

(No Model.)

S. BOYTON.
PICK OR LIKE TOOL.

No. 546,505.

Patented Sept. 17, 1895.

FIG. 1.

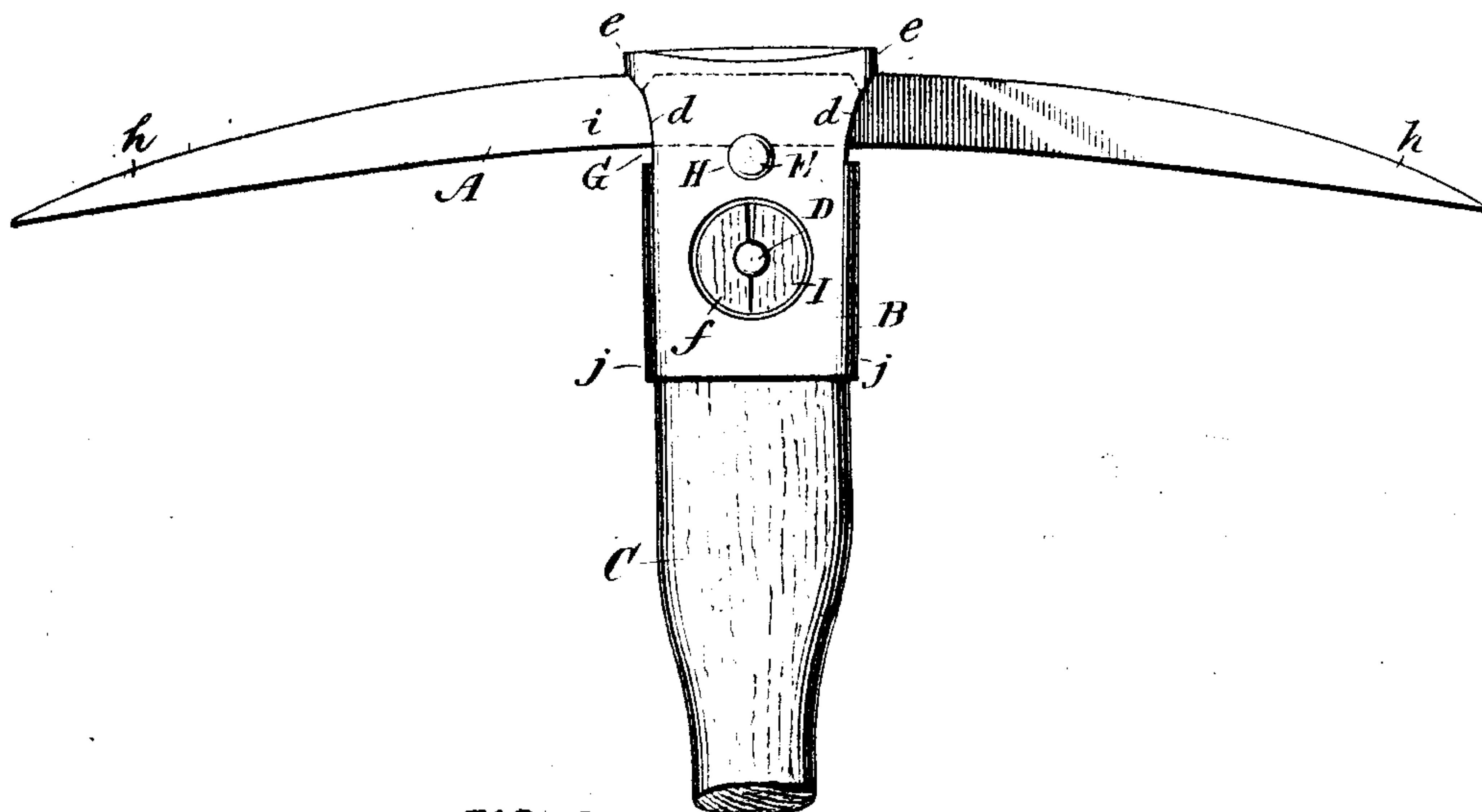
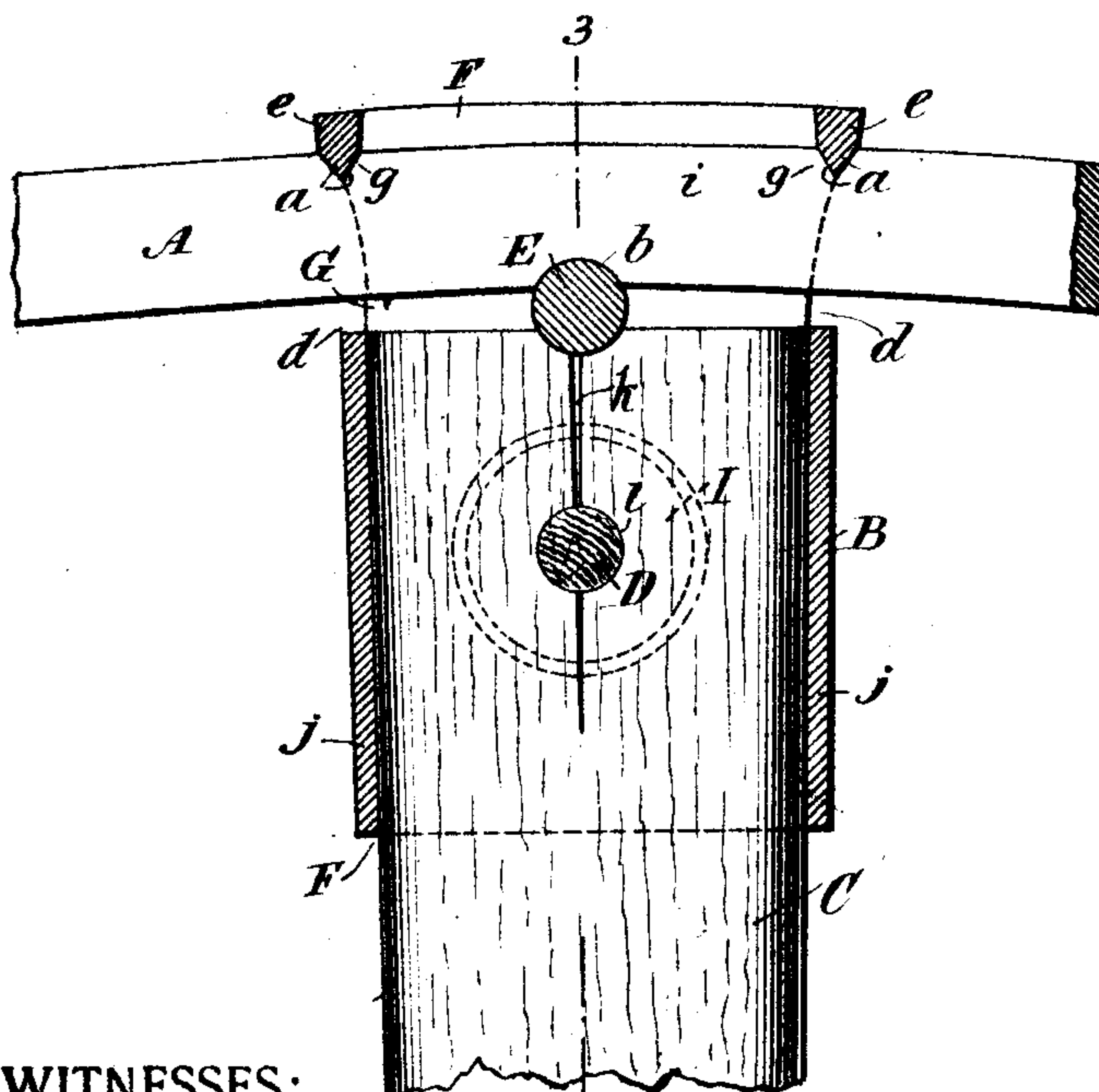


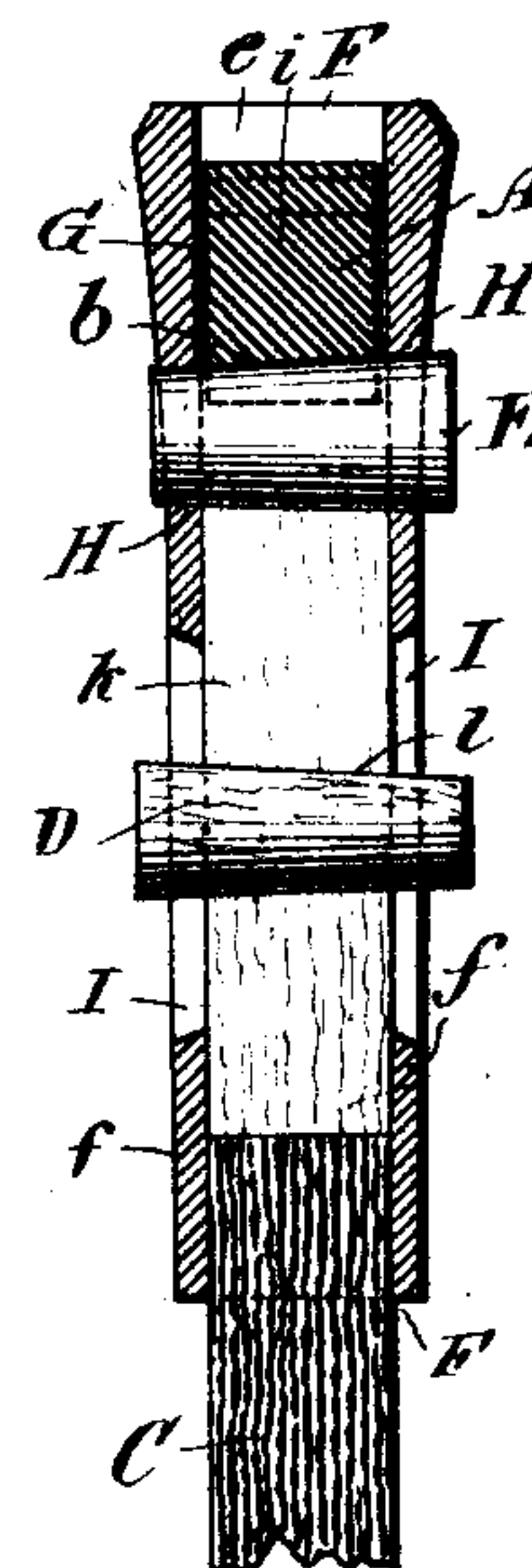
FIG. 2.



WITNESSES:

Fred White
Thomas J. Wallace

FIG. 3.



INVENTOR

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UNITED STATES PATENT OFFICE.

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PICK OR LIKE TOOL.

SPECIFICATION forming part of Letters Patent No. 546,505, dated September 17, 1895.

Application filed November 26, 1894. Serial No. 529,933. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL BOYTON, a citizen of the United States, residing in Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Picks and Like Tools, of which the following is a specification.

This invention relates to picks and like tools, and particularly to such implements which have a socket-piece, a removable handle applied thereto, and a removable blade, arm, or point carried by said socket-piece, and aims to provide an improved device of this character. Heretofore various picks have been constructed with separable blades or arms, socket-pieces, or heads and handles.

In carrying out the preferred form of my present improvement I construct the socket-piece with a longitudinal socket extending entirely through it and receiving the butt-end of the handle and with a transverse socket extending entirely through it at its head or outer end in the direction of its longer diameter and corresponding in width with the other socket, through which passes the center of the blade or arm-piece, with projections at the inner head edges of the latter socket, a transverse wedge-hole in the line of this socket, and an enlarged transverse wedge-aperture intermediate of its ends, and I construct the blade or arm-piece on its outer edge with notches or shoulders engaging with the points or shoulders at the head of the socket-piece, with a wedge surface or recess on its inner edge intermediate of these shoulders and coinciding with the wedge-socket adjacent thereto, whereby a wedge driven through said socket and engaging said surface will hold the blade in position with its shoulders in engagement with those of the socket-piece, and I provide a handle having a split butt-end and a wedge-aperture coinciding with that in said socket-piece, and I provide tapering wedges, the one entering said wedge-socket in one direction and engaging said blade, and the other of less diameter than the diameter of said wedge-aperture entering the wedge-hole in said handle in the opposite direction to the direction of entry of the other wedge and projecting at its end or ends into the space within said aperture. In this construction the concussion incident to the driving of

one wedge in one direction tends to move the other wedge in the other direction and thereby tighten it, and either may be driven sufficiently tight to prevent accidental loosening without impairing the tightness of the other. The blade or point-arm may be removed speedily and easily by removing its wedge, and the head or socket piece can readily be separated from the handle after withdrawal of the handle-wedge by the insertion of a punch or other implement into the open head end of the socket-piece to push or drive the handle therefrom.

In the accompanying drawings, which show the preferred form of my invention as applied to a pick, Figure 1 is a fragmentary side elevation of my improved pick. Fig. 2 is a similar view on a larger scale, showing the socket piece or head in longitudinal section on the line of its longer diameter and the wedges in cross-section, and Fig. 3 is a transverse section cut on the line 3 3 in Fig. 2 in the direction of the shorter diameter of the head.

Referring to the drawings, let A indicate the blade of the pick; B, the socket piece or head thereof; C, the handle thereof; D, the handle-wedge; E, the blade-wedge; F, the handle-socket; G, the blade-socket; H, the wedge-sockets for the blade-wedge; I, the wedge-apertures for the handle-wedge; e, the head end of the piece B; a, the shoulders or points thereon, and g the reciprocal shoulders on the blade A.

The blade A may be of any suitable or usual construction for use with picks or like tools. That shown is the usual arm, having pointed ends h h and intermediate shank i of rectangular cross-section, on the top edge of which the shoulders g are formed by V-shaped cross notches traversing the edge, and on the bottom edge of which intermediate of these shoulders a wedge-surface for the wedge E is provided, preferably by means of a transverse tapering groove b, having an arc-shaped wall.

The socket piece or head B may be of soft cast-steel, that shown being constructed of wide flat side walls f and curved end walls j, slightly flaring in their extension toward the head end of the piece at the edges and parallel between the side walls on their inner surfaces. According to my improved construction the socket-piece is traversed longitudi-

nally by the handle-socket F from end to end, which socket has a slight taper in the direction of its longer axis, being wider at the head end than at the other end of the piece; and transversely of this socket and in the direction of its longer axis the piece B is traversed from edge to edge by the blade-socket G, which is equal in width to the shorter diameter of of the handle-socket and finds its open ends in cut-away portions *d* of the edge walls *j* of the piece B. These cut-away portions constitute openings which in their depth equal or exceed the space necessary to permit the inward movement of the blade toward the handle until its shoulders *g* will pass beneath the shoulders *a* of the socket-piece.

The shoulders *a* are best formed as V-shaped projections on the bottom edges of cross-pieces *e* above the wall *j*, somewhat thicker than the latter, and connecting the head ends of the walls *f*.

The wedge-socket II for the blade-wedge E extends in the direction of the shorter diameter of the piece B, and is formed by two holes, the one in one of the flat walls *f* and the other in the opposite flat wall, concentric with the first, but of less diameter than the latter. The holes are preferably bored to a taper, and the wedge has a corresponding taper, to coincide with which the surface or groove *b* of the blade is preferably adapted. The socket II is formed partially in the line of the blade-socket G, and so disposed that when the wedge E is driven home against the blade it will force the latter outwardly until its shoulders engage those of the piece B, and it is firmly clamped therebetween and against the cross-pieces *e* at the head end of the socket-piece.

The handle-wedge aperture I is preferably formed by means of opposite concentric circular holes traversing the walls *f* intermediate of the socket II and the inner end of the piece B. These holes are of considerably greater diameter than the handle-wedge D, and permit easy access to the latter for driving it in or out of the handle, and also expose a considerable of the adjacent portion of the handle to view.

The butt end of the handle C is split at *k* and formed with a wedge-hole *l* opposite the aperture I, which hole is preferably tapered in opposite direction to the direction of taper of the wedge-socket II, and the wedge D for the handle is preferably a tapered wooden wedge of slightly greater length than the thickness of the piece B, whereby it can be readily driven home therein or out therefrom. It wedges the edges of the butt of the handle firmly against the edge walls *j* of the piece B. The handle when passed into the socket-piece is usually pushed therein until its end strikes the blade-wedge E after the latter has been driven home, which arrangement insures that the handle shall not interfere with the removal of the blade.

In operation the blade is removed from the

socket-piece by driving out its wedge, moving the blade inwardly until its shoulders are free from those of the socket-piece, and then moving it laterally thereof in either direction. To replace it it is passed into the blade-socket until disposed centrally therein, then moved outwardly until the shoulders engage, and then fixed in position by driving home its wedge. This may all be done when the handle is either connected with or disconnected from the socket-piece. To apply the handle its butt-end is inserted in the inner end of the socket-piece until it strikes the wedge E, care being taken to preserve its taper during such insertion opposed to the taper of said wedge. When so inserted the wedge D is driven into the wedge-hole *l* until tight. To remove the handle, the wedge is driven out of the hole *l*, and then if the handle will not free itself from its socket-piece the blade is removed and a punch or other tool inserted in the open head end of the socket-piece until it bears against the butt of the handle, whereupon the latter can be driven out by driving the punch in. Any of these operations can be accomplished very quickly and easily and without the use of any special tools or the exercise of any particular skill.

It will be seen that my invention provides improvements in picks or like tools which can be variously and advantageously availed of, and that when used the blade of the tool can be removed at will, either for sharpening, repair, or the substitution of other blades, as circumstances require. The handle may be separated readily from the socket-piece even when its butt-end alone remains therein, thus avoiding the necessity of burning out a butt when the handle has been broken off at the inner end of the socket. The facility with which both the handle and blade may be separated permits the use of different blades and different handles with the one socket-piece.

It will be understood that the invention is not limited to the exact features of construction and arrangement set forth as constituting its preferred form, but that these may be modified in certain respects, as circumstances or the judgment of those skilled in the art may dictate, without departing from the essential features of the invention.

The disposition of the shoulders *a* at the outer sides of the piece B and the wedge E intermediate of and equidistant from these shoulders gives a connection between the blade and piece at three points, whereby a firm seating of the blade in the piece is insured. With the round wedge or any curved or rocking wedge surface on the inner edge of the blade the latter can rock on the wedge until its final position against the shoulders is reached.

What I claim is—

1. In picks and like tools, a handle, a socket piece connected thereto, and a removable blade, said socket piece having a transverse blade socket at its outer end and should-

ders *a* at the outer ends of said socket, and a
 transverse wedge socket intermediate of said
 shoulders at the inner side of said blade, and
 said blade having shoulders *g* at its outer
 5 edge engaging said shoulders *a*, and a curved
 wedge surface at its inner edge opposite said
 wedge socket, and intermediate of and equi-
 distant from said shoulders, in combination
 with a wedge in said wedge socket having a
 10 convex face engaging said wedge surface of
 said blade and forcing the latter outwardly
 and its shoulders into engagement with those
 of said socket piece, whereby said blade can
 adjust itself around said wedge equally
 15 against said shoulders, substantially as and
 for the purposes set forth.

2. In picks and like tools, a removable han-
 dle, in combination with a socket piece B,
 having side walls *f*, edge walls *j*, cross-pieces
 20 *e*, longitudinal handle-socket F traversing
 its entire length, transverse bladesocket G at
 right angles to said socket F and extending

in the direction of its longer diameter, shoul-
 ders *a* on said cross-pieces, tapering wedge
 socket H at right angles to and in the line of 25
 said blade socket, and wedge apertures I in
 its walls *f* between said wedge socket and its
 inner end, the blade A in its socket G, hav-
 ing shoulders *g* on its upper edge engaging
 said shoulders *a*, and wedge surface *b* on its 30
 lower edge, the tapering wedge E in said wedge
 socket engaging said wedge surface and forc-
 ing said blade outwardly, and the wedge D
 of less size than said wedge apertures and
 traversing said handle and the latter, sub- 35
 stantially as and for the purpose set forth.

In witness whereof I have hereunto signed
 my name in the presence of two subscribing
 witnesses.

SAMUEL BOYTON.

Witnesses:

W. GIERLINGS,
 GEO. E. HOGG.