D. STROUP.

BASE BALL PITCHING MECHANISM.

APPLICATION FILED JAN. 17, 1916.

1,194,093.

Patented Aug. 8, 1916.

4 SHEETS—SHEET 1.

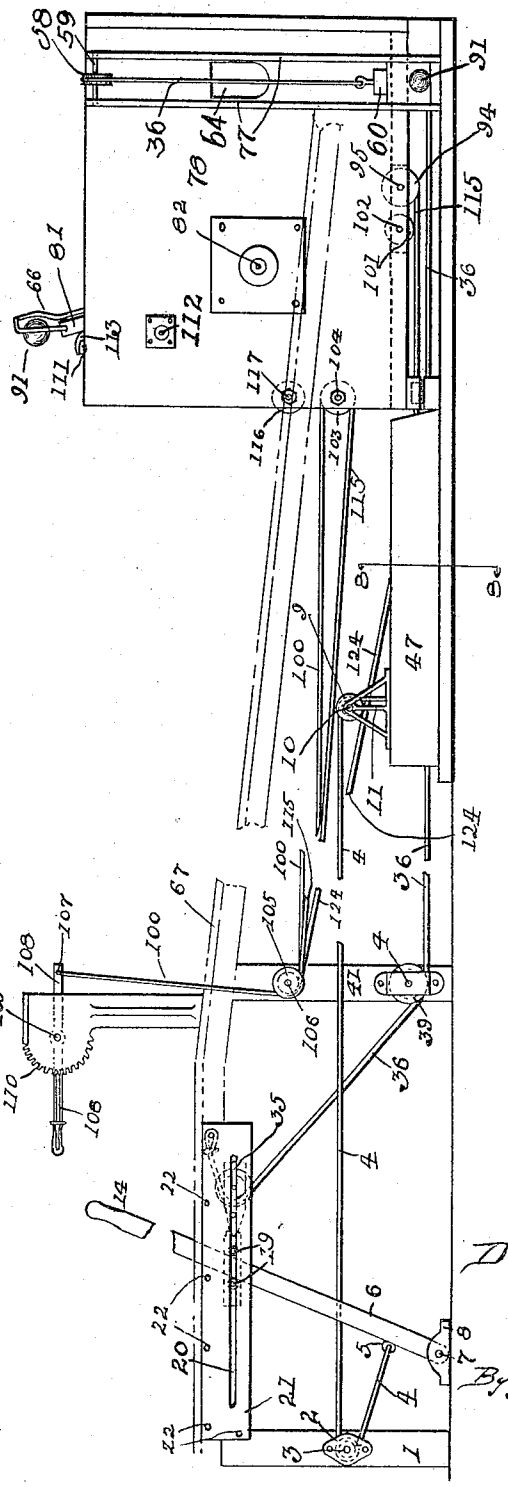


Fig. 1.

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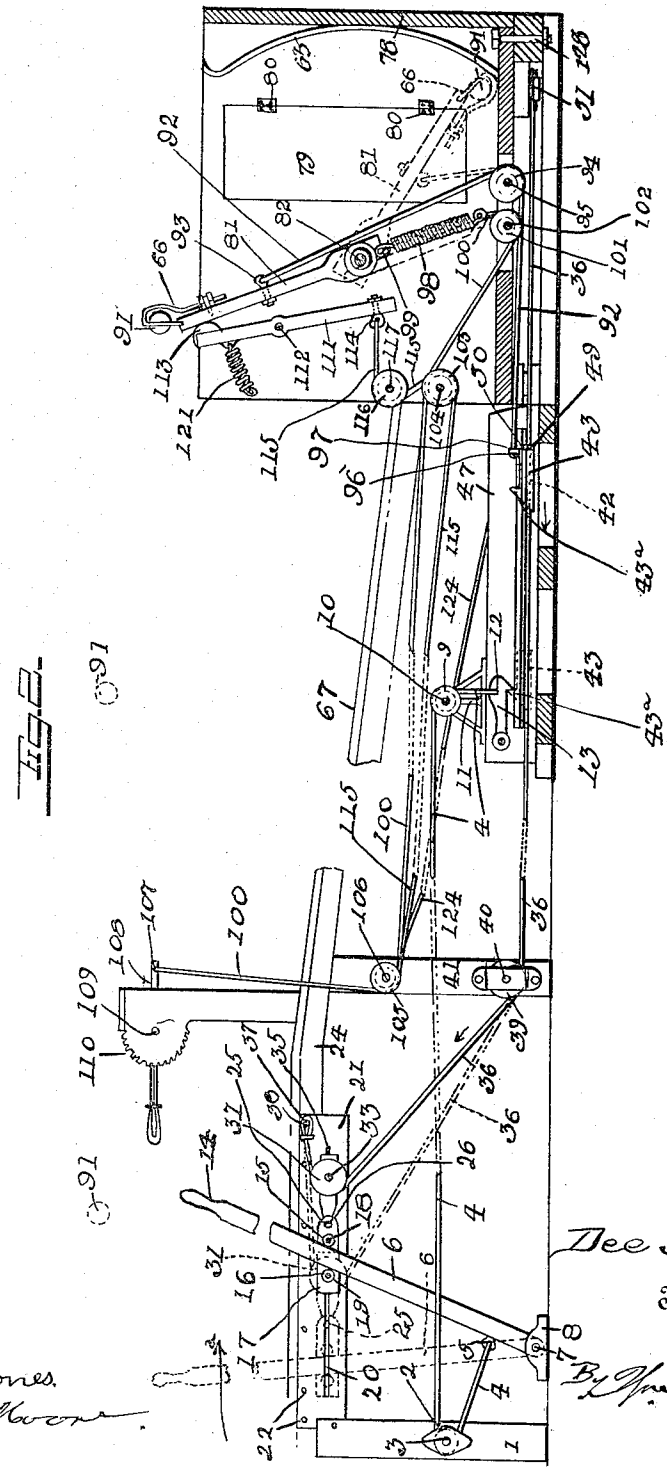


Fig. 2.

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4 SHEETS—SHEET 3.

Fig. 4.

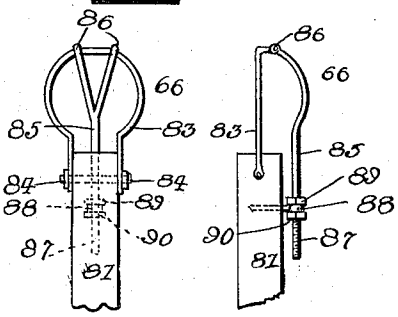


Fig. 3.

Fig. 5.

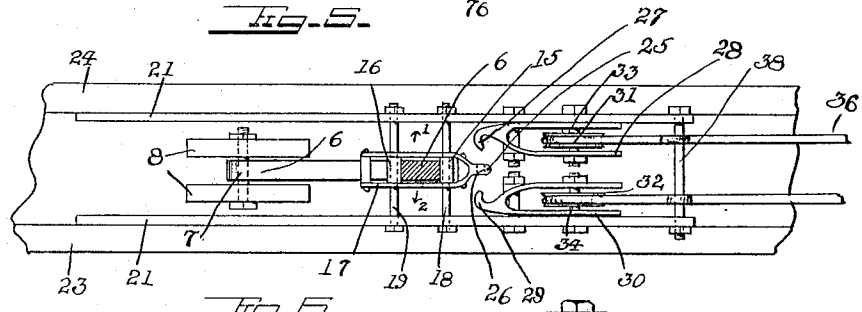
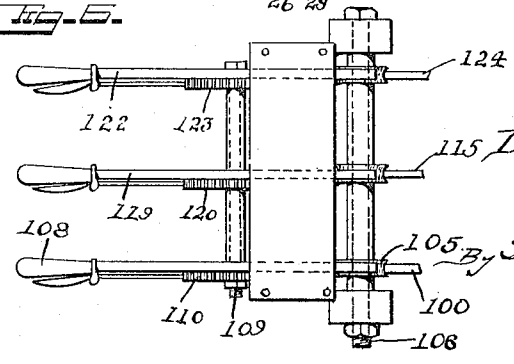


Fig. 6.



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4 SHEETS—SHEET 4

Fig. 7.

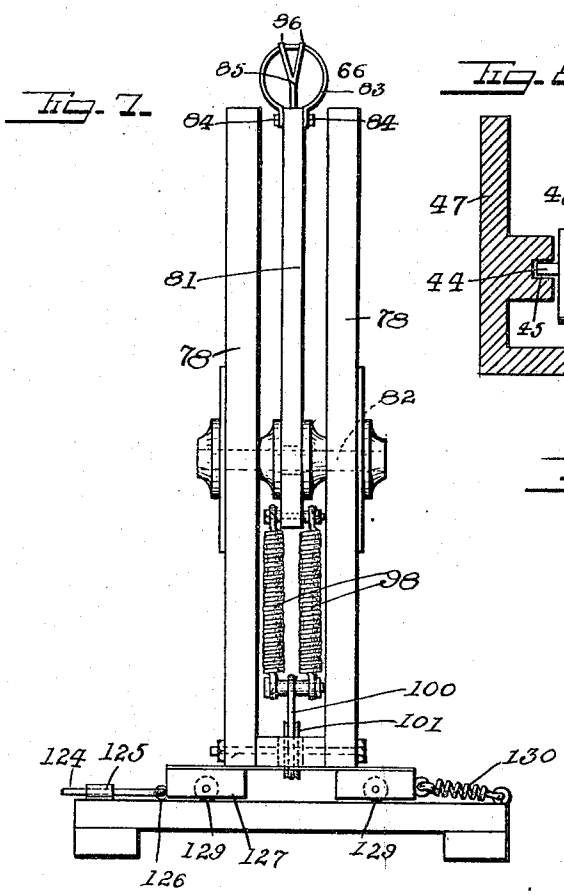


Fig. 8.

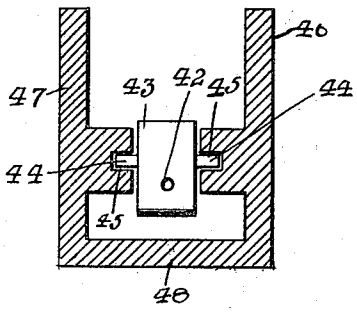


Fig. 9.

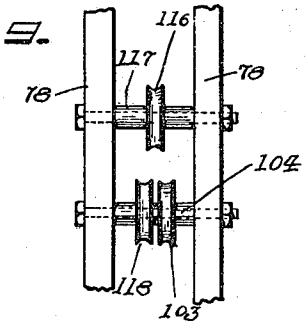


Fig. 10.

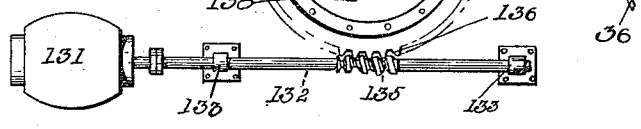
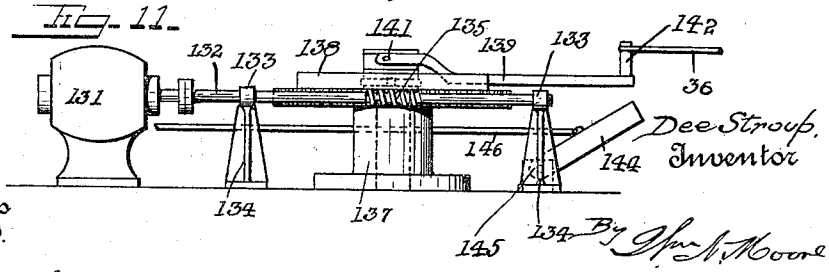


Fig. 11.



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UNITED STATES PATENT OFFICE.

DEE STROUP, OF CLEVELAND, OHIO.

BASE-BALL-PITCHING MECHANISM.

1,194,093. Specification of Letters Patent. Patented Aug. 8, 1916.

Application filed January 17, 1916. Serial No. 72,491.

To all whom it may concern:

Be it known that I, DEE STROUP, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Base-Ball-Pitching Mechanism, of which the following is a specification.

This invention relates to certain new and useful improvements in base-ball pitching mechanism and it has for its objects among others to provide an improved device of this character which may be readily installed in any place of amusement, park, business place, in the open air or under cover, where it can be used for batting practice or amusement, and by building it of proper size an indoor base-ball may be used instead of the ordinary base-ball.

It has for a further object to provide for all the adjustment necessary whereby one man with a lever control can operate two machines at the same time and by the simple adjustment of a lever he can throw the ball close to the batter or over the plate or far enough to one side so that the batter will not be able to reach it at all. I also provide for such adjustment that either a swift ball or a slow ball can be thrown, and by another adjustment I am enabled to throw a high or a low ball, and by manipulating the adjustment the operator can mix up the variety of balls so as to fool the batter, and afford much amusement to the spectators.

I provide an artificial floor slanting from the batter toward all sides of the building or the required distance if out of doors to a trough, and a screen or netting of any kind may be used to inclose the batter so that all balls thrown by the machine, whether batted or not may strike it and return by way of the slanting floor to the operator. I may provide a background consisting of four pieces, each piece fastened at each end to represent first, second and third base and the home plate, just in front of the machine or just back of it, as may be best suited according to the place where the machine is set up, which will be for balls to strike against when batted, to decide whether it is a fair or foul ball, a one-base hit, a two-base hit, a three-base hit, or a home run, each base line being set a little back of the other so that if the ball hits on any base strip of canvas it will not touch the others and may fall down between and return to the machine, whereas if one piece of canvas is used with the base lines painted or printed thereon and a ball strikes on a line in the center, it would cause a dispute as to which base it hit.

The device may be made in sections readily assembled and easily and quickly set up and as quickly taken apart and compactly arranged for shipment or storage.

I may employ any kind of hand power lever for operating the throwing arm as well as any kind of levers to adjust the side shift, spring tightener and bumper arm. Further I may use any kind of motor and gear to operate the same, whether worm gear or belts and pulleys or a chain drive.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a device constructed in accordance with my present invention with portions broken away. Fig. 2 is a substantially central vertical longitudinal section with parts in elevation. Fig. 3 is a side elevation of the elevator mechanism. Fig. 4 represents in face and side views the ball holding device. Fig. 5 is a detail in top plan with a portion in section. Fig. 6 is a top plan of the operating levers. Fig. 7 is a face view of the throwing arm. Fig. 8 is a cross section on the line 8—8 of Fig. 1, looking in the direction of the arrows. Fig. 9 is a detail, in top plan, of the pulleys for the operating cord or chain. Fig. 10 is a top plan of the motor, its worm shaft and the coöperating gear, etc. Fig. 11 is a side elevation of Fig. 10.

Like numerals of reference indicate like parts throughout the several views.

The present drawings illustrate one form of embodiment of the invention.

In such drawings, 1 designates a post or upright adapted to be supported in any suitable manner in any required position.

2 is a pulley mounted on an axle 3 supported in said post and over which passes a rope, cord or other ligament 4, one end of which is connected, as at 5, to an operating lever 6 pivotally mounted at its lower end, as at 7, to any fixed member as the block 8, see Figs. 1 and 2. The other end of said

cord or ligament 4, after passing around the pulley 2, extends substantially horizontally and passes over a pulley or guide 9 on a shaft 10 mounted in a suitable bearing in a bracket or the like 11 and is attached, as at 12, to a gravity dog or pawl 13.

The lever 6 extends upwardly and is provided with a handle portion 14, and intermediate its ends this lever works between the rollers 15 and 16 mounted on the slide 17, the shafts 18 and 19 of said rollers working in slots 20 in horizontal members 21, which latter are secured by suitable means, as 22, to the upright 1 and to opposite members 23 and 24 of a supplemental floor soon to be described. The end of the member 17 farthest from the post 1 has an extension 25 provided with a transverse opening 26, seen clearly in Figs. 2 and 5.

As seen in Fig. 5, the lower end of the lever 6 is free for movement laterally as is also the member 17 carrying the rollers 15 and 16. This is for the purpose of permitting lateral movement of the member 17 so that the opening 26 thereof may be brought into coöperative relation with the hook 27 of the sheave carrier 28 or with the hook 29 of the sheave carrier 30, as may be required when it is desired to operate two machines, and by throwing the member 17 to the right or left the right or left-hand machine may be operated, it being understood that when moved to the left the hook 27 is engaged in the opening 26 so that the left-hand machine may be operated and when the member 17 is moved to the right the opening member 26 thereof is brought into position to receive the hook 29 so that the right-hand machine may be operated.

The sheave carriers 28 and 30 are mounted for independent longitudinal sliding movement in the members 21. The carrier 28 has journaled therein a sheave or pulley 31, while the carrier 30 has journaled therein a sheave or pulley 32. The axles 33 and 34 of these sheaves or pulleys are guided in longitudinal slots 35 in the members 21 which, as shown in Fig. 1, may be continuations of the slots 20.

36 is a cord or ligament, one end of which is secured in any suitable manner, as at 37, to a cross bolt or the like 38 fixed in the members 21, as seen in Figs. 1, 2 and 5, and thence over the sheave or pulley 31 and then downward under a sheave or pulley 39 mounted on a shaft 40 supported in an upright 41 and thence forward, passing through an opening 42 in a sliding member 43, which member, in the present instance, is shown as provided with lateral pins or the like 44 (see Fig. 8) movable in the guides 45 in the side members 46 and 47 of the platform 48. After passing through this member 43, there is provided upon the ligament 36 a stop member 49 which may be in the nature of a knot or a collar or any well known expedient which is adapted to engage the end 50 of the member 43 so as to force the same in the direction of the arrow seen in Fig. 2 when the cord 36 is pulled in the direction of the arrow thereon in said figure. Continuing, this cord or ligament 36 passes under a pulley 51, see Figs. 2 and 3, and thence under a pulley 52 mounted on a shaft 53 supported in the platform or the like 54, the said cord or ligament then passing upward, as seen clearly in Fig. 3, and through a guide 55 and over a pulley 56 carried by the shaft 57, thence horizontally and over a pulley 58 on a shaft 59, and thence downward and connected to an elevating bucket or receptacle 60, by which the ball is carried up to be delivered to the throwing or pitching arm. Connected with the ligament 36, as at 36^a, is a cord 36^b which, after passing over a pulley 36^c carried by a shaft 36^d, depends downward and carries a counterbalance weight 36^e, all as clearly shown in Fig. 3.

The elevator 60 is provided preferably with an inclined bottom 61, as indicated by dotted lines in Fig. 3, and is further provided with a flap or pivoted member 62 pivoted, as at 63, and held in the inclined position in which it is seen in dotted lines at the bottom of Fig. 3 until the elevator reaches a point opposite the opening 64, see Fig. 1, when, its free edge being no longer supported by the guiding wall in which the elevator moves, drops by gravity into the downwardly inclined position in which it is seen in dotted lines near the midheight of Fig. 3, thus permitting the ball to run down said member which now constitutes an inclined floor or extension to the inclined floor 61, and upon the curved guide member 65 which serves to conduct the ball down and into the ball-receiving member 66, as shown by dotted lines in Fig. 2, the said member being in its position to receive the ball as it drops down the said guideway.

In the use of the apparatus, the batter, of course, stands beyond the upright 1, that is, to the left thereof, as viewed from Figs. 1 and 2, and in order to convey the balls back from the batter to the elevator, I provide a supplemental floor 67, as indicated in Figs. 1 and 2, which inclines in all directions toward a trough 68, which latter is indicated in Fig. 3, being supported by any suitable supports, as the uprights 69, and this trough is designed to deliver the balls by gravitation into a supplemental pivoted trough 70 pivoted at 71, as seen in Fig. 3, and provided with a depending stop member 72, which, when the supplemental trough 70 is in the position in which it is seen in full lines in Fig. 3, serves to close the outlet from the trough 68 and thus prevents the passage of the balls therefrom. When this trough 70

is lowered into its horizontal position, as indicated by dotted lines in Fig. 3, the stop member 72 is moved downward into a position where it no longer impedes the passage of the ball from the trough 68 and the first or lowermost ball in said trough 68 moves by gravity into the trough 70. In order that only one ball at a time may pass from the trough 68 into the trough 70, I provide a pin 73 fixed in any suitable manner in an upright 74 and slightly inclined, as shown, which pin is adapted to engage in an opening 75 in the movable trough 70, as indicated by the dotted line position in Fig. 3, and thus stop the ball which is prevented from moving along the trough 70 until the latter is again moved into its inclined position, that indicated by full lines in Fig. 3, and when in such position the member 72 again serves as a stop to prevent the passage of the next ball out of the trough 68 until the supplemental trough 70 is again brought into its horizontal position. The preponderance of weight of the trough 70 being to the left of its pivot, as seen in Fig. 3, the trough 70 will normally be held in its horizontal position. In order that it may be thrown from such position when the elevator 60 is lowered, said trough 70 is provided with an extension or trip arm 76 which extends beneath the elevator 60 and when the latter is lowered, the weight thereof upon the trip arm 76 serves to throw the pivoted trough 70 from its normal horizontal position into the inclined position in which it is shown in full lines in Fig. 3.

The elevator is guided by the uprights 77 which are secured in any suitable manner to the outer wall of the inclosure or housing 78 within which the throwing arm and the bumper arm are disposed. If desired, this housing or inclosure 78 may be provided with a suitable door 79 hinged, as at 80, to permit ready access to the inclosed parts whenever occasion may require.

81 is the throwing arm pivoted, as at 82, and carrying at its free end the ball holder 66. The ball-receiving member 66 may be of any suitable form of construction, but, in the present instance, I have chosen to show it as comprising the member 83, the side arms of which are pivoted, as at 84, to the arm 81 so that they may be moved thereon when desired and in order to adjust this member 83 so as to change the inclination of the member 83 I provide the member 85 pivotally connected, as at 86, and branched, if desired, as seen in Fig. 4 at the left, the other end of said member 85 being screw-threaded, as at 87, and supported in a suitable eye or the like 88 upon opposite sides of which are the nuts 89 and 90. It will thus be readily understood that by this means the member 85 may be moved up or down and the member 83 thus inclined to the right or left (as viewed from Fig. 4 at the right), as may be desired to give a different movement to the ball as it is thrown by the arm in a manner which will soon be set forth. The ball 91 is held within this holder but so as to be readily thrown and released therefrom when the holder is brought from the position in which it is indicated in dotted lines in Fig. 2 to that shown by full lines in said figure.

The throwing or pitching arm 81 is actuated as follows:—a cord, or ligament 92, has one end attached thereto, as at 93, at a point substantially midway the length of said arm, as seen in Fig. 2, and after passing under a pulley 94 on a shaft 95, extends forward and is secured, as at 96, to a lug 97 on the sliding member 43, as seen clearly in Fig. 2. Consequently, as the member 43 is moved suddenly in the direction of the arrow seen in Fig. 2, the arm 81 will be thrown from its full line position in Fig. 2 to its dotted line position in said figure, where it receives the ball 91 which has been delivered thereto down the guideway 65. The throwing or pitching arm 81 is thrown suddenly from its dotted line position in Fig. 2 to its full line position in Fig. 3 by a powerful spring 98, as seen in said Fig. 2, which spring is connected at one end, as at 99, to any suitable means on the arm 81 adjacent its pivot, there being preferably two of such springs, as seen in Fig. 7. The spring 98, or both springs, if two are employed, will be connected in any suitable manner to a cord or ligament 100 which passes under a sheave or pulley 101, as seen in Figs. 2 and 7, the said pulley 101 being mounted on a suitable shaft 102 and the ligament 100 thence extended upwardly and forwardly and over a pulley 103 on a shaft 104 and thence forward under a pulley 105 on a shaft 106 on the post 41 and thence upward where its end is attached at 107 to an actuating lever 108. This lever is pivotally mounted, as at 109, and carries a spring-actuated pawl engaging a toothed ratchet 110, for an obvious purpose.

111 is a bumper arm pivotally mounted, as at 112, and carrying a suitable bumper or cushion 113 at one end, the other end having connected therewith, as at 114, one end of a cord or ligament 115, as seen clearly in Fig. 2. This ligament 115 passes over a pulley 116 on the shaft 117 and thence under the pulley 118 carried by the shaft 104, see Fig. 9, and thence forward and under a pulley on the shaft 106 and thence upward with its upper end attached to one end of the lever 119, as seen in Fig. 6, the said lever being provided with a pawl designed to engage the toothed ratchet 120, see Fig. 6.

121 is a spring connected with the upper end of the bumper arm 111 to normally hold the same in the position in which it is indicated in Fig. 2.

122 is another lever carrying a spring-actuated pawl adapted to coöperate with a toothed ratchet 123, see Fig. 6, and to the end of this lever is attached a cord or ligament 124 which, after passing around a pulley 125, is attached at 126 to the block 127 which is pivotally mounted, as at 128, see Fig. 2, and which is mounted on rollers 129, as seen best in Fig. 7, and which carries the throwing arm and its accessories.

A powerful spring 130, see Fig. 7, is provided to normally hold the parts in normal position and to return them to such position after power is removed from the ligament 124.

The device, as hereinbefore described, is designed to be operated by manipulation of the lever 6, that is for throwing the ball. The levers 108, 119 and 122 are for control of the throwing arm, the bumper arm and for the lateral adjustment of the parts. It may sometimes be desirable to operate the device by other than hand power and in such case motor mechanism, such as seen in Figs. 10 and 11, may be employed. In these figures, 131 is a motor, preferably an electric motor, and 132 a worm shaft mounted in suitable bearings 133 on the supports 134, see Fig. 11, and the worm 135 thereof meshing with a worm gear 136 rotatably mounted on the base 137, and carrying upon its upper face a lug 138, as seen best in Fig. 10. 139 is an arm pivoted to the collar 140 by suitable means, as dowel pins 141. The outer end of this arm has a pin 142, to which the cord or ligament 36 may be attached in any suitable manner. In operation, the worm 135, meshing with the gear 136, rotates the latter and turns the same until the lug 138 contacts with the arm 139 which is then forced around with the gear in the direction of the arrow in Fig. 10 until it passes the center and then strikes against the end 143 of the lug 138 which may be provided with any suitable cushioning device. 144 is an arm pivotally mounted, as at 145, and having connected therewith a cord or ligament 146 designed to be operated in any suitable manner and when pulled upon throws the member 144 upward, causing the same to impinge against the under side of the arm 139, raising the same out of the path of the lug 138, so that the lug will pass under said arm and not actuate the latter and, consequently, not work the machine. 147 is a depending pin or support carried by the arm 139 and adapted to slide on the upper face of the gear 136.

With the parts constructed and arranged substantially as hereinbefore described and as illustrated in the drawings, the operation, briefly stated, is as follows: With the lever 6, the throwing or pitching arm 81 and the movable member 43 in the dotted line position in Fig. 1, the device is "loaded", that is the ball 91 is in the holder 66 and the parts are in position to be released for throwing or pitching the ball. The dog 13 is in engagement with the lug 43^a on the member 43, holding the latter in its extreme position to the left. When it is desired to throw the ball, the operator moves the lever 6 in the direction of the arrow *a* in Fig. 2 which puts the cord 4 under tension, it being understood that it is relaxed when the lever 6 is in its dotted line position, and pull on this cord 4 disengages the dog 13 from the lug 43^a when the spring or springs 98 immediately move the arm 81 from its dotted line position in Fig. 2 to its full line position and upon contact of the arm 81 with the bumper arm 111 or its cushion 113 the ball 91 is ejected from the holder and thrown toward the batter. The ball is returned through the medium of the inclined supplemental floor 67 through the trough 68 into position to be delivered to the trough 70 and from thence to the elevator 60, and when the lever 6 is again moved from its full line position in Fig. 2 to the dotted line position in said figure, the elevator is raised through the medium of the cord 36 and connections and another ball is delivered to the ball-holding device 66, it being understood that in the meantime, by the manipulation of said lever 6, the throwing arm 81 has been carried to its dotted line position in Fig. 2.

When it is desired to "mix them up", that is to throw succeeding balls in different ways so as to confuse the batter, the levers 108, 119 and 122 are manipulated in accordance with the character of the ball to be thrown and by manipulation of these levers the operator is enabled to throw a fast or slow ball, an in-curve, or an out-curve, or a high or low ball, as may be desired, controlled by the manipulation of the levers 108, 119 and 122 to change the relative position of the holder 66 or the bumper arm 11 or the relation of the throwing arm to the batter, these movements being accomplished by reason of the pivoting at 128 and the proper manipulation of the levers above mentioned.

It is to be noted that the lug 43^a and the dog 13 have their contacting faces oppositely beveled in one direction and right-angled in the other, so that as the member 43 is moved to the left the contacting face of the lug thereon rides upon the inclined face of the dog so as to allow it to pass the same and when once passed the right-angled faces prevent retrograde or return movement thereof until the pawl or dog 13 is raised by the manipulation of the lever 6 through the medium of the parts actuated thereby.

By means of the construction shown in Fig. 5, I make the one lever serve for two throwing arms, it being understood that, as shown in said figure, the lever is in neutral

position and with the parts in such position its manipulation would not actuate anything, but by moving the lever 6 in the direction of the arrow 1 until the opening 26 therein is engaged by the lug 27 and then moving the lever, as hereinbefore described, the device is operated as above set forth. By moving the lever 6 in the direction of the arrow 2 in Fig. 5 until the opening 26 is engaged by the lug 29 and then manipulating the lever 6, as above described, another throwing arm will be actuated in the same manner and by duplication of the connections hereinbefore described in connection with the cord 36, etc.

When it is desired to dispense with the hand-operated mechanism, the electric motor device shown in Figs. 10 and 11 is substituted. Generally, however, the device will be hand-operated, as hereinbefore particularly described.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. In a ball-throwing machine, a pivotally mounted throwing arm, actuating means therefor, an elevator and pivoted means carried by the elevator for delivering the ball to the throwing arm at a predetermined time.

2. In a ball-throwing machine, an elevator, a pivoted trough, an inclined way for delivering balls to the trough, a stop member carried by the trough, and means coöperating with the trough to prevent the delivery of more than one ball at a time.

3. In a ball-throwing machine, an elevator, a pivoted trough, an inclined way for delivering balls to the trough, a stop member carried by the trough, means coöperating with the trough to prevent the delivery of more than one ball at a time, and a pivoted member carried by the elevator to deliver a ball therefrom.

4. In a ball-throwing machine, an elevator, a pivoted trough, an inclined way for delivering balls to the trough, a stop member carried by the trough, means coöperating with the trough to prevent the delivery of more than one ball at a time, a pivoted member carried by the elevator to deliver a ball therefrom, and a pivoted throwing arm.

5. In a ball-throwing machine, an elevator, a pivoted trough, an inclined way for delivering balls to the trough, a stop member carried by the trough, means coöperating with the trough to prevent the delivery of more than one ball at a time, a pivoted member carried by the elevator to deliver a ball therefrom, a pivoted throwing arm, and a ball-guiding member for delivering a ball discharged from the elevator to the ball-throwing arm.

6. In a ball-throwing machine, a pivoted throwing arm, means for actuating the same, an elevator controlled by said actuating means, a trough for delivering balls to the elevator, an inclined way for guiding the balls to the trough, and means whereby the trough is actuated by the elevator.

7. In a ball-throwing machine, a pivoted throwing arm, means for actuating the same, an elevator controlled by said actuating means, a trough for delivering balls to the elevator, an inclined way for guiding the balls to the trough, means whereby the trough is actuated by the elevator, and a stop carried by the trough movable into the path of the balls from said inclined way.

8. In a ball-throwing machine, a pivoted throwing arm, an elevator for delivering a ball thereto, a lever and connections for controlling said arm and moving said elevator, and means for throwing said arm to one side or the other to vary the character of the throw thereof.

9. In a ball throwing machine, a pivoted lever, a laterally movable member carried thereby and a plurality of ball-throwing mechanisms either one of which may be actuated by said lever.

10. In a ball-throwing machine, a pivoted throwing arm, means for actuating the same, an elevator, means carried by the elevator for delivering the ball to the throwing arm at a predetermined time, and an adjustable bumper arm for limiting the movement of the throwing arm to produce either a low or high ball.

In testimony whereof I affix my signature in the presence of two witnesses.

DEE STROUP.

Witnesses:

THOMAS MYERS,

WALLACE M. JENNINGS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."