

No. 626,402.

Patented June 6, 1899.

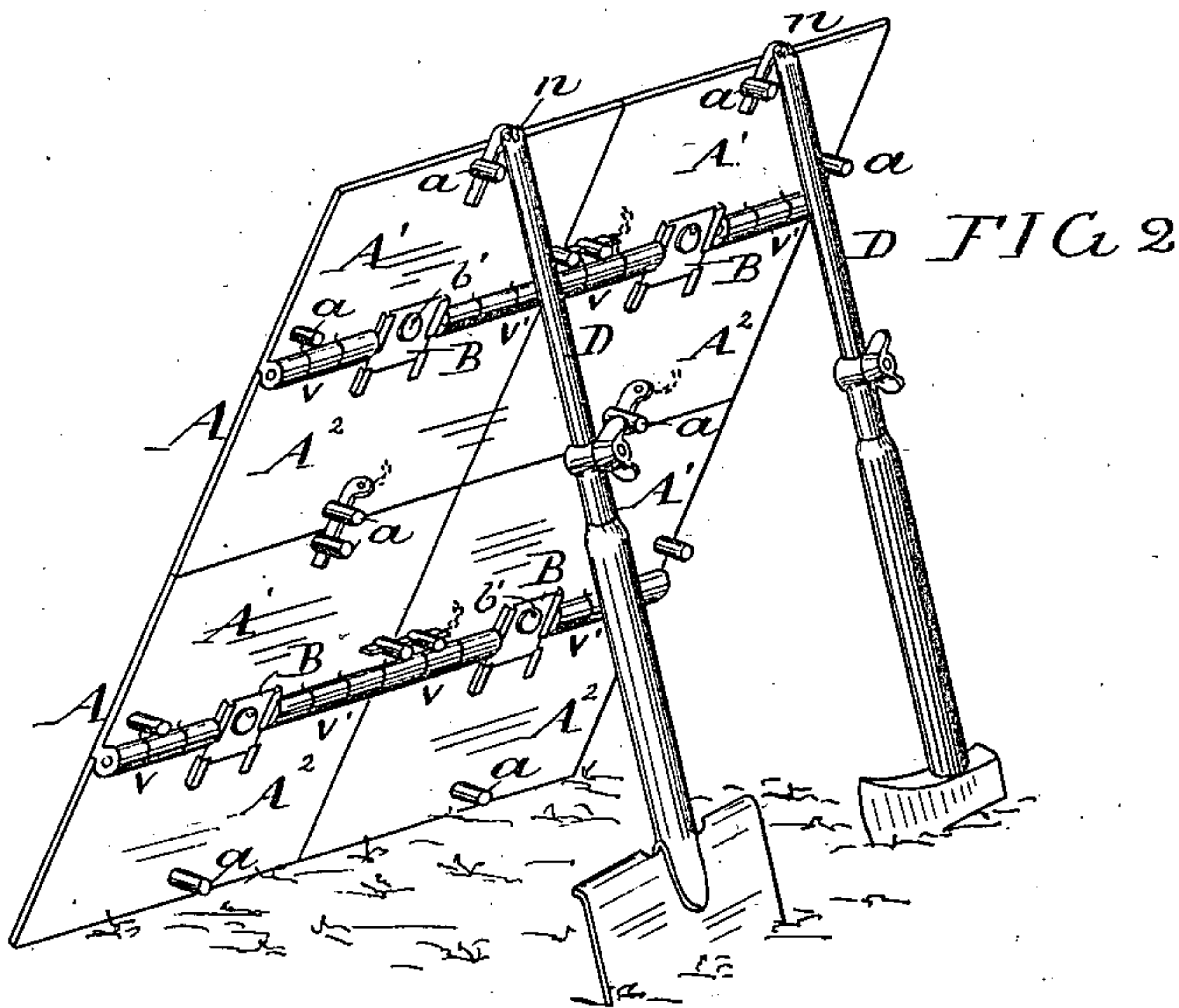
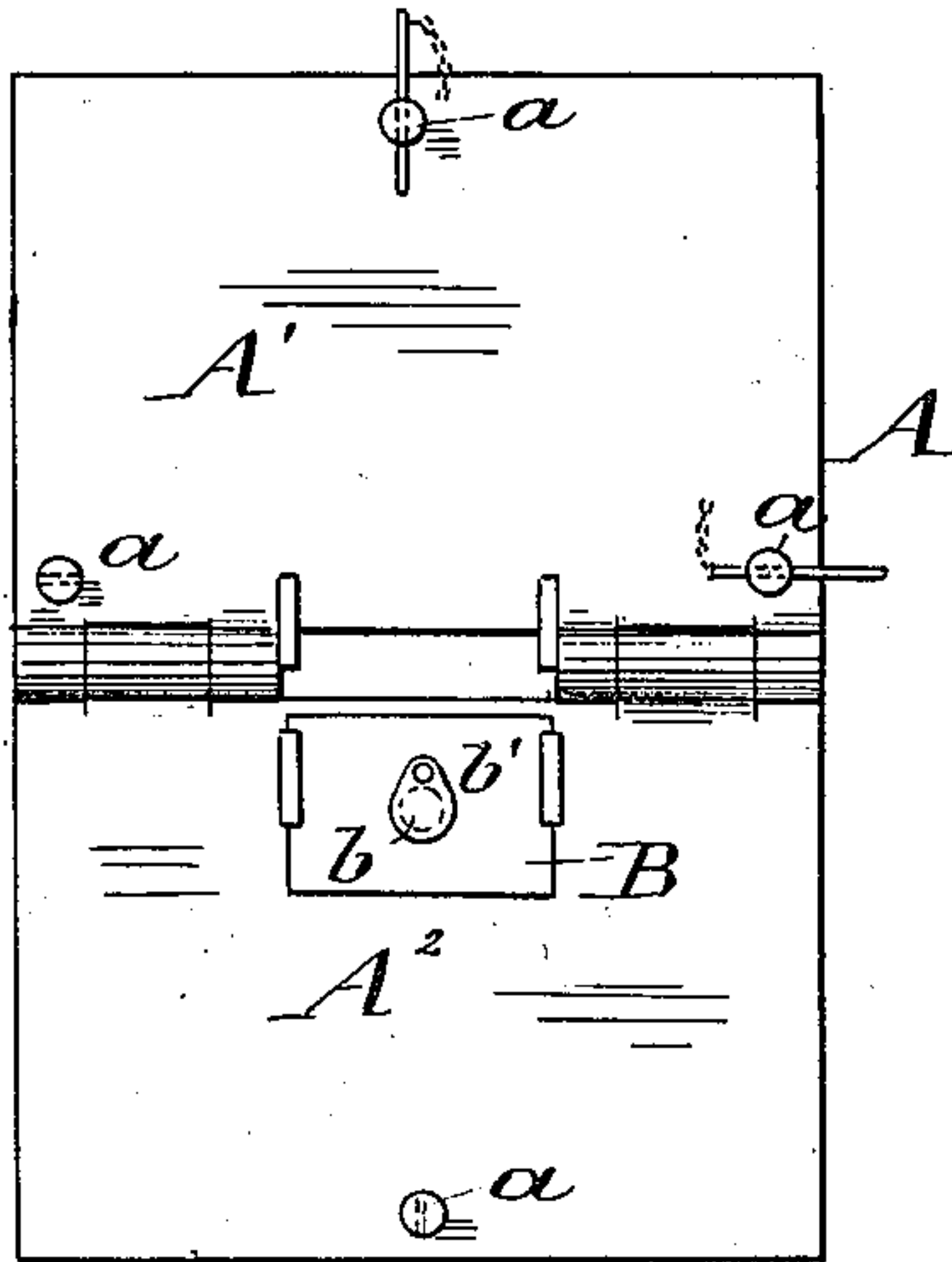
J. ZINN.
BUILT UP SHIELD.

(Application filed Apr. 4, 1899.)

(No Model.)

2 Sheets—Sheet 1.

FIG 1



Witnesses
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2 Sheets—Sheet 2.

FIG 3

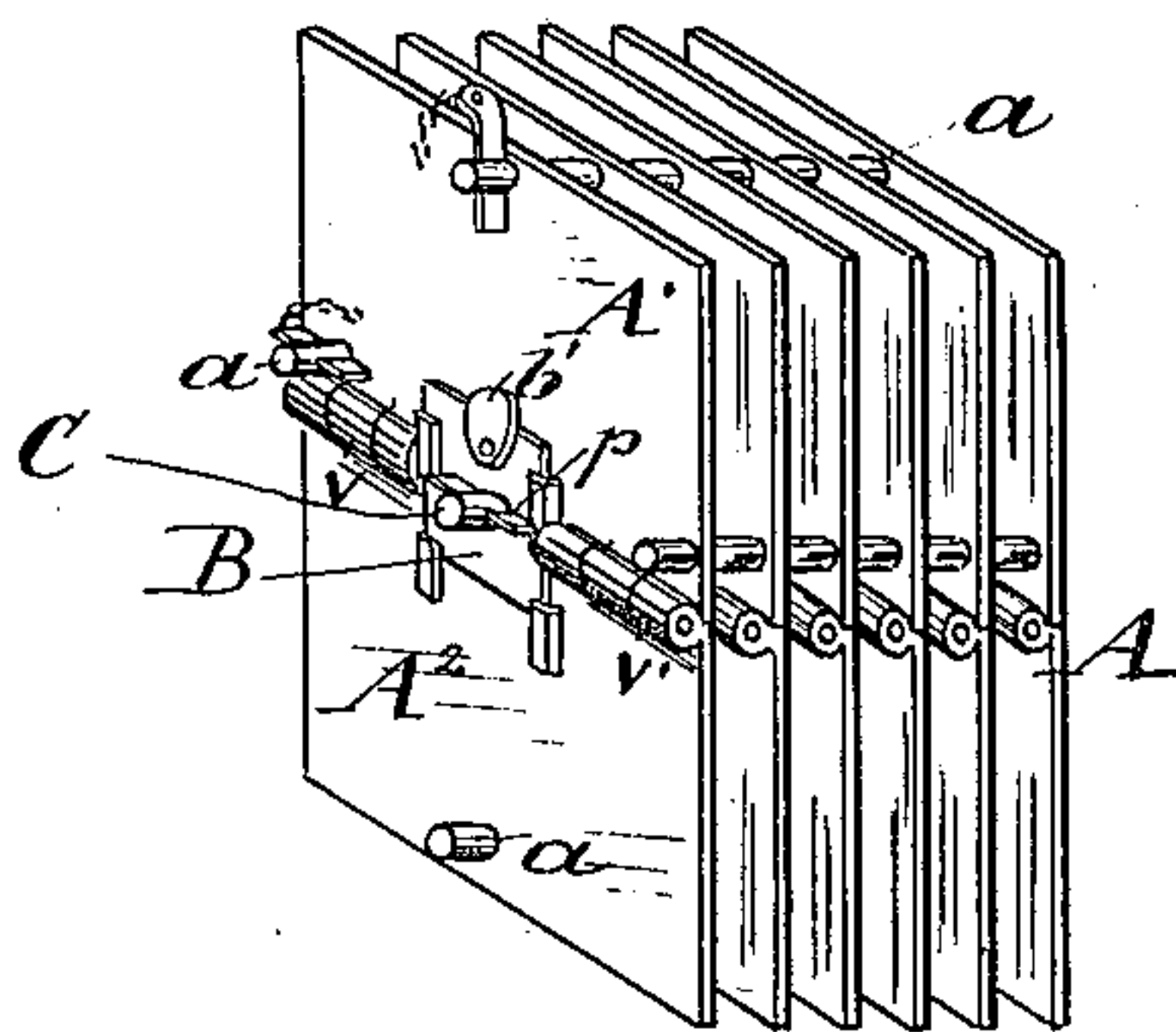


FIG 6



FIG 7

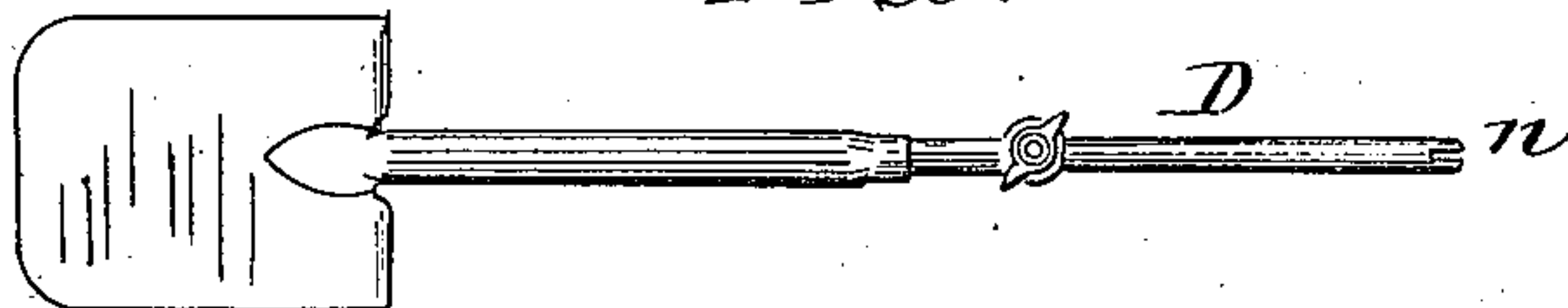
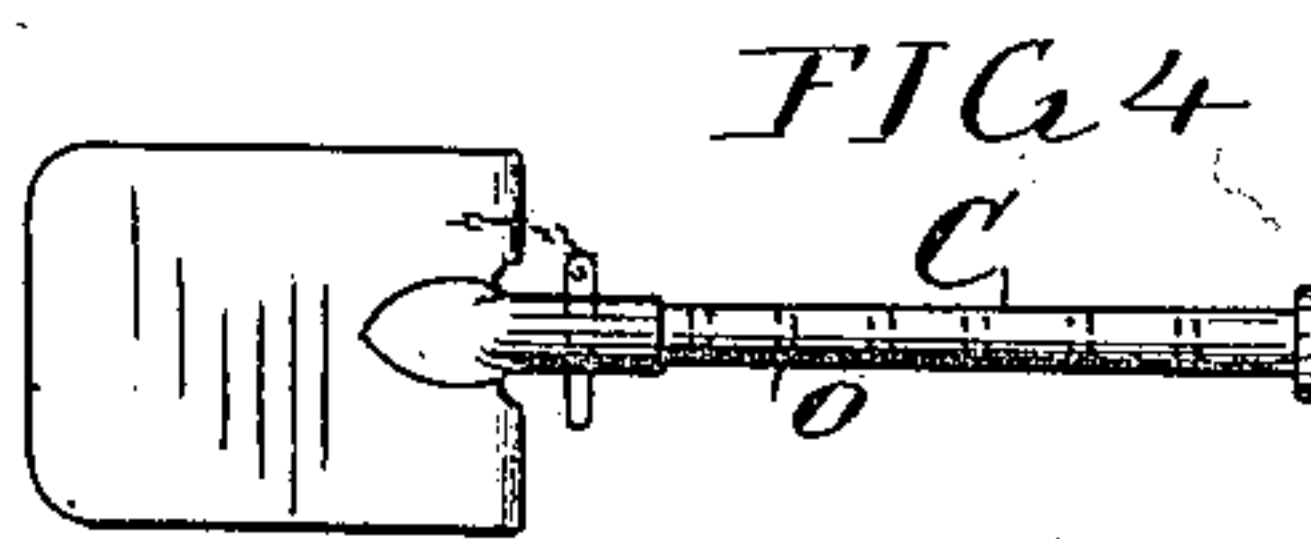


FIG 8



Witnesses
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UNITED STATES PATENT OFFICE.

JENS ZINN, OF COPENHAGEN, DENMARK.

BUILT-UP SHIELD.

SPECIFICATION forming part of Letters Patent No. 626,402, dated June 6, 1899.

Application filed April 4, 1899. Serial No. 711,757. (No model.)

To all whom it may concern:

Be it known that I, JENS ZINN, architect, residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Built-Up Shields Chiefly for Military Purposes; and I do hereby declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in built-up shields chiefly for military purposes, and is particularly applicable for use by the infantry.

The main object of it is to enable a strong and firm shield of any desired size and thickness to be readily built up from two or more complete single shields and as readily dismounted when required and which shall be easy to erect, transportable, and not fall to pieces when overturned, a further object being to so construct the component parts that they form intrenching or other useful implements for use when not required to form part of a shield, and thus obviate the necessity of carrying special tools for this purpose.

According to my invention the shield is composed of one or more single shields, which is or are complete in itself or themselves.

The shields may be constructed to form a miner's or infantry shield, wall, or a piece of armor, which may be of any desired size and thickness. These combination-shields possess the great advantage of being transportable—i. e., may be readily removed and fixed at different places, according to requirements or as desired, without necessitating the whole shield being taken to pieces for that purpose.

The characteristic feature of this shield is the rigid connection of the individual shields, as it is this rigidity which attains the desired aim—viz., to form from a greater or smaller number of identical shields (single-man shields) a miner's shield or a wall of armor of any desired size and thickness and that may be easily transported as a whole without falling to pieces and again erected as one piece should it accidentally or otherwise become overturned.

This invention as arranged for an infantry-shield is illustrated in the accompanying drawings, in which—

Figure 1 shows a rear elevation of a single shield. Fig. 2 shows a miner's shield, composed of four single shields and two supporting struts or legs. Fig. 3 illustrates how a number of single shields may be placed and fixed one behind the other to attain the desired thickness. Figs. 4 and 5 show intrenching implements—spades, pickaxes, axes, &c.—with shafts, as represented in Fig. 6. Fig. 6 is the pin or bar which serves to hold the plates of armor in position together, as illustrated in Fig. 3. Figs. 7 and 8 represent plan and side elevation, respectively, of an intrenching implement with an elongated shaft as such implement is used when it is to form the support for an infantry-shield. (See Fig. 2.)

The shield A, Fig. 3, which is made of such material and such thickness as to withstand modern musket-shots, bullets, shrapnel, &c., is composed of two parts or plates A' A², hinged together at *v* and *v'*, so that the shield may be folded together and opened—i. e., to form a larger or smaller angle. The aperture between the hinges *v* and *v'* forms the embrasure, which is sufficiently big to permit the man behind the shield a free aim. When the said embrasure is not required for use, it may be closed or covered by the lid B, the latter serving simultaneously for staying the shield and preventing same from collapsing. A round opening *b* is provided in the lid B, which, if required, may be closed by a movable cover or slide *b'*. This opening serves for the reception of the shaft of the intrenching implement, if same is employed, to hold together the various component shields placed one behind the other, as shown in Fig. 3.

In order to be able to connect a greater or smaller number of these single shields to obtain a rigid and durable miner's shield or a piece of armor, each of the individual shields is provided with connecting-studs *a*, which serve also as distance-pieces when the shields are placed one behind the other to form a wall. The connecting-studs *a* have holes or slots in them for the reception of wedges or bolts. After the shields are placed together in position, so that the connecting-stud *a* of the one shield is opposite the connecting-stud *a* on the adjacent shield, these wedges or bolts are passed through the holes or slots in each pair of the studs *a*. The said wedges or bolts

may be secured to the shields by means of small chains. By means of these connecting-studs, with their wedges or bolts, it is obvious that a durable and rigid miner's shield of any desired size may be produced quickly and easily, and which is removable at will, stands of itself, and if overturned will not fall to pieces and, on the other hand, may be again separated into its component parts with facility. Such a shield may be supported by intrenching implements—spades, pickaxes, axes—which possess a shaft C, (see Figs. 4 to 6,) of tubular cross-section, in order to receive elongating bars D. (See Figs. 2, 7, and 8.) The top ends of these elongating bars are so constructed at *n* that same may be connected to the connecting-stud *a* near the top edge of the shield by means of suitable wedges or bolts. After fixing the shaft to the desired length it will prop up or support the shield, as shown in Fig. 2. If it is intended to produce a thick shield or wall suitable for protection against heavier projectiles, it is simply necessary to arrange the individual shields A one behind the other, as in Fig. 3, and to connect them together by means of a shaft of an intrenching implement, which passes through the openings *b* in the cover-plates B of the embrasures. A row of apertures or slots *v* is provided in the shaft, which apertures are arranged as far apart from each other as the length of the connecting-studs *a*—i. e., the distance separating two adjacent shields and the thickness of one shield. Any desired number of shields may be arranged one behind the other. After the shaft C has been passed through the opening *b* a wedge *p* (see Fig. 3) is passed through that slot in the shaft C corresponding to the number of shields united together, whereupon the construction will be quite rigid and firm, as desired. It is obvious that similarly built-up shields may be placed at the top and bottom, as well as at the sides, of such a piece of armor, the various complete shields being fastened together by means of the connecting-studs *a* and wedges or bolts passed through a pair of these studs in the way above described. This will insure a rigid connection, so that a rigid wall of any desired size and thickness may be thus obtained. If such a wall be required for covering field ordnance, machine-guns, &c., gaps can be left in the wall in a simple manner—namely, by leaving out one or more shields at the places desired.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In shields for military and other purposes the combination of means for enabling the single shields to be temporarily united to form a shield of any desired size and thickness, consisting in providing each half of the single shield with the complementary halves of a hinge, an embrasure between the hinges, guide-cleats on each side of the embrasures, a sliding lid fitting under said cleats, to cover the embrasure and at the same time give the necessary rigidity to the two united halves, a hole in the said lid, fixed studs adapted to serve both as distance-pieces and as means for connecting the upper ends of the props, or legs, by which the shield is supported, the said prop being formed into an intrenching or other useful implement, substantially as and for the purposes described and shown.

2. A shield for military and other purposes consisting of a plate in two parts hinged together, an embrasure between the two halves of the hinge, guide-cleats on either side of the embrasure, a sliding lid fitting under the said cleats and covering the embrasure, a hole in said lid, distance-studs adapted also to serve as means for connecting a prop or leg to support the shields when erected and the said prop or leg, all substantially as described and set forth.

3. The combination with a shield for military and other purposes, consisting of a plate in two parts hinged together, an embrasure between the two halves of the hinge, guide-cleats on either side of the embrasure, a sliding lid fitting under the said cleats and covering the embrasure, a hole in said lid, studs adapted to serve both as distance-pieces and as means for connecting a prop or supporting-leg with the shield, of a prop or supporting-leg fashioned into an intrenching or other useful implement.

4. In a shield for military and other purposes the combination of two or more shields each complete in itself and consisting of a hinged plate, an embrasure, guide-cleats, a sliding lid to cover the embrasure, a hole in said lid, studs serving both as distance and connection studs, and legs or props for supporting the shield, all constructed, operated, serving, substantially as and for the purposes described and set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JENS ZINN.

Witnesses:

THEODOR HOLM,
OTTO WETZEL.