A. B. & W. E. JUDD.

GAME BALL PITCHING MACHINE.

APPLICATION FILED JAN. 11, 1915.

1,146,262.

Patented July 13, 1915.

2 SHEETS—SHEET 1.

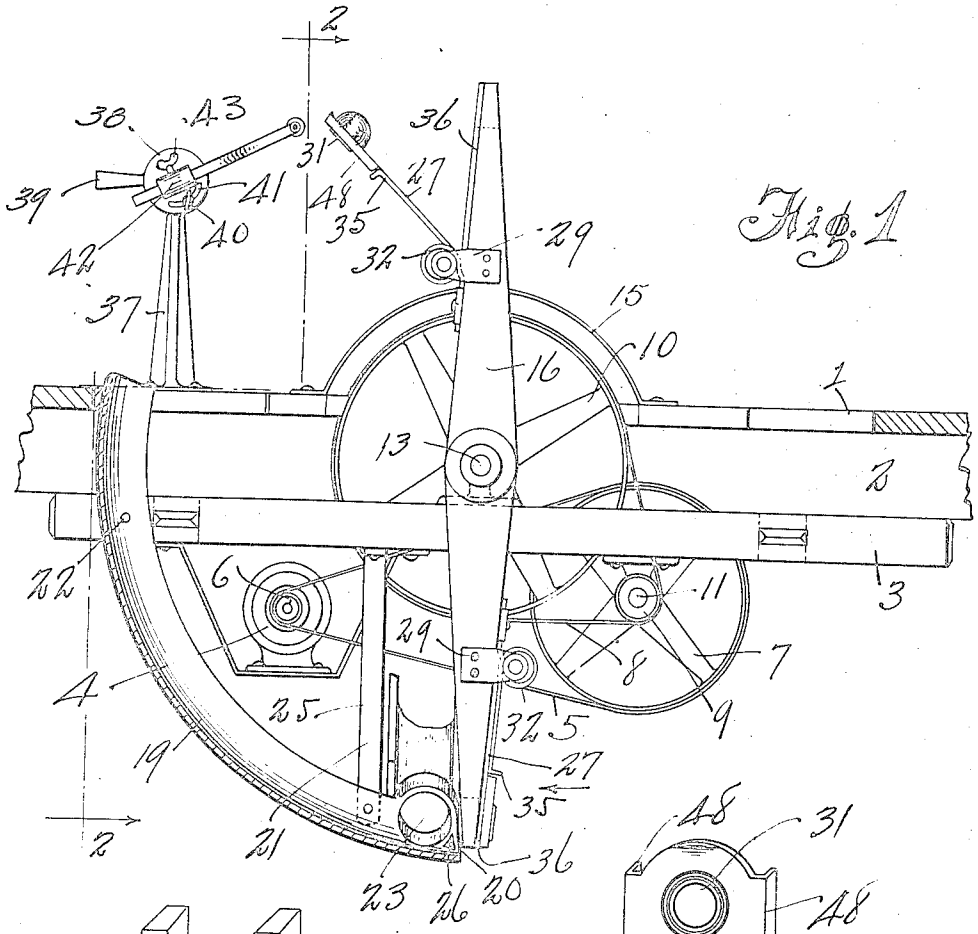


Fig. 1

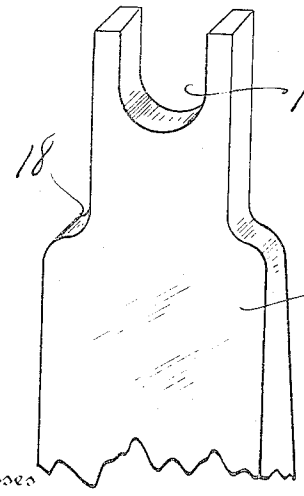


Fig. 3

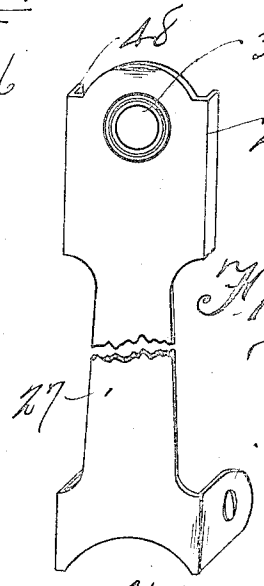


Fig. 4

Witnesses

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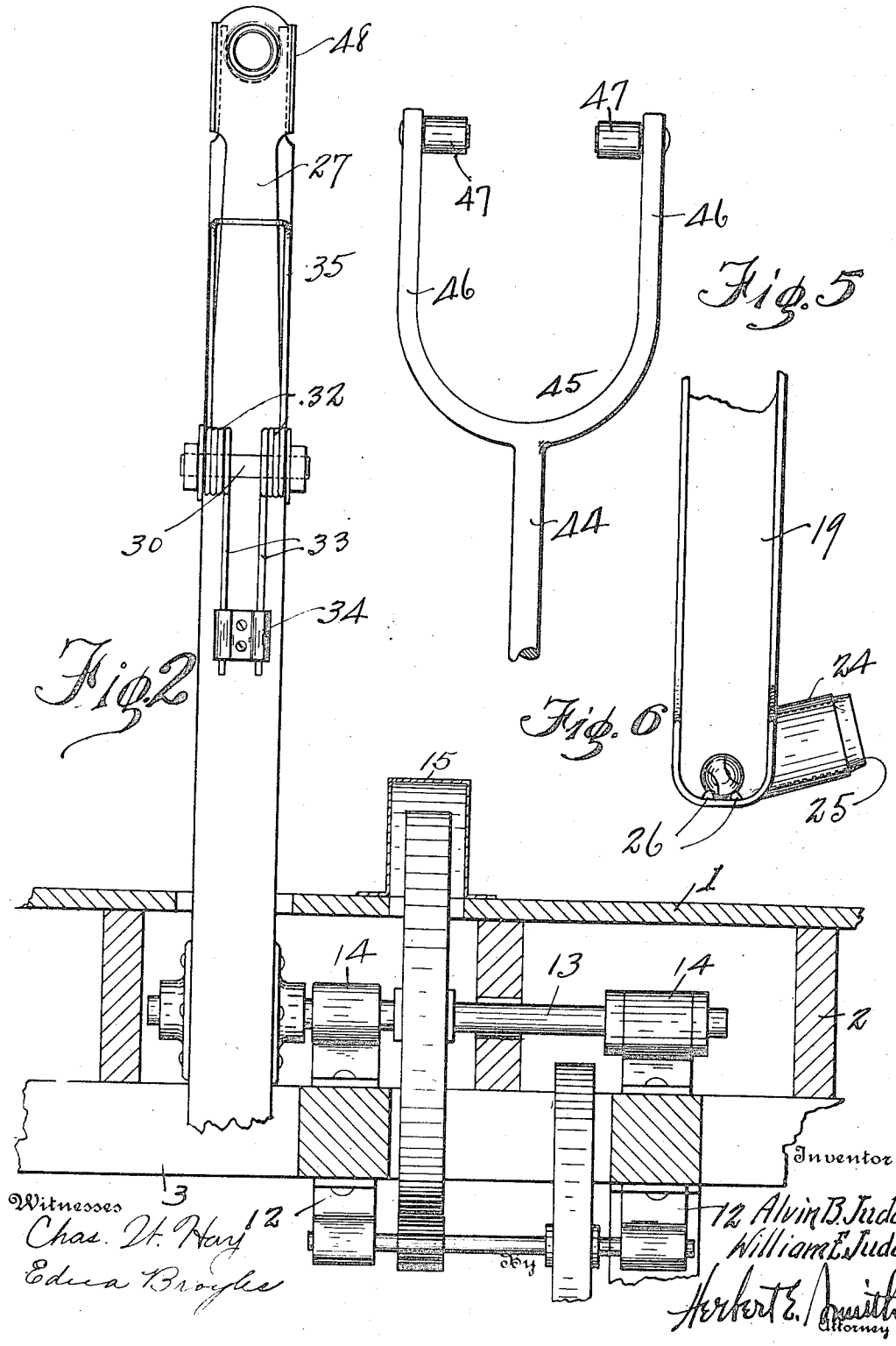


Fig. 2

Fig. 5

Fig. 6

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UNITED STATES PATENT OFFICE.

ALVIN B. JUDD AND WILLIAM E. JUDD, OF SPOKANE, WASHINGTON, ASSIGNORS OF ONE-THIRD TO WILLIAM H. WHITE, OF SPOKANE, WASHINGTON.

GAME-BALL-PITCHING MACHINE.

1,146,262. Specification of Letters Patent. Patented July 13, 1915.

Application filed January 11, 1915. Serial No. 1,581.

To all whom it may concern:

Be it known that we, ALVIN B. JUDD and WILLIAM E. JUDD, citizens of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Game-Ball-Pitching Machines, of which the following is a specification.

This invention relates to improvements in game ball pitching or projecting machines for use in projecting a game ball for practice or like purposes.

It is one of the objects of this invention to provide a machine of this character with ball pitching means adapted to be energized to pitch the ball as said means approaches a pitching position.

It is a further object of this invention to provide pitching means which is continuously movable into and out of a pitching position, the said means being automatically energized to pitch the ball during its operating movement.

A further novel feature consists in providing a pitching machine provided with a continuously rotating arm for engaging a ball at either end thereof, the said ends of said arm being provided with pitching devices adapted to be automatically energized as the arm ends attain pitching positions.

Other features and objects of the invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out in and by the appended claims.

In the drawings: Figure 1 is a vertical sectional view of the mounting of the device of our invention, showing the latter in elevation. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a perspective view of one end of a ball-carrying arm, included in the device of our invention. Fig. 4 is a perspective view of a ball pitching arm. Fig. 5 is a plan view of a retracting or energizing fork. Fig. 6 is a view looking ing in the direction of arrow of Fig. 1, showing means for delivering a ball from a trough to a ball guide.

Like characters of reference designate similar parts throughout the different figures of the drawings.

As illustrated, the device of our invention is mounted partly below a platform 1 which is disposed upon joists 2, the latter being mounted upon a frame-work 3. A prime mover such as an electric motor 4, is belted to drive a reducing gear which comprises belt 5, trained about motor pulley 6 and a transmission pulley 7, and a belt 8 which is trained about a pulley 9 and an arm driving pulley 10. Pulleys 7 and 9 are mounted on a shaft 11 which is suitably journaled in bearings 12, pendent from the frame-work 3. Pulley 10 is mounted on a shaft 13 which is journaled in bearings 14. A guard 15 conceals that portion of the pulley 10 which projects above the platform.

Secured upon shaft 13 is a ball carrying arm or member 16 which is forked at both ends, as indicated at 17. Adjacent the forked ends 17, a reduction is provided as indicated at 18, the purpose of which will presently appear. The forked ends 17 provide openings for receiving the ball, and in accordance with the position of arm 16, said openings or the walls thereof will first act as guides and then as ball carriers. Within or adjacent the circular sweep of the ends of member 16, as the latter rotates, is a ball guide 19 which is shown of semi-circular formation of a quadrantal length, the cross section of said guide being circular. At its lower or intake end 20, said guide 19 is attached to supports 21, one only being shown, and said support being pendent from the frame-work 3. Near the upper end of said guide 19 the same is shown attached at 22, to the frame-work 3. As the ends of the arm 16 sweep through their circular path, said ends will extend into the guide 19 in such a manner as to engage a game or base ball which has been delivered thereto. At one side of the guide 19, near the intake end 20 thereof, is an opening 23 through which balls are delivered from a tubular connection 24 united with a trough 25.

It will be understood that we may employ a canvas field in the background for causing the struck balls to descend into a hopper-like receiver which may be connected with trough or tube 25, the object being to automatically deliver a struck ball to the machine in such a manner that the ball may be picked up by the machine and pitched or projected toward the player or batter. However, the machine is also adapted for use in pitching balls for batting practice on base ball diamonds, such practice usually preceding a game. However, inasmuch as the device of our invention does not relate

to the particular means of receiving the struck ball, the canvas and hopper-like receiver have not been shown as they are well known expedients.

A novel feature of our invention consists in providing means for holding a delivered ball in and adjacent the open end 20 of the guide in such a manner as to permit the arm 16 to engage and advance the ball to a pitching position.

As illustrated, lugs 26 are disposed in the guide 19, near the open end 20, so that when the ball rolls into the guide 19 through opening 23, it will be held against movement out of the open end 20.

In the present embodiment of the invention, each end of arm 16 is provided with a pitching device but as both of said devices are alike in structure and operation, only one thereof need be described in detail.

Our improved pitching means is shown in the form of an arm 27 which may be formed of sheet material of a strong character, lugs being shown bent up as indicated at 28. Bearings 29 are mounted upon arm 16 and the pitching arm 27 is pivoted to the ball carrying arm by means such as a bolt 30. Near the other end of said arm is formed a socket portion 31 which is disposed in registry with the opening 17 so that as the ball lies in the latter it will be engaged in following relation, with respect to the direction of rotation of arm 16, by the holding socket 31. The pitching arm 27 is adapted to be energized to perform its function and we have shown a spring applied to said arm, for this purpose. The spring is provided with portions 32, coiled about bolt 30, and the ends 33 being secured to the ball carrying arm by a fastening device 34. An intermediate portion of the spring is shaped to form a loop 35 which bears against the pitching arm 27 and normally holds the latter in close relation against that side of the pitching arm 16 which is rearwardly disposed with respect to the direction of rotation. A buffer or shock absorber 36, carried by arm 16, is interposed between the latter and the pitching arm so as to absorb the shock of impact of the pitching arm against the carrying arm, in a manner which will presently appear. Now assuming that a ball has been delivered to the guide 19 in advance or in front of the lower end of arm 16, it will be seen that as the arm advances in the direction of the arrow the lower forked end will pass on opposite sides of the ball and the latter will be caught in the socket 31 of the pitching arm. The ball will occupy this relation with respect to the parts until the latter approach a pitching position. During this portion of rotation, the guide 19 and the lower forked end will serve to hold the ball against movement out of socket 31 until the lower end of the arm reaches a substantially horizontal position, at which point the ball will seek to retain its position in the socket 31 by gravity.

We will next describe the novel means for energizing the improved pitching machine, to pitch the ball, when the arm attains an upper or pitching position. An upright 37 is mounted upon platform 1 and carries a vertically disposed adjustable head 38 which is adjustable about a horizontal axis. A handle 39 facilitates operation and a set screw 40, projecting through a slot 41, serves to anchor the head 38 in its adjusted position. The head 38 is provided with a fork holder comprising a sleeve 42 having a winged adjusting and holding screw 43. The shank 44 of a fork 45, extends through said holder 42 and may be adjusted longitudinally therein and locked in any desired position. By reason of the longitudinal and rotative adjustment afforded, the widest latitude for positioning the fork, is provided. The fork 45 comprises two forked portions 46 having rollers 47. Now the distance between the inner ends of the rollers 47 is slightly in excess of the width of the reduced forked ends of the arm 16 so that the latter may freely pass between the rollers 47. However, the socket end of the pitching arm 27 is provided with flanges 48 which project laterally of the reduced ends of the arm 16 a sufficient distance so that the upper end of the arm 27 will be engaged by the rollers 47. The result of this operation will be to arrest pitching arm 27 when the arm 16 approaches a pitching position so as thereby to tension the pitching arm spring. As the carrying arm 16 reaches a pitching position, the pitching arm will have slipped or slid from under the rollers 47 and will have been released thereby for actuation by the spring to quickly snap the pitching arm into abrupt contact with arm 16. This will impart to the ball a sufficient impetus to project the same the desired distance to where the batter or player stands. The ball will reach the batter under swift motion in simulation of a ball pitched by the human hand. The speed with which the ball is pitched may not only be regulated by the character of spring applied, but also by the adjustment of the fork 45 to reduce or increase the period of engagement of the pitching arm by the latter.

It is believed that the advantages and utility of our invention will be fully understood from the foregoing description, and while we have herein shown and described one specific form of our invention, we do not wish to be limited thereto except for such limitations as the claims may import.

We claim:—

1. In a game ball pitching or projecting machine, a ball carrying arm movable toward a pitching position and engaging the

ball, a spring actuated ball projecting arm pivoted on said carrying arm, and means for retracting said projecting arm during movement of said carrying arm toward a pitching position to initiate tension of said projecting arm for projection of the ball, substantially as described.

2. In a game ball pitching or projecting machine, a ball carrying arm having an opening for receiving the ball, a pitching arm mounted on said carrying arm and having a ball socket portion for engagement with the ball to maintain the latter in said opening as said carrying arm advances toward a pitching position, and means causing actuation of said pitching arm to project the ball, substantially as described.

3. In a game ball pitching or projecting machine, a ball guiding arm having portions for guiding a ball toward a position to be projected, a pitching arm mounted on said guiding arm and having a socket disposed adjacent said guiding portion for holding the ball in operative relation therewith during movement of the ball toward a position to be projected, and means causing actuation of said pitching arm to project the ball, substantially as described.

4. In a game ball pitching or projecting machine, a guiding arm having a portion for guiding a ball toward a position to be projected, a pitching arm mounted on said guiding arm and having a ball receiving socket registering with said guiding portion, a spring normally holding said pitching arm against said guiding arm, and means for retracting and then releasing said pitching arm for impact of the latter against said guiding arm on tension of said spring to project the ball, substantially as described.

5. In a game ball pitching or projecting machine, ball guiding and pitching arms movable together and having coacting portions for supporting a ball to be projected, and means acting upon said pitching arm for effecting projection of the ball, substantially as described.

6. In a game ball pitching and projecting machine, a ball guiding arm having a forked ball guiding end, a pitching arm pivoted on said guiding arm and having a socket portion registering with said forked end and coacting therewith to support the ball, a spring normally holding said pitching arm in engagement against said guiding arm, and means for retracting and then releasing said pitching arm to project the ball, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

ALVIN B. JUDD.
WILLIAM E. JUDD.

Witnesses:
W. H. WHITE,
H. E. SMITH.