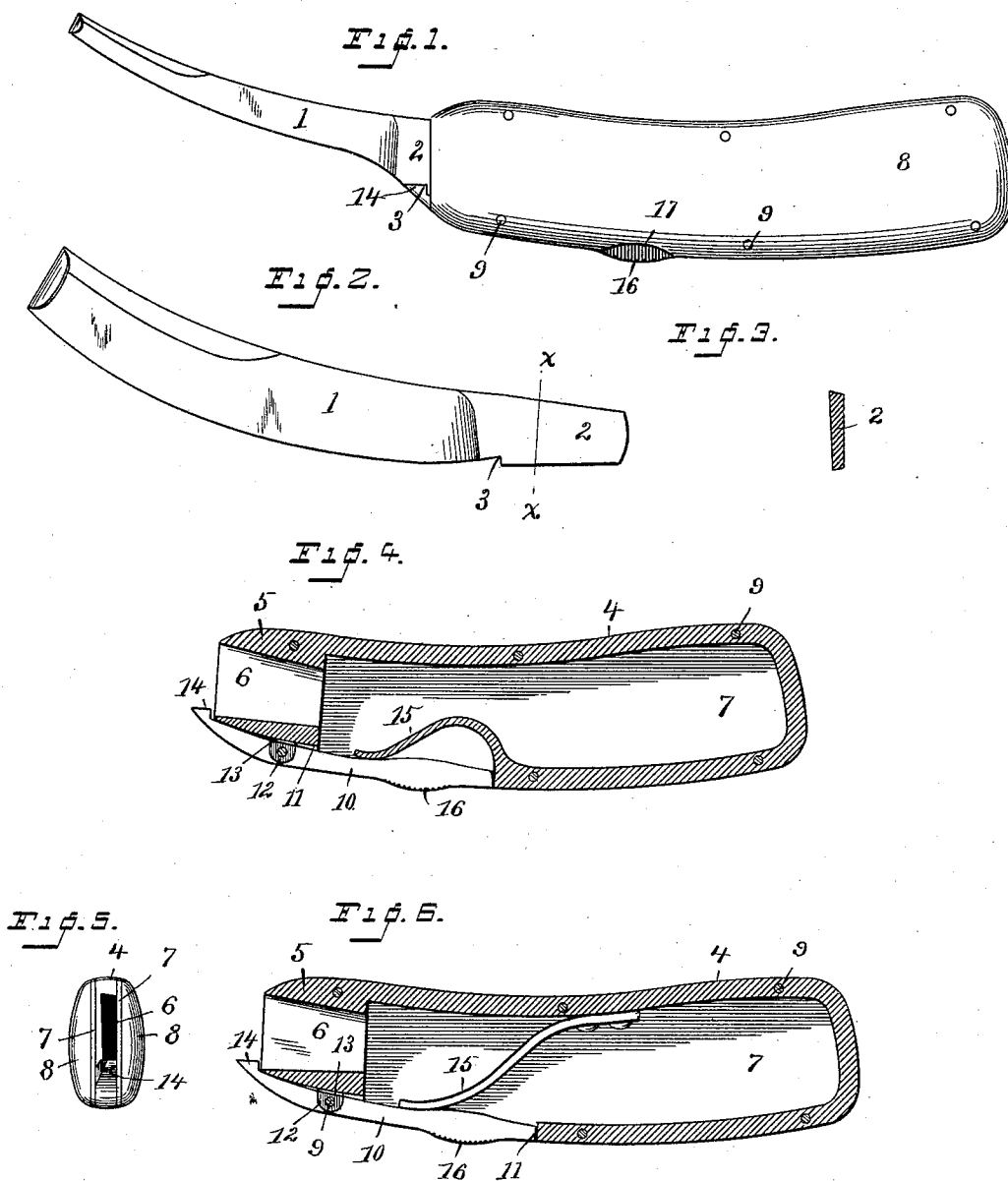


(No Model.)

N. P. NIELSEN.
KNIFE.

No. 443,534.

Patented Dec. 30, 1890.



WITNESSES

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KNIFE.

SPECIFICATION forming part of Letters Patent No. 443,534, dated December 30, 1890.

Application filed April 19, 1890. Serial No. 348,691. (No model.)

To all whom it may concern:

Be it known that I, NIELS P. NIELSEN, a subject of the King of Denmark, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Horseshoeing-Knives; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make use the same.

My invention is adapted to all classes of knives in which it may be found desirable to use a plurality of blades in connection with a single handle, the object being to produce a simple, inexpensive, easily operated, and very strong construction of blade and handle that will permit the ready attachment and detachment of the blades.

I have illustrated my invention as applied to a horseshoeing-knife, for the reason that a number of knives of different shapes and sizes are required by every blacksmith in horseshoeing, and that there is probably no class of small knives upon which there is greater strain in use.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of my novel knife complete; Fig. 2, an elevation of the blade detached, showing the tang; Fig. 3, a cross-section of the tang on the line $x x$ in Fig. 2; Fig. 4, a longitudinal section of the handle, the blade being removed and the locking-piece in elevation; Fig. 5, a front end view of the handle with the blade removed; and Fig. 6, a section corresponding with Fig. 4, illustrating the use in connection with my novel handle of another form of spring.

1 denotes the blade, the operative portion of which may be of any ordinary or preferred construction, the tang denoted by 2 being provided with a locking-notch 3, as will be more fully explained.

4 denotes the frame of the handle, ordinarily made in a single piece, with the bolster denoted by 5, the bolster being made open on one side, as shown in Fig. 5, and provided with a recess 6 to receive the tang of the blade.

7 denotes the scales, and 8 the cheek-pieces, the parts being secured together by rivets 9 in the ordinary manner.

In order to give the greatest possible strength and rigidity to the knife in use, I make the tang of a special shape, which I will now describe. In order to get a wedging action when it is forced into recess 6, I make the edges of the tang taper toward the outer end thereof. In order to relieve the rivets from any strain which would result from side pressure of the tang, I make the bottom or closed side of recess 6 wider than the top or open side thereof, as is clearly shown in Fig. 5, and make the tang widest upon the side next to the bottom of the recess, as indicated in Fig. 3. This causes any side pressure toward the open side of the recess to be taken up by the solid metal of the bolster instead of being taken up by the cheek-piece and scale on that side and transferred to the rivets. It is apparent, furthermore, that as knives of this class are ordinarily constructed the greatest strain of all in use comes upon the back of the bolster. In order to do away entirely with this strain, I make the blade widest upon its inner side, as is clearly shown in Fig. 3, the blade tapering from the inner side toward the back, so that the strain upon the bolster is equalized and special strain upon the back is avoided, it being understood of course that the tangs and recess correspond with each other strictly. It will thus be seen that I insure perfect rigidity of the blade, and also avoid strain upon the back of the bolster and upon the cheek-pieces, scales, and rivets, the entire side strain and the direct strain in use being taken up by the solid metal of the bolster.

10 denotes the locking-piece, which is pivoted between the scales in a recess 11 in the lower edge of the handle. The locking-piece is provided on opposite sides with recesses 12, which receive ears 13 formed on the bolster, the locking-piece and ears lying between the scales when used, or if scales are not used between the cheek-pieces. At the outer end of the locking-piece is a shouldered projection 14, which extends beyond the bolster, the shoulder of which is just adapted to engage the shoulder of notch 3 in the tang. The locking-piece is preferably pivoted on one of the ordinary rivets 9.

15 denotes a spring, which may be either forged integral with the frame and bolster

and suitably curved to give the desired action, as in Fig. 4, or may be made from a separate piece of metal and riveted to the frame, as in Fig. 6. This spring bears against the inner edge of the locking-piece on the inner side of the pivotal point of the locking-piece to the bolster, so that the outer end of the locking-piece—that is, the shouldered projection—is always forced inward, as is shown in the drawings, so as to engage or be ready to engage the notch in the tang of a blade.

For convenience in operation I provide a rounded projection 16 upon the outer edge of the locking-piece for the operator to press against when it is desired to release the blade, and I preferably, although it is not necessary, cut away the sides of the cheek-pieces and scales, as at 17 in Fig. 1, to permit ample movement of the locking-piece in detaching the blade.

The operation is so simple as to hardly require description.

The tangs of the blades are of course all made the same shape as the recess in the bolster. The tang can only be inserted one way on account of the peculiar shape of the tang and recess, which has been fully described, and also because there is but one position in which the locking projection will engage the notch in the tang. As the operator presses the tang into the recess, the shouldered projection 14 on the locking-piece will be pressed

outward against the power of the spring until the tang has passed in far enough to permit the shouldered projection to pass into the notch, which movement instantly takes place through the action of the spring. To detach a blade, the operator simply presses in upon projection 16 against the power of the spring and pulls the blade out, the operation taking less time than is required to describe it.

It is of course obvious that the various details of construction of the handle may be varied greatly without departing from the principle of my invention.

I claim—

The combination, with the handle 4, provided with the integral bolster 5, having the ears 13, and a recess 6, which is open on one side and which is wider at its bottom or closed side than at its open side, of a knife-blade having a beveled tang 2 wider at one side than at the other to fit the said recess, and a notch 3, and the spring-pressed locking piece or lever 10, pivoted to the said ears and having the shouldered projection 14 extending outward beyond the said bolster, substantially as set forth.

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

NIELS P. NIELSEN.

Witnesses:

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