accompany this specification and form a part thereof, which illustrate an embodiment of this invention and on which the same reference characters are used to designate the same elements wherever they may appear in each of the several views, Figure 1 is a plan of a sickle blank; Fig. 2 is a plan of said blank after it has been bent approximately to the form of the sickle; Fig. 3 is a plan view of the same blank after the handle has been offset; Fig. 4 is a perspective view of the completed sickle; Fig. 5 is a longitudinal section taken on the line *a*—*a* of Fig. 3; Fig. 6 is a horizontal cross-section taken on the line *b*—*b* of Fig. 4.

Referring specifically to the drawings, the numeral 1 designates a sickle blank which consists merely of a section of flat steel of suitable width and thickness, one end of which is preferably approximately squared with the length of the blank, while the other end is beveled to provide the point in the finished sickle.

The edge portion of the sickle is provided by slightly reducing one edge of the blank for a part of its length as indicated by the numeral 2, leaving the part indicated by the numeral 3 to form the handle proper and to provide the offset which in the finished article unites the said handle and blade.

In manufacturing a sickle of the type described by this specification and in which the sickle is formed from a unitary blank, the blank, as shown by Fig. 1 of the drawings, is first bent to the approximate shape in plan of the finished sickle as shown by Fig. 2. The offset 4 is then provided by bending the handle, including the offset portion, at right angles to the plane of the curved blade 8 and then bending the handle 9 away from the blade until it is at right angles to the offset portion, as clearly shown by each of the Figs. 3, 4 and 5 of the drawings.

Preferably the handle portion 3 is reduced in thickness by hammering, its width being increased at the same time, and holes are provided therethrough through which bolts or rivets may pass to secure a suitable handgrip 5 to the handle of the sickle proper.

Sickles are used either with a swinging, chopping motion or with a pulling motion like a brush-hook or the so-called grass-hooks and if the offset 4 of the sickle were simply rectangular in cross-section and of the same cross-sectional area as the blank from which the sickle is formed, the blank would have to be of considerable thickness to provide the requisite strength at the points where the offset bends to the blade and to the handle.

In order to provide sufficient strength at these two points and throughout the extent of the offset itself, while at the same time using a comparatively thin blank from which to form the sickle, the offset portion is forged into the shape of a semi-cylinder, though of course its figure in cross-section could approximate a complete cylinder, or it could be of the form of a triangle or any polygon of a greater number of sides, the purpose and intent being to provide the offset portion with such a form in cross-section that it is adapted to sustain the stresses and strains resulting from using the sickle with a swinging, cutting motion, or to withstand the stresses and strains due to using the sickle as a hook, the pull in the latter case being approximately in the general line of the handle.

In order that the cross-sectional form given to the offset shall not only provide for strengthening said offset throughout its length but shall also be available for strengthening the connecting portions between the offset and the handle and blade, the general cross-section of the offset is carried into the blade structure at their point of union,

forming a recess 6 in that end of the blade, there being a projection 7 formed for a like reason at the end of the handle.

It will be seen from the above description and by reference to the drawings that this invention provides a cheap and expeditious method of forming sickles and similar implements from comparatively thin blanks while at the same time providing the offset which connects the blade and the handle with sufficient strength and rigidity to withstand strains and stresses imposed upon it from various directions as the result of the tool being used in different ways and for various purposes.

The integral structure of the sickle as described in this specification and as illustrated by the drawings, is at present the form which I prefer, but it is to be understood that the cutting blade of the sickle and the handle of the sickle may be formed as separate and distinct members and united to the blade portion and handle portion of the offset member in any suitable or preferred manner; but I wish it distinctly understood that I consider such a structure as falling within the scope of my invention and as covered by and included in the claims hereunto annexed, provided that the semicylindrical or equivalent form of the offset portion is continued into the blade and handle portions in the manner illustrated, described and claimed.

What I claim is;

1. A sickle composed of a blade portion, a handle portion and an offset portion, formed from a flat piece of steel, said offset portion being bent approximately to the form in cross section of a semicylinder so as to withstand strains which may be imposed upon it in either of two directions, said semicylindrical form of said offset portion being continued into said blade portion and said handle portion.

2. A sickle composed of a blade portion, an offset portion and a handle portion, all made from a single integral blank of sheet steel, said offset portion being bent into substantially a semicylindrical form in cross section in order to withstand strains which may be imposed upon it in either of two directions in the use of the sickle, said semicylindrical form of said offset portion being continued into said blade portion and said handle portion.

3. A sickle composed of a blade portion, an offset portion extended at an angle from said blade portion and a handle portion extended at an angle from said offset portion, said offset portion being semi-cylindrical in cross-section, said semi-cylindrical section of the offset portion being extended to its connection with the blade portion whereby a recess is provided in the end of the blade, and also being extended to the handle portion whereby a projection is provided on the handle portion.

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

HUGO VOLCKMANN.

Witnesses:

GRACE BERTRAM,

HERMAN STEUBER.