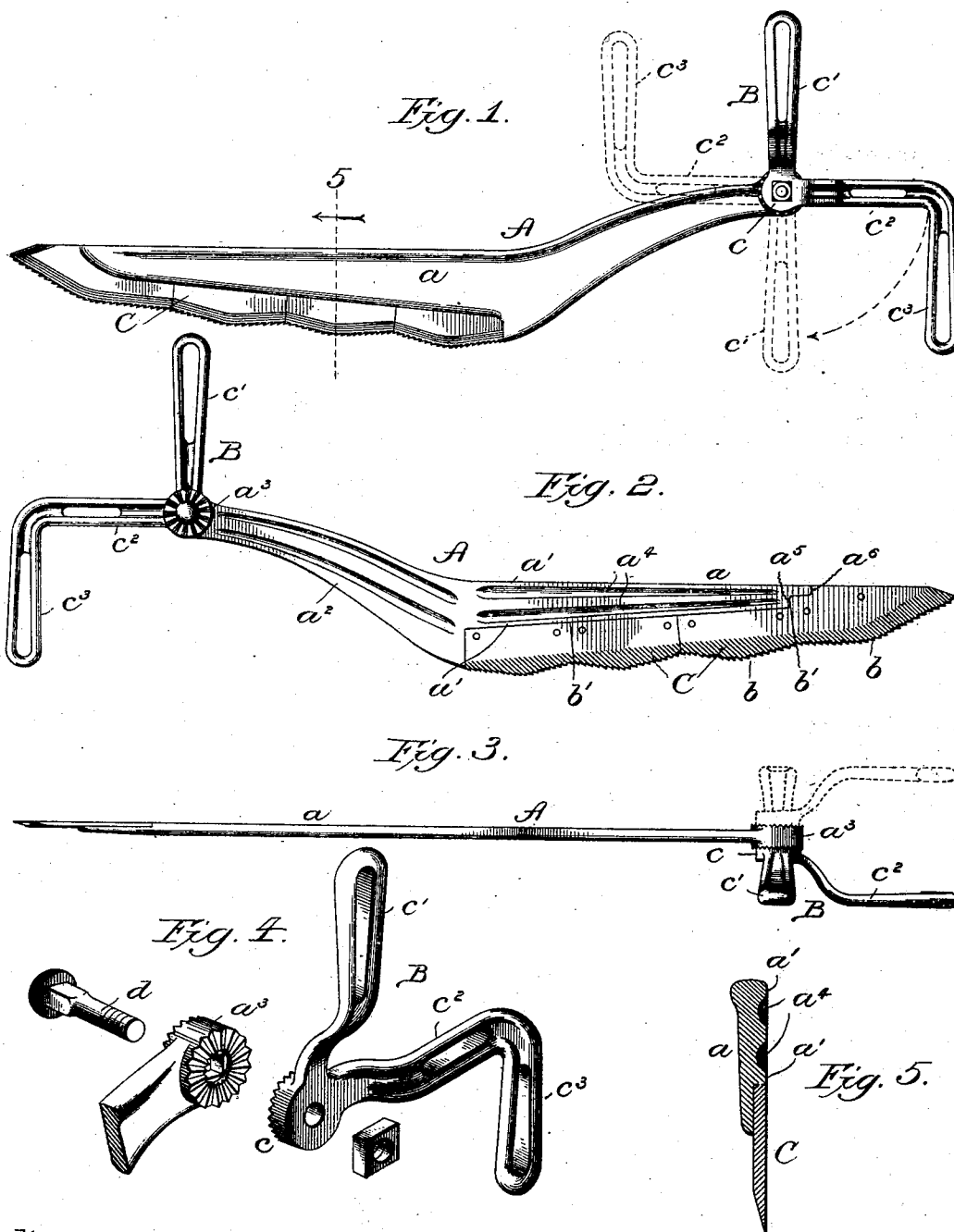


W. L. IWAN.
KNIFE FOR CUTTING HAY, CANE, &c.

(Application filed Jan. 15, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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KNIFE FOR CUTTING HAY, CANE, &c.

SPECIFICATION forming part of Letters Patent No. 696,050, dated March 25, 1902.

Application filed January 15, 1900. Serial No. 1,514. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LOUIS IWAN, a citizen of the United States, residing at Streator, in the county of LaSalle and State of Illinois, have invented a new and useful Improvement in Knives for Cutting Hay, Cane, &c., of which the following is a specification.

My invention relates to an improvement in knives for use in cutting hay, cane, fodder, and the like.

My object is to provide a knife of general improved construction, the handle, shank, and cutting-sections all being of improved form.

In the accompanying drawings, Figure 1 is a side view of a knife embodying my improvements, one position of the adjustable handle being shown in full lines and another position being shown in dotted lines; Fig. 2, a view of the reverse side of the knife; Fig. 3, an edge view of the blunt side of the knife viewing it from above in the position of Fig. 1, dotted lines being employed to show the position which the reversible handle occupies when the knife is converted from a right cutting-knife to a left cutting-knife; Fig. 4, a view in perspective of the handle, a portion of the shank, and the bolt fastening the parts together; and Fig. 5, a sectional view taken as indicated at line 5 of Fig. 1.

The knife comprises in its preferred form a shank A, an adjustable and reversible handle B, and cutting-sections C.

The shank A comprises a plate or section back a , provided with a flange a' , against which the edges of the cutting-sections abut, as shown in Fig. 5, and a stem or shank a^2 at an angle to the part a and provided with a double-faced toothed head a^3 , as clearly appears in Fig. 4. The flange a' is of general triangular shape, as appears from Fig. 2, where it is shown provided with scallops a^4 . The flange narrows gradually from its base to its outer end and ends in two abrupt shoulders a^5 and a^6 , to which the cutting-section conforms. The cutting-line of the cutting-sections is of the somewhat wavy form shown, the points of projection b being located centrally of the sections and the points of recession or indentation b' being located at the meeting lines between the sections. Thus the highest cutting-point of each section pro-

jects the point where the cutting-line passes from that section to the next succeeding section and prevents hay or straw from getting between the sections. The whole cutting-section back a is of triangular or tapering form, as shown in Fig. 1. In fact, the flange a' is formed by recessing the back a on one side to receive the knife-sections, as appears from Fig. 5. This manner of constructing the back gives great strength and rigidity to it. The cutting edges of the cutting-sections are serrated in a novel manner, the lines of serration being all parallel and inclined in such manner as to "take hold" in the down-stroke only.

The handle B comprises, preferably, a head c , provided with teeth adapted to engage with teeth on the head a^3 on the shank, a grip c' for one hand, which is out of the plane of the head c , a shank c^2 , substantially at right angles to the part c' and lying in the plane thereof, and a grip c^3 , substantially parallel to the grip c' , but projecting in opposite direction. The head a^3 of the shank A is perforated to receive the connecting-bolt d , being counter-sunk on either side to receive the head of the bolt.

In Fig. 4 the relative position of the several parts is shown.

In Fig. 1 the full lines represent the handle in one position which it occupies when the knife is used in cutting toward the right of the operator. The dotted lines of this figure represent another position of the handle, in which the handle is lowered, as for use in a kneeling position. In rotating the handle from the position in the full lines to the position of the dotted lines of this figure an angular movement of one hundred and eighty degrees occurs, which leaves the part c^2 in a pending position. It is obvious, however, that the rotation may be stopped after it has proceeded through an angle of ninety degrees and that in such case the part c^2 would be brought to a horizontal position, (assuming the knife to be in the vertical position of cutting,) in which case the part c^2 would serve as a grip for one hand, while the part c' would serve as a grip for the other hand. When the handle is transposed from the side on which it is shown in full lines in Fig. 3 to the position indicated in dotted lines in that

figure, it is evident that the knife may be used for cutting toward the left of the operator. It is also evident that the handle is adjustable when on this side of the shank, just as it was before being transposed.

The gist of my invention, so far as the feature of the improvement in the handle is concerned, lies, broadly stated, in providing a reversible handle and, more specifically stated, in forming the grips of an adjustable handle integrally with each other, as well as making a handle of this description reversible.

Changes in details within the spirit of my invention may be made.

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

1. In a knife for cutting hay, or the like, a shank having a handle-attaching head, and a handle having a head matching the aforesaid head and adjustably secured thereto, and provided with grips for two hands, said grips extending in opposite directions in approximately the same plane.

2. In a knife for cutting hay, or the like, a shank having at each side a handle-attaching head, and a handle having a head matching the aforesaid heads and adapted to be adjustably secured at either side of the knife, said handle provided with two grips extending in opposite directions.

3. In a knife for cutting hay, or the like, a shank having a handle-attaching head, and a

handle having a head matching the aforesaid head and adjustably secured thereto, said handle having integral therewith two oppositely-extending grips offset from the head.

4. In a knife for cutting hay, or the like, the combination with a shank provided with a handle-attaching head, of an adjustable handle provided with a head *c*, with a grip *c'*, a member *c*² and a grip *c*³ at an angle to the member *c*², substantially as and for the purpose set forth.

5. In a knife of the character described, the combination of a shank provided with a flanged back, and cutting-sections abutting against the flange of said back, the point-section being provided with a pointed extremity and with a cutting-ridge in the rear of which the cutting edge inclines toward the back of the shank, and each of the remaining sections being provided with a projecting cutting-ridge which protects the point where the cutting-line crosses from that section to the succeeding section, all said sections being provided with serrations throughout the length of their cutting edges, all of which serrations slant in a direction to take hold of the material in the downward stroke, substantially as and for the purpose set forth.

WILLIAM LOUIS IWAN.

In presence of—

ALONZO P. WRIGHT,
THEODORE ROCKENFELLER.