BASEBALL PITCHING SYSTEM

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A baseball pitching system for allowing an individual to operate a baseball pitching machine similar to an actual human pitcher. The baseball pitching system includes a housing, a ball throwing unit within the housing, a central processing unit in communication with the ball throwing unit, and an interface in communication with the central processing unit. The user is able to select a desired pitch type and velocity through the interface which communicates the same to the central processing unit which manipulates the velocity of the pitching wheels within the ball throwing unit to create the desired pitch. Automatic sequences may be programmed along with random pitches to assist in simulating a real life human pitcher.
FIG. 4

Interface
30

Central Processing Unit
100

Ball Throwing Unit
104
START

User Selects Pitch Type

User Selects Pitch Velocity

Adjust Velocity of Wheels of Ball Throwing Unit According to Selections

Release Ball Between Wheels

END

FIG. 6
BASEBALL PITCHING SYSTEM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates generally to baseball pitching machines and more specifically it relates to a baseball pitching system for allowing an individual to operate a baseball pitching machine similar to an actual human pitcher.

[0003] 2. Description of the Prior Art

[0004] Baseball pitching machines have been in use for years. Conventional baseball pitching machines are typically comprised of a frame structure, a baseball reservoir, and a pair of wheels driven by a motor for engaging and “throwing” the baseball. The user may manually control the velocity of the baseball being thrown by adjusting the rotational velocity of the pair of wheels wherein the baseball is placed between. The user may also adjust the relative rotational velocity of the pair of wheels to achieve various types of pitches such as a curve ball, a slider, a fastball sink, a fastball rise, and various other pitches that are well known in the art. To switch between a slider to a fastball sink the user must typically rotate the entire frame of the baseball pitching machine since the pair of wheels only rotate in a single plane.

[0005] An improvement upon the two-wheel design is illustrated in U.S. Pat. No. 5,649,523 entitled “Ball Throwing Apparatus” issued on Jul. 22, 1997 to Jack C. Scott. U.S. Pat. No. 5,649,523 illustrates the usage of three wheels at an angle of 120 degrees with respect to one another for providing various types of pitches without requiring adjustment of the frame structure. The present invention incorporates by reference the disclosure of U.S. Pat. No. 5,649,523 into the present application.

[0006] The main problem with conventional baseball pitching machines, including U.S. Pat. No. 5,649,523, is that they do not provide a convenient means for delivering a desired pitch to a batter to simulate a real life experience with a human pitcher. A problem with conventional pitching machines is that they require significant labor and time for adjusting the type of pitch to be delivered.

[0007] While these devices may be suitable for the particular purpose to which they address, they are not as suitable for allowing an individual to operate a baseball pitching machine similar to an actual human pitcher. Conventional pitching machines are difficult to operate and do not provide an accurate simulation of a real life human pitcher.

[0008] In these respects, the baseball pitching system according to the present invention substantially departs from the conventional concepts and designs of the prior art, and in so doing provides an apparatus primarily developed for the purpose of allowing an individual to operate a baseball pitching machine similar to an actual human pitcher.

SUMMARY OF THE INVENTION

[0009] In view of the foregoing disadvantages inherent in the known types of baseball pitching machines now present in the prior art, the present invention provides a new baseball pitching system construction wherein the same can be utilized for allowing an individual to operate a baseball pitching machine similar to an actual human pitcher.

[0010] The general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new baseball pitching system that has many of the advantages of the baseball pitching machines mentioned heretofore and many novel features that result in a new baseball pitching system which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art baseball pitching machines, either alone or in any combination thereof.

[0011] To attain this, the present invention generally comprises a housing, a ball throwing unit within the housing, a central processing unit in communication with the ball throwing unit, and an interface in communication with the central processing unit. The user is able to select a desired pitch type and velocity through the interface which communicates the same to the central processing unit which manipulates the velocity of the pitching wheels within the ball throwing unit to create the desired pitch. Automatic sequences may be programmed along with random pitches to assist in simulating a real life human pitcher.

[0012] There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and that will form the subject matter of the claims appended hereto.

[0013] In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of the description and should not be regarded as limiting.

[0014] A primary object of the present invention is to provide a baseball pitching system that will overcome the shortcomings of the prior art devices.

[0015] A second object is to provide a baseball pitching system for allowing an individual to operate a baseball pitching machine similar to an actual human pitcher.

[0016] Another object is to provide a baseball pitching system that does not require significant time and labor to adjust the type of pitch to be delivered.

[0017] An additional object is to provide a baseball pitching system that allows for quick and efficient adjustment of a pitch to be delivered without significant time delays.

[0018] A further object is to provide a baseball pitching system that allows an individual to select a pitch by name.

[0019] Another object is to provide a baseball pitching system that displays the velocity of the pitch in an easy to read manner.

[0020] Other objects and advantages of the present invention will become obvious to the reader and it is intended that these objects and advantages are within the scope of the present invention.
To the accomplishment of the above and related objects, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated and described within the scope of the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Various other objects, features and attendant advantages of the present invention will become fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the several views, and wherein:

FIG. 1 is an upper perspective view of the present invention.
FIG. 2 is a rear view of the present invention.
FIG. 3 is a top view of the interface.
FIG. 4 is a block diagram illustrating the communications between the interface, central processing unit and the ball throwing unit.
FIG. 5 is a block diagram illustrating an exemplary central processing unit.
FIG. 6 is a flowchart illustrating the operation of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 through 6 illustrate a baseball pitching system 10, which comprises a housing, a ball throwing unit within the housing, a central processing unit in communication with the ball throwing unit, and an interface in communication with the central processing unit. The user is able to select a desired pitch type and velocity through the interface which communicates the same to the central processing unit which manipulates the velocity of the pitching wheels within the ball throwing unit to create the desired pitch. Automatic sequences may be programmed along with random pitches to assist in simulating a real life human pitcher.

A. Housing

The present invention generally is comprised of a housing 20 which may be similar to conventional pitching machines. The housing 20 preferably includes an opening 22 for allowing discharge of the balls from the ball throwing unit 104, a plurality of legs 24, opposing side portions 26, a front portion 28 and a rear portion. However, the housing 20 may be constructed of various types of materials and shapes as can be appreciated by one skilled in the art. The housing is preferably structured for allowing easy transportation, setup and storage thereof.

B. Central Processing Unit

FIG. 5 is a block diagram of an exemplary central processing unit 100 for practicing the various aspects of the present invention. The central processing unit 100 is preferably enclosed within the housing 20. A power source is electrically connected to the central processing unit 100 for providing electrical power to the central processing unit 100. The power source 140 may be comprised of any power source such as a battery structure (disposable or rechargeable), solar cells, or direct power.

The central processing unit 100 may include a display screen, a network interface 112, a keypad 114, a microprocessor 116, a memory bus 118, random access memory (RAM) 120, a speaker 102, read only memory (ROM) 122, a peripheral bus 124, a keypad controller 126, and a communications device 108. As can be appreciated, the central processing unit 100 of the present invention may be comprised of any combination of well-known computer devices, personal digital assistants (PDAs), laptop computers, and other similar electronic structures.

The microprocessor 116 is a general-purpose digital processor that controls the operation of the central processing unit 100. The microprocessor 116 can be a single-chip computer or implemented with multiple components. Using instructions retrieved from memory, the microprocessor 116 controls the reception and manipulation of input data and the output and display of data on output devices.

The memory bus 118 is utilized by the microprocessor 116 to access RAM 120 and ROM 122. RAM 120 is used by microprocessor 116 as a general storage area and as scratch-pad memory, and can also be used to store input data and processed data. ROM 122 can be used to store instructions or program code followed by microprocessor 116 as well as other data.

Peripheral bus 124 is used to access the input, output and storage devices used by the central processing unit 100. In the described embodiment(s), these devices include a display screen, an accessory device 106, a speaker 102, a communications device 108, and a network interface 112. A keypad controller 126 is used to receive input from the interface 30 or a keypad 114 and send decoded symbols for each pressed key to microprocessor 116 over bus 128.

The display screen is an output device that displays images of data provided by the microprocessor 116 via the peripheral bus 124 or provided by other components in the central processing unit 100. Other output devices such as a printer, plotter, typesetter, etc. can be utilized as an accessory device 106.

The microprocessor 116 together with an operating system operate to execute computer code and produce and use data. The computer code and data may reside on RAM 120, ROM 122, or other storage mediums. The computer code and data could also reside on a removable program medium and loaded or installed onto the central processing unit 100 when needed. Removable program mediums include, for example, PC-CARD, flash memory, and floppy disk.

The network interface 112 is utilized to send and receive data over a network connected to other central processing units. The network interface may be comprised of a Universal Serial Bus (USB), an external bus standard that supports data transfer rates of 12 Mbps (1.2 million bits per second). A single USB port can be used to connect up to 127 peripheral devices, such as mice, modems, and key-
boards. An interface card or similar device and appropriate software implemented by microprocessor 116 can be utilized to connect the central processing unit 100 to an existing network and transfer data according to standard protocols including data over a global computer network such as the Internet. [0041] The interface 30 and/or a keypad 114 is used by a user to input commands and other instructions to the central processing unit 100. Other types of user input devices can also be used in conjunction with the present invention. For example, pointing devices such as a computer mouse, a trackball, a stylus, or a tablet to manipulate a pointer on a screen of the central processing unit 100.

[0042] The present invention can also be embodied as a computer readable code on a computer readable medium. The computer readable medium is any data storage device that can store data which can be thereafter be read by a central processing unit. Examples of the computer readable medium include read-only memory, random-access memory, magnetic data storage devices such as diskettes, and optical data storage devices such as CD-ROMs. The computer readable medium can also be distributed over a network coupled central processing units so that the computer readable code is stored and executed in a distributed fashion.

[0043] The communications device 108 may be comprised of any well-known communication system that allows communications with external electronic devices. The communications device 108 may provide for various types of communication such as but not limited to via infrared (IR), wireless (i.e. BLUETOOTH), unidirectional, bi-directional, radio frequency (RF), visible light, ultrasonic and various other means for communicating with external electronic devices.

[0044] C. Interface

[0045] Input into the central processing unit 100 is accomplished mainly through the usage of the interface 30 as shown in FIGS. 2 and 3 of the drawings. The interface 30 is in communication with the central processing unit 100 for allowing control of the central processing unit 100 as shown in FIG. 4 of the drawings. The interface 30 includes a plurality of buttons that allow the user to execute one or more commands. A power switch 40 within the interface 30 controls the power to the baseball pitching system 10.

[0046] The interface 30 allows for the control of basic functions such as pitch type, pitch velocity, pitch direction, pitch elevation, pitch program, and programming. However, the interface 30 may also include several buttons that represent a specific pitch. For example, a button upon the interface 30 may be programmed to throw a curve ball at a velocity of 75 mph in a central direction and elevation. The interface 30 indicates to the user what pitch type and pitch velocity they have selected.

[0047] As best illustrated in FIG. 3 of the drawings, the interface 30 preferably includes an elevation display 50, a first elevation selector 52, and a second elevation selector 54. The user is able to select the desired elevation (i.e. low to high) by selecting the elevation selectors 52, 54 until the desired elevation of the pitch is achieved as shown upon the elevation display 50.

[0048] As further shown in FIG. 3 of the drawings, the interface 30 preferably includes a direction display 60, a first direction selector 62, and a second direction selector 64. The user is able to select the desired direction (i.e. left to right) of a pitch by selecting the elevation selectors 62, 64 until the desired direction of the pitch is achieved as shown upon the direction display 60.

[0049] A programming display 70 is provided for allowing programming of the central processing unit 100 of a pitching program. The plurality of programming selectors 72 allow for the input and viewing of each pitch of the selected program. Obvious variations of the programming section of the interface 30 may be achieved.

[0050] As shown in FIG. 3 of the drawings, a pitch selector 80 is provided allowing the user to control the pitch type and pitch velocity of an individual pitch. The user may select the pitch type by depressing any of the pitch type selectors 82, 83, 84, 86, 88, 89 which represent various pitches including but not limited to a left handed/right handed curve ball, a left handed/right handed slider, a fastball sink, a fastball rise, and various other pitches that are well known in the art. When the user selects the desired pitch type, the pitch type indicator 91 adjacent the selector 82, 83, 84, 86, 88, 89 is illuminated indicating the pitch type selected.

[0051] After the pitch type is selected, the user then selects the pitch velocity by selecting one of the velocity selectors 90, 92. The velocity display 94 informs the user of the current selected velocity thereby allowing the user to easily adjust the pitch velocity.

[0052] The interface 30 further may include a type of program section 210 that has a plurality of program selectors. The user is able to select the desired pitching program using the program selectors such as but not limited to a desired sequence, random and repeat as further shown in FIG. 3 of the drawings.

[0053] D. Ball Throwing Unit

[0054] The ball throwing unit 104 is preferably comprised of a system utilizing three or more rotating wheels to engage and throw the ball without undue delay. The usage of three or more wheels allows for the adjustment of the pitch type and pitch velocity without having to change the rotational plane of the wheels which requires a significant period of time to accomplish with conventional ball throwing devices.

[0055] In addition, the following patent is considered relevant to the ball throwing unit 104 of the present invention and is incorporated herein by reference: U.S. Pat. No. 5,649,523 to Scott. The aforementioned patent, of which is mentioned elsewhere in this disclosure, and which forms a part of this disclosure, may be applied in known manner by those skilled in the art in order to practice various embodiments of the present invention.

[0056] E. Operation

[0057] In use, the user first selects the pitch type desired by selecting one of the pitch type selectors 82, 83, 84, 86, 88, 89 as shown in FIG. 6 of the drawings. The user then selects the velocity of the pitch by selecting the velocity selectors 90, 92. The user may also change the pitch direction and elevation if desired as discussed previously. The central processing unit 100 receives the pitch information and
instructs the ball throwing unit 104 accordingly thereby adjusting the velocity of each of the wheels to perform the desired pitch. The ball is then released from a ball reservoir or manually placed into the ball throwing unit 104 which is then engaged by the rotating wheels as discussed in detail within U.S. Pat. No. 5,649,523. The above process continues with each individual pitch.

[0058] As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

[0059] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed to be within the expertise of those skilled in the art, and all equivalent structural variations and relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

[0060] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

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I claim:

1. A baseball pitching system, comprising:

   a housing;

   a ball throwing unit within said housing;

   a central processing unit in communication with and controlling said ball throwing unit; and

   an interface in communication with said central processing unit, wherein said interface allows a user to control a pitch type and a pitch velocity.

2. The baseball pitching system of claim 1, wherein said interface allows said user to control a pitch direction.

3. The baseball pitching system of claim 2, wherein said interface allows said user to control a pitch elevation.
4. The baseball pitching system of claim 3, wherein said pitch type is comprised of a left handed slider, a right handed slider, a left handed curve, a right handed curve, a fast ball rise, and a fast ball sink.

5. The baseball pitching system of claim 4, wherein said interface indicates said pitch type and said pitch elevation.

6. The baseball pitching system of claim 5, wherein said interface indicates said pitch direction and said pitch elevation.

7. The baseball pitching system of claim 6, wherein said interface allows said user to program a predetermined pitch having a predetermined pitch type and a predetermined pitch velocity.

8. The baseball pitching system of claim 7, wherein said interface allows said user to create a program of pitches to be delivered to a batter.

9. The baseball pitching system of claim 8, wherein said interface allows said user to generate a random selection of pitches to said batter.

10. The baseball pitching system of claim 9, wherein said interface allows said user to control a pitch elevation.

11. A baseball pitching system, comprising:

   a housing;

   a ball throwing unit within said housing;

   a central processing unit in communication with and controlling said ball throwing unit;

   an interface in communication with said central processing unit, wherein said interface allows a user to control a pitch type and a pitch velocity;

   a plurality of pitch type selectors within said interface;

   a plurality of pitch type indicators adjacent each of said plurality of pitch type selectors;

   a plurality of pitch velocity selectors; and

   a velocity display for indicating said pitch velocity.

12. The baseball pitching system of claim 11, wherein said interface allows said user to control a pitch direction.

13. The baseball pitching system of claim 12, wherein said interface allows said user to control a pitch elevation.

14. The baseball pitching system of claim 13, wherein said pitch type is comprised of a left handed slider, a right handed slider, a left handed curve, a right handed curve, a fast ball rise, and a fast ball sink.

15. The baseball pitching system of claim 14, wherein said interface indicates said pitch type and said pitch elevation.

16. The baseball pitching system of claim 15, wherein said interface indicates said pitch direction and said pitch elevation.

17. The baseball pitching system of claim 16, wherein said interface allows said user to program a predetermined pitch having a predetermined pitch type and a predetermined pitch velocity.

18. The baseball pitching system of claim 17, wherein said interface allows said user to control a pitch elevation.

19. The baseball pitching system of claim 18, wherein said interface allows said user to generate a random selection of pitches to said batter.

20. A method of operating a baseball pitching system having a housing, a ball throwing unit within said housing, a central processing unit in communication with and controlling said ball throwing unit, and an interface in communication with said central processing unit, wherein said interface allows a user to control a pitch type and a pitch velocity, said method comprising the steps of:

   (a) selecting a pitch type;

   (b) selecting a pitch velocity;

   (c) adjusting said ball throwing unit according to selected pitch type and pitch velocity; and

   (d) releasing a ball into said ball throwing unit.

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