July 29, 1941. D. S. JOHNSTON 2,250,802

GAME APPARATUS

Filed Sept. 1, 1939

Fig. 1.

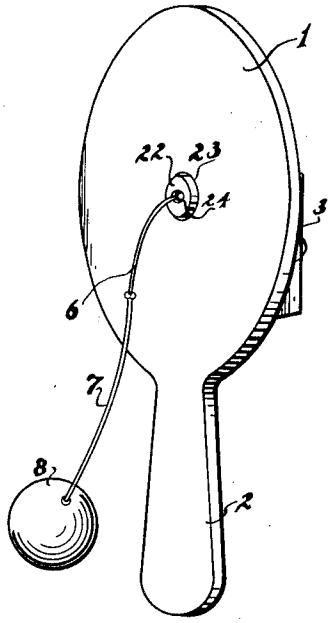


Fig. 2.

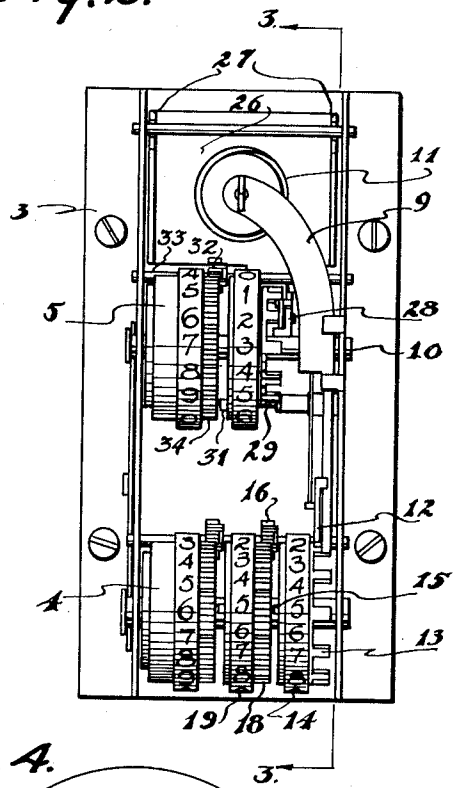


Fig. 3.

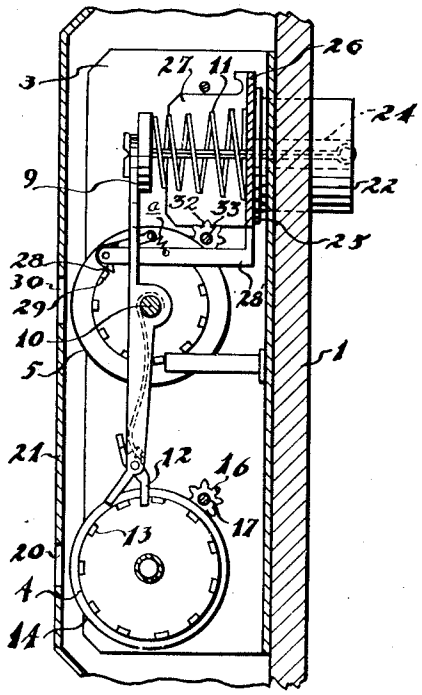
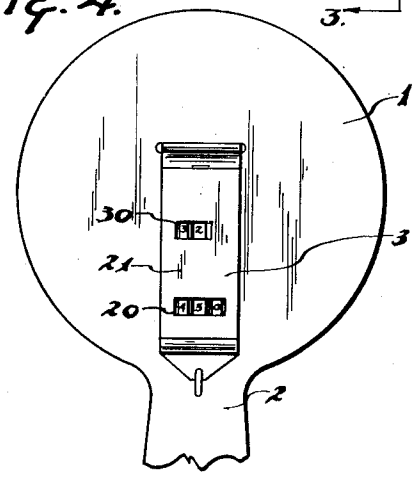


Fig. 4.



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GAME APPARATUS

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4 Claims. (Cl. 273—98)

This invention relates to the type of game played with a ball attached to a racquet by an elastic cord.

The apparatus for the game now in common use consists of a racquet or paddle, adapted to be held in the hand, to the facial center of which is fastened one end of an elastic cord. At the opposite end of the said cord is a ball of suitable size.

The game is played by striking the ball with the racquet, driving it to the limit of the elasticity of the connecting cord, and striking it with the racquet when it is drawn back by the elastic cord, driving it forth again. The score is arrived at by counting the number of times the player is able to hit the ball on its return, and the count is made visually and mentally.

This invention improves on the aforementioned apparatus and the game played therewith by having a counting and recording device attached to the rear face of the racquet or paddle, said recording device being operatively attached to a cord extending through the center of the racquet to which is attached the playing ball by means of an elastic cord. Each time the ball is struck by the racquet is automatically recorded by the pull on the said cord when the ball in play reached the limit of its outward passage.

In this invention, another element of skill is added to the player's hazard by having the operating cord pass through a button, or bull's eye, located at the center of the racquet. This button is operatively connected to a separate set of counting wheels in the recording device and records only the direct hits made in the center of the racquet by the ball on its return passage.

This invention may be used as a training racquet by athletes in training for tennis, squash, and other ball and racquet games, in the playing of which it is necessary to strike the ball accurately with the center of the face of the racquet.

In the accompanying drawing, attached hereto and made a part of this specification:

Figure 1 is a perspective view of the racquet, showing the playing ball attached to the front face and the recording device attached to the rear.

Figure 2 is a rear view of the recording device with the protecting cover removed.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a rear view of the racquet.

Referring to the drawing, upon which like reference numerals indicate like parts throughout:

The racquet, or striking implement, 1, dependent from which is the handle 2, has mounted on its rear face a counting and recording instrument 3. The counting and recording mechanism 3 is provided with two separate sets of recording wheels, 4 and 5. The recording wheels 4 are operated by the cord 6 to which is attached the elastic cord 7, which in turn is attached to the playing ball 8. When the ball 8 is struck by the racquet 1 it travels to the elastic limit of the elastic cord 7, and through the cord 6, causes the lever 9, which is pivoted on the transverse shaft 10, to compress the coiled spring 11, and allows the pawl 12 mounted on the opposite end of the lever 9 to engage a tooth on the escapement wheel 13.

When the play ball 8 has started on its return toward the racquet 1, the spring 11, acting through the lever 9 and the pawl 12, causes the number wheel 14, which is integral with the escapement wheel 13, to advance one number.

Integrally mounted on the side of the number wheel 14, is the pin 15 which, once in each complete revolution of the number wheel, engages the pinion 16 mounted on the shaft 17 and in passing moves it forward one tooth. This pinion 16 also engages a gear 18, integral with the number wheel 19, and advances the said number wheel 19 one number. There are ten teeth on the gear 18, corresponding to the numbers on the face of the number wheel 19. This mechanism is repeated for as many number wheels as may be in the recording device. The numbers on the periphery of the number wheels are read through the slotted apertures 20 in the hinged cover 21.

The series of number wheels 5 is operated in the following manner.

The bull's eye button 22 is arranged to move freely in the aperture 23 in the racquet 1 and projects slightly from the front or striking face of the racquet 1. The button 22 is pierced by the centrally located hole 24, through which the cord 6 may move freely and is provided at its inner end with a flange 25 adapted to prevent the button 22 from passing completely through the aperture 23.

The flange 25 impinges upon the plate 26, which is guided by the side walls 27 made integral with the said plate 26 in such a manner as to cause only sufficient inward movement as to allow the spring pawl 28 to engage the adjacent tooth of the escapement wheel 29. The pawl 28 is pivotally connected to the inner end of a standard 28′ integral with the plate 26 and a spring *a*

actuates the pawl 28 when the plate 26 is urged inwardly by the button 22 when the latter is depressed by the ball 8. Each inward movement of the plate 26, to which is integrally attached the side wall members 27 which guide the plate 26, causes the counting mechanism to register another sequence. The next outward pull on the cord 6 causes the series of number wheels 5 to record one more number.

By means of this arrangement the series of number wheels 5 records only the direct hits of the ball 8 upon the outer face of the button 22. The reading of the score of direct hits is made through the slotted aperture 30 in the cover 21.

The series of number wheels 5 operates in the same manner as do the number wheels 4. An integral pin 31 is attached to the side of the first of the number wheels 5 and engages a pinion 32 mounted on a shaft 33 extending laterally through the mechanism 3, as shown in Figures 2 and 3, between the standard 28' and the side wall members 27. The pinion 32 meshes with a gear 34 integral with the second number wheel of the series 5 and advances the same one number when the pinion is partially rotated by the pin 31.

Having thus fully described my invention, I claim:

1. In a game apparatus, the combination of a striking racquet having mounted upon the rear face thereof a dual registering mechanism, an elastic cord operatively connected to one of the said registering mechanisms having a ball secured to its free end, a button centrally located and protruding from the striking face of the said racquet operatively attached to the other of the said registering mechanisms and having a central bore therethrough, the said cord operatively arranged through the said bore and adapted to actuate the first named mechanism when a pull is exerted thereon by the said ball.

2. In a game apparatus, the combination of a striking racquet having mounted upon the rear face thereof two series of counting and registering wheels, each having numbers decimally arranged on the periphery thereof, integrally mounted gears with teeth corresponding to the said numbers, pinions operatively engaging the said gears and pins integral with the said number wheels adapted to contact the pinions engaging the gear on the adjacent number wheels, escapements integral with the initial movement wheel of the said series, a pawl operatively mounted on a pivoted lever having a limited movement sufficient to turn the said escapement one tooth, in the first of the said series, a movable button operatively arranged through the said racquet and connected with the second of the said series, an elastic cord operatively attached to the said lever passing through an aperture in the center of the said button, and adapted to actuate the first of the said series, a playing ball attached to the end of the said elastic cord, and a coiled spring operatively adapted to return the said lever and the said button to equilibrium after each passage of the said ball from and its return to the racquet.

3. In a game apparatus, the combination of a striking racquet having mounted upon the rear face thereof a series of counting and registering wheels having numbers decimally arranged on the periphery thereof, integrally mounted gears with teeth corresponding to the said numbers, pinions operatively engaging the said gears, pins integral with the said number wheels adapted to contact the pinion engaging the gears on the adjacent number wheels, an escapement wheel integral with the initial number wheel of the said series, a pawl operatively mounted on a pivoted lever having a limited movement sufficient to turn the said escapement one tooth and a cord having a ball secured to its free end operatively attached to the said lever passing through an aperture in the center of the racquet adapted to actuate certain of the said counting and registering wheels when a pull is exerted thereon by the said ball.

4. In a game apparatus, the combination of a striking racquet having mounted upon the rear face thereof a series of counting and registering wheels having numbers decimally arranged on the periphery thereof, integrally mounted gears with teeth corresponding to the said numbers, pinions operatively engaging the said gears, pins integral with the said number wheels adapted to contact the pinions engaging the gears on the adjacent number wheels, an escapement wheel integral with the initial movement wheel of the said series, a pawl operatively mounted on a pivoted lever having sufficient movement to turn the said escapement one tooth and an elastic cord having a ball secured to its free end operatively attached to the said lever passing through an aperture in the center of the racquet and adapted to actuate the said wheels when a pull is exerted thereon by the said ball.

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