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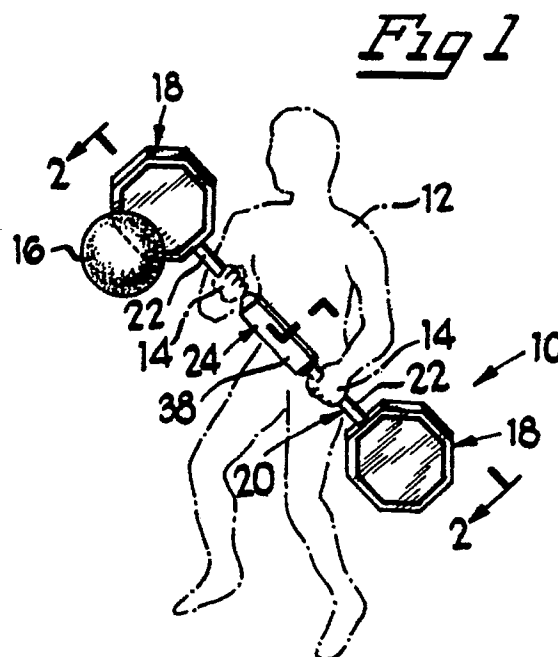
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54 **Game apparatus for hitting a missile.**

57 A staff (20) Having a paddle (18) mounted at each end of the staff with each paddle providing a generally planar surface (28) for hitting a ball (16) or other missile is provided for playing a sport or game. Between two spaced apart hand grip portions (22) of the staff there is a middle part (24) that provides at least one additional generally planar surface (38) for hitting the missile. The paddles may be hollow to reduce their weight and, in an alternative embodiment, permit the respective ends of the staff, to be telescoped into the paddles to adjust the length of the staff exposed between the paddles.



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# GAME APPARATUS FOR HITTING A MISSILE

This invention relates generally to apparatus for sports or games and more particularly to an apparatus for hitting a ball or other missile between contestants.

Numerous prior art paddle or racquet games such as ping pong, tennis, racquetball, badminton, squash, and lacrosse have long been popular pastimes and provided players with considerable challenge and entertainment. Smith, United States Patent 717,041 issued December 30, 1902 and Grosberg, United States Patent 3,674,266 issued July 4, 1972, each show a double-ended ball paddle without any middle part between the two paddles to provide an additional surface for hitting the ball or other missile. Kersch, United States Patent 3,606,322 issued September 20, 1971, discloses an elaborate structure in Figure 3 that contemplates striking a ball with five identical impact members in sequence. However, the intermediate multiple impact members of Kersch, being of the same relatively large size as the impact members at either end, obstruct rather than facilitate a player's vision and ability to maneuver the apparatus in a manner so as to bring any of the intermediate multiple impact members into play when an opponent hits a ball or other missile directly at a player's body and the player is unable to move either of the end impact members quickly enough to intercept the missile. The prior art also includes a number of martial sports or contests in which opponents use a staff or pugil stick held with both hands spaced apart on the staff or pugil stick to joust with each other as in London, United States Patent 3,336,029 issued August 15, 1967. Accordingly, there remains a need for sports, games or contests, and for an apparatus to use in such sports, games or contests, in which the direct physical contact between opponents of the martial contests is eliminated and an inanimate item such as a ball or other missile is hit using the apparatus provided, to propel the inanimate item between players.

The invention provides an apparatus for a player to use in a sport or game to hit an inanimate missile back and forth between players comprising: a pair of paddles; each of the paddles having a generally planar surface with a preselected peripheral shape and a predetermined size for hitting the missile; means connecting the two paddles and providing a single handle so that the player maneuvers both paddles at the same time; the means including two spaced apart portions; a middle part generally centrally disposed between the two spaced apart portions; the middle part presenting at least one substantially planar surface for hitting the missile; the at least one surface of the middle

part providing a substantially greater surface area than either of the two spaced apart portions; and the at least one surface of the middle part providing a significantly smaller surface area than either of the two paddles.

In the accompanying drawings:

FIG. 1 is a perspective view showing an embodiment of the present invention in use;

FIG. 2 is an enlarged scale view, partially in section, taken generally along line 2-2 of FIG. 1;

FIG. 3 is a fragmentary view taken generally along line 3-3 of FIG. 2;

FIG. 4 is a sectional view taken generally along line 4-4 of FIG. 2;

FIG. 5 is a view, similar to that of FIG. 3, but of an alternative embodiment; and

FIG. 6 is an enlarged scale, fragmentary sectional view of an alternative embodiment showing an adjustable connection between the staff and paddle.

Referring now to the drawings in which like parts are designated by like reference numerals throughout the several views, FIG. 1 shows an apparatus 10 which a player 12 is holding with both hands 14 spaced apart to hit a ball 16. As indicated by the general proportions of FIG. 1, ball 16 is of a size similar to that of a basketball or volleyball and preferably comprises a rubber or plastic, hollow air filled spherical shell. The present invention is not limited to a ball of any particular size or composition, nor for that matter to a ball, as another missile such as a giant shuttlecock, a bean bag, or any other similarly safe missile may be used.

Apparatus 10 includes a pair of spaced apart paddles 18 connected by means of an elongated staff 20 that provides a single handle so that both of the paddles are maneuvered at the same time. Staff 20 includes a pair of hand gripping portions 22 spaced apart by a middle, generally centrally disposed part 24. Each paddle 18 has a generally planar surface 28, of a predetermined shape and a predetermined size, on one side or face of the paddle, and another generally planar surface 28 of the same predetermined shape and size on the opposite side of the paddle. Paddles 18 are spaced apart by and connected to staff 20 such that surfaces 28 on one side or face of the paddles are lying in substantially the same plane while the opposed surfaces 28 substantially lie in another plane that is generally parallel to the first plane.

Opposed surfaces 28 are separated by an end wall 30 of each paddle 18 which, in the preferred embodiment, comprises eight substantially equal facets 32 to form a regular octagon defining the periphery of the paddle. While in the embodiment

illustrated in FIGS. 1-4, the periphery of the surface 28, as well as the periphery of paddle 18, is in the form of an octagon, they may be in the form of any other polygon or even a circle. In fact, the peripheries of paddle 18 and surface 28 may be of different shapes. Between wall 30 of paddle 18 and surface 28 is a recessed groove 34 which facilitates decorating surface 28 differently than the rest of paddle 18 by the use of paint or a decal or, alternatively, applying a contrasting paint or colored-strip in recess 34 to highlight surface 28.

Extending outwardly from one facet 32 is a collar 36 which is connected to staff 20 either by integrally forming staff 20 with paddles 18 or securing the staff to the paddle by a suitable adhesive, ultrasonic welding or the like. Elongated staff 20 is of a sufficient length to provide two separate spaced apart hand gripping portions 22 adjacent either end. As is best illustrated in FIG. 2, staff 20 is a generally cylindrical shaft. Generally centrally disposed, spacing apart hand gripping portions 22, is middle part 24. In the illustrated embodiment, middle part 24 has approximately the same length as the distance across the face of either paddle 18 from one facet 32 to an opposed facet 32.

Middle part 24 has a greater cross sectional area, and correspondingly provides a greater surface area than hand gripping portions 22 of staff 20. As is best shown in FIG. 4, in the embodiment illustrated in FIGS. 1-4, middle part 24 is triangular in cross section and provides a generally planar surface 38 that is generally parallel to outwardly directed surfaces 28 when apparatus 10 is held as illustrated in FIG. However, when apparatus 10 is held with the opposed surfaces 28 facing outwardly, opposite what is illustrated in FIG. 1, then apex 40 of triangular middle part 24 is directed outwardly which makes it more difficult to strike an incoming ball or other missile but serves to return it in a more erratic, less predictable manner. Thus, middle part 24 provides, in addition to surfaces 28 of paddles 18, an additional surface for hitting ball 16 or some other missile. The use of middle part 24 comes into play predominately when an opponent hits the ball or other missile directly at a player's body and the player is unable to move either of the paddles quickly enough to intercept the missile.

As is best illustrated by the partially sectional view of FIG. 2, each of paddles 18, staff 20 and middle part 24 are hollow to reduce weight to facilitate maneuverability as well as to save material cost. Middle part 24, may, like paddles 18, be integrally formed with hand gripping portions 22 to form staff 20 or may be secured between hand gripping portions 22 by suitable adhesives, ultrasonic welding or the like.

FIG. 5 illustrates an alternative embodiment in

which paddles 44 have a circular periphery 46 and middle part 48 has a hexagonal cross section presenting six surfaces 50 for striking the ball or other missile.

In a further alternative embodiment, provision is made for adjusting the exposed length of an elongated staff 52 between a pair of spaced apart paddles 54 (only one of which is shown in FIG. 6). Again, the staff and the paddles are hollow. Staff 52 or more particularly, each of its ends 55 is received for telescoping into a respective one of hollow paddles 54 through a respective collar 56. Accordingly, for a young child, the exposed length of staff 52 between each of paddles 54 may be shortened by telescoping the ends of the staff into the paddles. For an adult, the telescoped ends of staff 52 may be extracted to lengthen the part of staff 52 exposed between spaced apart paddles 54.

For securing staff 52 at desired incrementally telescoped positions to expose a selected length of staff 52 between paddles 54 there are a series of generally equally spaced apart holes 58 extending through opposed walls of shaft 52. Each collar 56 has a pair of opposed holes 60 that align with holes 58 of staff 52 in the desired one of the incrementally adjustable positions to receive a locking pin 62. As illustrated in FIG. 6, locking pin 62 includes an elongated portion 64 with an enlarged head 66 at one end and a threaded axial bore at the other end to receive a correspondingly threaded bolt 68 also having an enlarged head 70.

## Claims

1. An apparatus for a player to use in a sport or game to hit an inanimate missile back and forth between players, comprising:
  - a pair of paddles;
  - each of the paddles having a generally planar surface with a preselected peripheral shape and a predetermined size for hitting the missile;
  - means connecting the two paddles and providing a single handle so that the player maneuvers both paddles at the same time;
  - the means including two spaced apart portions;
  - a middle part generally centrally disposed between the two spaced apart portions;
  - the middle part presenting at least one substantially planar surface for hitting the missile;
  - the at least one surface of the middle part providing a substantially greater surface area than either of the two spaced apart portions; and
  - the at least one surface of the middle part providing a significantly smaller surface area than either of the two paddles.
2. The apparatus of Claim 1 in which the middle part has an elongated dimension between the two

spaced apart portions and a dimension transverse to the elongated dimension with the transverse dimension being less than the elongated dimension.

3. The apparatus of Claim 2 in which each of the paddles has a dimension generally parallel to the means and the elongated dimension of the middle part is approximately the same as the paddle dimension. 5

4. The apparatus of any one of the preceding claims in which the preselected peripheral shape of each of the paddles is the same. 10

5. The apparatus of any one of the preceding claims in which the means is hollow.

6. The apparatus of any one of the preceding claims in which the cross section of the middle part is a polygon. 15

7. The apparatus of Claim 6 in which the polygon is a triangle.

8. The apparatus of Claim 6 in which the polygon is a hexagon. 20

9. The apparatus of any one of the preceding claims in which the generally planar surfaces are in substantially the same plane.

10. The apparatus of any one of the preceding claims in which both of the paddles each have opposed faces with each of the opposed faces providing a generally planar surface having a preselected peripheral shape and a predetermined size for hitting the missile. 25 30

11. The apparatus of Claim 10 in which the first generally planar surface on one face of each of the paddles are in substantially the same first plane while the second generally planar surface on the opposed face of each of the paddles are in substantially the same second plane. 35

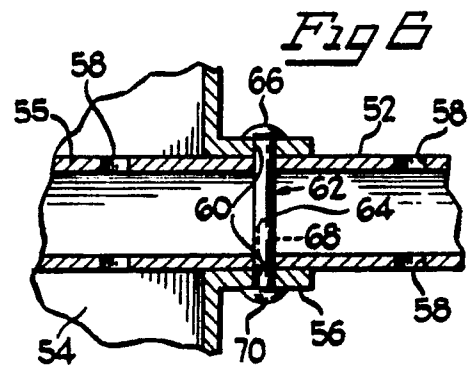
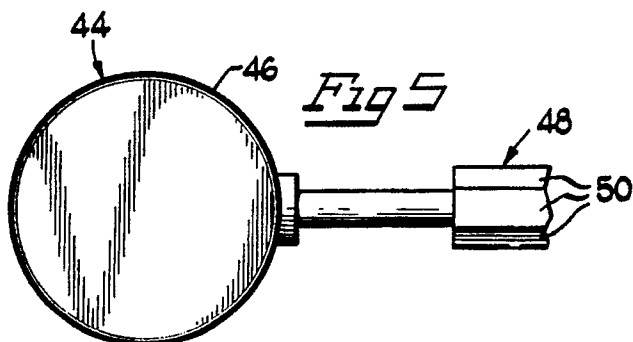
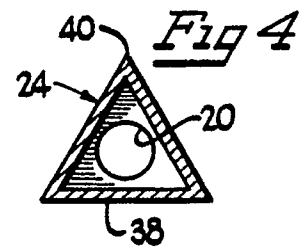
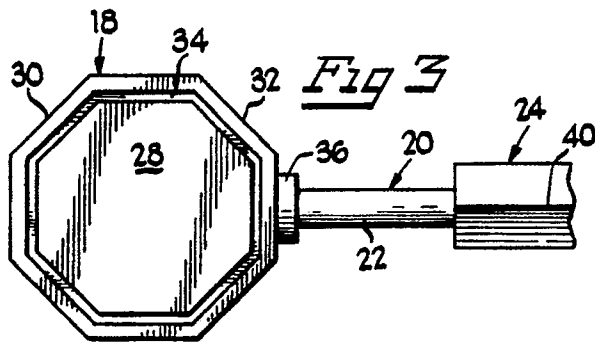
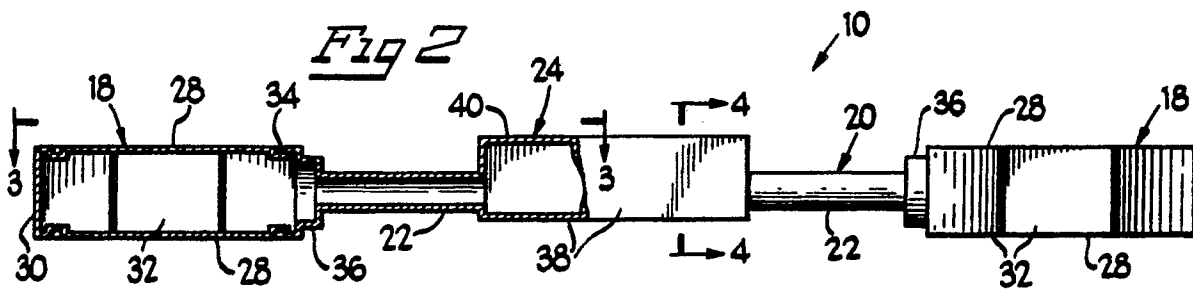
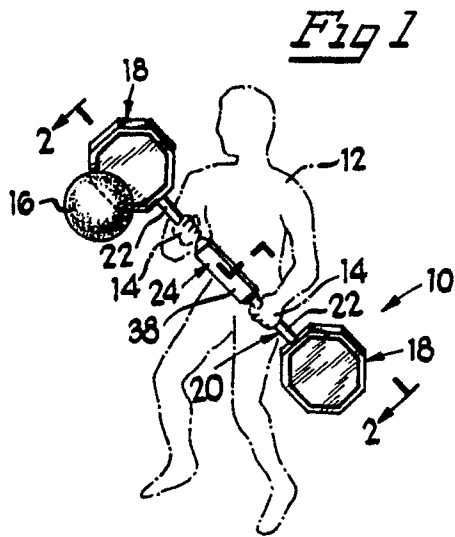
12. The apparatus of any one of the preceding claims in which each of the paddles is hollow.

13. The apparatus of Claim 12 in which:  
the means is of a given length; 40  
the means has end portions; and  
the end portions are receivable in the hollow paddles to permit the length of the staff exposed between the paddles to be adjusted.

14. The apparatus of Claim 13 including means for securing the adjusted length of the means between the paddles. 45

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## EUROPEAN SEARCH REPORT

Application Number

EP 90 31 2154

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                               |                                               |                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim                             | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
| D,A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-A-3 674 266 (GROSBERG)<br>* Column 1, lines 72-75 *<br>-----               | 1                                             | A 63 B<br>59/00                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                               |                                               | TECHNICAL FIELDS<br>SEARCHED (Int. Cl.5)      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                               |                                               | A 63 B                                        |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                               |                                               |                                               |
| Place of search<br>The Hague                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                               | Date of completion of search<br>11 January 91 | Examiner<br>GERARD B.E.                       |
| <div>CATEGORY OF CITED DOCUMENTS</div> <div>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document<br/>T : theory or principle underlying the invention</div> <div>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>-----<br/>&amp; : member of the same patent family, corresponding document</div> |                                                                               |                                               |                                               |