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D. P. BROWN ET AL

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TENNIS BALL CAN HOLDER

Original Filed June 30, 1941

Fig. 1.

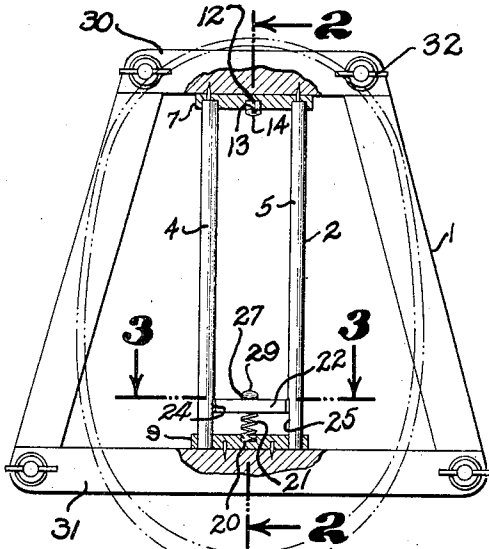


Fig. 2.

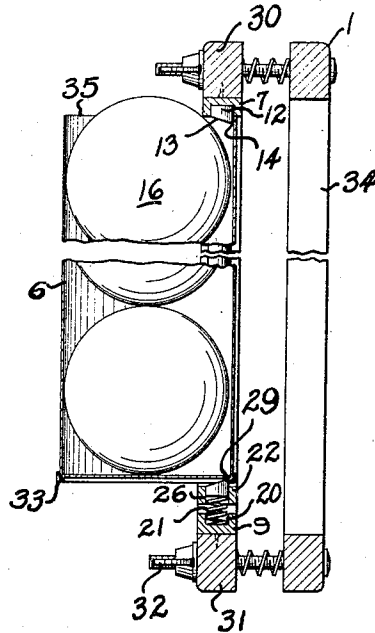


Fig. 4.

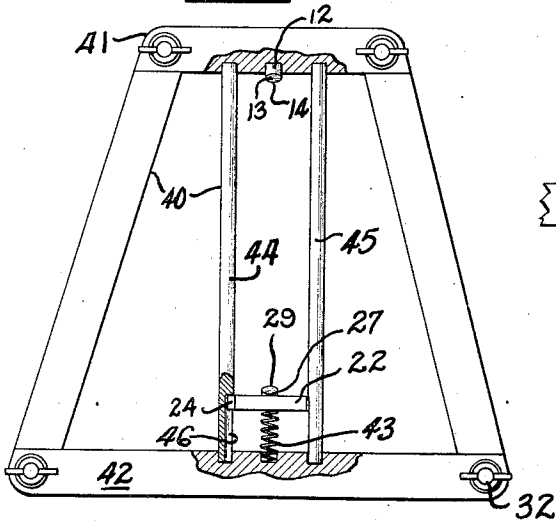


Fig. 3.

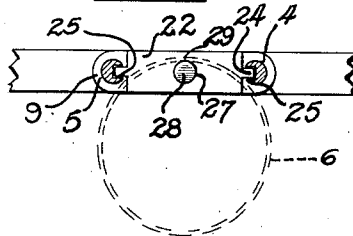
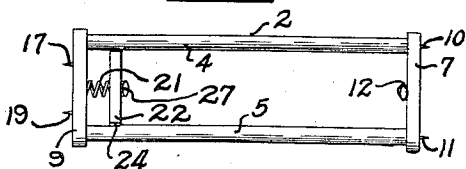


Fig. 5.



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## UNITED STATES PATENT OFFICE

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## TENNIS BALL CAN HOLDER

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400,550, June 30, 1941. This application July  
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3 Claims. (Cl. 248—205)

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This invention relates to tennis ball holders, and particularly to means for securing an opened can of balls to a racket press.

It is common practice to distribute tennis balls in sealed cylindrical metal cans holding three balls each. This method insures that the balls will retain their resilient characteristics until the can is opened prior to use, preventing the deterioration during storage, which occurs more rapidly when the balls are exposed to the air, and has various other advantages. The number of balls, three, is that which has been found by tennis players most convenient to have available during a game.

When the balls are to be used, the can is opened by the use of a key, supplied therewith, which removes a strip of the container metal. This method of removal is entirely conventional in the sealed container art, and forms no part of the present invention.

The opened can has become the most generally used container for carrying the balls after play, in spite of the sharp, dangerous edge left by the opening operation. While carrying cases for rackets have been traditionally equipped with ball pockets, the majority of players prefer to keep their rackets in presses when not in play, and the press usually interferes with the use of the pocket.

Combination presses with cases are available, but are usually clumsy and expensive. In the milder climate regions, the use of a case has been largely found unnecessary, and the majority of players simply carry their rackets in their presses.

The balls are then carried in the can, and while this method is better than carrying three balls loosely in the hands or pockets, it still leaves much to be desired. This is the need which the present invention was made to fill.

It comprises, in brief, a frame which can be secured to the racket press and which in turn will hold either a closed or an opened can of balls securely in place, but instantly removable therefrom when desired.

The objects of our invention thus include:

Providing a more convenient carry means for tennis balls;

Making possible the carrying of an opened can of tennis balls without loss or attention;

Reducing the safety hazard of carrying a ball can with a sharp, unprotected edge in the bare hands;

Insuring that the balls and racket will always be kept together when not in use;

Eliminating the difficulty of inserting balls in

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a pocket when a case is to be used with the racket press;

Providing ball-carrying means which can be applied readily to existing racket presses;

5 Providing ball-carrying means which may be incorporated in new racket presses during manufacture;

Providing ball-carrying means in a form which may be manufactured with great economy from readily procurable materials.

10 These and other objects will be apparent to those skilled in the art from the following description of preferred embodiments illustrated in the drawings.

15 It will be understood that we do not intend to limit our invention to carrying tennis balls, but may apply it to any equivalent situation in which a press or frame is used in conjunction with a number of small implements such as balls, birds, and the like, with or without a racket or similar piece of apparatus.

In the drawings:

Fig. 1 is a view of our device applied to a separate racket press, portions of the construction being shown in section;

25 Fig. 2 is a side sectional view of the invention, partially broken away, taken in the plane indicated by arrows 2—2 in Fig. 1;

Fig. 3 is a fragmentary top sectional view of the can holder, taken as indicated by the arrows 3—3 in Fig. 1;

Fig. 4 is a view of another preferred embodiment of our invention, illustrated partially in section to show its incorporation into a racket press during manufacture as a unit; and

35 Fig. 5 is a view of the unitary embodiment of Figs. 1—3 separated from the racket press.

Referring now to the drawings for an explanation of the details of the invention, in Fig. 1 the device is shown attached to a standard racket press 1, and in Fig. 5 it is illustrated by itself.

The ball can holder 2 is a unit including two spaced parallel dowels, 4 and 5, against which the ball can 6 rests as shown in dotted outline in Fig. 3. The dowels 4 and 5 are fixed relative to each other by bored fixed and sliding cross-bars 7 and 9, respectively, into which their ends are inserted. It is preferred that the dowels 4 and 5 shall be firmly secured in the fixed cross-bar 7, but shall not extend completely therethru. The remainder of the thickness of bar 7 is bored coaxially with dowels 4 and 5 to receive the shanks of short metal studs 10 and 11 which have their projecting ends very sharply pointed. A steel phonograph needle may be used to advan-

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tage for this purpose, and substantially one-eighth of an inch is a desirable length for the projection of the stud beyond the cross-bar 7.

Midway of dowels 4 and 5, the fixed cross-bar 7 is bored to receive a short dowel stud 12. Stud 12 has an inclined end face 13 against which the ball can 6 is pressed during insertion, and terminates in a point 14 over which the rim of the can will lock, while the cross-bar 7 presses against the outermost ball 16 in the can 6.

The sliding cross-bar 9 is bored to allow dowels 4 and 5 to extend with a sliding fit therethru. Sharpened projecting studs 17 and 19 are set into sliding cross-bar 9, which is suitably bored between the dowels 4 and 5. Midway therebetween a seat 20 is provided to receive a helical spring 21, the opposite end of which is seated in a floating cross-bar 22. Spring 21 has a dual purpose, functioning not only to hold the unit 2 in the press 1, while permitting ready attaching or detaching, but also acting to hold the ball can 6 in position, while allowing rapid insertion or removal thereof.

Floating cross-bar 22 has a rectangular tongue 24 extending from each end thereof with its greatest dimension parallel to the dowels 4 and 5. The tongues 24 fit slidably into grooves 25 formed oppositely in the lower ends of dowels 4 and 5. The grooves 25 extend upwardly from the lower ends of dowels 4 and 5 a sufficient distance to permit spring 21 to force the floating cross-bar 22 a short distance closer to the upper cross-bar 7 than the length of the opened ball can 6. Thus floating cross-bar 22 is free to ride up or down in grooves 25 as far as permitted by the end of the grooves or the opposition of the spring 21. The seat for spring 21 in the floating cross-bar 22 is provided by a bore 26 centrally therethru, into the opposite end of which is fixed a dowel stud 27 having an inclined face 28 sloping away from a locking point 29. This stud 27 is to engage the end of can 6 opposite that held by fixed cross-bar stud 12.

When the holder 2 is to be attached to a press 1, the sharp pointed studs 10 and 11 are set against one of the cross-pieces 30 of the upper half of the racket press, centered and aligned, and pressed firmly into the wood. The sliding cross-bar 9 of the can holder unit is then pressed upwardly against the spring 21 until the pointed studs 17 and 19 will clear the lower cross-piece 31 of the press, centered and aligned, and the sharpened studs 17 and 19 pressed into the wood.

We have illustrated the holder unit 2 as being applied to the front or upper half of the racket press 1. Since the thumb-screws 32 commonly project on this side of the press, the overall thickness of the press is less increased by mounting the ball can on the same side, and the parts tend mutually to protect each other from contact with other objects. Obviously, however, the holder 2 might be applied to the lower half 34 of the press in similar fashion. In such case, however, the unit 2 would have to be turned about so that the stud locking points 14 and 29 are properly disposed to hold can 6, as set out below. It will also be apparent that the holder might be inserted with the floating cross-bar 22 at the top instead of the bottom, if desired.

When the holder 2 has been attached to press 1 as described above, with the pointed studs 10, 11, 17, and 19 firmly embedded in the cross-pieces 30 and 31, the unit is very securely held in place. It will be seen that the pressure of spring 21 now serves to keep all the studs in position. In prac-

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tice, it has been found that the stress in spring 21 will keep the holder in place even when the user has done no more than begin to force the studs into the press cross-pieces 30 and 31.

Once the holder has been attached to the press, it may be left without further attention, yet at any time it may be removed by reversing the steps described above for insertion. The slidable cross-piece 9 is retracted against the compressive stress in spring 21, withdrawing the studs 17 and 19 from press cross-member 31, and the sharpened studs 10 and 11 at the opposite end may then easily be removed from press cross-member 30.

When the ball can 6 is to be carried with the press, the rim 33 which surrounds and extends from the can 6 is hooked over the stud 27 on the floating cross-bar 22, and pressed down against the resistance of spring 21 until the opposite can edge 35 can be passed across the inclined face 13 of the stud 12 and hooked behind the locking point 14. We have shown our invention used with an opened ball container, since this will be its most frequent use, but it may be used in the same manner to carry any unopened can of balls.

It will be apparent that the spacing and thickness of the dowels 4 and 5 and the dowel studs 12 and 27 must be properly related. We prefer to simplify manufacture by using a minimum number of different parts and sizes of parts. We therefore utilize a single size of round material,  $\frac{3}{8}$ " diameter, for doweling and studs. Such round stock is readily procurable as a standard article of manufacture. Obviously, however, any other suitable shape or size could be substituted therefor. Using this stock, we find a center-to-center spacing of  $2\frac{1}{8}$ " to be desirable with the present standard ball can, which is substantially  $2\frac{5}{8}$ " in diameter. Obviously, this spacing and the related dimensions may be varied within the skill of the ordinary mechanic without departing from the spirit of our invention, and in accordance with any change in the size or shape of the dowel members used.

When a ball can 6 is hooked over the studs 12 and 27 as set out above, it is securely held against the dowels 4 and 5 for substantially their entire length. At the same time, the balls are retained positively in can 6 by the pressure of the outermost ball 16 against the fixed cross-piece 7. If the can 6 has been inserted with the closed end adjacent cross-piece 7, the engagement of ball 16 will, of course, be against floating cross-bar 22. It is felt preferable to place the closed end of the can 6 against the floating cross-piece 22, since the can rim 32 will not distort when pressure is exerted thereagainst in compressing spring 21 as easily as would the opposite can edge 34. This, however, is a matter of choice, and either end of the can may be set in contact with the floating cross-piece 22 first. Regardless of which way the can 6 is inserted, one of the cross-pieces will project far enough across the mouth of the can to prevent the balls from coming out. It is not necessary that the can be kept completely filled to hold them in place, since the cross-piece is equally effective with one, two, or three balls.

While the embodiment illustrated in Figs. 1, 2, 3, and 5 is ideally suited to use with any conventional racket press, we also have arranged our invention for incorporation in new racket presses during manufacture. This form, as shown in Fig. 4, is not intended to be a separate, removable entity, but to be a unit 40 with the racket press.

In this case, the upper press cross-member 41 and lower press cross-member 42 are themselves

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bored to receive the dowels, the fixed stud, and to form a seat for spring 43, and the dowels and the floating cross-member are fixed in place during assembly of the press proper.

Dowels 44 and 45 are longer than the corresponding dowels 4 and 5 in Fig. 1, since they must project into the bored cross-members 41 and 42. The slots 46 are lengthened, as is spring 43, so that substantially the same minimum separation is obtained between stud 27 on the floating cross bar 22 and the opposite stud 12 as between studs 12 and 27 in the embodiment of Fig. 1. In case spring 43 is found to buckle excessively due to its added length, we prefer to insert a short rod, not shown in the figure, centrally thru a portion thereof to maintain the axial alinement.

A modified form of this embodiment, not shown in the drawings, can be produced by eliminating the central portion of the dowels, reducing them to elongated studs at each end of the can, and increasing the depth of the portions inserted in the press cross-members in order to maintain the dowel alinement with sufficient rigidity, or forming them integrally with these cross-members.

It is contemplated that the can-holding elements are to be made of wood or an equivalent material which may be easily worked and will yet withstand hard service and the wear and tear to be expected in such equipment. The spring element may be formed of any resilient non-rusting material, or of rust-proofed steel.

The dowels and studs are particularly subject to rough contact and wear in the portions which engage the can and balls directly. Hence, we contemplate the use also of metals or such plastic materials for these parts as possess the necessary hardness and toughness, either as surface layers applied to a core of wood or equivalent material, or as the entire member. We intend to utilize such materials in colors which will be attractive to the purchaser as well as useful.

In summary, it will be seen from the above description that we have invented a new and useful mechanism for carrying tennis balls in conjunction with a racket press. Our device is light and inexpensive, and may readily be attached to existing racket presses or incorporated in the manufacture of new presses as a unit therewith. A can of balls may be instantaneously inserted or removed therefrom, and when in position is held securely. Our holder eliminates the loss of balls in carrying, and insures that the racket and the balls will be kept together. While extremely practical, our holder is susceptible of economical manufacture from materials which will contribute to a very attractive appearance. Our device not only contributes to convenience, but also removes a possible hazard in the common practice of carrying opened cans of balls,

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with their raggedly sharp edges, in the hands.

We claim:

1. A device for securing a ball container to a racket press, comprising parallel members arranged to engage the exterior of said container, a fixed cross-member secured to said parallel members at one end thereof, a locking stud extending centrally from said fixed cross-member, a slidable cross-member engaged about said parallel members at the end thereof opposite said fixed cross-member, longitudinal guide slots formed oppositely in the ends of said parallel members adjacent said slidable cross-member, a floating cross-member disposed near said slidable cross-member, a locking stud extending centrally from said floating cross-member, guide lugs extending from said floating cross-member into limited slidable engagement with said guide slots, sharpened studs extending outwardly from said fixed and slidable cross-members, and resilient means disposed in compression between said slidable cross-member and said floating cross-member.

2. In combination with a racket press, means for securing a ball container thereto, comprising spaced parallel dowels fixed in said press, a dowel stud having an inclined end face disposed intermediate said parallel dowels at one end thereof, parallel guide means formed in said dowels at the ends opposite said stud, a cross-member disposed between said dowels and slidable in said guide means, a locking stud extending centrally from said cross-member, and resilient means for urging said cross-member and locking stud toward said dowel stud.

3. A device for holding a tennis ball container, comprising spaced rods, a cross-member slidably secured on one end of said rods, a cross-member fixedly secured on the opposite end of said rods, a locking stud extending centrally from said fixed cross-member, slots cut in registry into said rods, a floating cross-member arranged to slide in said slots, a locking stud extending centrally from said floating cross-member, resilient means disposed in compression between said slidably mounted cross-member and said floating cross-member, and engaging means formed on said fixed and said slidably mounted cross-members arranged to secure said device relative to a racket press.

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