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**Bristol BS1 6PL(GB)**(54) **Equipment for use in playing or practising a game.**

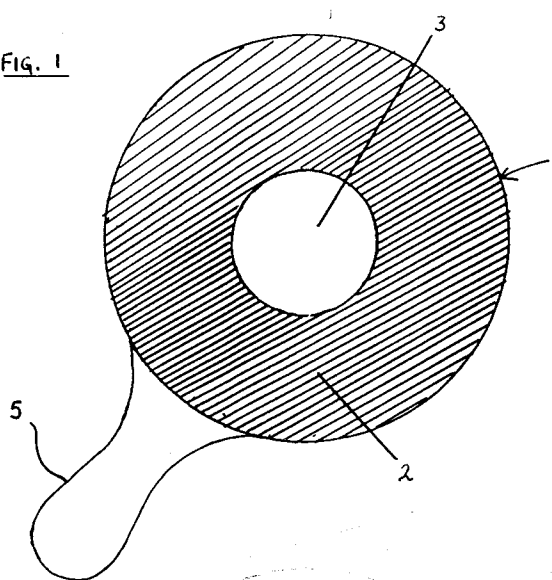
(57) A projectile-striker such as a bat, racquet, club, mallet or the like (1) is provided over part of its striking surface with a coating (2) to which the projectile will stick on contact. A projectile-target may be similarly partially coated. The surface of the projectile may be adapted to enhance retention to the coating. A conversion kit enables the equipment to be made by adapting the user's own conventional games apparatus.

Typically the uncoated region of the striker (3) will be the part that is desired to be used for striking the projectile (e.g. the so-called "sweet spot" of a bat or racquet), and the uncoated region of the target (3) will be the part at which the projectile is to be aimed.

The coating (2) may be via a touch-stick pair of materials such as a hook and loop fastener, provided one on the projectile and the other on the striker and/or target.

The invention enables coordination and other skills to be tested or practised, or enables an exciting and entertaining game to be played. By using different relative sizes of the stick and non-stick regions of the striker and/or target, different players can be handicapped according to their skill level.

Fig. 1

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The present invention relates to equipment for use in playing or practising a projectile game, particularly but not exclusively a projectile-throwing game or a projectile-striking game such as a bat/ball, racquet/ball or racquet/shuttlecock game.

According to one aspect of the invention, there is provided equipment for use in playing or practising a projectile game, comprising a striker or target for the projectile, the striker or target having an operative surface which includes a first region adapted to permit the projectile to rebound therefrom, and a second region adapted to retain the projectile thereto on contact between the projectile and said second region.

Preferably a projectile-striker is hand held, typically taking the form of a bat, racquet, club, mallet or the like.

Preferably a projectile-target rests or stands on, or is fixed to, the ground or a support surface.

The projectile typically takes the form of a ball, shuttlecock or the like. The projectile may be a conventional projectile as used in the normal game, or may more preferably be coated with a material which will maximise or at least enhance retention to the second region of the operative surface of the equipment. For example, the projectile surface and the said second region may each carry one half of a touch-stick pair of materials such as a hook and loop fastener (e.g. Velcro R). Projectiles adapted for use with a projectile-striker or projectile-target according to the invention, by virtue of being coated with a retention-enhancing material as described above, themselves constitute a further aspect of the present invention.

One or more suitable projectiles may conveniently be provided together with the striker and/or target as a kit of parts, such a kit comprising a further aspect of the present invention.

It is preferred that the first region of the striking surface will occupy that portion of the surface which should properly be used to strike the projectile (e.g. the so-called "sweet spot" or region of optimum rebound), the second region of the striking surface occupying a portion of the surface the use of which is undesirable. It is preferred also that the first region of the target surface will occupy that portion of the surface at which the projectile should properly be aimed (e.g. a corner of the service box on a tennis court), the second region of the target surface occupying a portion of the surface the aiming at which is undesirable.

However, as will readily be understood, other arrangements of the first and second regions may prove useful, particularly for training purposes. For example, improvement of coordination of hand and eye, wrist strength, etc. can be achieved by practising hitting the projectile from an unusual or difficult area of the striking surface, or to an unusual

or difficult area of the field of play.

In a further form of the invention, the arrangement may be such that the relative sizes, shapes and/or positions of the first and second regions may be altered as desired. Furthermore, a conversion kit may be provided according to the invention, to enable a user's own existing game equipment to be converted into equipment according to the invention. Such a conversion kit may typically take the form of one or more strips or rings having an upper surface provided with the material of the second region of the desired resultant operative surface. By placing such a suitably shaped ring, or such strips, over a conventional bat or racquet surface, for example, or over an area of a conventional playing or target area, so as to leave the desired first region uncovered and therefore able to function normally when in contact with the projectile, the user's own existing game equipment may readily be converted to the equivalent of the game equipment of the invention. In a generally similar manner, coating strips (suitably adhesive-backed), having an upper surface provided with a material which will maximise or at least enhance retention of the projectile to the second region, may be included in the conversion kit so that the user's own projectile may be modified as described above.

The user of the preferred striker equipment according to the invention must attempt to strike the projectile with the first region of the striking surface to achieve a satisfactory shot. A projectile which is struck using the second region of the striking surface will not rebound but will stick to the striking surface. Similarly, in the case of the preferred target equipment according to the invention, unless the projectile is properly aimed it will not bounce properly but will stick to the target.

The invention enables coordination and other skills to be tested or practised, either by an individual or in a competitive game, or enables an exciting and entertaining game to be played. If desired, the rules of such a game may provide that it is required that the projectile is caught on the second region, rather than rebounded from the first region.

By using different relative sizes, or arrangements of first and second regions, different players can be handicapped according to their skill level, which can enable team or competitive games to be played more enjoyably than hitherto. For ease of understanding of the invention, an embodiment will now be described, by way of example and without limitation, with reference to the accompanying drawings, wherein:

Fig. 1 shows a front view of a projectile-striker;

Fig. 2 shows a rear view of the striker of Fig. 1;

Fig. 3 shows a front view of an alternative projectile-striker;

Fig. 4 shows a rear view of the striker of Fig. 3;

Fig. 5 shows a projectile suitable for use with the striker of Figs. 1 and 3;

Fig. 6 shows a perspective view of a conventional tennis racquet being converted to equipment of the present invention; and

Fig. 7 shows a front view of a projectile-target.

Referring to Figs. 1 to 4, the projectile-striker takes the form of a generally circular solid bat 1 provided on its front side with an outer covering ring 2 of a fabric constituting one half of a hook and loop type of fastener (e.g. Velcro ®) in which complementary fabrics (i.e. "hook" and "loop" fabrics) are releasably retained to each other on mutual contact. The covering ring 2 is arranged so as to leave an inner circle 3 (representing the so-called "sweet spot") uncovered. For example, the "hook" fabric may be used as the covering for region 2. The rear side 4 of the bat 1 is uncovered.

The bat illustrated in Fig. 1 is held in the user's hand by means of a conventional handle 5, whereas the bat of Fig. 3 is held by inserting the hand beneath a tight strap 6 extending across the rear side.

In the case of the bat of Fig. 1, therefore, the bat can alternatively be used in conventional manner by using the rear side 4.

Referring to Fig. 5, the projectile takes the form of a spherical ball 7 (e.g. a tennis ball) provided on its surface with an outer fabric covering 8 constituting the complementary half of the hook and loop fastener used on the bat front side (e.g. in the case where the "hook" fabric is used as the covering for region 2, the ball 7 could be coated with the complementary "loop" fabric).

The ball 7 will bounce off bat region 3 in normal manner, but will stick to region 2 on contact.

The ball may either be manufactured so as to have the necessary outer surface or may be converted from a conventional ball, suitably by attaching pieces or strips (suitably provided with an adhesive backing) of the hook or loop material to the ball.

The bat described above enables hand and eye coordination to be trained more efficiently than hitherto, and has application, for example, in physical education of young children (e.g. for individual practice or competitive games) as well as more advanced practice and training. The relative sizes of areas 2 and 3 can suitably be adjusted to control the skill factor involved, typically for beginners region 2 will be small in relation to 3, whereas for more skilful users region 2 will be large in relation to 3.

Referring to Fig. 6, a conventional tennis racquet 9 is modified to a projectile-striker in accordance with the invention by means of a converter piece 10. The converter piece 10 is a ring of a

generally lightweight fabric or material carrying on its front surface 11 a covering of one half of a hook and loop type of fastener (e.g. Velcro ®). The converter piece 10 is brought up to the racquet head in the direction shown by the arrows and is secured to the rim of the racquet head by means of clips or other suitable fasteners (not shown). A second similar converter piece (not shown) may be fixed to the other face of the racquet head.

The converter piece 10 is in the form of a ring, the open centre of which corresponds to the sweet-spot of the racquet; in the assembled equipment the sweet-spot region of the racquet strings comprises the first region of the striking surface and the front surface 11 of the converter piece comprises the second region.

Referring to Fig. 7, a projectile-target 12 comprises a ring of one half of a hook and loop type of fastener (e.g. Velcro ®) mounted to a circular base. The central portion 13 of the base is left uncovered or indeed may be cut out to provide an aperture. By laying the target 12 on the ground at a location to which a projectile should be aimed (e.g. for practising service accuracy in the game of tennis), or by mounting the target to a wall or other support surface, a player's aim can be readily tested, practised and improved.

The relative sizes of the peripheral and central regions of the converter piece 10 and the projectile-target 12 can suitably be adjusted to control the skill factor involved; typically for beginners the peripheral region will be small in relation to the central region, whereas for more skilful users the peripheral region will be large in relation to the central region.

The above describes the invention without limitation to particular embodiments and all variations and modifications which may be made without departing from the invention as defined in the following claims are to be considered as included in the scope hereof.

## Claims

1. Equipment for use in playing or practising a projectile game, comprising a striker or target for the projectile, the striker or target having an operative surface which includes a first region adapted to permit the projectile to rebound therefrom, and a second region adapted to retain the projectile thereto on contact between the projectile and said second region.
2. Equipment according to claim 1, wherein the projectile-striker is hand held and takes the form of a bat, racquet, club or mallet.
3. Equipment according to claim 1 or claim 2,

wherein the first region of the operative surface of the striker occupies that portion of the surface which should properly be used to strike the projectile, the second region of the striking surface occupying a portion of the surface the use of which is undesirable. 5

4. Equipment according to claim 1, wherein the first region of the operative surface of the target occupies that portion of the surface at which the projectile is to be aimed. 10
5. Equipment according to claim 1, wherein the relative sizes, shapes and/or positions of the first and second regions are capable of being altered as desired. 15
6. Equipment according to claim 1, further including a projectile adapted from a conventional projectile of the game so as to adhere to said second regions in use. 20
7. Projectiles selected from balls, shuttle-cocks and the like, whenever adapted for use with equipment according to claim 1 by being coated with a material which enables retention of the projectile to the said second regions in use. 25
8. Projectiles according to claim 7, wherein the coating material is one half of a touch-stick pair of material such as a hook and loop fastener. 30
9. A conversion kit for enabling conventional projectile strikers or targets to be converted into equipment according to claim 1, the kit comprising means for covering a portion of the operative surface of the conventional striker or target with a material having the properties of the second region as defined in claim 1, so as to leave a first region of the converted equipment from which the projectile is capable of rebounding as defined in claim 1. 35  
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FIG. 1

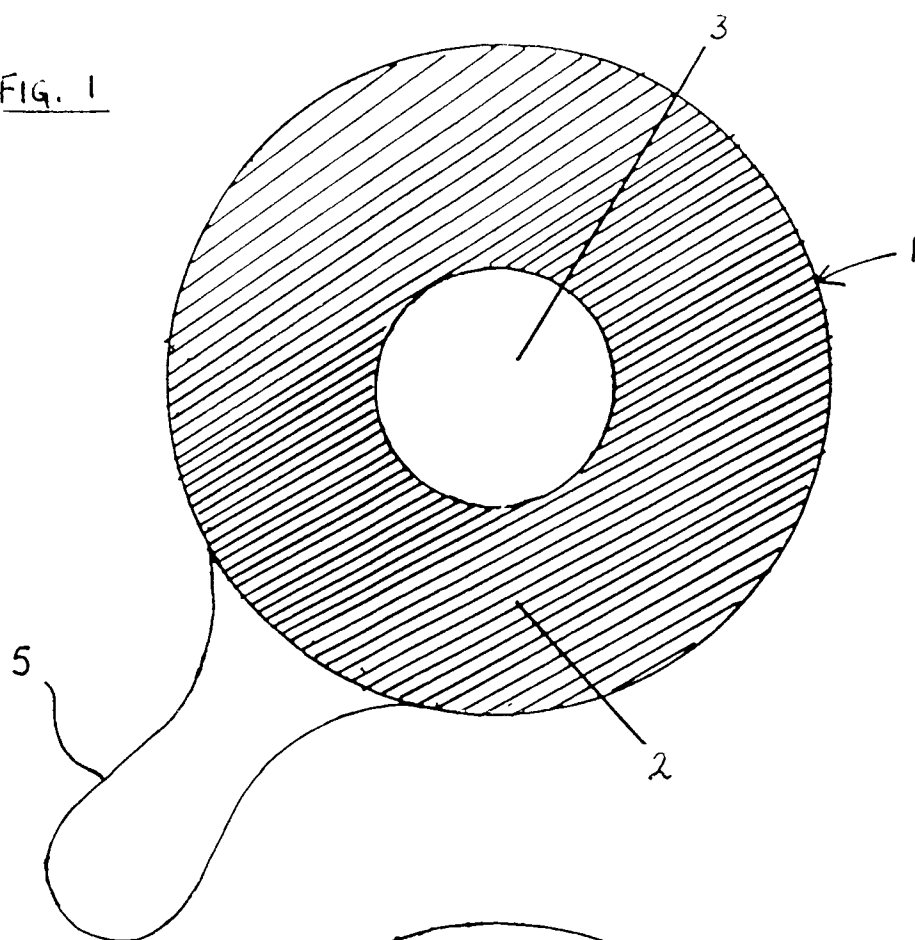


FIG. 2

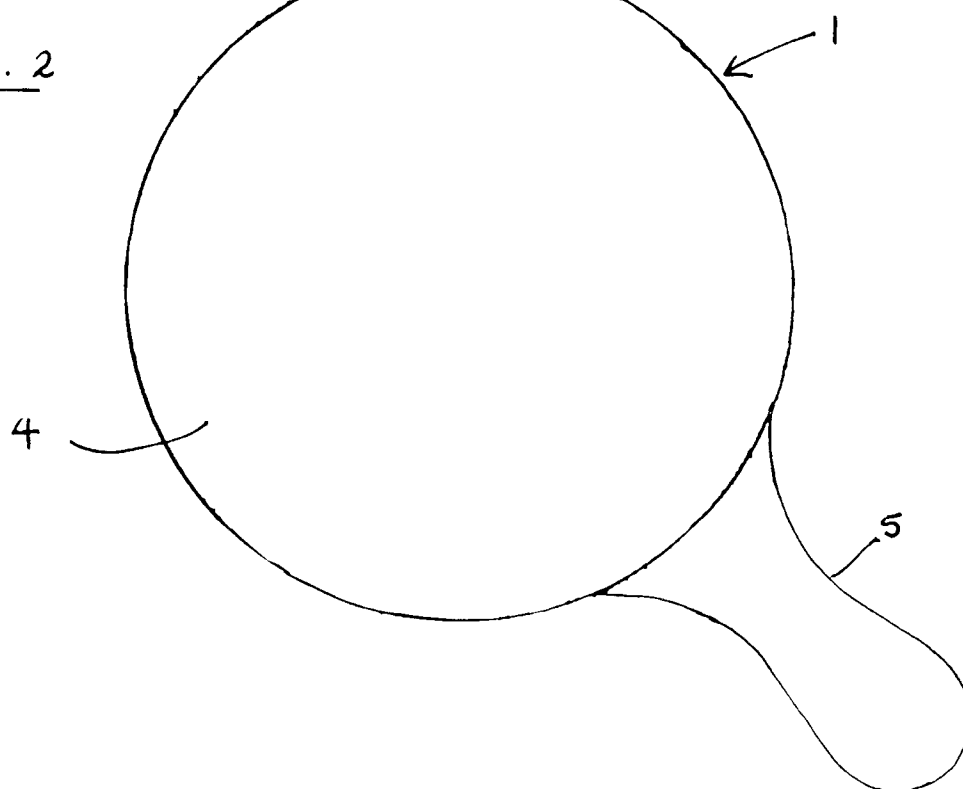


FIG. 3

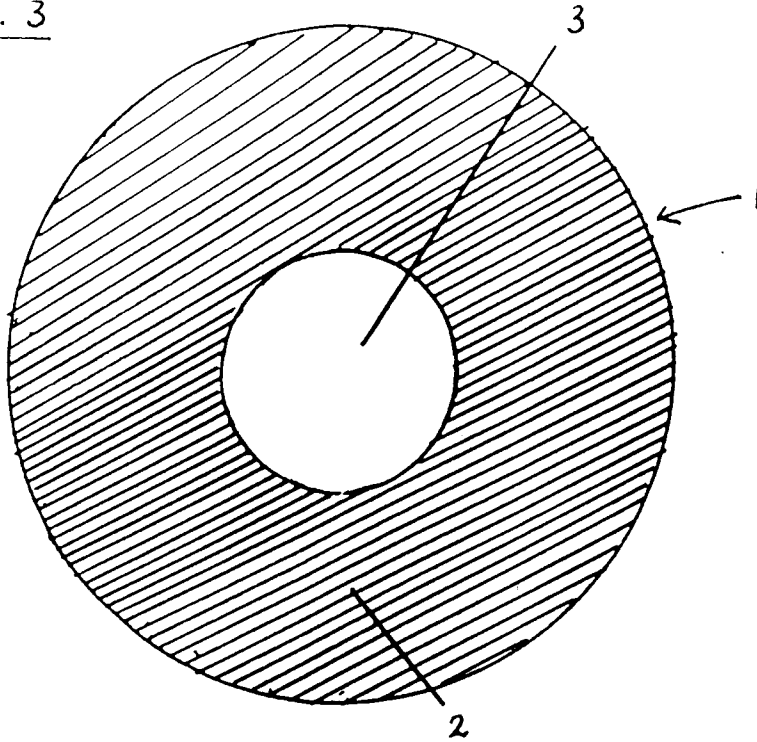


FIG. 4

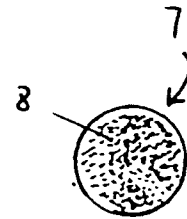
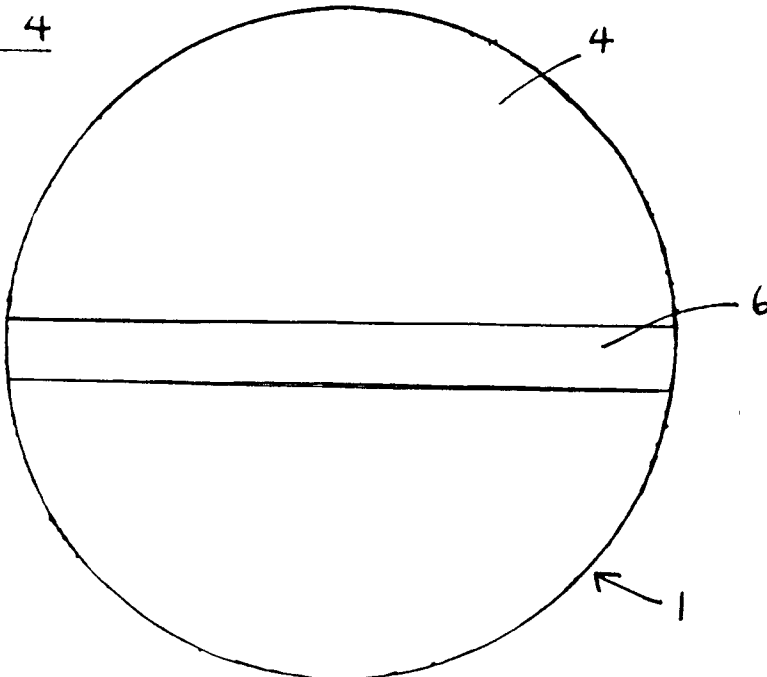


FIG. 5

Fig. 6

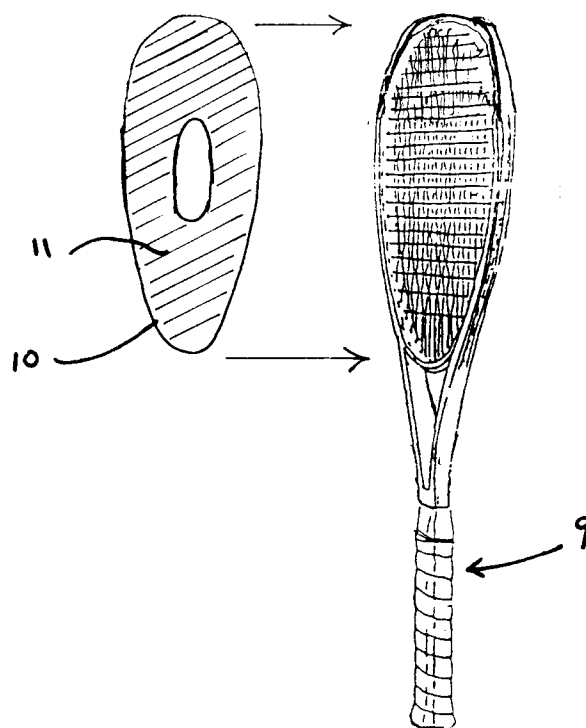
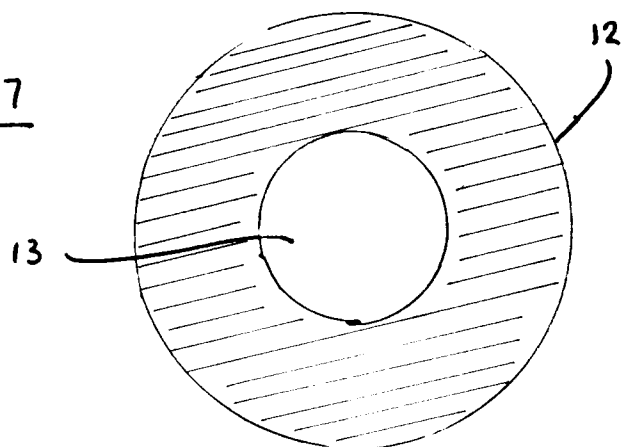


Fig. 7





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## EUROPEAN SEARCH REPORT

Application Number

EP 91 31 0618

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)
X	US-A-3 954 266 (CARRAND ET AL.) * column 1, line 51 - column 2, line 2 * * column 2, line 36 - line 58 * * column 3, line 19 - line 60 * * abstract; claims 1-5; figures 1-6 *	1-4, 6-8	A63B59/02
Y	---	5, 9	
Y	DE-B-1 173 824 (ERFURT) * column 3, line 28 - line 64; figures 1-4 *	5, 9	
A	DE-U-8 706 892 (SCHMIDT) * page 7, line 8 - line 24 * * page 8, line 1 - line 19; figures 1, 2, 4, 5 *	7, 8	
A	US-A-4 875 689 (LIN) * abstract; figures *	7, 8	
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			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A63B A63F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03 MARCH 1992	Examiner GIMENEZ BURGOS R.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document			