March 1, 1938. E. E. MOORE 2,109,799

BAT ASSEMBLY

Filed June 30, 1936

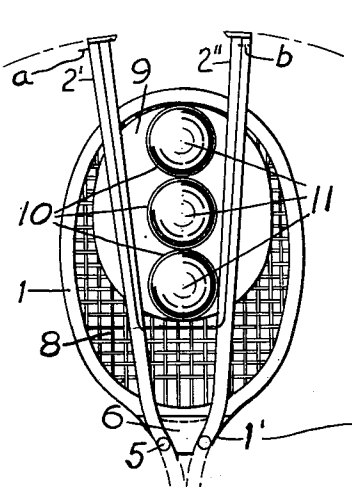


Fig. 1.

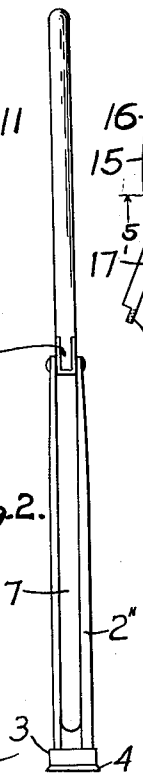


Fig. 2.

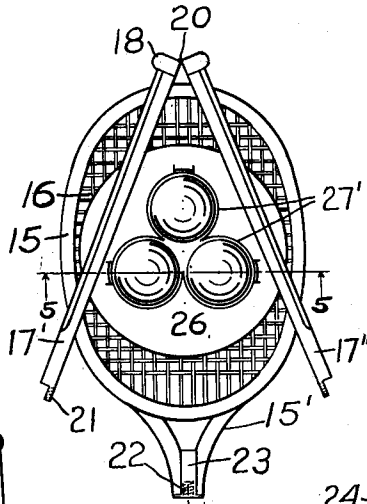


Fig. 3.

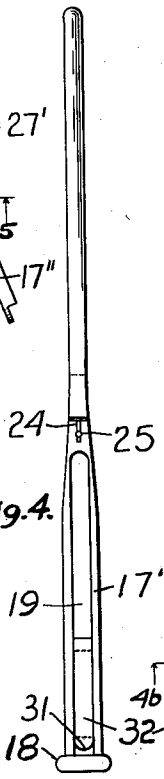


Fig. 4.

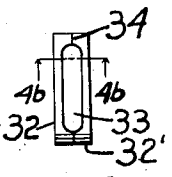


Fig. 4a.



Fig. 4b.

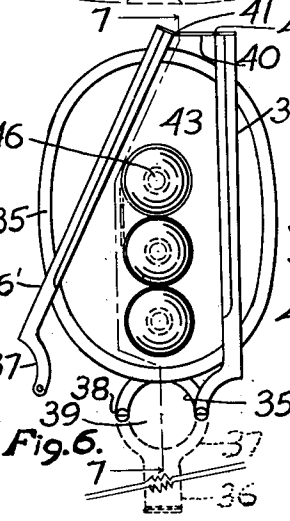


Fig. 6.

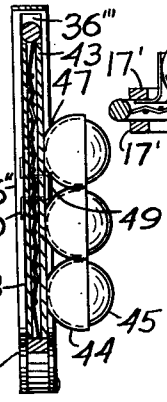


Fig. 7.

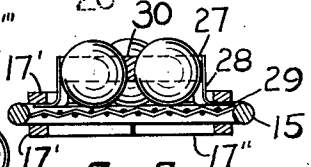


Fig. 5.

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BAT ASSEMBLY

Earl E. Moore, Washington, D. C.

Application June 30, 1936, Serial No. 88,193

20 Claims. (Cl. 273—73)

Articles such as clubs, grappling nets, oars, paddles, bats, racquets and the like, due principally to their greater length than width, have long been awkward things to carry from place to place. Especially has this been so when travelling a sufficient distance to require other luggage such as travelling bags and trunks. Travelling bags, sometimes even trunks, are generally not large enough to accommodate such articles. Often such wanted articles have been left at home simply because of their inconvenience in transporting them.

Greater inconveniences were the result when necessary accessories had to be carried with a bat or racquet such for instance as braces to prevent distortion of the head of the bat or racquet and balls or other missiles to be used with the bat or racquet. Heretofore, no means was devised to hold the various elements to make up a complete equipment in one complete assembly for carriage or shipment. Often the brace would become lost or mislaid with the result that its use would be dispensed with to the detriment that the bat head would become distorted, it being well recognized that even a slight distortion of the bat head would noticeably affect its dependability in play, especially has this been true with tennis racquets. Often perfectly good balls, birds, shuttlecocks, etc., would be left behind or lost requiring unnecessary purchase of new ones simply because no convenient means was available for keeping such missiles and racquet in a single compact assembly.

Such inconveniences were especially true in the games of tennis, ping-pong, battledores and badminton.

An object of this invention is to obviate the above faults and inconveniences and provide a means and method for compacting such lengthy pleasure articles and the like.

Another object is to provide a means and method whereby such articles and associated accessories can be compacted into a single portable unit.

Another object is to provide a means and method for compacting such articles and accessories so that they coact together to form a complete interlocked assembly.

A still further object is to provide a bat assembly which includes sectional parts which may be applied to the head of the bat to brace it and prevent its distortion.

A still further object is to present a bat assembly which; when not being used for play, is a compact unit, part of which is used to brace the head of the bat and also to hold a missile holding device, all as a single interlocked unit for carriage.

And a still further object is to provide the necessary materials, joints, grips, etc., to make a complete and practicable bat assembly, for lasting beauty and service.

Further objects will become apparent from reading the specification and appended claims. It is understood, however, that the accompanying drawing, and specification are presented merely to illustrate and describe one or more forms of the invention and are not to be taken in the sense of limiting the scope of the invention except as limited by the appended claims.

The invention is shown in connection with a tennis racquet but, it is within the purview of this invention to include other forms of bats and objects some of which are those used in badminton, battledores, ping-pong etc., and sporting objects such as oars, paddles and nets which may be advantageously compacted by sectionalizing the handle part and bringing it into embracing relation with the other end of the object. Likewise, the ball holder described may be, by making minor changes, adapted to hold birds, shuttlecocks, small balls, etc., and not limited to holding tennis balls, as illustrated.

Figure 1 shows an elevation of a bat of the tennis racquet type with the handle elements in bracing position on the head of the racquet and a ball carrying unit attached to the head.

Figure 2 shows an end view of the racquet of Figure 1 without the ball carrying unit, the handle elements being in normal position for tennis court use.

Figure 3 is an elevation of a modified form of tennis racquet similar to the arrangement shown in Figure 1.

Figure 4 is an end view of the racquet shown in Figure 3 without the ball carrying unit, the handle elements being in position for play.

Figure 4*a* shows an insert for the handle of Figure 4.

Figure 4*b* is a section of the insert taken on the line 4*b*—4*b* of Figure 4*a*.

Figure 5 is a sectional view taken on the line 5—5 of Figure 3.

Figure 6 is an elevation of still another form of the invention showing the parts assembled as in Figure 1.

Figure 7 is a section substantially along line 7—7 of Figure 6.

One form of the invention as shown in Figures 1 and 2 will first be described. The head

of the racquet has the usual bent frame 1 joined to the handle 2 by the curved portion 1'. The handle 2 has two component parts 2' and 2'' both of which in normal playing position are held together by a heavy rubber band 3 or any other suitable means that may be used for this purpose, such as a snap latch or other coupling device. The part 4 is a flange at the end of the handle to prevent the band 3 from working off the handle when used in play. The handle 2 is preferably of strong light weight metal such as is used for structural members in the manufacture of aircraft, for instance, alloys containing a large proportion of aluminum mixed with various stronger metals such as copper, nickel and steel. The surfaces of the handle should be highly polished or chromium plated for appearances and service. The hand grip section of the handle may, however, be roughened to prevent it from slipping while in the hand of the player.

Rivets or machine screws 5 forming a pivot joint pass through both sides of each handle section 2' and 2'' and a U-plate 6. The plate being shown as partly sunk into the bottom part of the frame 1 for strength and rigidity. The plate may be fastened to the frame bottom and frame extensions at 1' in any suitable manner with screws, bolts, rivets, etc. As shown best in Figure 2; both sections 2' and 2'' of the handle 2 are slotted, the slots being of proper dimensions to receive the frame 1. These slots should be of the same configuration as the frame sides so as to make a snug fit at all points of contact when they are brought together. The sides of the sections are shown as rigidly held between the heads of the rivet or screws 5 and the U-plate 6. The pivots 5 firmly hold the associated parts together permitting however by the use of medium force, the handle sections 2' and 2'' to be swung in opposite directions to embrace the frame 1, the frame passing into the slots 7 of the handle sections.

The slots 7 are of predetermined size to tightly fit and grasp the frame 1 at a plurality of points so as to prevent the frame from changing its configuration. Warping due to change of humidity of the atmosphere or the unequal pull of the strings 8 is not of infrequent occurrences and a brace of some nature is almost indispensable. Due to the rounded contour of the outer edges of the frame 1, the slots 7 can be easily brought into gripping engagement with the frame. Because of the relative positions of the handle ends and pivots a fulcrum action results by pulling the handle sections toward each other at the top of the frame 1 and will require but slight force to press the frame into the slots. Such pressing action will place strain upon the U-plate 6 but not upon the lower or any part of the frame. When the frame is tightly gripped by the elements 2' and 2'', the frame is firmly held in alignment. A pin *a* is provided at the end of the handle section 2' to engage a hole *b* at the end of handle section 2'' to hold the sections in alignment when they abut one another in playing position.

The rivets or screws 5 should tightly bind the associated joint elements together so that there will be no loose play between them when the handle is in playing position. Lock or spring washers may be placed just under the heads of the rivets or screws 5 or between the handle sections and the U-plate.

A flat plate 9 is shown placed upon the strings 8 and embraced by slots of the handle sections 2' and 2'' to hold it on the strings 8. Pocket-like receptacles 10 of half spherical shape are provided to grip balls 11 and are affixed to the plate by brazing or welding or by any other suitable means. The receptacles 10 are preferably slightly more than a half sphere so that some appreciable force must be used to place the balls in them. A finger hole should be placed through the bottom of each receptacle 10 and the plate 9 beneath so that the balls may be easily pushed out of the receptacles.

Figure 1 presents the entire assembly of a tennis racquet, head-brace and ball holder, all as a single unit. Obviously, a cover made of thin rubber or other material may be placed over the entire assembly for protection from dust and rapid changes of temperature and humidity. Such a cover may be closed by snap fasteners or by zipper means.

A form of the invention as shown in Figures 3 to 5 inclusive will now be described. This form of the invention shows a tennis racquet with a head section having a frame 15 and frame ends 15'. Strings of wire, gut etc., 16 are strung or otherwise placed to the frame 15. The frame may be made from wood or metal as is common practice in the racquet industry. Handle section 17 includes two half handle portions 17' and 17'' pivoted at 20 by any suitable swingable joint or hinge. The handle may be made of a satisfactory strong fibre material or preferably light-weight but strong metal. When the two component parts 17' and 17'' making up the handle 17 are in abutting relation, the rounded element 18 acts as a stop to prevent the racquet from slipping from the hand of the user. One end of the handle 21 is shown as reduced in size and threaded to fit a female threaded part 22 of the preferably metal joint element 23. The joint element 23 is firmly fixed to the frame extensions 15' by any suitable means such as screws, bolts, rivets, etc.

One of the side flanges of 23 is slotted to receive the nose of a spring pressed plunger in groove 24 of the handle. When the handle parts 17' and 17'' are abutted and screwed into the joint element 23 and brought into a tightly screwed position, the plunger in the groove 24 will spring into the slot of the flange. To release the handle so that it can be screwed from 23, a thumb grip 25 is pulled downwardly to disengage the slot of the flange and plunger. When the handle is free, the portions 17' and 17'' may then be swung apart and placed over the frame 15 as shown in Figures 3 and 5.

A slot 19 is provided through both portions 17' and 17'' of the handle for telescoping engagement with the frame 15 when brought together in the coacting relation shown in Figures 3 and 5, the portions 17' and 17'' and the pivot 20 permitting a fulcrum-like action so that the frame 15 can with moderate pressure be tightly pressed into the slots 19. The resulting vise-like grip between 15 and slot sides of 17' and 17'' tending to resist any torsion or twisting of the frame 15. The pivot 20 is preferably of the revolvable pin type similar to a house door hinge so that, if desirable, each handle portion 17' and 17'' may be independent of one another and separately placed to grip the frame 15.

A plate like sheet of fibre or metal 26 having pocket-like receptacles is shown mounted upon the strings 16 for holding one or more balls. Bent straps 28 (Figure 5) having feet 29 support a resilient preferably metal collar 27 which supports center element 30 to form pockets 27' of

predetermined size to snugly fit the balls to be used with the racquet. The straps **28** are preferably cut and bent from the plate **26**. The collar **27** being soldered or welded to **28**. Note that the element **30** is curved so that the balls can not accidently be jarred from the pockets. The flat portions of **26** are of proper thickness so that when the portions **17'** and **17''** embrace the frame **15**, they will also embrace the ball holder **26** and thus present an assembly of a racquet head with its handle and ball holder as a single disengageable unit.

Figures 4*a* and 4*b* show a grip element **32** designed to closely fit in the slot **19**. The rounded part **32'** fitting the rounded part **31** of the handle portions. This element **32** may extend for the entire length of slot **19** if desirable but, since a seasoned player rarely if ever grips the handle much above the lower end, the element **32** is shown somewhat short. The element **32** may be made of any soft or hard material. Sponge rubber is preferred and may extend a little beyond the breadth of the handle so as to provide a positive grip.

The grip **32** is not necessary, however, for the reason that no part of the hand will normally tend to enter the slot **19** but, since some players may desire to place their thumbs where the slot is, the grip element **32** is provided.

A slot **33** of the element **32** is provided as a means to permit the element to be readily slipped on to a part of the racquet when the handle is bracing the frame **15**. For instance, **32** may be slipped on one of the handle portions near the pivot **20** before the frame is pressed into the slots **19** and thus be carried with the racquet. When the element **32** is placed in the slot **19**, its slot **33** is at right angle to slot **19**.

To prevent **32** from being misplaced when engaged in slot **19**, a thin fin **34**, preferably flexible rubber, is provided on each side and on both ends of **32**. Fins **34** are to be placed in between the abutting portions **17'** and **17''** before the handle assembly is screwed into **22** thus, in a vise-like manner **32** is held in place.

Figures 6 and 7 will now be described. A frame **35**, strung with gut or wire sandwiched between removable plates **43** and **48**, is shown embraced by the handle sections **36'** and **36''**. The handle **36** made from the sections **36'** and **36''** has a rounded upper part **37** joining the frame extensions **35'**. Screws **38**, preferably wing type so that they can be readily removed by hand, fasten the overlapping ends **37** and **35'** rigidly together. By removing one of the screws **38** and retaining the other as a pivot, the handle sections **36'** and **36''** may be swung to embrace the head or frame **35**. Slots **36'''** in the handle sections (Figure 7) engage the frame **35** preferably as shown in Figure 6. The strap **40** with pivots **41** and **42** permitting the sections to be so positioned. The parts **37** and **35'** when in joining relation form a curved hole **39** to form a pocket for a ball when the racquet is being used for play or otherwise. The hole **39** has a curved perimeter at right angles to the curve shown in Figure 6 so as to snugly fit the spherical surface of the ball and hold it in place.

The plate **48** and the ball receptacle plate **43** are of sufficient size to cover the gut or metal strings of the frame and protect the strings from exposure, dirt, grit and accidental damage. Both plates are held in place by the embracing handle sections **36'** and **36''**, in the same manner shown in Figures 1 and 3. These plates **43** and **48** however may also be held in place by a flexible wire means **49**. The flexible wire **49** pass through holes in plates **43** and **48** and the ends **50** bent in opposite directions to hold the plates together on the racquet. Obviously the plate **48** may be omitted and the wire ends **50** pressed in opposite directions upon the gut side opposite the plate **43**. Such an arrangement will make the ball holder **43** of service in conjunction with an ordinary racquet.

The plates may be of some composition such as a fibre board containing rubber or a metal plate coated with paint or plated with chromium to enhance their appearance. The plates **43** and **48** or just one of them may be coated with a black composition which will readily adhere to white chalk so that score may be kept upon them. An elastic strap may be placed upon the plate to hold a stick of chalk or a chalk pencil.

The plate **43** has mounted thereon, by welding or otherwise, cups **44** to receive the tennis balls **45**. The cups are of proper size to snugly fit the balls. Each cup is a little more than a half hollow sphere so that the balls must be forced in and out of the cups. A finger hole **46** is provided in the bottom of the cups and thru the plate **43** so that the balls may be pushed from the cups when the plate **43** is free of the racquet. Obviously the pockets **44** may comprise vertical spring fingers to hold the balls, three such fingers being sufficient for this purpose.

I claim:

1. A bat and the like, the bat having a head section and a handle section, a lower part of the handle section having movable means to grip the head section at a plurality of points about the periphery of the head sections.

2. A device having a head portion and a gripping portion joined together to form a tennis racquet ready for use, the gripping portion having means comprising an elongated open slot large enough to embrace the head portion at a plurality of spaced loci and to coact with the head portion, means holding the portions rigidly together but permitting the portions to frictionally engage one another in a vise-like relation when brought into gripping relation and a non-playing condition.

3. A device having a head section pivoted to a handle section, means holding the sections rigidly together; means to release the holding means to permit the sections to swing into telescoping engagement with one another, means on the handle section to grip the head section at a plurality of points to resist change in configuration of both sections.

4. A bat and the like, a head and a handle, one end of the handle being removably attached to a portion of the head to form a bat ready for play, a slot in the handle of appreciable breadth and sufficient length to be telescoped by the head when the handle is removed and forced onto the head in an embracing relation.

5. The bat as set forth in claim 4 in which the handle section is composed of a plurality of separable and cooperable portions.

6. A bat, racquet and the like, a head section and a handle section pivotally connected together, the handle section having a plurality of portions with means to engage the head section at a plurality of points.

7. A racket or the like having a head section with a periphery frame and a reticulated center, a handle section releasably fixed to the head section, a slot lengthwise of the handle section of

sufficient breadth and length to receive the frame of the racket head.

8. The racket recited in claim 7, the handle section including a plurality of complementary parts having slots.

9. A bat with a head section and a handle section, the head section having a framed perimeter bordering a rebounding wall adapted to be struck by resilient missiles, removable wall elements on either side of the rebounding wall, the handle section having means of proper configuration to telescope and tightly grip the head section as well as the wall elements to form a single compact unit.

10. A foldable bat and the like, the bat having a head section and a handle section, releasable means joining the sections together to form a bat ready for use, the handle section having a wide slot designed to tightly grip the periphery of the head section at points removed from said means when the bat is folded for non-use.

11. A racket and the like, a head section and a handle section, means joining said sections rigidly together but, permitting them to embrace one another, the handle having an elongated slot to receive and grip the head, means removably held in the slot to close a portion of it while the racket is used in play.

12. A racket and the like, a head and a handle, means joining them together, said means being broad and having an opening therethrough, the sides of said opening being bowed and adapted to tightly hold a ball.

13. In a racket device, a head and a handle, the head being pivoted to one end of the handle so that they can be folded when the racket is not in use, means associated with the handle to grip the head at a plurality of remote points in a vise-like manner when the means is slid onto the head.

14. A tennis racket having a head and handle in playing position, pivoted means holding the head and handle together and permitting the handle to swing into contact with the head, a slot in the handle having sufficient breadth and length to embrace the head and tightly grip it at a plurality of remote points when the head and handle are placed in a non-playing foldable condition.

15. A bat and the like, a head and a handle, one end of the handle being pivotally connected to a portion of the head and held in a playing position, cooperating slotted sections to form the handle, the slots being of sufficient size to embrace the head when the bat is folded.

16. A foldable racket including a head section for batting a ball and a handle section for controlling the movement of the head section, means foldably mounting the sections together, said means including a device mounted upon the head section, the device including studs which pass tightly through the handle section and act as pivots about which the handle can turn to approach the racket head and embrace it.

17. A tennis racket, a head and handle, the handle including a plurality of complementary parts, said parts being removably and pivotally attached to a portion of the head independent of one another so that either part may be released and both parts placed in contact with the head.

18. A racket and the like, a head section and a handle section, means to hold the sections together in position for playing but permitting them to be placed into embracing relation, the handle section including complementary portions having slots of sufficient length and breadth to receive the head section when they are brought together.

19. A racket and the like for batting balls, a head section and a handle section, means joining the sections together, the handle section including complementary parts having slots for receiving portions of the head section, said parts being pivoted with respect to one another so that when the head is received by the slots a fulcrum action can be employed to force the head tightly into the slots.

20. In a device for preventing the distortion of a bat head, a plurality of elongated elements having slots designed to tightly hold the head of a bat when placed in telescoping relation therewith, said elements being pivoted together at one end thereof so that a fulcrum action can be employed to force the bat head into the slots.

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