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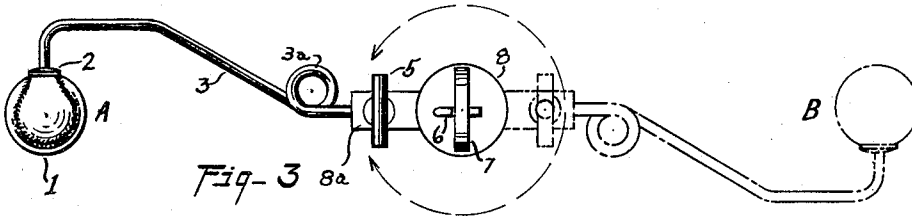
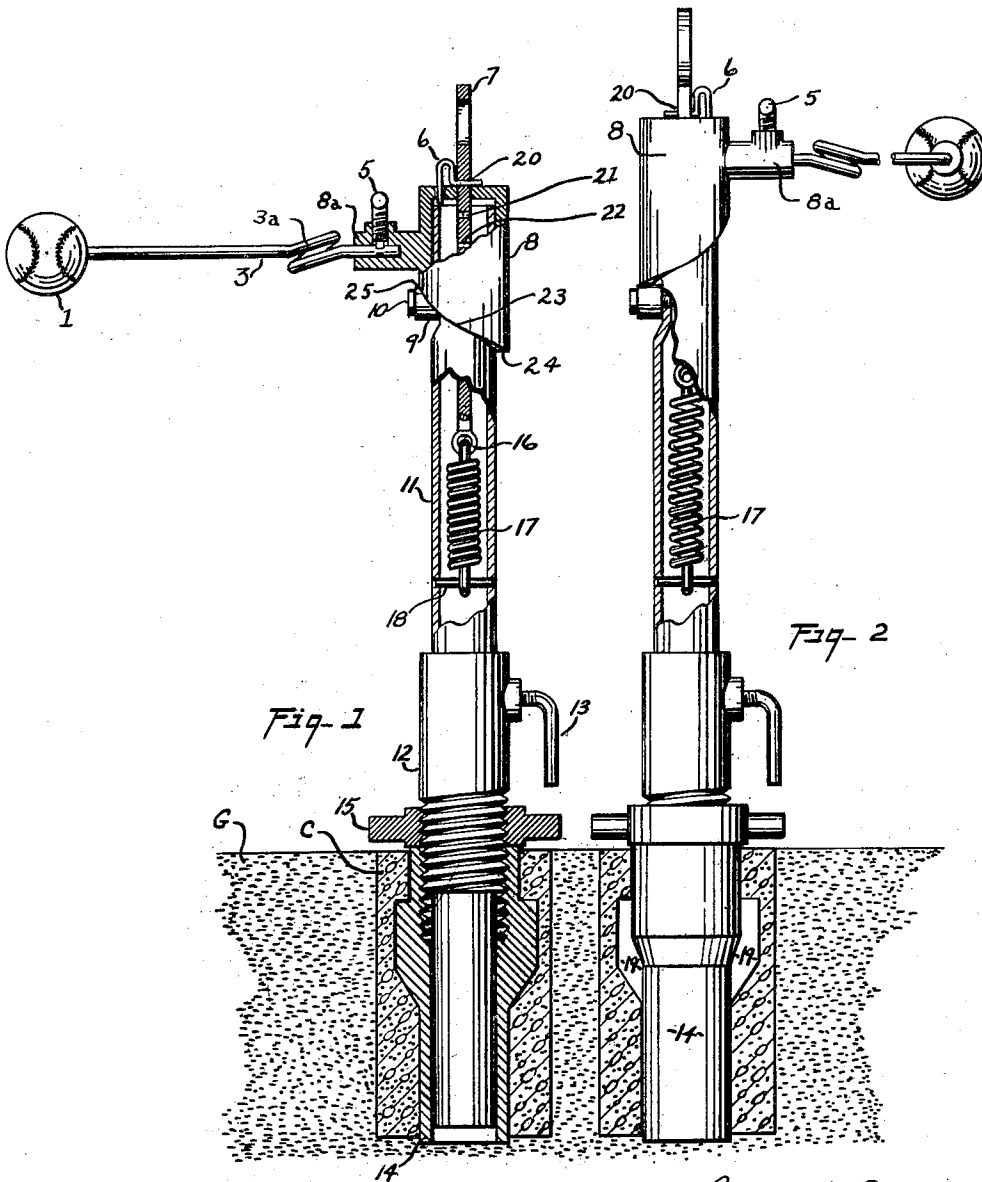
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2,818,255

BATTING PRACTICE DEVICE

Filed Oct. 27, 1955

2 Sheets-Sheet 1



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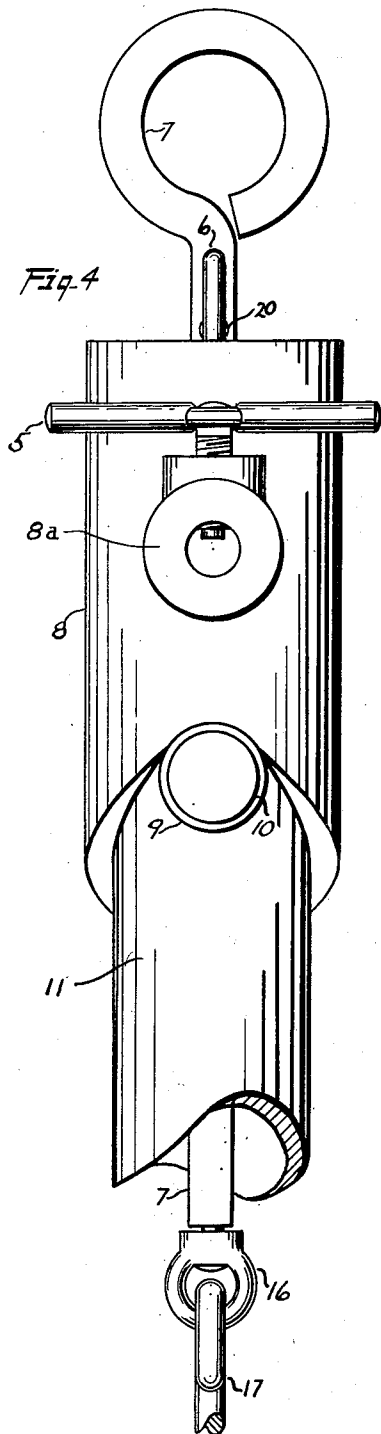
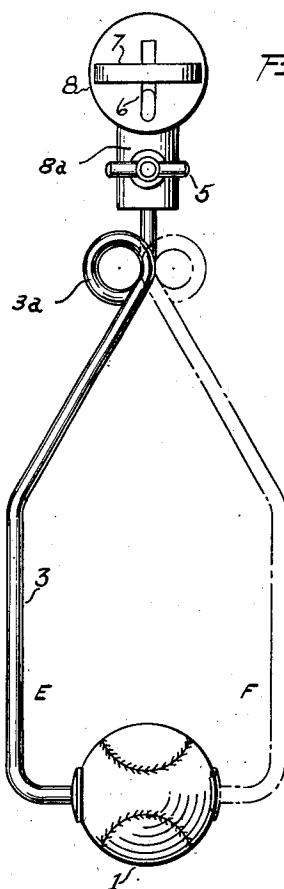
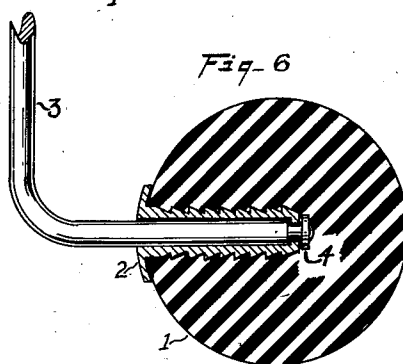
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2 Sheets-Sheet 2



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BATTING PRACTICE DEVICE

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5 Claims. (Cl. 273—26)

The present invention relates to a batting practice device and more particularly to a batting practice device of the type wherein a ball is mechanically presented to a batter thereby obviating the necessity for the employment of another individual as a pitcher.

Many batting practice devices have been proposed. The great majority of these have been relatively expensive so as to constitute items only a few of which could reasonably be purchased and put into use. Additionally, while most of these devices provided some amusement, they did not provide the utilitarian function of improving the batting skill or capacity of an individual; and furthermore, provided little indication of the batting skill of any particular individual. As a consequence, the stimulus of observable improvement in batting skill was not present; and these devices soon fell into relative disuse so far as actual "practice" in the skill of hitting a baseball is concerned.

Accordingly, the general object of the present invention is to provide a batting practice device which, while simple and thus inexpensive, effects by its use an increase in batting skill and stimulus for yet further improvement.

A feature of the invention is to provide a batting practice device that is so inexpensive and easy to install as to render reasonable its purchase and use by the average family.

More particularly, a feature of the invention relates to the provision of an adjustment of the device for use by batters of various heights and who may be right or left-handed.

A further feature relates to the incorporation of a novel arrangement for resiliently resisting movement of a batted ball and for subsequently returning the ball to its starting position preparatory to a second impact by the bat.

Yet another feature relates to the adjustability of the amount of resistance to ball motion which adjustment can be effected quickly and easily.

An additional feature relates to the incorporation of certain shock absorbing elements whereby the force of impact to the structure is absorbed without excessive shock to any one component.

These and other objects and features of the invention as well as the advantages stemming therefrom will become more apparent from a perusal of the following description of the accompanying drawings wherein:

Fig. 1 is a side elevation of a preferred embodiment of the present invention, certain parts being broken away to illustrate interior details of construction,

Fig. 2 is a side elevational view similar to Fig. 1, but illustrating the ball in a different rotative position,

Fig. 3 is a top plan view of the device as shown in Fig. 1 and illustrating in phantom lines the advanced rotative position of the ball as shown in Fig. 2,

Fig. 4 is an enlarged fragmentary view in side elevation of the rotatable mounting for the ball,

Fig. 5 is a fragmentary top plan view illustrating in full and phantom lines the ball-positioning arrangement

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for the accommodation of right and left-handed batters, and

Fig. 6 is a detailed sectional view of the ball and the mounting structure therefor.

The baseball, indicated at 1, is mounted in accordance with the present invention to move in a generally circular path about a substantially vertical axis. It will be understood that the term "ball" or "baseball" as used herein refers to that object, indicated at 1, which is in reality merely a simulation of a baseball.

In order to mount the ball 1 for the described movement, a tubular standard 11 is arranged for telescopic insertion into an upright sleeve 12 so that the axis of the standard is substantially vertical. A clamp 13 passes through an opening in the sleeve 12 so as to releasably engage the tubular standard 11 and hold the same at a desired height. The sleeve 12, itself, is exteriorly threaded so that it may be screwed into a correspondingly threaded, generally cylindrical base 14 that is mounted in concrete, indicated at C, set in the ground G. Preferably, gussets 19 are formed on the exterior of the base 14 so as to render the mounting in the concrete C more secure. In order to lock the sleeve 12 within the base 14, a lock nut 15 is applied. Mere loosening of this lock nut 15 and subsequent turning of the threaded sleeve 12 enables the whole device to be removed from the base 14 and thus, as can be visualized with reference to Figs. 1 and 2, no structure is left protruding above the ground G.

On the upper end of the tubular standard 11 is placed a cam 8 in the form of a cylindrical cup that fits loosely over the top of the standard so as to be freely rotatable thereon. A cylindrical boss 8a projects radially from the cam 8 and has a small recess at its end for the reception of one end of an arm 3.

Such arm 3 is in the form of a cylindrical rod that is bent rectangularly at its distal end and projects into the previously mentioned ball 1 to mount the same. A sleeve 2 loosely surrounds the rod 3 and has teeth formed on its exterior surface to provide gripping engagement with the ball 1. A riveted washer 4 holds the rod 3 and sleeve 2 against axial displacement, but allows rotation of the ball 1 and sleeve 2 around the rod 3. Intermediate the ball and the mounted end of the arm 3, the latter is twisted into a helical configuration 3a which both absorbs the shock of impact of a bat with the ball 11 and also permits the ball to move slightly up or down when struck a glancing blow.

In order to hold the arm 3 securely within the boss 8a, a set screw 5 is arranged to engage one of two diametrically-opposed flattened portions on the rod. If one flattened portion is engaged by the set screw 5, the arm 3 and ball 1 will be disposed as indicated in full lines in Fig. 5 so as to accommodate a right-handed batter. If, on the other hand, a left-handed batter desires to use the device, the set screw 5 is loosened and the arm 3 rotated 180° to the position shown in phantom lines in Fig. 5 whereupon the set screw may again be tightened so as to maintain this position.

Reverting now to the previously mentioned cam 8 that takes the form of a cup mounted in inverted position on top of the standard 11, the lip of such cup provides a cam face 23 adapted to engage the surface of a roller 9 mounted on a shaft 10 that projects horizontally from its support on the standard 11. As can best be visualized by reference to Fig. 4, the cam face 23 is divided into two sections, each of which has a helical configuration, but are of opposite pitch or, in other words, are counterwound. Each of the helical cam face sections extends through one half the circumference of the cup-shaped cam 8 so as to form at their opposite junctures high and low points as indicated at 24 and 25. The cam 8 is constantly

maintained in engagement with the roller 9 by means of a spring 17 that is held in tension between a pin 18 that bridges the interior of the tubular standard 11 and a swivel 16 at the lower end of a connecting rod 7. The upper end of this connecting rod 7 projects through a suitable opening in the cup shaped cam 8 and is connected operatively thereto by a pin 6 that is arranged for manual insertion into a desired one of several holes 20, 21, 22 formed in the rod 7. The upper end of the rod 7 is bent so as to form a handle enabling manual withdrawal of the connecting rod 7 when it is desired to change the placement of the pin 6. Preferably, one end of the pin 6 is bent downwardly to enter a small hole in the cup-shaped cam 8 so as to preclude its accidental withdrawal from the connecting rod 7 during operation of the device.

When the device has been assembled and adjusted for a right-handed batter, the normal disposition of the parts will be as illustrated in Fig. 1 with the roller 9 in engagement with the low point 25 of the cam 8. If it is assumed that the batter directly hits the ball, the same will move from the position illustrated in Fig. 1 and in full lines in Fig. 3 to eventually arrive at the position illustrated in Fig. 2 and in phantom lines in Fig. 3. During this movement of 180°, the cam 8 is caused to shift upwardly to eventually reach engagement with the roller 9 at its high point 24 as shown in Fig. 2; and as the cam 8 raises, the amount of tension of spring 17 increases. As a consequence, a gradual increase in the resistance to the circular motion of the ball 1 is experienced during its first half revolution. If the ball is struck insufficiently hard to complete one-half revolution, it will be quickly returned by rotation in the opposite direction to its starting point, as illustrated in Fig. 1. If on the other hand, the striking force is greater, the ball will move more than 180° and thereafter continue in the same direction and complete one full revolution to return to its starting point. In certain cases, the ball may be struck sufficiently hard to achieve two or more complete revolutions; but whenever the force of impact has been expended, the ball 1 will be immediately returned to its starting point by a motion which in each case will be less than one-half of a revolution. Furthermore, when the ball is returned to its starting position, the low point 25 of the cam 8 comes into contact with the roller 9 whereupon damping forces are encountered to quickly eliminate oscillation of the ball.

When the ball is struck directly or centrally, it will move substantially in a horizontal plane, rising just slightly as the cam 8 climbs the roller 9. A certain amount of the shock of such contact is absorbed in the helical portion 3a of the arm 3 and as a consequence, excessive shock of engagement between the cam 8 and roller 9 is avoided. On the other hand, if the ball is hit a glancing blow, the helical portion 3a of the rod 3 permits limited oscillation of the ball in an up and down direction, which will immediately indicate to the batter that additional practice is required in order to achieve more solid and central bat-

ting contact. By observation of the number of revolutions obtainable by a given batter and taking into consideration the setting of the tension of spring 17, a batter may ascertain how great and how rapid he is improving.

Various alterations and modifications may be made without departing from the spirit of the present invention. As a consequence, the foregoing description of a preferred embodiment thereof is to be considered as merely exemplary and not in a limiting sense; the actual scope of the invention being indicated by the appended claims.

What is claimed is:

1. A batting practice device which comprises a ball, a cylindrical cam mounting said ball at a position displaced from the axis of said cam, means mounting said cam for rotation and axial shifting movement, a roller rigidly supported for engagement with the face of said cam, and resilient means operably engaging said cam to resist axial motion of said cam in a manner such that rotation of said cam and said ball mounted thereon is resiliently retarded.

2. A batting practice device according to claim 1 wherein said cylindrical cam has a cam face extending helically for one-half the circumference of said cam and extending helically in a direction of opposite pitch for the remaining half of the circumference of said cylindrical cam.

3. A batting practice device according to claim 1 wherein said resilient means comprises a tensioned spring.

4. A batting practice device according to claim 3 comprising means for adjusting the tension of said spring.

5. A batting practice device which comprises a ball, an arm supporting said ball at its end, the end of said arm being bent substantially rectangularly to the remainder thereof, a cylindrical cam supporting said arm to extend radially therefrom and for adjustment about its longitudinal axis whereby said arm can be disposed with its ball-carrying end selectively directed in either of two opposite directions, means mounting said cam for rotation and axial shifting movement, a roller rigidly supported for engagement with the face of said cam, and resilient means operably engaging said cam to resist axial motion of said cam in a manner such that rotation of said cam, said arm supported thereby, and said ball mounted at the end of said arm is resiliently retarded.

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