

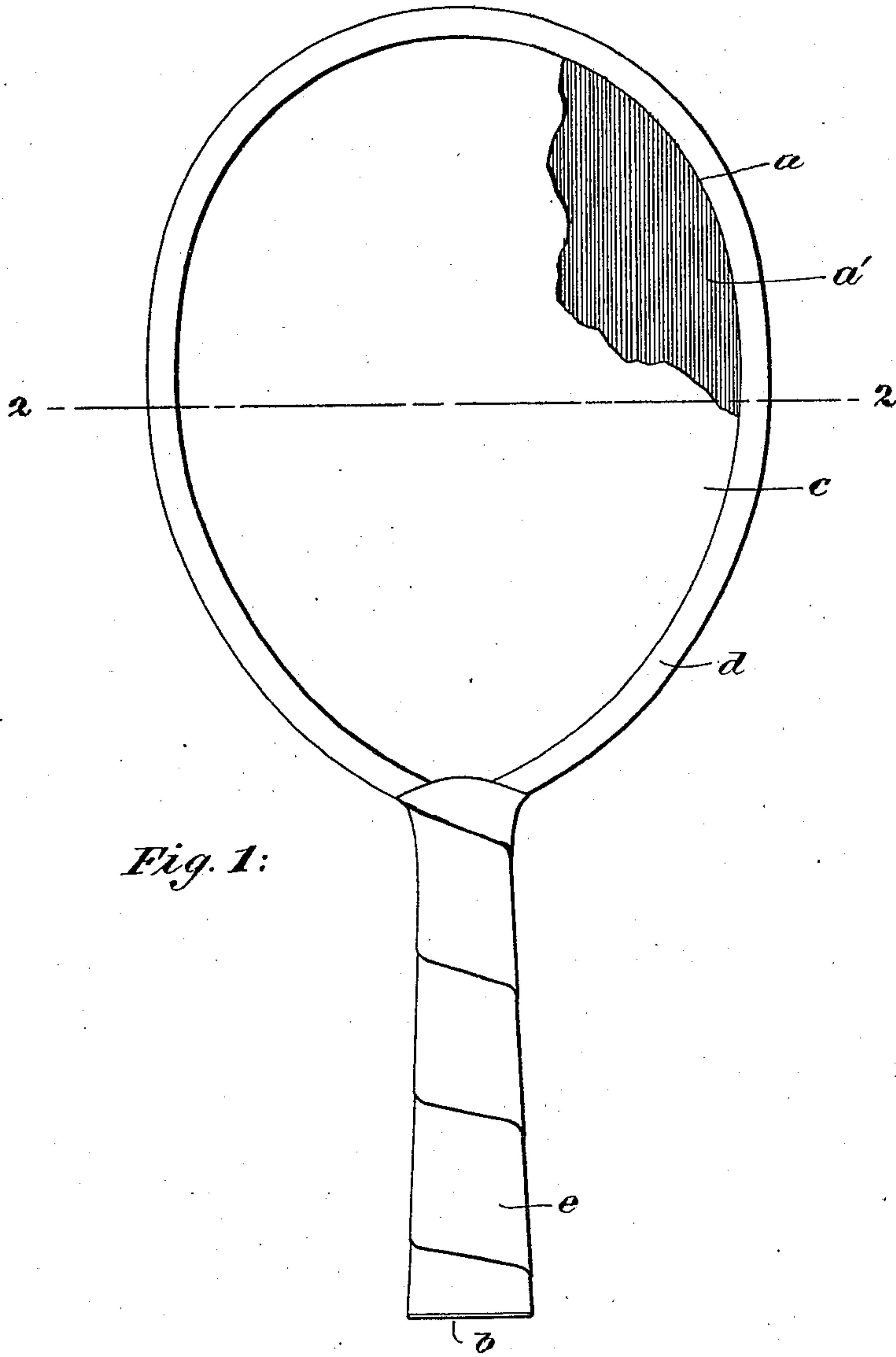
No. 711,424.

Patented Oct. 14, 1902.

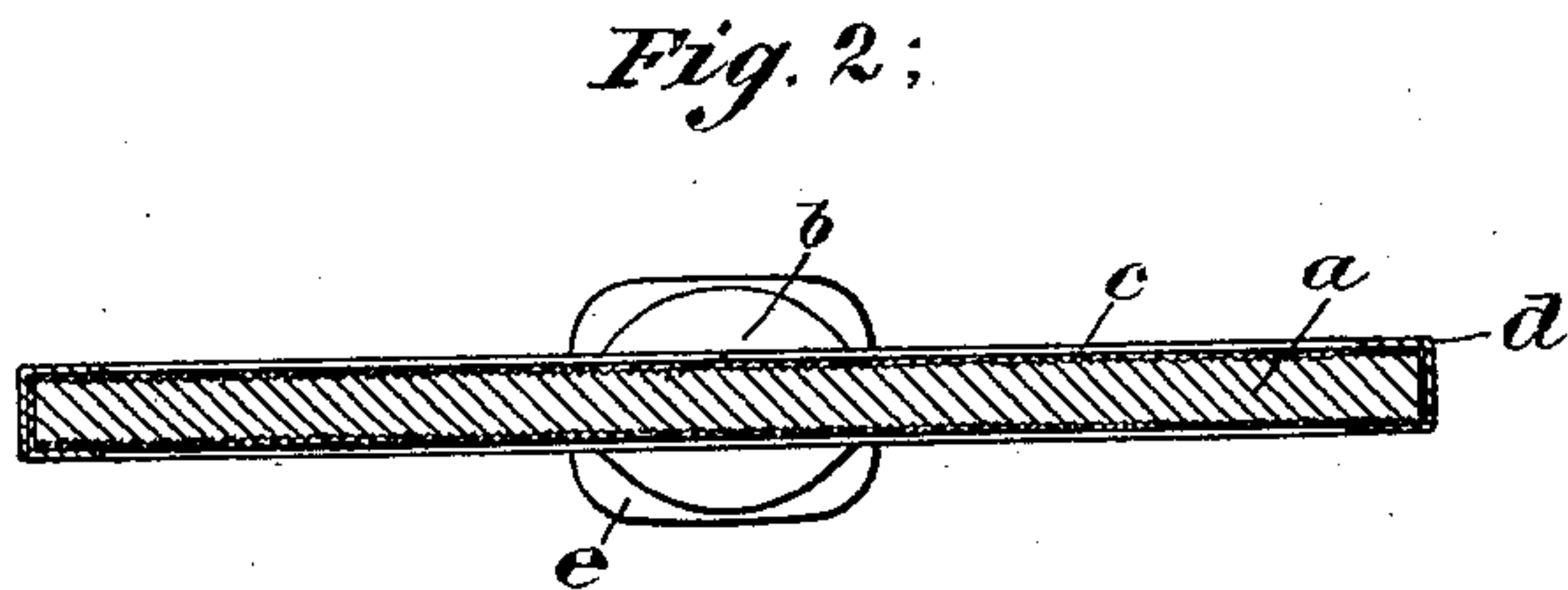
H. G. HIGGINS.  
GAME DEVICE.

(Application filed Aug. 4, 1902.)

(No Model.)



*Fig. 1:*



*Fig. 2:*

Witnesses,  
Ernest S. Emery.  
Thomas B. Booth.

Inventor,  
Henry G. Higgins,  
by Edmund L. Emery  
Atty.

# UNITED STATES PATENT OFFICE.

HENRY G. HIGGINS, OF CAMBRIDGE, MASSACHUSETTS.

## GAME DEVICE.

SPECIFICATION forming part of Letters Patent No. 711,424, dated October 14, 1902.

Application filed August 4, 1902. Serial No. 118,203. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY G. HIGGINS, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Game Devices, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention consists in an improved game device, and particularly in a novel form of playing-bat presenting improved and simplified features of construction.

In playing-bats such as are ordinarily employed for parlor tennis and other like games wherein use is made of a bat with a flattened face or racket it is desirable that the surface of the bat should present a certain frictional resistance to that of the ball, so that the latter when struck a glancing blow or one not directly normal to the face of the bat may be given thereby a twisting or rotary as well as a forward or progressive movement. It has heretofore been attempted to provide a surface suitable for this purpose in various ways, one of which, for example, has been to cement a strip of corrugated rubber on the face of the bat. Since the rubber thus employed, however, has an appreciable thickness, this method not only materially adds to the expense of this otherwise simple implement, but also increases the weight of the bat and tends to deaden or cushion the blow, which for many purposes should be sharp, such as would be given by a wooden or other hard and solid body. My invention provides the necessary character of surface without a substantially increased expense and without other disadvantages attendant upon the present forms.

My invention will be best understood from the following description of one specific embodiment thereof, while its scope will be particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a front elevation of one form of my improved playing-bat, showing the face thereof with the enveloping coating partially removed to show the corrugations on the surface; and Fig. 2 is a section of the same on the line 2 2 in Fig. 1.

The body or face *a* of the device or bat is made of any suitable material, preferably of wood, although my invention is not limited in this respect to any particular material. The handle *b* is also preferably of wood and may be attached in any desired manner to the body of the bat or may be integral therewith.

To obtain a suitable surface upon the face of the bat, I employ a thin film or membrane *c* of a material providing the requisite frictional properties, and for this purpose I preferably make use of rubber, which I apply in its crude or unvulcanized state in the following manner: A solution of crude rubber or caoutchouc of the desired consistency is prepared, in which the entire body of the bat is immersed. On withdrawal of the bat from this solution the rubber will adhere to the surface thereof, forming a thin evenly-distributed enveloping film or coating over the entire body of the bat. While in this state of adherence to the face or body of the bat this film of rubber is subjected to vulcanization, preferably by one of the so-called "cold" processes, such as the well-known "acid-cured" process. This film of rubber is represented at *c* in Fig. 2 with an exaggerated thickness.

Before coating the body of the bat as above described I may, and preferably do, form a series of corrugations *a'* or other suitable irregularities in the surface of the bat. This affords a better retaining-surface for the rubber or other material, and since the membrane readily conforms to all surface irregularities the exterior coating itself presents on its surface to a degree the same or equivalent corrugations or other irregularities, and thereby provides a more effective frictional surface.

For the protection of the film or membrane at the edges of the bat I preferably bind or envelop the same with a protecting-strip *d* of cloth, leather, or other suitable material extending entirely around the face of the bat. To afford a firm hold upon the handle, the latter may be wrapped with a strip *e* of some suitable material, such as leather or cloth.

The exact method which I have herein out-



lined need not necessarily be followed, for it will be evident that the liquid rubber may be applied to the bat without immersing the latter in the former and that other departures from the steps I have described may be made.

It will be evident that this form of bat permits a hard sharp blow to be delivered, since the coating of the rubber or other material may be so thin that the blow is not deadened. The amount of rubber required to coat a bat is slight and the method of application is simple and inexpensive, yet a surface is produced fully as effective as that of any bat now in use. By repeating the applications of the liquid rubber to the bat or other device the coating may be made of any desired thickness.

The method of applying the rubber and its subsequent vulcanization while in contact with the face of the bat not only gives a sound surface, but renders it so firmly adhesive to the body of the bat as to give the effect of a surface substantially integral therewith.

While I have shown my invention as applied to a bat, it is also evident that it is not limited thereto, but that it may be equally well applied to and embodied in other implements or features of game apparatus and still fall within the scope of my invention.

I claim--

1. A playing-bat having its face coated with an adhesive film of rubber.
2. A playing-bat having a body of hard material and a thin membranous coating of frictional material covering the face thereof.
3. A playing-bat having a corrugated surface and a thin membranous coating of rubber covering the same.
4. A playing-bat having a face with an irregular surface and a coating of rubber applied thereto and vulcanized thereon.
5. A playing-bat having a wooden body provided with corrugations on its face and a thin film of rubber applied to the surface and vulcanized thereon.
6. A playing-bat having a body of hard material and a thin membranous coating of rubber covering the face thereof.
7. A playing-bat or racket for table-tennis or other similar game, having a handle, a broad flattened playing-face, and a thin membrane of rubber vulcanized on said face to provide a frictional surface therefor.

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

HENRY G. HIGGINS.

Witnesses:

THOMAS B. BOOTH,  
FREDERICK L. EMERY.