

March 5, 1935.

L. MOUNTBATTEN

1,993,334

POLO STICK

Filed Aug. 6, 1931

Fig. 3

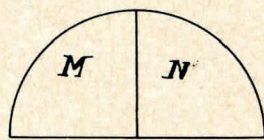


Fig. 4

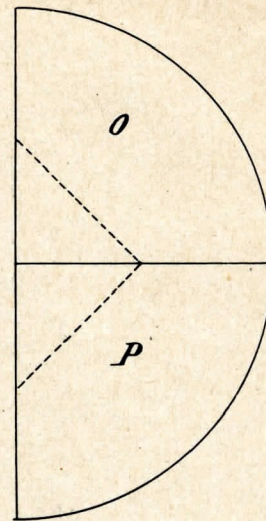


Fig. 1.

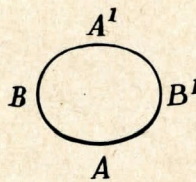


Fig. 2.

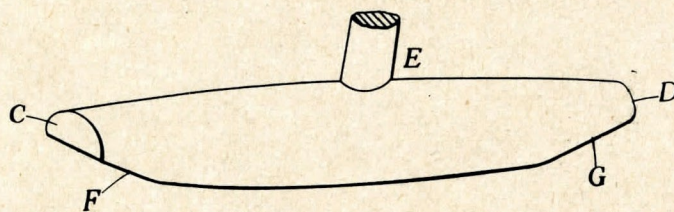
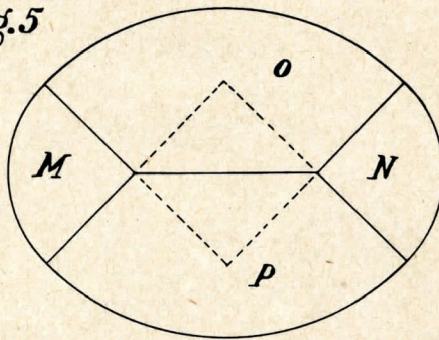


Fig. 5



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L. Mountbatten
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1,993,334

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UNITED STATES PATENT OFFICE

1,993,334

POLO STICK

Louis Mountbatten, London, England

Application August 6, 1931, Serial No. 555,552
In Great Britain March 5, 1931

5 Claims. (Cl. 273-67)

This invention relates to appliances for playing polo. According to this invention the head of the striking appliance or stick is made of improved shape so that a different or better contact with the ball in play is obtained than is usual hitherto. By this means the hit on the ball is improved and a better trajectory or flight or loft obtained in normal flight of the ball after a true hit. Instead of the head being made of conical cylindrical or cigar shape, i. e., with circular cross-section, the head is constructed with an oval or similar cross-section, the major axis or dimension being horizontal and the minor axis or dimension vertical when the ball is being hit normally. In a preferred form of construction the ratio of these dimensions is substantially 6 to 5. It is preferred to derive the oval section from four quadrants, the two hitting ends or faces being similar, i. e., derived from quadrants of equal radius, and the upper and lower quadrants may be of equal radius or not as desired. By keeping the hitting faces alike dimensionally and circular in section or cylindrical or cigar shaped in surface the fore and back hand hits on the ball are alike, and are the best obtainable with accuracy allowing for slight deviations from perfect strokes. The relative sizes of the quadrants used in building up the cross-sectional shape of the head naturally vary with the actual shape of head required. For example, if the major and minor dimensional ratio of 4 to 3 were required, a perfect oval section can be built up from two semicircles, the radii of which are in the proportion of 2 to 1. This is effected by cutting each semicircle to form a pair of quadrants and then cutting off the right angle or apex of each of the larger quadrants, so that they can be fitted together with the small quadrants to form an oval profile. Thus re-arranged these four pieces give an oval with rounded ends, similar and circular in shape, and with similar upper and lower parts also circular in shape and of twice the radius of the end parts, and with a vertical to horizontal measurement or head ratio of 3 to 4.

As long as the cylindrical form of the striking ends and the cylindrical form of the lower part of the head are not departed from and a ratio of less than unity is obtained for the ratio of vertical or minor dimension to horizontal or major dimension of the head, the striking head is considered to be the best constructionally possible in accordance with the invention.

In the drawing filed with this specification,

Fig. 1 shows a central cross-sectional view of a head, and

Fig. 2 a perspective view of a head constructed or shaped in accordance with this invention.

Figs. 3, 4 and 5 are diagrams illustrating more particularly the method of constructing one form of head.

Referring first to Figs. 3, 4 and 5, which illustrate the construction of a head having a major and minor dimensional ratio of 4:3, Fig. 3 shows a semicircle of one unit radius cut to form two quadrants M and N; and Fig. 4 shows a semicircle of two unit radius cut to form two quadrants O and P. The quadrants O and P are next cut out where indicated by dotted lines in Fig. 4, this cutting resulting in the mutilated quadrants having their radially directed sides equal in length to one another and to the radius of the smaller quadrants M and N, that is, equal to one unit. The sides of the mutilated quadrants O and P formed by this cutting are next placed in contact, as shown in Fig. 5, and the smaller quadrants M and N are finally placed, as indicated in Fig. 5, to complete the oval. The dotted lines in Fig. 5 serve to define the outlines of quadrants O and P as they would appear if they had not been cut, and thus to illustrate more clearly the purpose of the cutting.

In the same manner as indicated above, the oval ABA'B' shown in Fig. 1 is made up of parts of four quadrants and the ratio of AA' to BB' is 5 to 6. In one preferred form of construction the depth AA' at the centre of the head is $1\frac{1}{2}$ inches and the width BB' is $1\frac{1}{8}$ inches. The radius of the arc A and the arc A' is there $1\frac{13}{64}$ inches, and the radii of arcs B, B', which are equal, are $\frac{47}{64}$ inch respectively at this central section of the polo-stick head. The oval shape is maintained from the centre of the head to the tips or ends and the ratio of depth to width is preferably maintained also, and as shown in Fig. 2 the head is tapered both ways from the centre to the tips or ends. Part of the shaft E of the stick is shown broken away in Fig. 2 and the tips or ends CD are bevelled as shown at FG so that the ends C, D are partly oval with a straight edge where cut away.

In the practice of the game it has been found and demonstrated that a decided improvement in the trajectory of the ball in flight after a true hit can be obtained from the improved polo-stick when compared with that obtained from the use of any ordinary or other polo-stick. For example in comparing the heights of loft of the ball when hit with the improved stick and with an ordinary circular sectioned stick of make similar in all other respects excepting shape of head it has

been found that the effective heights are in the ratio of 25 to 10.

In the manufacture of sticks in accordance with this invention it is preferred to construct the heads in one piece and shape them in a copying lathe, using a standard one-piece head or a built-up or sectioned head as the model or copy. Any other method of construction may be adopted without departing from the invention. The shaft E of the polo-stick, as is usual, is socketed in the head and placed at the appropriate angle.

I claim:—

1. A head for a polo stick, made oval in cross section and having its major axis extending in the direction of the striking movement.
2. A polo stick, the head of which is made oval in cross section and having its major axis extend-

ing in the direction of the striking movement, the oval being derived from four circular arcs.

3. A polo stick as claimed in claim 1, in which the ratio of width to depth of the oval is substantially 6 to 5.

4. A polo stick having a head of oval cross section, with the major axis of the oval extending in the direction of the striking movement, and the oval tapering from the center toward each end.

5. A polo stick having a head of oval cross section, with the major axis of the oval extending in the direction of the striking movement, the oval tapering from the center toward each end, the ends being beveled on the lower side of the head.

LOUIS MOUNTBATTEN.

Fig. 1 shows a central cross-sectional view of a head, and

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In the same manner as indicated above, the oval ABA'B' shown in Fig. 1 is made up of parts of four quadrants and the ratio of AA' to BB' is 5 to 6. In one preferred form of construction the depth AA' at the center of the head is 1 1/2 inches and the width BB' is 1 1/4 inches. The radius of the arc A and the arc B, B', which are equal, are 4 1/4 inch respectively at this central section of the polo-stick head. The oval shape is maintained from the center of the head to the tips or ends and the ratio of depth to width is preferably maintained also, and as shown in Fig. 2 the head is tapered both ways from the center to the tips or ends. Part of the shaft E of the stick is shown broken away in Fig. 2 and the tips or ends CD are beveled as shown at FG so that the ends C, D are partly oval with a straight edge where cut away.

In the practice of the game it has been found and demonstrated that a decided improvement in the trajectory of the ball in flight after a true hit can be obtained from the improved polo-stick when compared with that obtained from the use of any ordinary or other polo-stick. For example, in comparing the heights of loft of the ball when hit with the improved stick and with an ordinary circular sectioned stick of make similar in all other respects excepting shape of head it has

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In the drawing filed with this specification, Fig. 1 shows a central cross-sectional view of a head, and

PETITION

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To the Commissioner of Patents 7965

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2 YOUR PETITIONER ~~X~~ Lieutenant-Commander The Lord Louis Mountbatten, K.C.V.O., Royal Navy, ~~is~~ a British subject, U. S. Patent Office

~~citizens~~ ~~subjects~~ ~~of~~

and residents of Brook House, Park Lane, London, W.1, England

334 whose post-office address ~~is~~ is Brook House, Park Lane, London, W.1, England,

prays that letters patent may be granted to ~~him~~ ^{him} for improvements in Polo Sticks

set forth in the annexed specification; and ~~they~~ ^{he} hereby appoints JOHN IMIRIE whose registered No. is of 600 F Street, W.W., Washington, D. C., his

attorney, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

Signed at London,

England,

this 23 day of July 1931

Louis Mountbatten

SPECIFICATION.

To all whom it may concern:-

Be it known that I, Lieutenant-Commander The Lord (Louis Mountbatten, K.C.V.O., Royal Navy, a British subject

residing at Brook House, Park Lane, London, W.1, England,

have invented certain new and useful Improvements in Polo Sticks

of which the following is a specification:-

IN TESTIMONY WHEREOF I affix my signature.

7976

Louis Mountbatten

OATH.

GREAT BRITAIN AND IRELAND.

LONDON, ENGLAND,

CONSULATE GENERAL OF THE UNITED STATES OF AMERICA.

SS.

ss.

Lieutenant-Commander The Lord Louis Mountbatten, K.C.V.O., Royal Navy

the above-named Petitioner, being sworn, deposes and says that he is a
~~citizen subject of~~ British subject,

and resident of Brook House, Park Lane, London, W.1
England,

that he verily believes himself to be the original, first, and sole, inventor of the
improvements in Polo Sticks

described and claimed in the annexed specification; that he does not know and does not believe
that the same was ever known or used before his invention or discovery thereof, or patented
or described in any printed publication in any country before his invention or discovery thereof,
or more than two years prior to this application, or in public use or on sale in the United States
for more than two years prior to this application; that said invention has not been patented
in any country foreign to the United States on an application filed by himself or his legal
representatives or assigns more than twelve months prior to this application; and that no
application for patent on said improvement has been filed by himself or his representatives
or assigns in any country foreign to the United States, except as follows:

Great Britain - No. 6864/31 - Dated 5th March, 1931.

Full name:

Louis Mountbatten

Sworn to and subscribed before me,

this 23rd day of July 1931.

John F. Claffey
JOHN F. CLAFFEY.

VICE CONSUL OF THE UNITED STATES
OF AMERICA AT LONDON, ENGLAND



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