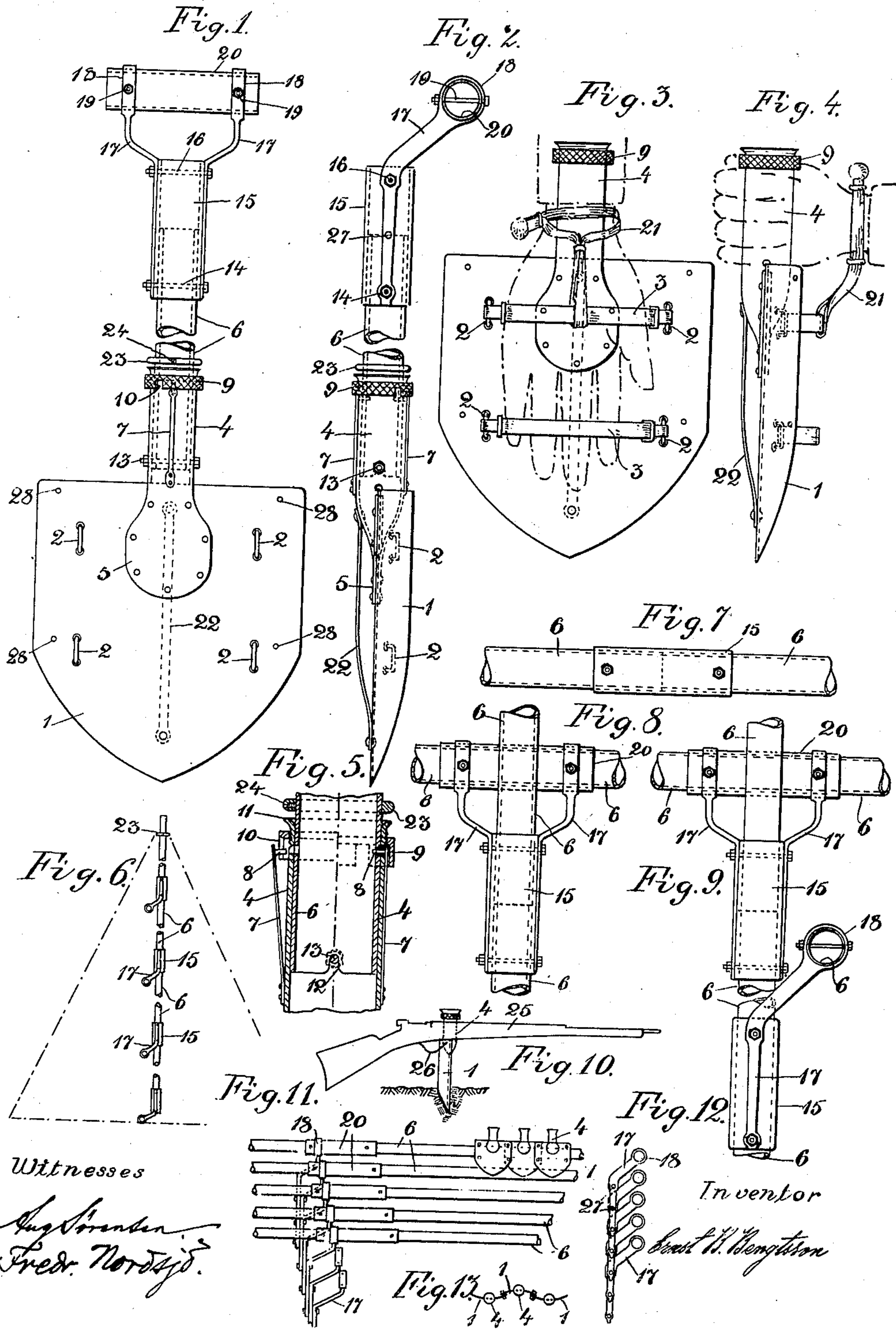


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 MILITARY INTRENCHING TOOL.  
 APPLICATION FILED NOV. 5, 1909.

993,015.

Patented May 23, 1911.



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## MILITARY INTRENCHING-TOOL.

993,015.

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*To all whom it may concern:*

Be it known that I, ERNST BENKT BENGTTSSON, a subject of the King of Sweden, residing at Stockholm, in the Kingdom of Sweden, have invented a new and useful Military Intrenching-Tool, of which the following is a specification, reference being had to the drawing accompanying and forming a part hereof.

This invention relates to military intrenching tools and particularly to spades for infantry.

It is well known that the advancing of infantry against an enemy's positions is performed at short intervals, and, if possible, intrenchments are formed at the stopping-places, whereby it is of importance, in order to decrease the losses, that each soldier utilizes, as much as possible, the depressions in the ground, or, if no depressions are to be found, produces such depressions himself. The use of a common spade for intrenching purposes has, however, the drawback that the rifle cannot be used simultaneously. It has proved itself that in the last wars the men used spoons, bayonets and even the hands in order to obtain a cover. A spade adapted to be used for intrenching purposes must therefore be so arranged that the spade and the rifle may be used simultaneously.

The object of the invention is to provide such a spade which is simple and easily portable and which may be used not only for intrenching or digging purposes, with or without shaft, but also for various other purposes which may be required in a modern war, such as for use as a body shield or as a head guard or cover, as a tent-pole, or for making frame-works etc.

The invention comprises a certain improved shaft-handle, said handle being detachably connected to the shaft, in a position at the side thereof, so as to allow the shaft to be extended past the handle for forming a pole or the like.

The invention further comprises means attached to the back of the spade-shield for catching the enemy's weapon.

Suitably the shaft is composed of one tube and two sleeves connected together by clamps and bolts so that the shaft may be easily taken into parts adapted for use in forming frame-works of different kinds.

The invention further comprises the con-

struction and combination of parts herein- 55  
after more particularly described.

In the drawing, I have shown a preferred embodiment of my invention and various employments of the same.

Figure 1 is a front view of the spade- 60  
shield with the shaft attached thereto. Fig. 2 is a side view of the same. Fig. 3 is a front view of the detached blade of the spade adapted for use as a shield or in digging with one hand only. Fig. 4 is a side 65  
view of the same showing in dotted lines the left hand seizing the short neck or shank of the blade. Fig. 5 is a longitudinal sectional detail view showing the connection between the said neck and the tubular shaft of the 70  
tool. Fig. 6 shows a number of shafts connected together to form a tent-pole. Fig. 7 shows two tubular shafts connected together by the sleeve normally forming the attachment for the handle part of the tool. Fig. 75  
8 shows a connection of shafts and sleeves forming part of a framework. Fig. 9 shows a similar connection forming part of a frame-work of three dimensions. Fig. 10 is a side view of the blade inserted in the 80  
ground in a position to serve as a head guard or cover in the prone position and as a support for the rifle. Fig. 11 is a front view of a frame work forming a cover against infantry fire. Fig. 12 is a side view 85  
of a number of handle clamps connected together to form a support for the longitudinal tubes of the cover. Fig. 13 is a plan view of a number of spade blades connected together to form the armor of the cover. 90

Referring to the drawing, the blade 1 (Figs. 1-4) of the spade suitably consists of a curved sheet-iron plate having a number (suitably two pair) of eyes 2 secured to its concave side, said eyes forming fastenings for straps 3 or the like (Figs. 3 and 4) of leather or other suitable material. Riveted or otherwise attached to the said blade 1 is a short length of tubing 4 cut diametrically at one end and flattened out as shown 100  
at 5 so as to form a pair of clutches for firmly holding the interposed blade. The upper part of the tube 4 forms a short neck having means for attaching the blade to a longer tube or shaft 6. The connection suitably consists of two blade springs 7 (Figs. 1, 2 and 5) attached to the neck 4 at two diametrically opposite points and having 105

at their free ends inwardly projecting pins 8 adapted to engage corresponding holes in the upper part of the neck 4 and the lower part of the shaft 6, as clearly shown at the right hand side of Fig. 5. The springs 7 have a tendency to take up the position shown at the lefthand side of Fig. 5, and in order to keep the same in locking positions, the upper part of the neck 4 is screw-threaded to receive an interiorly threaded cap 9 adapted to be screwed down upon the upper ends of the springs 7. In order that a slight turning of the cap 9 may suffice for locking or releasing the springs 7 the cap 9 may be provided with one or more slits 10 through which the springs may pass. For enabling the cap 9 to be conveniently handled it may suitably be milled at its circumference, as shown in Figs. 1-4. In order to prevent the cap from unscrewing itself from the neck 4 the latter may suitably be somewhat widened at its upper end, as shown at 11, Fig. 5. The lower end of the shaft 6 is suitably provided with two diametrically opposite slits 12 adapted to engage a bolt 13 inserted through two diametrically opposite holes in the neck 4.

When the shaft is to be connected to the blade, it is inserted with its lower end into the neck 4 of the blade, until its lower edge meets the bolt 13, and then turned, while being pressed inward, so that the slits 12 engage the said bolt. The springs 7 are then grasped with the left hand and pressed close up to the outer side of the neck so that the pins 8 engage the coinciding holes in the neck and the shaft, whereupon the cap 9 is screwed down upon the ends of the springs for locking same in position.

Attached by a bolt 14 to the upper part of the shaft 6 is a short socket or sleeve 15, and attached to the said sleeve, preferably by the bolt 14 and a second bolt 16 are two clamps 17 each forming at its upper end a ring 18. Inserted into the rings 18 and firmly secured thereto by through-going bolts 19 is a second socket or sleeve 20, preferably of the same dimensions as the sleeve 15 and having the holes for the bolts placed at the same distances from the ends as in the said latter sleeve, so that the one sleeve may be replaced by the other one, if desired. The holes in the shaft 6 for the bolt 14 are preferably at such a distance from the end of the shaft that, when the sleeve 15 is secured to the shaft, the end of the latter will be at the middle of the sleeve. The clamps 17 are bent laterally, as shown at the top of Fig. 2, so that, upon removal of the bolt 16, a shaft 6 may be inserted into the upper end of the sleeve 15 and secured in position by the bolt 16. Suitably the shaft 6 is provided with a pair of holes in level with the holes for the bolt 14 and displaced at an angle of 90° from the said latter holes

so that the sleeve 15 may be secured to the shaft 6 in a position at right angles to that shown in Figs. 1 and 2.

All the parts of the implement described are preferably made of steel by which the tool will be more effective in digging in hard and stony ground.

When the implement is to be used as a spade for digging with one hand, the blade 1 is detached from the shaft 6 and the straps 3 attached by spring-hooks or the like to the eyes 2, as shown in Figs. 3 and 4. The blade is hung by a sword-knot or strap 21 engaging the upper strap 3 to the wrist of the left hand, which may either be inserted between the two straps 3 at one side and the blade 1 at the other side, as shown in Fig. 3, or placed about the neck of the blade, as shown in Fig. 4. In the former case the rifle may be handled by both hands due to the flexibility of the straps 3 while during the pauses in firing the blade may be used by the operator lying prone for throwing up an intrenchment to provide cover from the fire of the enemy. The blade may also be used as a shield in fighting with sabers or bayonets, in which case the blade may be held as shown in Fig. 3. A metal strip 22 secured to the lower part of the neck 4 and to the lower part of the blade 1 serves as a means for catching and retaining the point of the enemy's bayonet or the like so as to expose him.

In camping it may be desired to connect a number of shafts to a tent-pole. To this end a suitable number of shafts are detached from the blades, and the lower end of one shaft is inserted into the upper end of another shaft in such a manner that the slit 12 at the lower end of the first shaft will engage the screw-bolt 16 at the upper end of the other shaft. Fig. 6 shows four shafts thus connected together to form a tent-pole. The ring at the apex of the tent will bear on a small flange or ring 23 near the upper (normally lower) end of the uppermost shaft (see Figs. 1, 2 and 5). The ring 23 may be attached to the shaft by small screws 24 so that it may be removed, when desired.

As is easily understood, the shaft may be readily taken into pieces, and it will be seen that each shaft furnishes one longer tube 6, two shorter sleeves 15 and 20, two clamps 17, and four screw-bolts with nuts. These parts may be used in constructing frame-works for various purposes.

In Fig. 7 two tubes 6 are shown firmly connected by a sleeve 15 and two bolts. Fig. 8 shows a similar connection forming two lengths of tubing crossing each other at right angles. Fig. 9 shows in what manner the parts may be connected in order to obtain a frame-work of three dimensions. In such a manner several structures may be formed, such as scales, bridges, fences, etc.

Fig. 10 shows in what manner the blade may be used as a cover in the prone position and as a support for the rifle 25 which is suitably placed in a position with the trigger-guard 26 close up to the blade.

Figs. 11-13 show in what manner the parts of a number of spades may be connected for the purpose of constructing an improvised safeguard. The clamps are connected by small bolts in the manner shown in the drawing. To this end the clamps 17 are provided just between the holes for the bolts 14 and 16 with a third bolt-hole 27 (Figs. 2 and 12). The tubes 6 are connected in the manner shown in Fig. 7 and supported in the rings 18 of the clamps. The blades 1, which are suitably provided at the edges with small bolt-holes 28 (Fig. 1), may be connected as shown in Fig. 13 so as to form an armor which may be attached to the structure (Fig. 11) by a number of bolts passed diametrically through the tubes 6.

The means for fastening the spade-shield to the back of the hand may obviously be varied in various ways without departing from the spirit and scope of my invention. Thus, for instance, the eyes 2 may be replaced by a number of holes through which a string or cord may be drawn in such a manner as to form a pair of bands for the hand.

I am aware that spades are before known in which the handle is placed at the side of the shaft, but in such spades the handle is firmly attached to the shaft, whereas, according to the present invention, the handle is detachably connected thereto. I, therefore, do not broadly claim shafts having the handle attached at the side of it but I only claim such shafts having the handle detachably connected to the shaft at the side thereof.

I claim:

1. A military intrenching tool comprising a spade-blade, a shaft detachably connected to the said spade-blade, and a handle detachably connected to the said shaft, at the side thereof, so as to allow an additional shaft to be applied to the former in a position in which it extends axially past the said handle.

2. A military intrenching tool comprising a spade-blade, a shaft detachably connected

to the said spade-blade, a sleeve connected to the upper end of the said shaft, and a handle detachably connected to the said sleeve in such a position as to allow the lower end of a second shaft to be inserted into the said sleeve.

3. A military intrenching tool comprising a spade-blade, a neck attached to the said spade-blade, a shaft adapted to be inserted into the said neck, springs attached to the said neck in positions to engage corresponding holes in the said neck and shaft, and a cap placed on the upper end of the said neck and adapted to keep the springs in locking positions.

4. A military spade-shield comprising means for applying same to one hand of the operator, and a metal strip attached to the back of the shield for catching the point of the enemy's weapon.

5. A military intrenching tool comprising a spade-blade, a shaft detachably connected to the said spade-blade, a sleeve attached to the upper end of the said shaft, clamps attached to the said sleeve, and a second sleeve attached to the said clamps in a direction at right angles to the first to form a convenient handle.

6. A military intrenching tool comprising a spade-blade, a shaft detachably connected to the said spade-blade, a sleeve attached to the upper end of the said shaft and adapted to be used as a socket-joint for connecting two shafts together, and a handle detachably connected to the said sleeve.

7. A military intrenching tool comprising a spade-blade, a shaft detachably connected to the said spade-blade, a sleeve detachably connected to the upper end of the said shaft and adapted to be used as a socket-joint for connecting two shafts together, and a handle attached to the said sleeve.

8. A military intrenching tool comprising a spade-blade, a shaft detachably connected to the said spade-blade, a sleeve detachably connected to the upper end of the said shaft and adapted to be used as a socket-joint for connecting two shafts together, and a handle detachably connected to the said sleeve.

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