May 22, 1934. H. KOHIROGAWA 1,960,113

GAME APPARATUS

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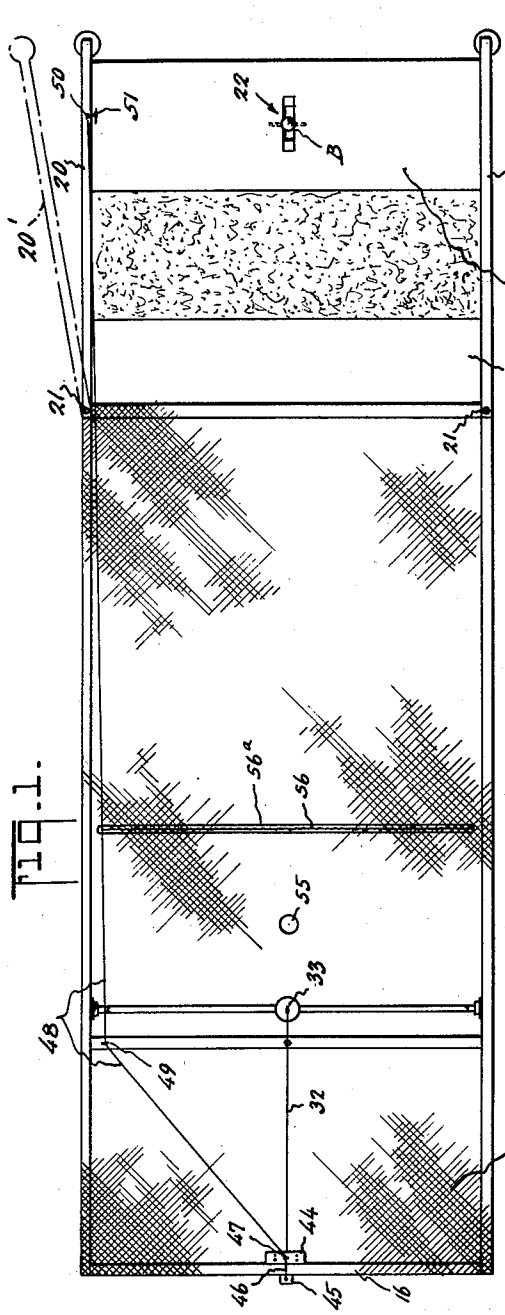


FIG. 1.

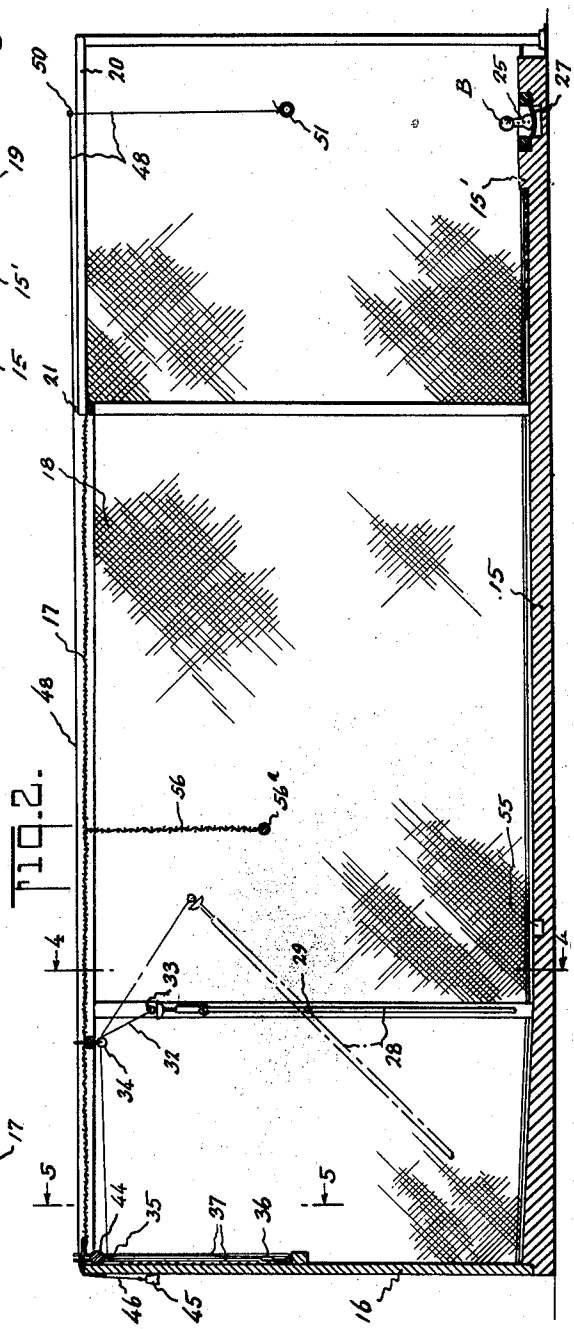


FIG. 2.

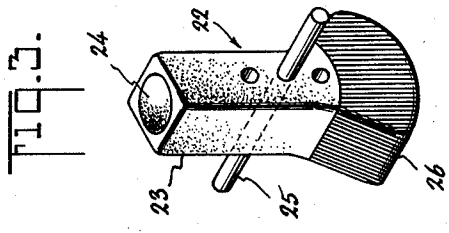


FIG. 3.

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Fig. 4.

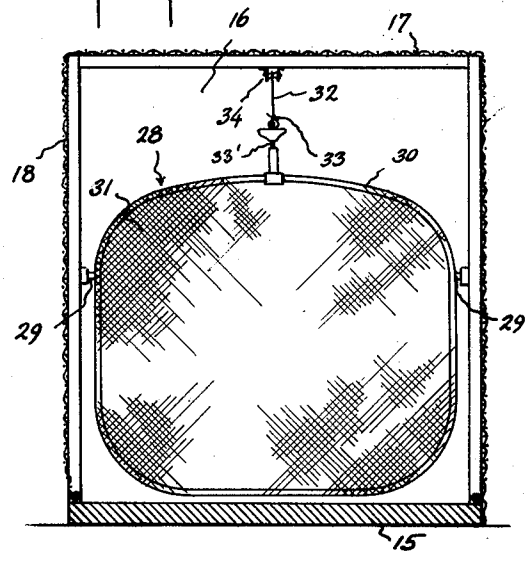
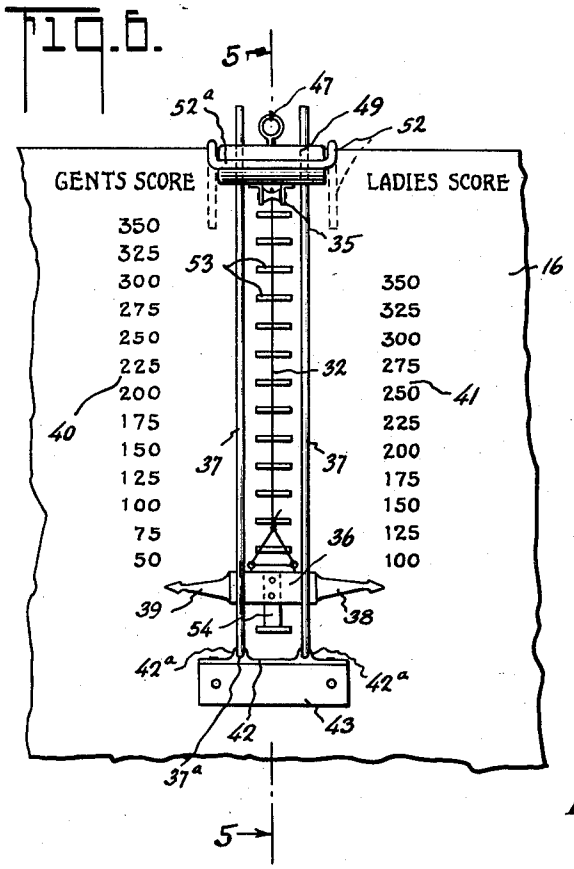


Fig. 5.



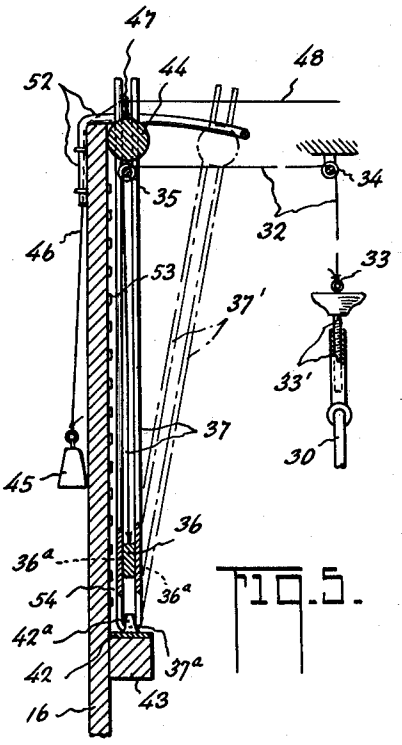


Fig. 5.

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Fig. 8.

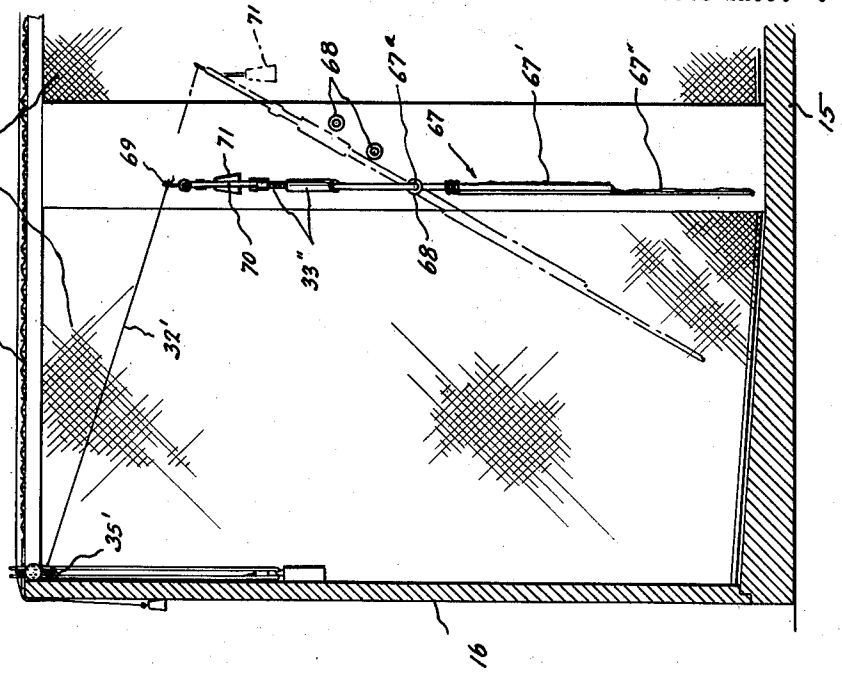
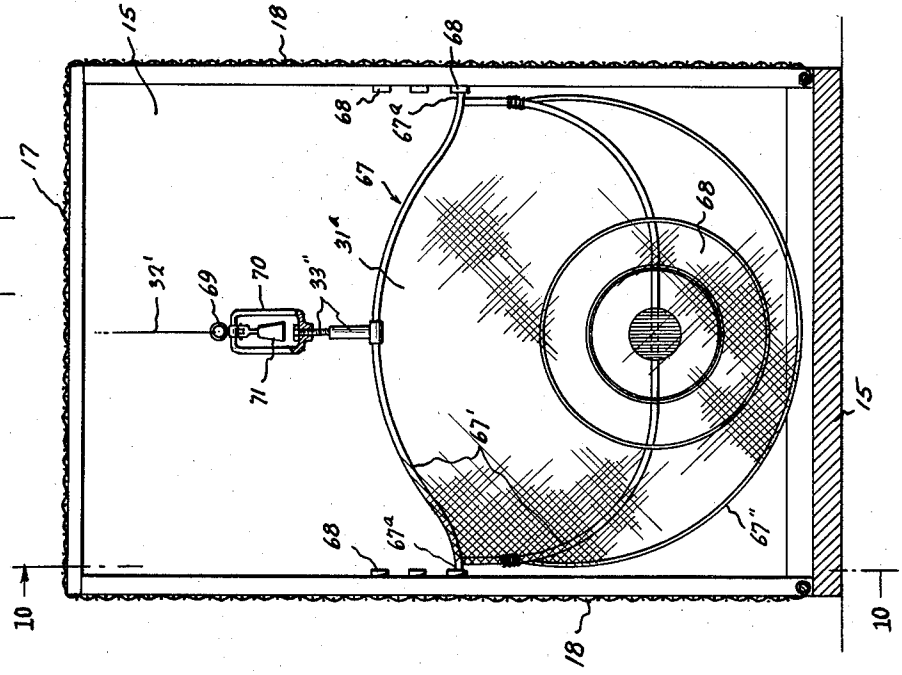


Fig. 7.



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UNITED STATES PATENT OFFICE

1,960,113

GAME APPARATUS

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Application December 22, 1930, Serial No. 504,199

6 Claims. (Cl. 265—20)

The subject of this invention is an improved apparatus whereby, indoors or in a relatively confined space, a golf player can practice, as many times as he likes, one or more strokes, desirably in the sequence usual in playing a typical hole on a full size golf course, and in each case determine with reasonable accuracy the length and direction of the flight of the ball following such strokes, as those given by a driver, a mashie, a putter and the like.

An object of the invention is to provide an apparatus of the kind just indicated, wherein cumbersome, expensive and complicated apparatus of the kind heretofore proposed will be avoided, yet a practicing or playing apparatus will be provided which will permit fair scoring based on skill, as in a contest between several players, which will have teaching value to one endeavoring to improve his game, and which will avoid any monotony because providing, when desired, a variety of successive strokes as aforesaid, and because resulting in the registration of any stroke in positive terms having a real relation to the playing of the game of golf on an actual golf course.

Other objects and advantages of the invention will be hereinafter specifically pointed out, or will become apparent, as the specification proceeds.

With the above indicated objects in view, the invention resides in certain novel constructions and combinations and arrangements of parts, clearly described in the following drawings, which latter show embodiments of the invention as at present preferred.

In said drawings:

Fig. 1 is a top plan view, showing one form of the invention;

Fig. 2 is a longitudinal vertical section, showing the embodiment of Fig. 1;

Fig. 3 is an enlarged detail, showing one of the elements of Figs. 1 and 2 in perspective;

Fig. 4 is a front elevation of the pivotally mounted target of Figs. 1 and 2;

Fig. 5 is a detail view, partially in side elevation and partially in section, showing certain of the parts as seen in Fig. 2 but on an enlarged scale, this Fig. 5 being taken on substantially the line 5—5 of Fig. 6;

Fig. 6 is a front elevation of the parts shown in Fig. 5, that is, looking toward the left in Figs. 2 and 5;

Fig. 7 is a view similar to Fig. 4, but showing a modified form of pivotally mounted target;

Fig. 8 is a view similar to the left hand end of Fig. 2, but illustrating the parts of Fig. 7;

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring preliminary to all the various embodiments, the aforesaid cage is illustrated as including a wooden, composition or other suitable floor 15, a back wall 16 preferably similarly constructed, and top and side walls marked respectively 17 and 18; these walls being preferably built up of netting, woven fabric or metal wire, and the dimensions of the cage being such that its height is such that the ordinary player may walk therein on the floor 15 without stooping, which height I have found, may conveniently be made seven or eight feet. Various framing members are provided as clearly shown in the various views, to which reference characters will not be applied except where required to explain a carried or associated element or device.

Preferably, in any case also, as shown in Fig. 1, the top and side walls, hereinafter called the screens, are extended to, but not beyond, an end portion or prolongation 15' of the floor 15, hereinafter called the stance platform; thus leaving the space above and at opposite sides of this platform clear for free swinging of the particular club the player is then using. If desired, auxiliary side frames 19 and 20, over which are stretched screens of the kind already described, may be provided, and these frames may be vertically hinged as indicated at 21, so that either or both thereof may be swung outwardly as desired, and according to whether or not the player is left handed or right handed, and according to whether or not he has a tendency to slice the ball on say a drive or mashie shot. In Fig. 1, for example, the auxiliary frame 20 is shown as outwardly readjusted to the dotted line position 20'.

On the stance platform 15' is a teeing-up device hereinafter called a tee; such device, as shown in Figs. 1, 2 and 3, including a tee proper 23, preferably of rubber and shaped to present a cup 24 at its top on which to place the golf ball before each stroke. This element 23 is pivotally hung by a pin 25 within a well 26 in platform 15'; the lower end of the device carrying a weight 26 of such size and mass as always to return the tee proper to the vertical position illustrated. In order that the cup 24 may be set at different heights above the stance platform, to suit different players, a plurality of apertures as shown may be formed through the tee proper at different points along its length, and the pin inserted through the proper hole to give the desired result; the projecting ends of the pin 25 resting in half-round aligned recesses cut in the top of

platform 15' at opposite sides of the well 26. In order to hold the tee against accidental vibration during a player's stroke, a leaf-spring 27 having a central bow may be mounted in the bottom of the well as indicated in Fig. 1, under such tension at said bow as not to interfere with the tee always returning to vertical position under the gravity action of the weight 26 yet to hold the tee ordinarily as just described.

Referring now particularly to the pivotally mounted target and registering means of the embodiment illustrated in Figs. 1 to 6, the target itself is indicated at 28, pivotally hung at 29. This target is made up (Fig. 4) of a framing 30 and a tautly stretched facing 31, of some suitable material, as canvas or fibrous or metal screening or the like. Due to the comparative elevation of the pivot points 29, the target of its own weight will tend to hang vertically, that is, as shown in Fig. 4. A cord 32 is attached at one end, at 33, to the mid-top of the target, and passes over a pulley 34, and then, as shown best in Figs. 5 and 6, over a pulley 35, finally to be connected at its opposite end to a cross-head 36; this cross-head being slidable up and down between four parallelly arranged round rods 37 by virtue of having four suitably spaced half-round parallelly arranged recesses on the back and front faces of said cross-head. Two of such grooves are shown in Fig. 5. On opposite ends said cross-head carries oppositely projected pointers 38 and 39 as shown in Fig. 6, for coacting with the columns of figures 40 and 41 there shown, these columns being on the front face of the back wall 16.

Also as shown most clearly in Figs. 5 and 6, the four rods 37 shown are the upstanding elements of two U-shaped wire members, having their bottom bowl portions 37*a* passed loosely through parallel apertures in upstanding bosses 42*a* of a plate 42, suitably secured on top of a block 43 attached to said back wall; thus pivotally mounting the lower portions of the rods to make of them a frame, hereinafter called the frame 37, swingable to the broken line position 37' of Fig. 5. Said rods are frictionally yet securely locked at the proper spacings on the frame, and the frame is made rigid and completed by having the upper end portions of said rods tight in suitable apertures through a cylindrical header 44 preferably of rubber or some other suitable material. When made of rubber or other resilient composition, which is preferred, the frictional hold on the upper ends of the rods will be secure, and at the same time such header functions as a buffer to prevent shock on the swinging frame when it comes to rest at either of its possible positions, those shown in full lines and in broken lines in Fig. 5. The full line position of said frame is its normal one, and the frame is held in this position by a weight 45 secured to the lower end of a cord 46 running over the top of back wall 16 (Fig. 5), and then carried forward and attached to eye 47 secured to the top of header 44. Another cord 48 is secured to said eye, and runs forwardly to near the stance platform 15' (Figs. 1 and 2), guided through eyes 49 and 50, and terminating in a depending ring 51 (Fig. 2). A bent wire yoke 52, shaped as shown most clearly in Figs. 5 and 6, is secured to the back wall 16, so that, while said back wall coacts with the header 44 to limit the movement of frame 37 back to the vertical, the front cross-length 52*a* of the fixture 52 is positioned to coact with said header to stop forward swinging movement of the frame 37 when it reaches the position 37'. Along the back wall 16, between the columns 40 and 41, are a series of horizontal ribs 53, aligned with the figures of the columns; and on the back of the cross-head 36 is a leaf-spring 54 bent downwardly and backwardly as shown.

When it is finally explained in connection with these Figs. 1 to 6, that the cord 32 is nicely adjustable as desired, by means of a turn-buckle 33', and that at a suitable point along the floor 16 a cup for putting is located at a suitable point, such as at 55, and that preferably a transverse screen 56 is hung from the top wall of the cage to have its lower end 56*a* depend at about the level of the target pivots 29, the structural details of this embodiment will have been described.

The operation of said embodiment may be as follows:

The ball B is driven at the target, by the use of any club prescribed for the particular stage of the play now reached according to the rules adopted for the "hole" then being played. Usually, the first stroke will be with a driver; then perhaps with a midiron; then perhaps with a mashie; and so on. For each stroke, the ball B is teed up on the device 22, and then driven toward the target; the force of the blow, when the ball strikes the target below its pivot line, rocking the target in the direction indicated by the broken line showing of Fig. 2. Then the target is driven through an angle measuring the force of the ball when the latter strikes. This angle is translated into yards of distance, represented by the figures in the columns 40 and 41; such yardage being registered, due to the corresponding rise of the cross-head 36 along the length of frame 37, the cross-head being thus pulled by the cord 32. When the target starts to swing back by gravity to its normal vertical position, the lower end of the leaf-spring 54 on the back of the cross-head becomes caught behind the highest rib 53 just previously passed; and the distance reading is registered for any length of time desired. To reset the pointers 38 for the next stroke, and also the target, the ring 51 is pulled down, and this causes the cord 48 to swing the frame 37 to the position 37' of Fig. 2, whereupon the cross head 36, which is heavy enough for the purpose, drops by gravity to the position shown in Figs. 5 and 6 and so takes up the slack and the cord 32. Then, when the ring 51 is released, the weight 45 restores the frame 37 back to the full line position of Fig. 5, that is, as shown in Fig. 6. The rules may be any desired. For instance, during the "approach" period, the yardage obtained from the first stroke, say that with the driver, will determine which club is to be used for the next stroke; and so on. The final stroke is a putting stroke, the object being to get the ball B in the cup 56 with the least possible stroke. Then, if the first putt be required to be taken from the tee 22, the whole floor 15, in front of the target, becomes temporarily the putting green.

Referring next to the embodiment shown in Figs. 7 and 8, a target 67 somewhat different from the targets previously described is employed, but the yardage registering mechanism is precisely like that shown in Figs. 1 to 6, as indicated in Fig. 8. The target 67 is built up of a main framing 67' and an auxiliary framing 67'', the facing 31*a* being the same, however, as described above for the facing 31 of Figs. 1 to 6, yet carrying, as shown, a canvas or other suitable bulls-eye 68. Further, instead of a single pivotal mounting for the target as in Figs. 1 to

6, the target 67 has a pivotal mounting adjustable whenever desired as to height; this mounting including a pair of projecting ends 67a of the framing 67, to act as pivot points, and a plurality of coacting pivot cups 68 arranged here in three sets at three levels as indicated; it being understood that as the pivot axis of the target is raised more and more, the center of the bulls-eye is raised more and more, and such changes of elevation could be respectively appropriate to strokes made by different clubs relative to the ball B. A cord 32', similar to the cord 32 of Fig. 1, for operating the aforesaid registering mechanism of Fig. 8, is run from an eye 69 at the top center of the target 67, to said registering mechanism, to be operatively connected with the latter exactly as previously described, as will be seen from Fig. 5, noting the pulley 35' of Fig. 8 which corresponds to the pulley 35 of Fig. 5. This eye 69 is at the top of a rectangular hanger 70 for a pivotally hung counter-weight 71; said hanger at its lower portion having swivelled through the same the male threaded member of a turn-buckle 33'' corresponding in function to the turn-buckle 33' of Fig. 5. Note that this pivotally hung weight will have a different counter-weighing relative to the swinging target, after the latter is struck by a ball driven at it, than a counter-weight merely fixed somewhere near the top of the target. Note, finally, that despite the alternative use of pivot cups 68, the cord 32' is always maintained the proper length, without a readjustment of turn-buckle 33'', due to the fact that the pairs of cups are arranged with their centers in the proper oblique plane as indicated in Fig. 8.

I claim:

1. A golf playing apparatus comprising, an enclosure having a back wall, a target mounted within and to the enclosure for swinging movement, an upright frame disposed back of and spaced from said target and pivotally mounted at its lower end on the back wall of the enclosure, a crosshead movable up and down the frame and having a pointer registrable with distance indications arranged in columnar form beside the frame, operative connections between the target and the crosshead to raise the latter when pivotal movement is imparted to the target, yielding means attached to the upper end of the frame for maintaining the latter in vertical position, releasable means for retaining the crosshead in the position to which it may be raised by the swinging of the target and adapted for release by movement of said frame from vertical position, and means for moving the upper end of the frame to dispose it out of vertical position to permit the return of the crosshead to normal position, said yielding means returning the frame to vertical position after the operation of the last said means.

2. A golf playing apparatus comprising, an enclosure having a back wall, a target mounted within and to the enclosure for swinging movement, an upright frame disposed back of and spaced from said target and pivotally mounted at its lower end on the back wall of the enclosure, said frame comprising spaced parallel bars, a crosshead movable on said bars, spaced horizontal ribs disposed on said back wall, between the bars of said frame, the crosshead having means to engage the said ribs to hold itself to the position to which it may be elevated on said frame by movement of the target, the crosshead having a pointer registrable with distance indications arranged in columnar form on said support beside said frame, operative connections between the target and the crosshead to raise the latter when pivotal movement is imparted to the target, yielding means attached to the upper end of the frame for maintaining it in vertical position against said back wall, and means for swinging the frame away from said back wall at the upper end to release said crosshead, said yielding means returning the frame to vertical position after the release of the last said means.

3. A golf playing apparatus comprising an enclosure having a back wall, a target mounted within and to the enclosure for swinging movement, an upright frame disposed back of and spaced from said target and pivotally mounted at its lower end on the back wall of the enclosure, said frame comprising spaced parallel bars, a crosshead movable on said bars, spaced horizontal ribs disposed on said back wall, between the bars of said frame, the crosshead having means to engage the said ribs to hold itself to the position to which it may be elevated on said frame by movement of the target, and also having a pointer registrable with distance indications arranged in columnar form on said back wall beside said frame, operative connections between the target and the crosshead to raise the latter when pivotal movement is imparted to the target, yielding means attached to the upper end of the frame for maintaining it in vertical position against said back wall, and means for swinging the frame away from said back wall at the upper end to release said crosshead, said yielding means returning the frame to vertical position against said support after the release of the last said means, said yielding means comprising a weight, and a flexible member connecting the weight with the frame at the upper end of the latter and trained over said back wall.

4. A golf playing apparatus comprising, an enclosure having a back wall, a target mounted within and to the enclosure for swinging movement, an upright frame disposed back of and spaced from said target and pivotally mounted at its lower end on the back wall of the enclosure, said frame comprising spaced parallel bars, a crosshead movable on said bars, spaced horizontal ribs disposed on said back wall, between the bars of said frame, the crosshead having means to engage the said ribs to hold itself to the position to which it may be elevated on said frame by movement of the target, and also having a pointer registrable with distance indications arranged in columnar form on said back wall beside said frame, operative connections between the target and the crosshead to raise the latter when pivotal movement is imparted to the target, yielding means attached to the upper end of the frame for maintaining it in vertical position against said back wall, and means for swinging the frame away from said back wall at the upper end to release said crosshead, said yielding means returning the frame to vertical position against said back wall after the release of the last said means, said yielding means comprising a weight, and a flexible member connecting the weight with the frame at the upper end of the latter and trained over said back wall, and the means for moving the upper end of the frame consisting of a flexible member connected to the upper end of the frame and pulleys over which said flexible member is trained to a remote point, said flexible member extending in a direction away from said back wall.

5. A golf playing apparatus comprising, an enclosure having a back wall, a target mounted

within and to the enclosure for swinging movement, an upright frame disposed back of and spaced from said target and pivotally mounted at its lower end on the back wall of the enclosure, said frame comprising spaced parallel bars, a crosshead movable on said bars, spaced horizontal ribs disposed on said back wall, between the bars of said frame, the crosshead having means to engage the said ribs to hold itself to the position to which it may be elevated on said frame by movement of the target, the crosshead having a pointer registrable with distance indications arranged in columnar form on said back wall beside said frame, a flexible member connecting said crosshead to the upper edge of said target, a yoke mounted at the upper edge of said back wall in surrounding relation to the upper end of the frame and having a pulley over which said flexible member is trained, the yoke determining the amount of swinging movement that may be imparted to the frame, and flexible members terminally anchored to the frame and extending in opposite directions therefrom, one over the upper edge of said back wall and being provided with a weight and the other being carried to a remote point and being provided with a pull knob.

6. A golf playing apparatus comprising, an enclosure having a back wall, a target mounted within and to the enclosure for swinging movement, an upright frame disposed back of and spaced from said target and pivotally mounted at its lower end on the back wall of the enclosure, said frame comprising spaced parallel bars, a crosshead movable on said bars, spaced horizontal ribs disposed on said back wall, between the bars of said frame, the crosshead having means to engage the said ribs to hold itself to the position to which it may be elevated on said frame by movement of the target, the crosshead having a pointer registrable with distance indications arranged in columnar form on said back wall beside said frame, a flexible member connecting said crosshead to the upper edge of said target a yoke mounted at the upper edge of said back wall in surrounding relation to the upper end of the frame and having a pulley over which said flexible member is trained, the yoke determining the amount of swinging movement that may be imparted to the frame, and flexible members terminally anchored to the frame and extending in opposite directions therefrom, one over the upper edge of said back wall and being provided with a weight and the other being carried to a remote point and provided with a pull knob, the frame having a header engageable respectively with the yoke and with the back wall in the two extreme positions of the frame with reference to the back wall.

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