United States Patent

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[54] BASEBALL BATTING PRACTICE DEVICE

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[52] **U.S. Cl.** ..... **273/26 E**
[51] **Int. Cl.** **A63b 69/40**
[58] **Field of Search** ..... 273/26, 26 E, 29, 95 A

[56] **References Cited**

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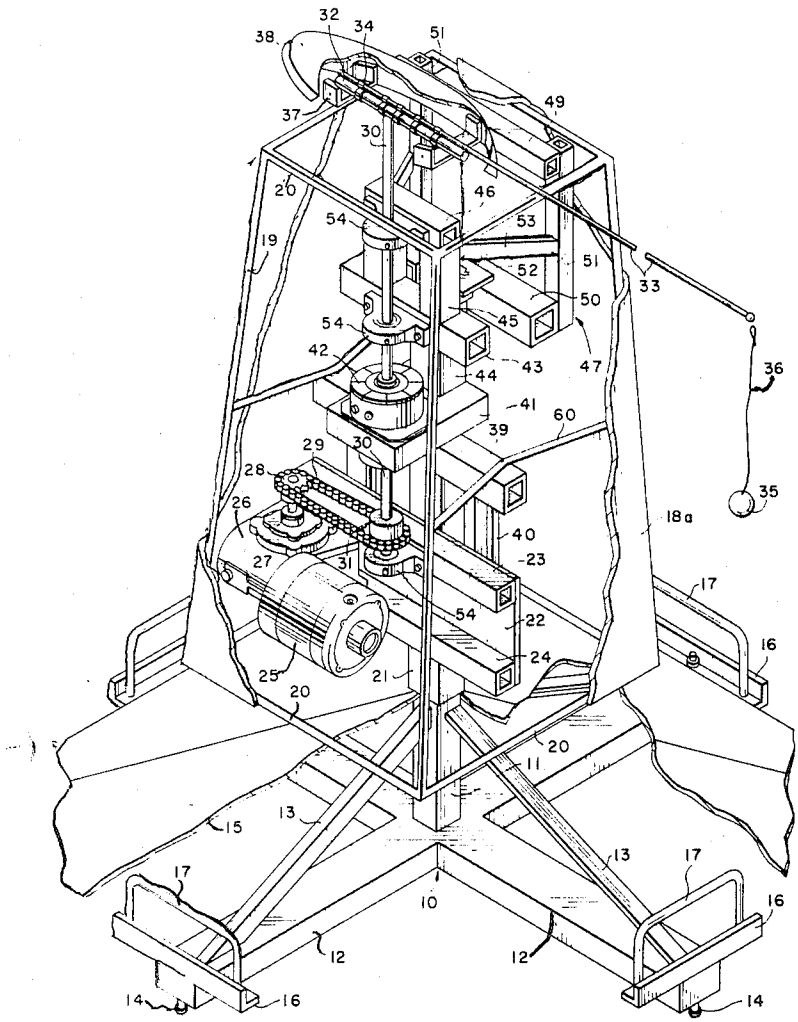
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[57] **ABSTRACT**

A baseball practice device including vertical shafts, one above the other, and a friction clutch therebetween. A lateral arm on the upper shaft supports a ball on a cord on the extending end of the arm and the lower shaft is driven by a variable speed reversible electric motor. All of the named parts are mounted in a vertically movable frame. The frame does not turn, but there is a reversible motor and screw mechanism, also carried by the frame, which selectively adjusts the height of the latter and consequently the height of the arm. Preferably, the arm supporting the cord and ball is flexible; thus, the speed of the first-mentioned motor, by centrifugal force, determines the height of the ball from the ground. The two motors are driven at the same time from remote controls; thus, a batter does not know the elevation or speed of the ball when he swings a bat and tries to hit the ball as it approaches him.

6 Claims, 3 Drawing Figures



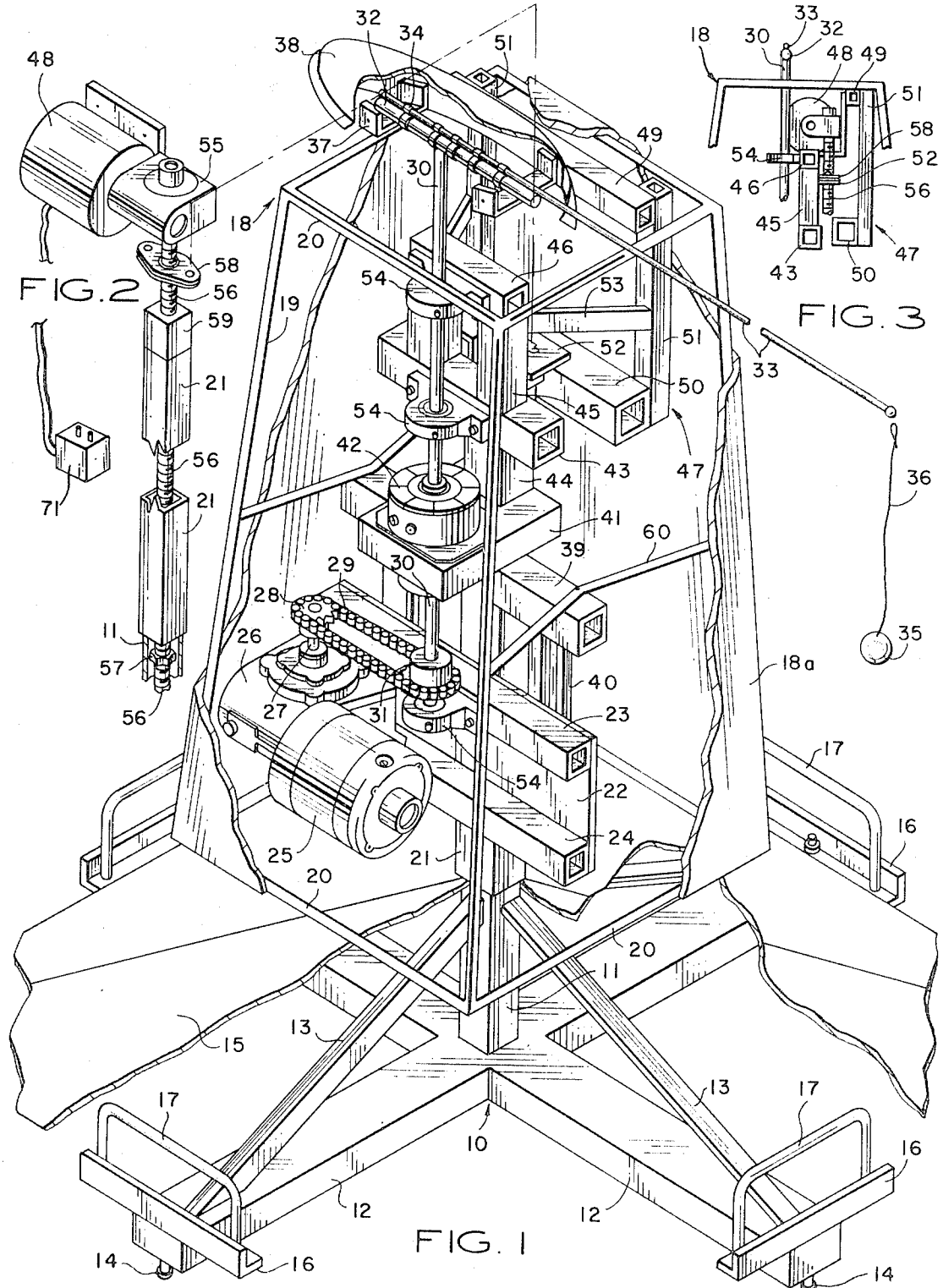


FIG. 2

FIG. 3

FIG. 1

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BASEBALL BATTING PRACTICE DEVICE

This invention relates to baseball practice devices and has reference to apparatus including a driven rotating and at least generally horizontal arm having a ball suspended by a cord on an extending end of the arm.

Devices of this general nature have been proposed heretofore but were not as versatile as the present invention.

The primary object of the invention is to provide a baseball practice device of such construction and operation that the batter will not know the elevation or speed of the ball until the ball is near him and whereby, by practice, he can develop his coordination.

Another object of the invention is to provide a baseball practice device including a frame having a reversible electric motor for rotating the frame in either direction.

A particular object is to provide an additional electric motor and screw mechanism for raising and lowering the entire frame including the rotating arm and ball suspended thereon.

A further object is to provide a variable torque electric clutch in a vertical arm supporting shaft whereby the direction of the arm may change when the ball is hit, yet provide means for stopping the arm and then rotating the arm in the desired direction for practice.

These and other objects of the invention will become apparent from the following description and the accompanying drawing, in which:

FIG. 1 is a broken perspective view of a baseball practice batting device according to the invention without the motor and mechanism for raising and lowering the frame.

FIG. 2 is a perspective, partly shown in section, of the motor and mechanism for raising and lowering the frame. The actual location of the motor and mechanism illustrated in FIG. 2 is indicated by dashlines and relate to FIG. 1, and

FIG. 3 is a transverse broken sectional view of the upper portion of the frame showing the motor and mechanism for raising and lowering the frame.

In the form of the invention shown there is a base **10** comprised of a central vertical stationary square tube **11** having lateral extensions **12** at the bottom. Diagonal braces **13** extend from the outer ends of the extensions **12** to the stationary tube **11**, and screw-type feet **14** extend downwardly from the ends of the extensions so as to adjust the stationary tube in a vertical, or nearly vertical, position. A conforming cover **15** of sheet material may be provided over the braces **13**. Handles for lifting and moving the device may be in the form of angle irons **16** across the ends of the extensions **12** and which irons have inverted U-shaped grips **17** secured to the irons.

Above base **10** there is a vertically movable frame **18** shaped like a truncated pyramid and comprised of generally vertical tubes **19** and horizontal tubes **20**, all joined, as by welding, at their corners. The frame **18** is supported on a vertical upper square tube **21** which telescopically fits the stationary square tube **11** of the base **10**. The frame **18** is covered with sheet material **18***a*. In the appended claims the telescoping tubes **11** and **21** are referred to as vertical supports. Secured to the upper square tube **21** near the lower end thereof there is a mounting plate **22** having parallel transverse upper and lower cross members **23** and **24**. A variable speed reversible electric motor **25** is mounted on the crossmembers **23** and **24** and has a commercially available reduction gear **26** on its drive shaft, not shown. The output shaft **27** of the reduction gear is vertically disposed and has a drive sprocket **28** on its upper end for driving an endless sprocket chain **29**. The chain **29** drives a vertical shaft **30** by means of a sprocket **31** near the shaft's lower end, whereas the upper end of the shaft extends above the frame **18** where the shaft has a T-member **32** for supporting a laterally extending flexible arm **33**. Clamps **34** around the T-member **32** secure the arm **33** in place. A baseball **35** is suspended on the extending end of the arm **33** by a cord **36**. U-shaped brackets **37** are provided on the ends of the T-member for supporting an elongate inverted cup-shaped cover **38**.

There is a transverse crossmember **39**, square in cross section, secured to the mounting plate **22** by upstanding members **40**. There is a horizontal rectangular support **41** on the last referred to crossmember **39** and is offset with respect thereto to receive the vertical shaft **30**. The shaft **30** is separated within a commercially available electrically controlled clutch **42** on the offset support **41**. Above the support **41** and parallel with the crossmember **39** there is another crossmember **43** connected with the support **41** by a spacer **44**. On the top of the crossmember **43** there are spaced vertical supports **45** and a crosspiece **46** across the tops thereof.

A subframe **47** for supporting an electric variable speed reversible motor **48** is mounted on and near the upper end of the upper square tube **21** and is comprised of spaced upper and lower horizontal members **49** and **50** and vertical members **51** at their ends. A horizontal plate **52** connects the lower subframe member **50** with the upper vertical square tube **21** and braces **53** connect the vertical subframe members **51** with the spaced vertical supports **45**. Pillow block bearings **54** are mounted on the top crosspiece **46** and crossmembers **43** and **23** for rotatably supporting the vertical shaft **30**.

Referring now to FIGS. **2** and **3**, the motor **48** includes a reduction gear **55** and a depending threaded shaft **56** which engages a threaded nut **57** fixed in the lower square tube **11**. A bearing **58** is mounted on the horizontal plate **52** and there is a smooth bore guide block **59** on the top of the upper vertically movable square tube **21**. Angular braces **60** connect the support crossmember **39** with the vertical frame members **19** to prevent the frame **18** from rotating.

In operation the lower motor **25** operates in a direction for use by either a right-hand or left-hand batter. Rotation of the arm **33**, by centrifugal force, causes the ball **35** to swing outwardly. If the ball **35** is struck by the batter the clutch **42** allows the arm **33** to swing in the opposite direction. However, energy applied to the clutch **42** quickly slows rotation of the arm **33** and the motor **25** again swings the arm in the desired direction. While the arm **33** is rotating the entire frame **18** may be raised and lowered by the upper motor **48** by remote control **71**, FIG. **2**.

The invention is not limited to the exemplary construction herein shown and described, but may be made in various ways within the scope of the appended claims.

What is claimed is:

1. A baseball practice device comprising a base, a vertical stationary support thereon, a second vertical support slidably mounted on the first said support, means preventing relative rotation between the two said supports, a vertical shaft rotatably carried by the second said support and extending thereabove, a laterally extending arm on the extending portion of said shaft, a ball tethered on the extending end of said arm, means rotating said shaft and means raising and lowering the second said support relative to said stationary support.

2. A baseball practice device as defined in claim **1** and wherein said means rotating said vertical shaft includes a motor and reduction gear carried by the second said vertical support, a drive sprocket having a vertical axis driven by said reduction gear, a sprocket on said vertical shaft and an endless drive chain connecting the two said sprockets, and an electrically controlled clutch in said vertical shaft above the sprocket thereon.

3. A baseball practice device as defined in claim **1** and wherein said means raising and lowering said second vertical support includes a reversible motor mounted near the upper portion thereof, a reduction gear driven by the motor, a depending screw driven by the reduction gear and a fixed nut carried by the first said vertical support and threadedly receiving said depending screw.

4. A baseball practice device as defined in claim **1** wherein said means raising and lowering the second said support relative to said stationary support is operable during rotation of said shaft for effecting a change in elevation during batting practice.

5. A baseball practice device as defined in claim 4 wherein said means raising and lowering the second said support relative to said stationary support comprises a powered means that is responsively connected with and responsive to a remote control.

6. A baseball practice device as defined in claim 5 wherein said powered means comprises a reversible electric motor that is drivingly connected with one element of a screw element-nut element combination so as to effect respective directional rotation of said one element for raising and lowering the second said support with respect to said stationary support.

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