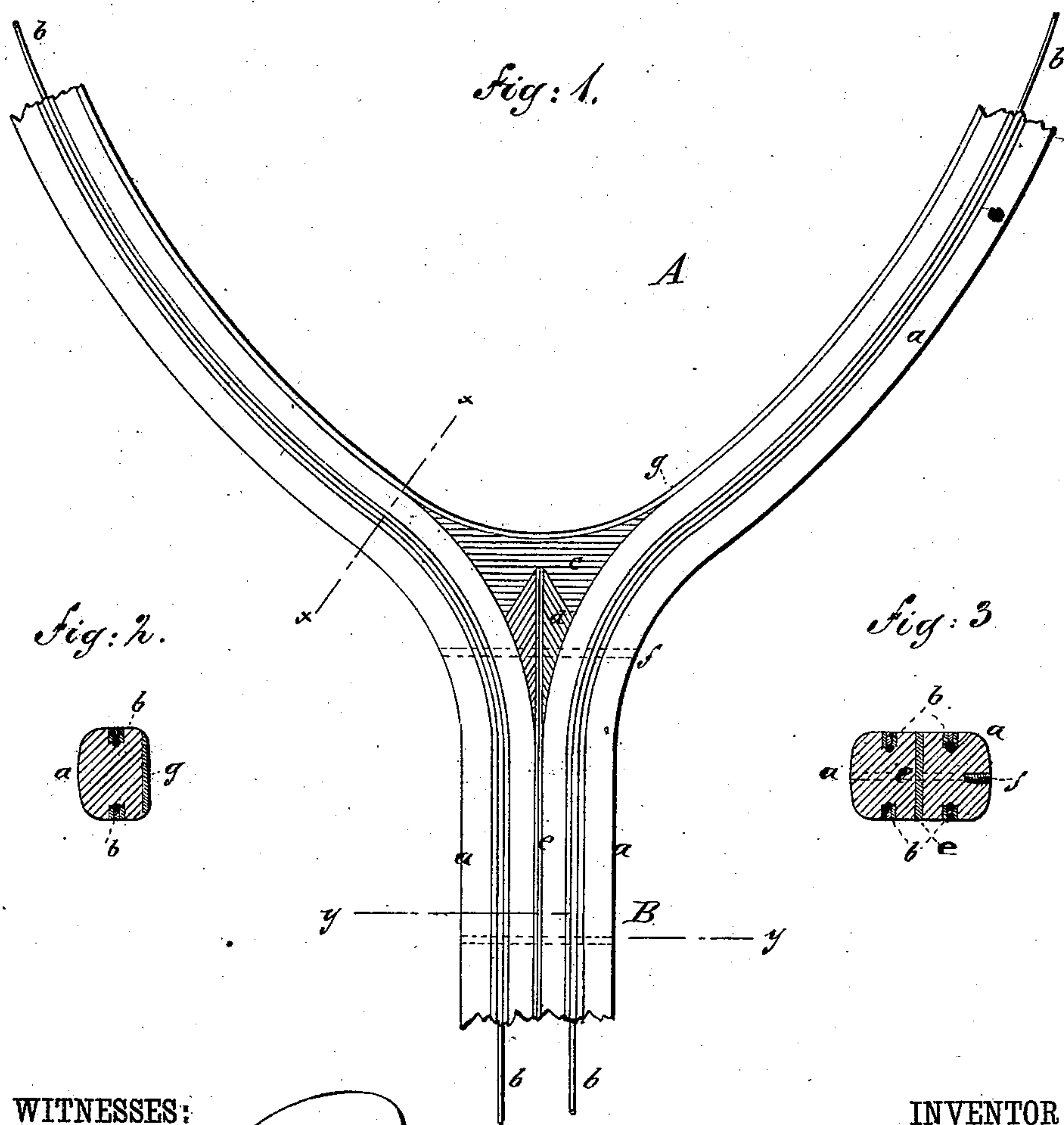


(No Model.)

C. KREUTZER.
Game Bat.

No. 236,045.

Patented Dec. 28, 1880.



WITNESSES:

Chas. Nida
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INVENTOR:

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UNITED STATES PATENT OFFICE.

CARL KREUTZER, OF NEW YORK, N. Y.

GAME-BAT.

SPECIFICATION forming part of Letters Patent No. 236,045, dated December 28, 1880.

Application filed May 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, CARL KREUTZER, of the city, county, and State of New York, have invented a new and useful Improvement in Game-Bats, of which the following is a specification.

My invention relates to bats having oval-shaped heads fitted with netting, used in lawn-tennis and other games, which bats have heretofore been made by bending one or more strips of wood to the required shape and securing the ends together to form the handle. Lightness and strength are the essential features of such bats, and heretofore those features have not been successfully combined, as bats made of the regulation weight frequently break or become loose at the crotch from the severe use to which they are subjected.

My invention consists in a bat formed by bending a piece of wood to the shape required, the strip having wire rods embedded into it at opposite sides throughout its length for the purpose of strengthening the bat; also, in gore-pieces which are fitted in the crotch in a peculiar manner to resist the strain and prevent disconnection at that point. These features are shown in the accompanying drawings, wherein—

Figure 1 is a face view of a bat constructed in accordance with my invention. Fig. 2 is a cross-section on the line *x x*, and Fig. 3 is a cross-section on line *y y*.

Similar letters of reference indicate corresponding parts.

A is the head or bowed portion of the bat, and B the handle.

The bow is formed by bending the strip *a* of wood to the shape required and securing the ends together by screw-pins *f* to form the handle. The strip *a*, before it is bent, is formed at opposite sides with a narrow groove, in which small iron or steel wires *b* are inserted and retained in place by strips of wood or other material cemented in the groove above the wire. These wires serve to strengthen the bat and give elasticity, so that a light bat can thus be produced with the required strength

and elasticity. The crotch of the head A is filled in by the wooden pieces *c d*.

I prefer to insert in the handle B, between the ends of strip *a*, a flat strip of wood, *e*, allowing the end to project into the crotch a short distance. The pieces *d* are then inserted at the sides of the projecting ends of *e*, and the pieces *d* secured by glue or cement and by the screw-pin *f*. The piece *c* is then inserted, and this is formed with a V-shaped recess that sets upon the similarly-shaped end of *d* to form a miter-joint. A thin strip, *g*, of veneer, glued to the inner side of head A, holds the pipe C more securely and strengthens the joint. The pieces *c*, *d*, and *e* are cut from the wood in such manner that when put in place the grain of each will run in a cross direction from the other. By this construction the pieces forming the filling at the crotch are mutually sustaining against wrenching and strain resulting from the use of the bat.

The head A is to be fitted with netting in the usual manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a game-bat formed by a strip of wood bent to the shape required, the wires *b*, inserted in grooves in the strip and secured by a filling of suitable material, substantially as and for the purposes set forth.

2. In a game-bat, the pieces *c d*, mitered together with the grain of the wood running in opposite directions and retained in place by the pin *f* through the handle and strip *g* at the inside of the head, substantially as shown and described.

3. In a game-bat, the flat strip *e*, secured between the two parts of the handle and extending into the filling pieces of the crotch, in combination with the filling-piece *d* and the pieces *a*, as and for the purposes specified.

CARL KREUTZER.

Witnesses:

GEO. D. WALKER,
WILLIAM KREUTZER.