

No. 622,394.

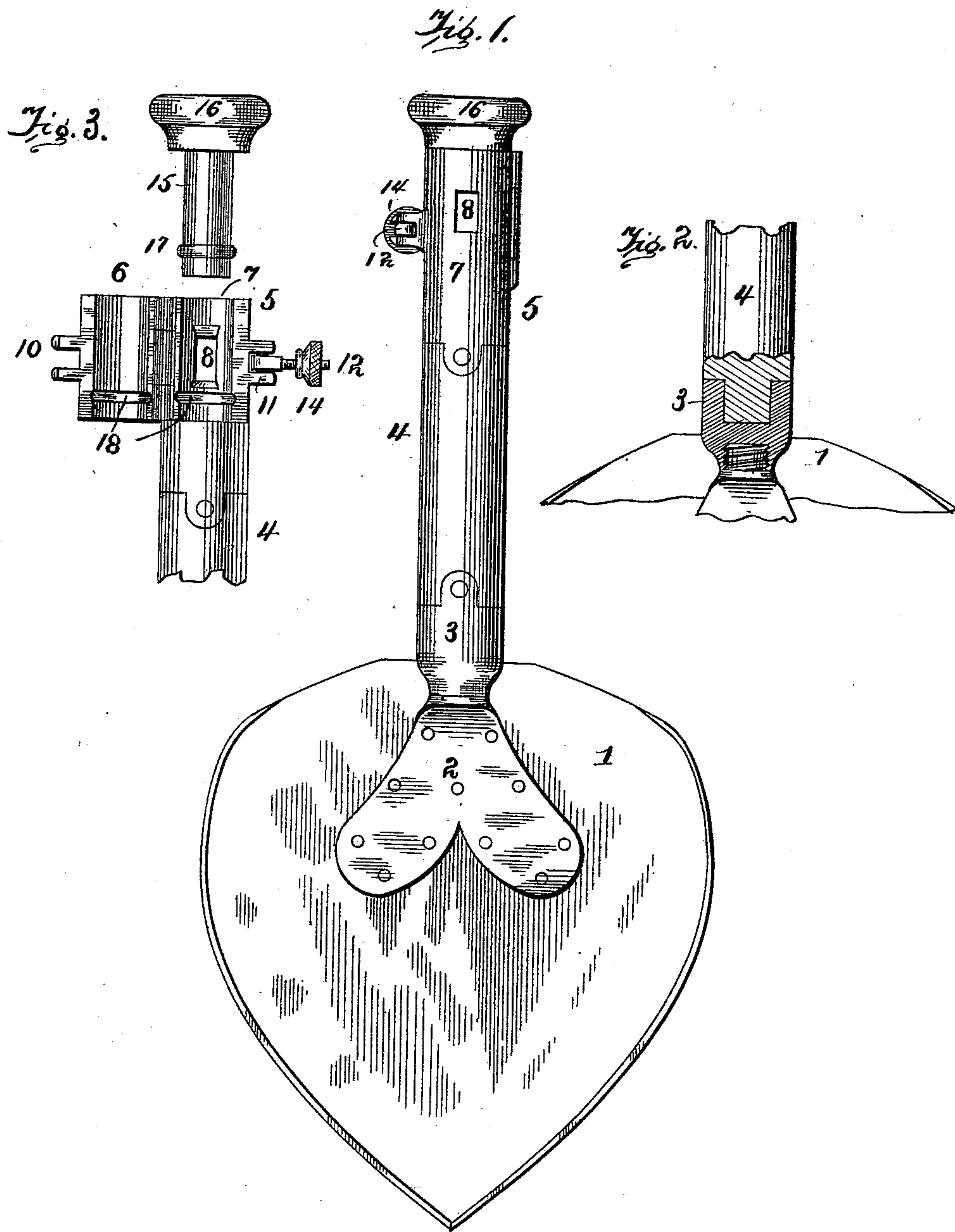
Patented Apr. 4, 1899.

J. D. RHODES.  
INTRENCHING TOOL AND HEAD PROTECTOR.

(Application filed June 13, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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Fig. 4.

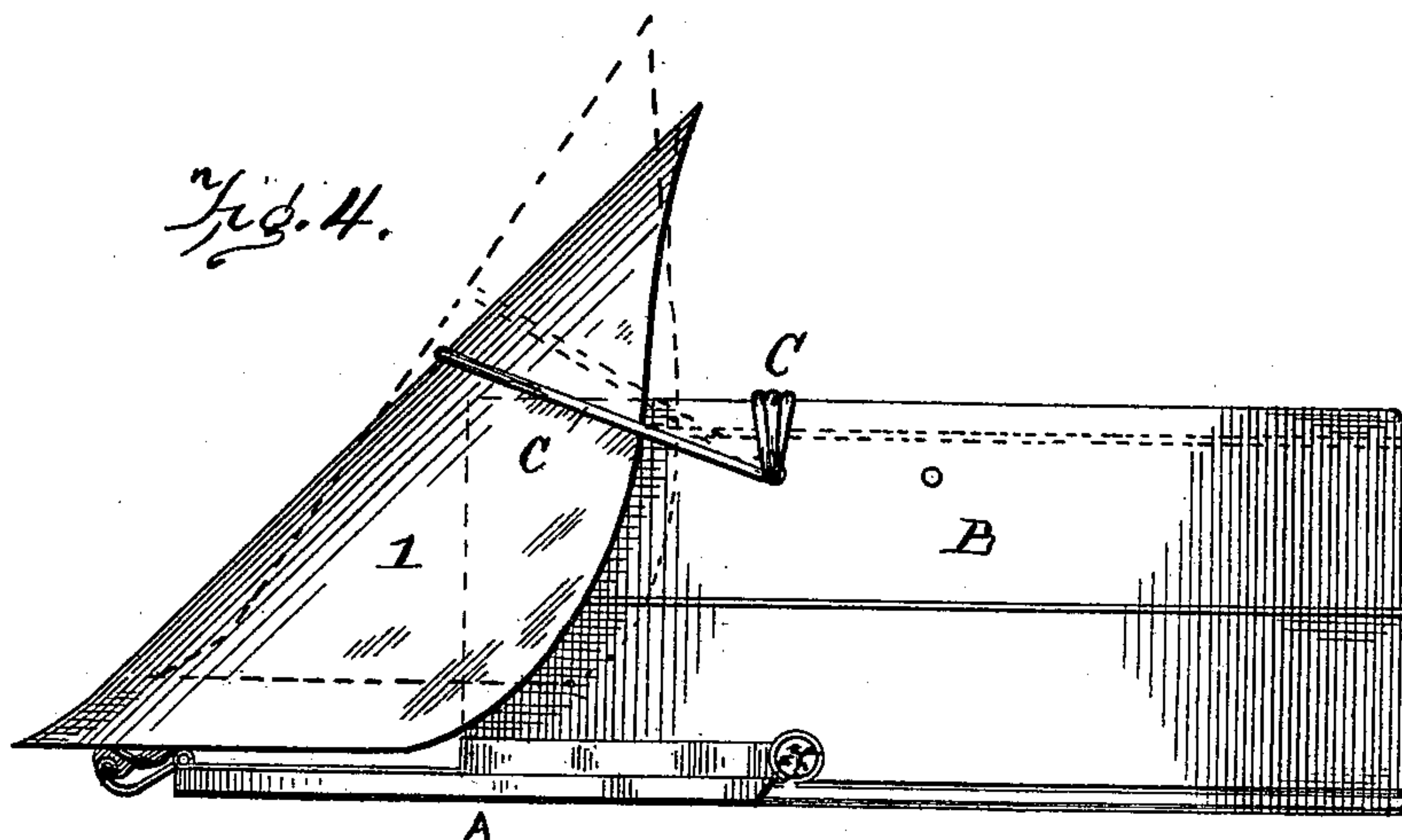


Fig. 6.

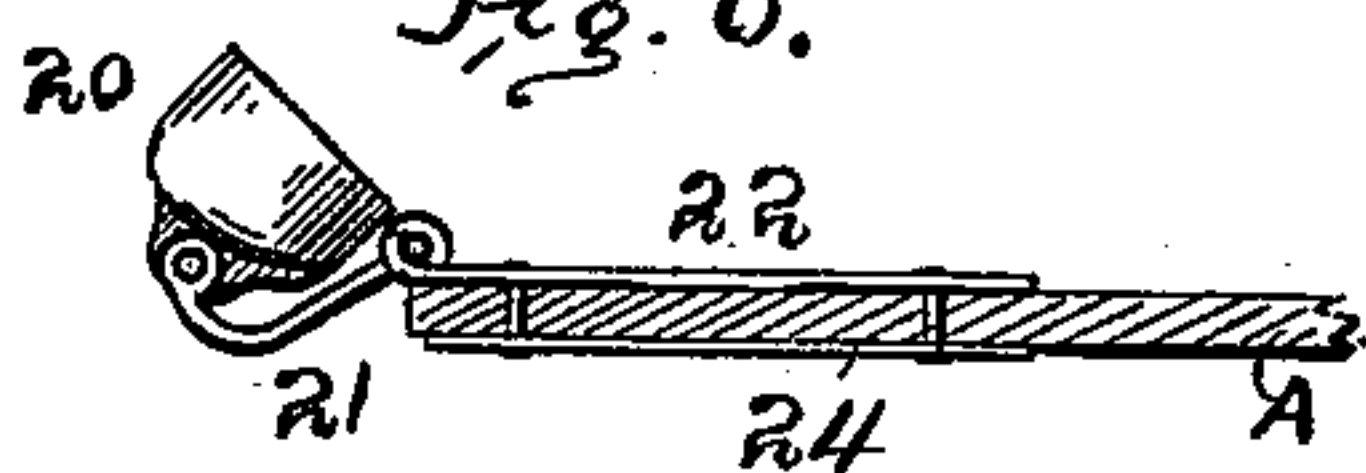


Fig. 5.

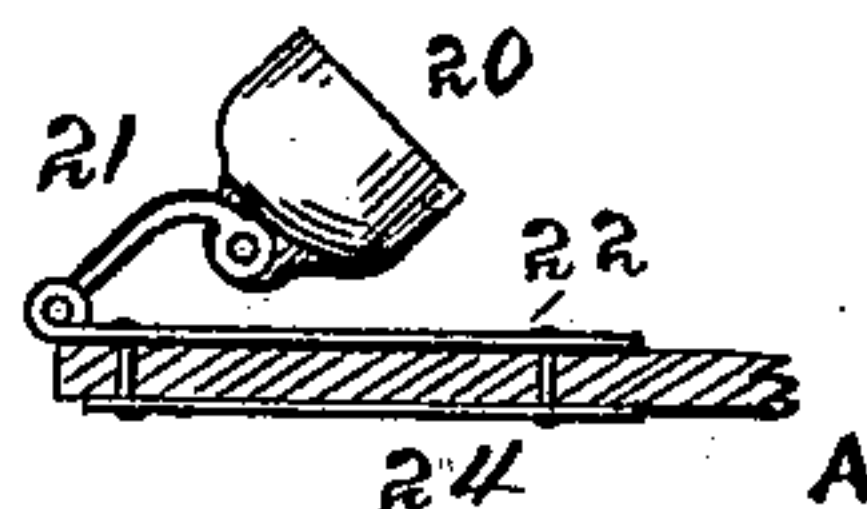


Fig. 8.

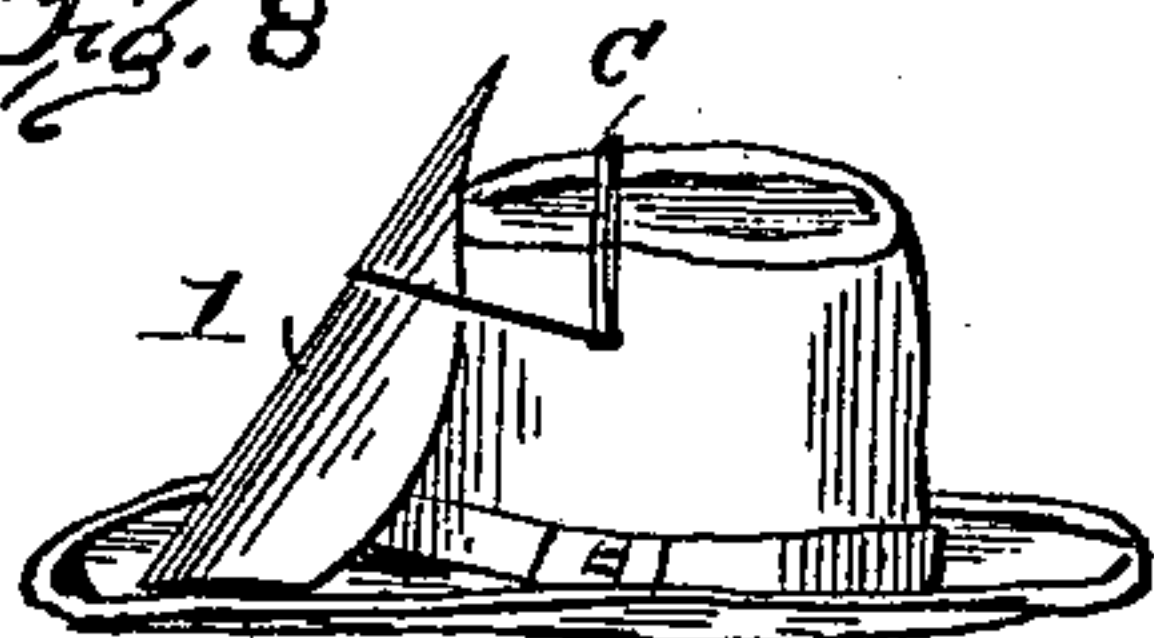


Fig. 7.

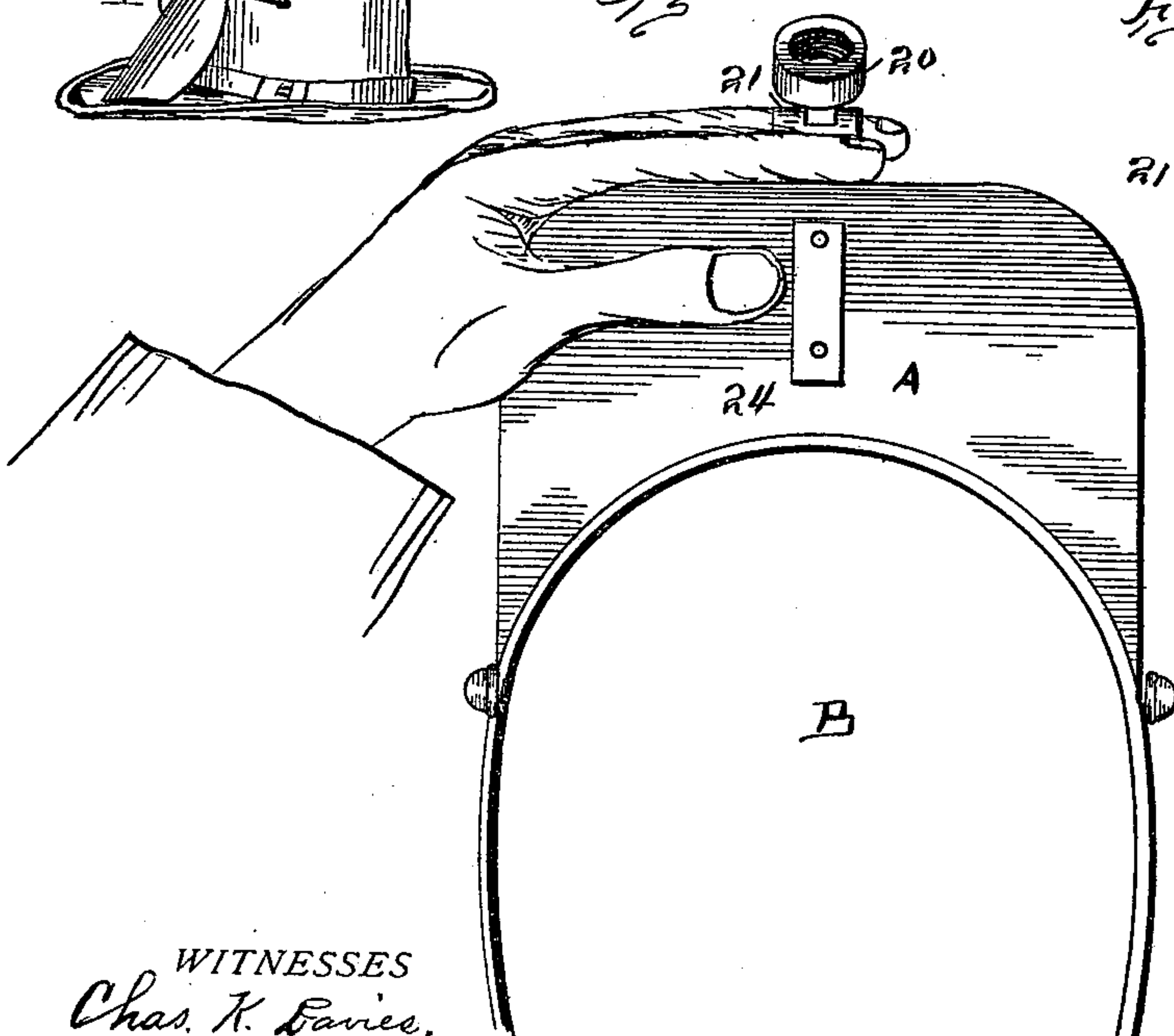
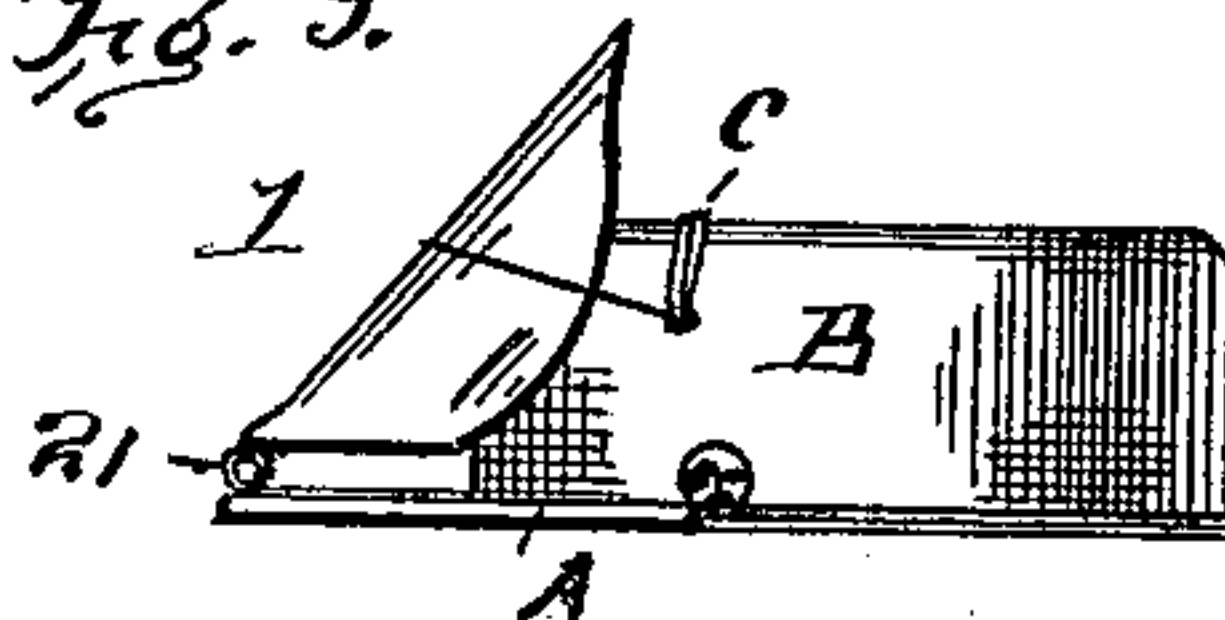


Fig. 9.



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# UNITED STATES PATENT OFFICE.

JULIUS D. RHODES, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR  
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## INTRENCHING-TOOL AND HEAD-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 622,394, dated April 4, 1899.

Application filed June 13, 1898. Serial No. 683,305. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS D. RHODES, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Intrenching-Tools and Head-Protectors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improved intrenching-tool which is adapted for use as a head-protector for soldiers in the field.

The object of my invention is to produce a convenient and efficient intrenching-tool capable of use with handles of different lengths or of attachment to a gun-barrel, either for use as an intrenching-tool or as a weapon, and to adapt the blade of such tool for attachment to the soldier's hat or cap, so as to form an efficient shield or protector to the head, the blade of the intrenching-tool being held at an incline over the forehead of the soldier in position to deflect or glance a projectile coming from the front.

The invention consists in certain constructions and combinations of mechanical elements for the objects above stated.

Figure 1 is an elevation of the intrenching-tool with short handle attached. Fig. 2 is a partial broken section and partial elevation of the blade, shank, and threaded ferrule with part of the short handle. Fig. 3 is an elevation of the split thimble in open position, showing part of the short handle and the closing-plug. Fig. 4 is a side elevation of a military cap with the intrenching-blade applied. Fig. 5 is a broken section of capvizor with cup attached thereto. Fig. 6 is a similar view showing cup attached in another position. Fig. 7 is a broken elevation of cap in hand in position for the application of the tool as a deflecting-shield. Fig. 8 is a side elevation of hat, and Fig. 9 a side elevation of cap, with blade attached in back position.

The numeral 1 indicates the blade or body of my intrenching-tool. Preferably this blade or body is nearly in form of a pointed spade and curved a little more than is the blade of a common spade or shovel, so that the inner face of the blade will approximately fit the

crown of a soldier's hat or cap. The blade should be of tempered steel and the edges may be sharpened, so that the tool can be used as a hatchet or as a knife.

The shank 2 is firmly attached to the inner face of the blade by rivets or otherwise and has a screw-threaded portion constructed for attachment to a detachable handle. The handle will preferably be attached by the threaded shank entering the threaded ferrule 3, which ferrule will, when the pintle is screwed into the shank of the tool, rest against the blade and support or brace the parts firmly.

A short handle 4, preferably of wood, is fixed to ferrule 3. The upper end of this handle has a thimble 5 firmly attached. The upper or outer end of this thimble is split longitudinally, and one part 6 is hinged to the other part 7, so that the part 6 may swing open and form an open or a closed socket. This split socket has a longitudinal passage in which a temporary handle may be secured whenever a long handle is needed for the intrenching-tool. Preferably the fixed part 7 of the socket will have a mortise 8 therein, and the socket may be applied to the end of a gun-barrel, the gun-sight or sight-stud projecting through mortise 8. The socket when closed and secured on the gun-barrel holds the tool in position to make a very effective bayonet, and the tool may also be used for intrenching, using the gun as a handle when the soil is such as to permit such use without danger of bending the gun-barrel. The handle 4 being in front of the gun-barrel prevents any dirt from entering the gun through the socket, which clasps the gun-barrel.

The parts 6 7 have pairs of projecting lugs 10 11 at or near the edges of the joint opposite the hinge. Between one of these pairs of lugs a catch 12 is pivoted and may swing between the lugs of the other pair. A nut 14 screws on this catch and may be moved by turning. Thus if the catch 12 be swung between the lugs 10 when the split socket is nearly closed the socket can be made to grasp a stick or any other article which nearly fits said socket. A sapling or bough may be cut by means of the blade, trimmed to nearly fit the split socket, and then the socket may be



closed and tightly clamped by means of the catch and nut. Thus an effective temporary handle for the intrenching-tool may be made.

A short plug 15, with a knob 16 at its end, may be inserted in the split socket. A rib 17 on the plug entering groove 18 in the socket holds the plug against escape when the socket is closed. This plug gives a smooth end to the handle when it is desired to use the tool with a short handle for digging or when the edge is used as a knife or hatchet. A cork which the soldier may carry in his pocket may be substituted for plug 15.

The short handle 4 may be hung to a suitable support on the soldier's belt, and the blade 1 may be placed in a pocket in the haversack when the tool is not in use, or other convenient disposition may be made of the tool, which, with its shank, weighs less than a common bayonet.

By actual test it has been found that a blade 1 of well-tempered steel will deflect a bullet at the range of a few yards without injury to said blade, the blade being held in inclined position, as on a cap, as will now be explained.

The intrenching-tool described will enable a soldier to excavate a hole large enough to conceal his body in average soil in a very few minutes. When so concealed, the soldier is very well protected against hostile fire; but he must expose his head above the excavation every time he seeks to fire at the enemy, and it is a known fact that where troops fight in intrenchments a large proportion of wounds received are head wounds, and hence often fatal wounds.

The blade 1 may be attached to a cap or head-covering and will serve as a very effective head-shield against fire from the front.

To the vizor A of a common military cap B I attach a metallic cup 20. This cup has an internal screw-thread, into which the shank of blade 1 may be screwed. By preference the cup 20 is pivoted to a short metallic link 21, which link is in turn pivoted to a small plate 22, which plate can be held by rivets to the cap-vizor, a small plate 24 being used as a reinforce below the vizor. The use of link 21 permits cup 20 to be adjusted in two positions, as shown in Figs. 5 and 6. When the blade 1 is attached to the cup 20 in its turned-back position, Fig. 5, the blade extends higher above the head of the wearer and the weight of the blade has less tendency to tilt the cap forward, (see dotted lines, Fig. 4;) but where the firing is at close range it is desirable to get as much protection as possible to the head, and the cup is turned forward, bringing the blade or shield 1 into the position shown in Fig. 4, full lines.

To conveniently apply the blade 1 to the cap, the cap is held in the left hand, as shown in Fig. 7, with cup 20 between the fingers, and the threaded shank 2 can then be readily entered and screwed home in cup 20. Elastic cords C, three or four in number, are secured to the cap near the top of the crown and nor-

mally pass across the top of the cap. When the blade 1 is applied to the cap, one of these cords C is stretched over the blade, and this holds the blade to the cap with sufficient firmness. Should one of these cords be broken or shot away by a deflected bullet, another cord is available.

Should the intrenching-blade 1 become bright by use, so as to attract attention, the convex side can be darkened by smoking or by smearing with dirt or mud, or a piece of dark cloth or paper may be applied and held down by the elastic cord C.

The intrenching-tool described is quite efficient as a bayonet, is useful as a knife or hatchet, as well as for intrenching, and gives the soldier a very efficient head protection against the fire of small-arms. The soldier's cap or head-covering serves as a cushion to deaden the blow of the bullet, and the inclined position of the shield causes it to glance or deflect a bullet with much less shock to the wearer of the shield than would occur from stopping a bullet.

The blade 1 may be attached to a hat by an elastic band or cord connected to or passing around the blade and around the hat-crown, or other convenient means for attachment may be used.

What I claim is—

1. An intrenching-blade of substantially the form of a concave spade, a military cap, and means for holding said intrenching-blade on said cap, in combination, substantially as described.

2. In combination with a cap and its vizor, a metallic cup connected to said vizor, and the intrenching-blade having its shank secured in said cup, substantially as described.

3. In combination with a cap and an intrenching-blade connected to the front thereof, an elastic clamp for retaining the blade to the crown of the cap.

4. In combination with a soldier's head-covering, an intrenching-blade removably secured to the front of the said head-covering in inclined position, substantially as described.

5. In combination with a cap-vizor, a link pivotally connected to said vizor, a metallic cup connected to said link and having means for the attachment of the shank of an intrenching-tool thereto, and the intrenching-tool having a shank for attachment to said cup, said tool having a concave blade to extend in inclined direction over the crown of the cap, all substantially as described.

6. In combination with a military head-covering, a concave metallic intrenching-blade, and means for attaching said blade in inclined position to the crown of the head-covering, substantially as described.

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

JULIUS D. RHODES.

Witnesses:

E. A. PAUL,

W. A. BARTLETT.