June 3, 1930. R. H. STRASSER 1,761,317

AUTOMATIC GOLF LINK

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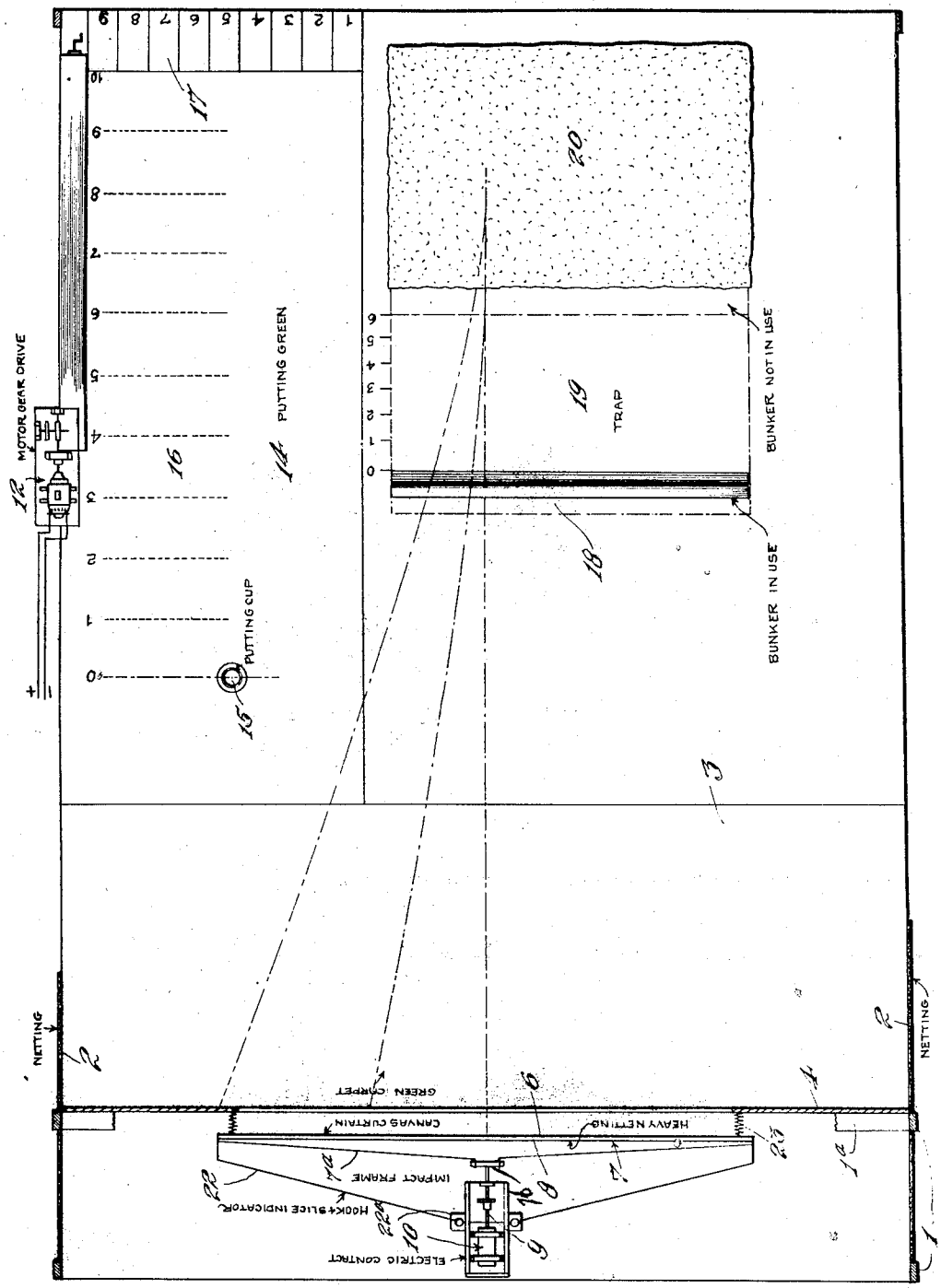


Fig. 1

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AUTOMATIC GOLF LINK

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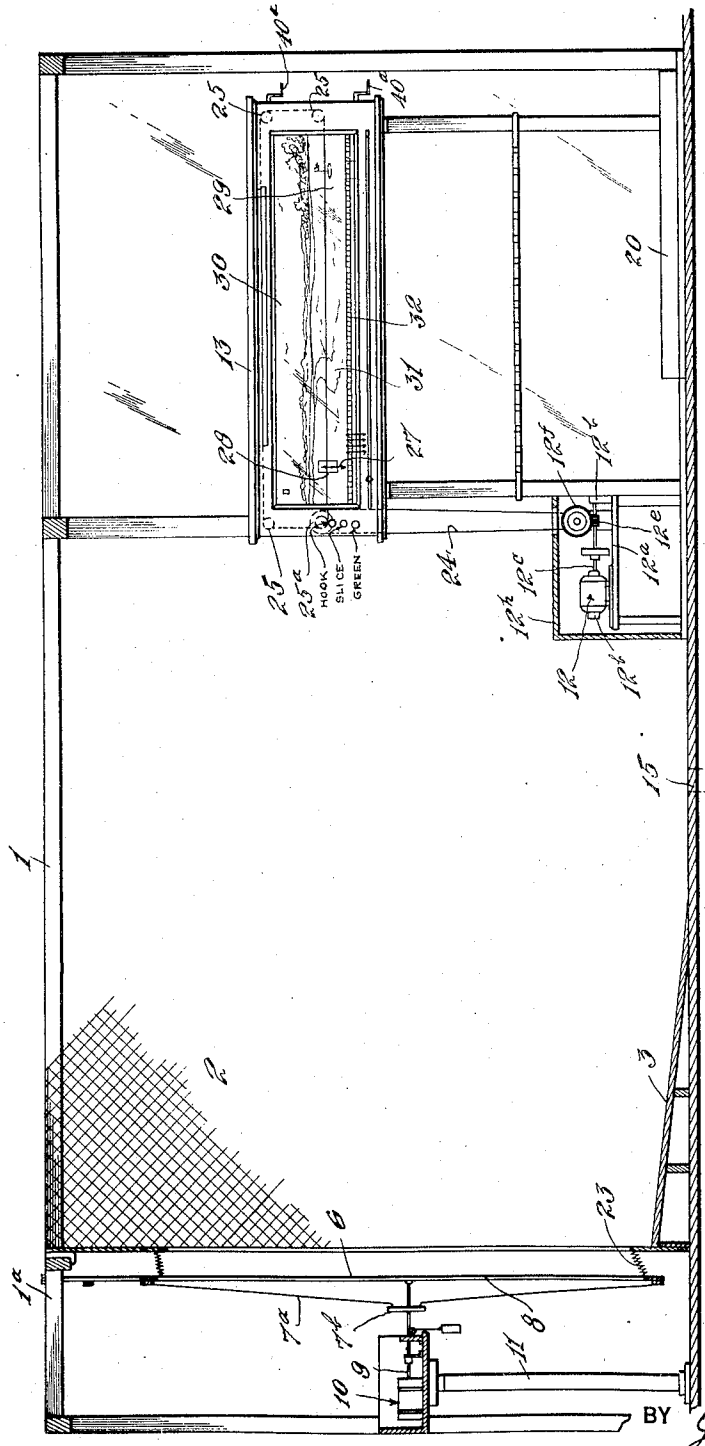


Fig. 2

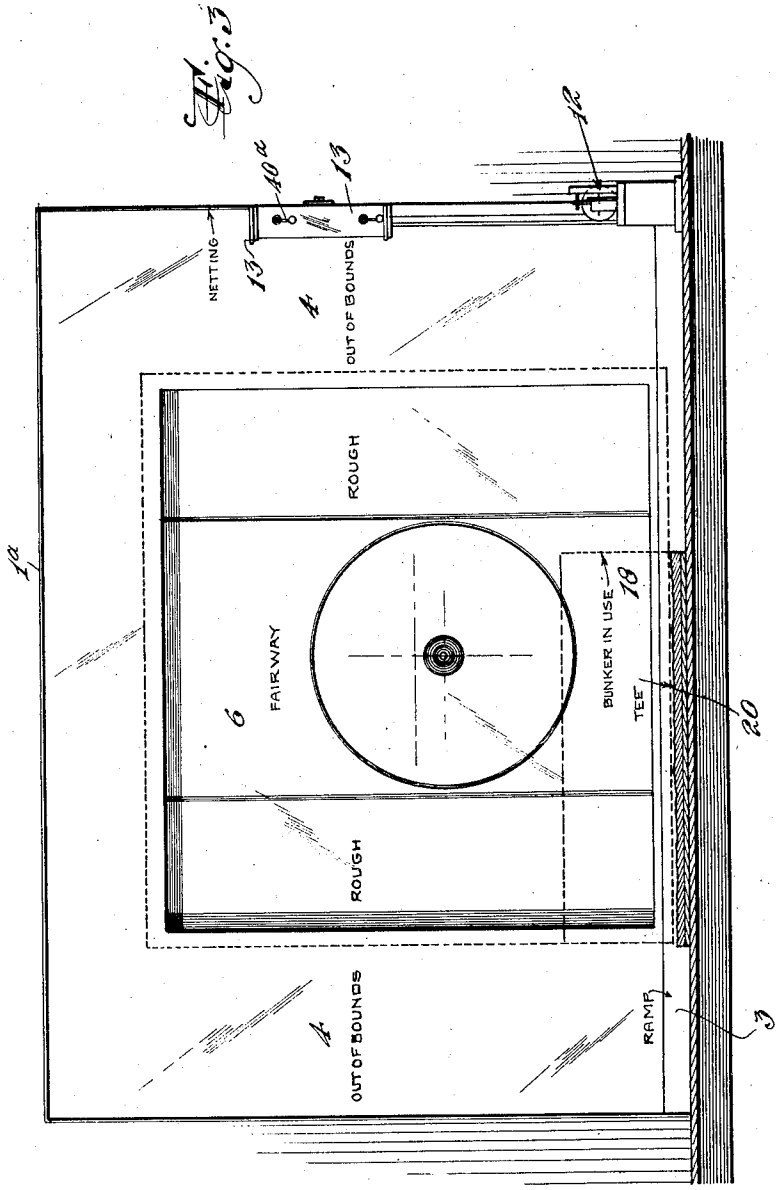
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AUTOMATIC GOLF LINK

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Fig. 3



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AUTOMATIC GOLF LINK

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Fig. 4

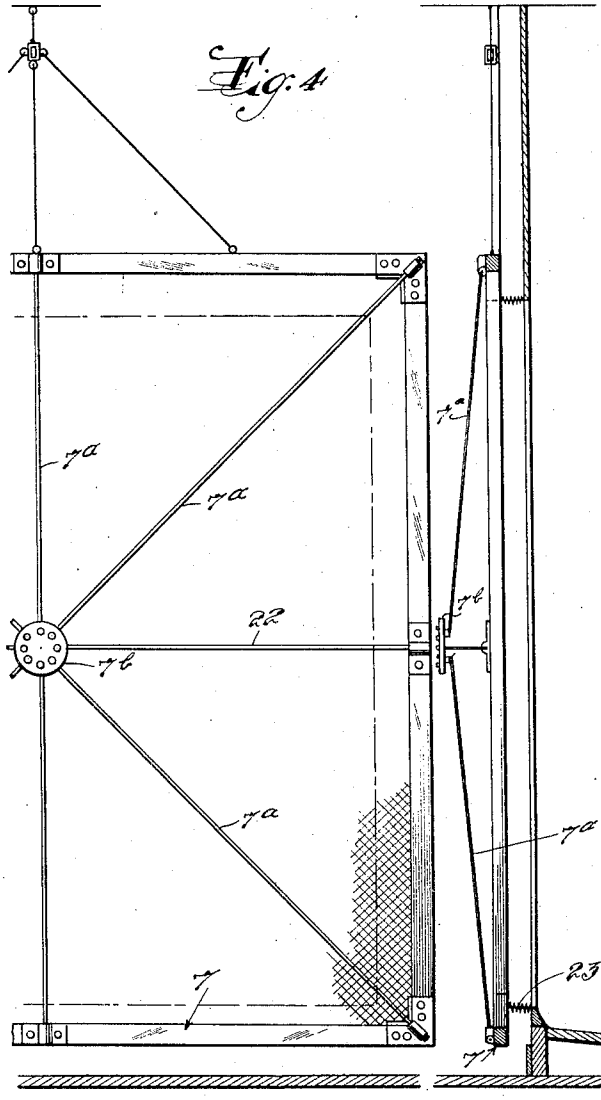
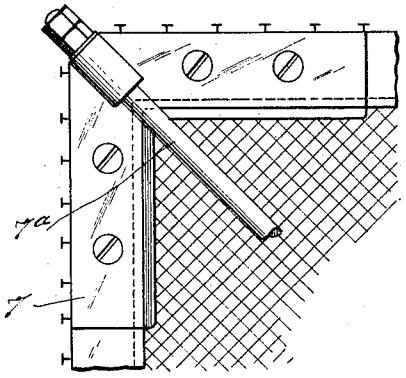


Fig. 7



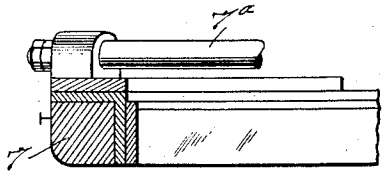


Fig. 6

Fig. 5

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AUTOMATIC GOLF LINK

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Fig. 9

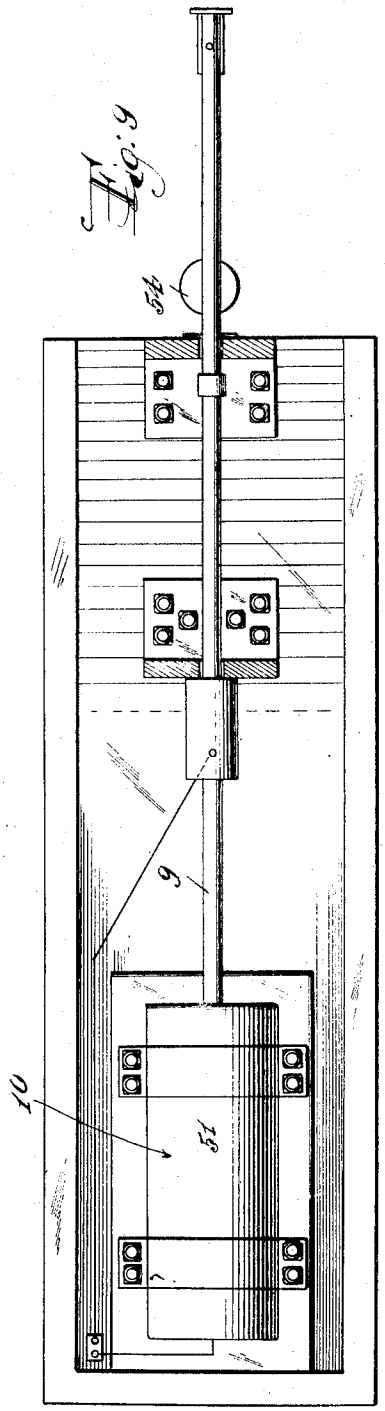
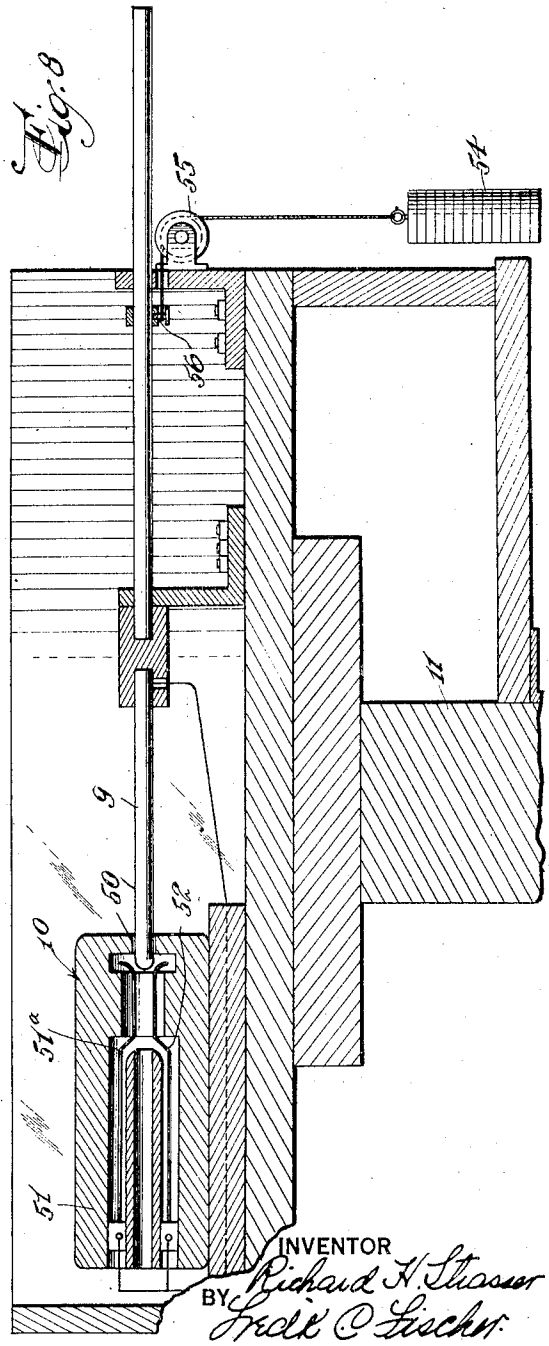


Fig. 8



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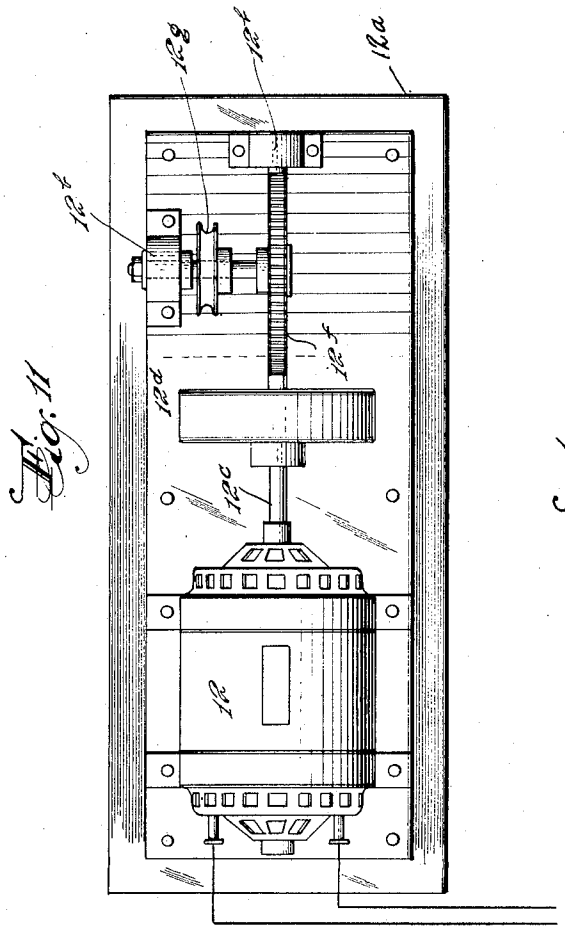


Fig. 11

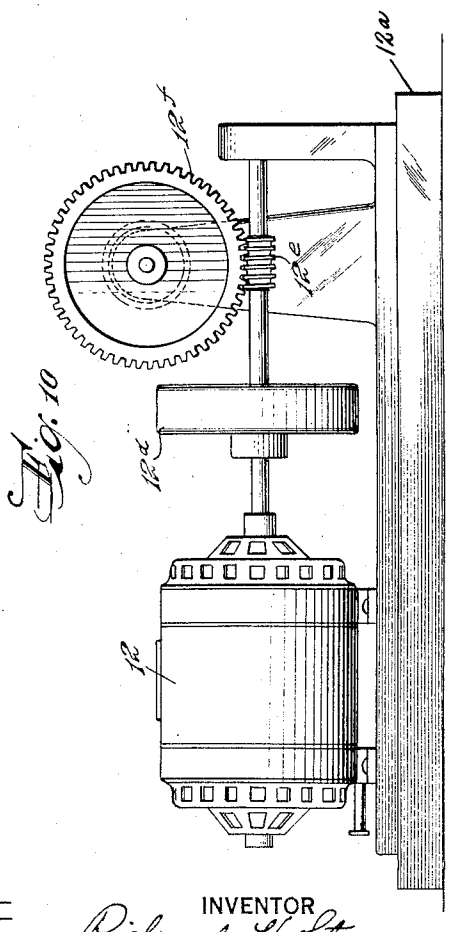


Fig. 10

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Fig. 14

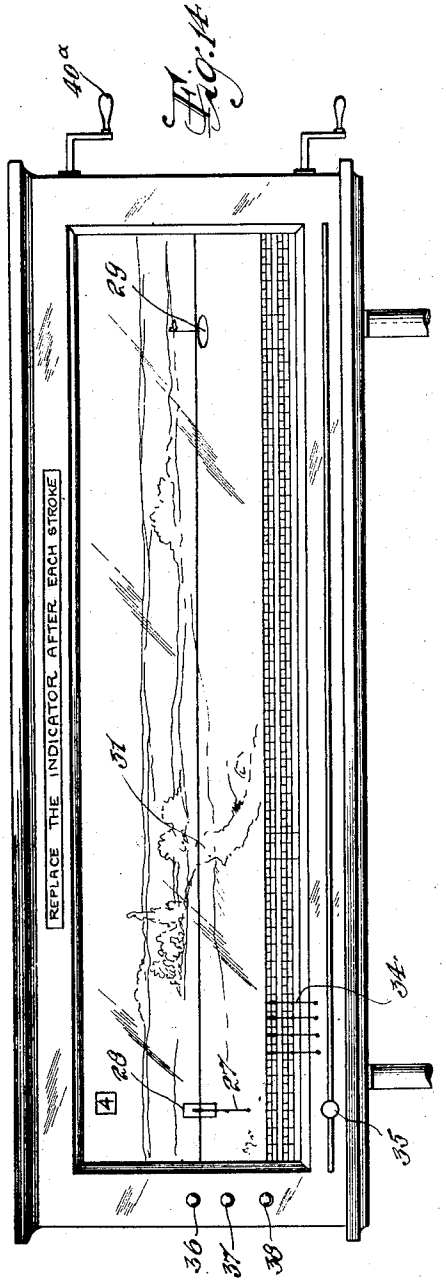


Fig. 13

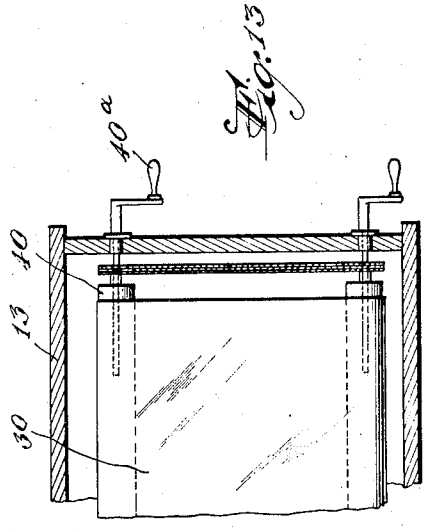
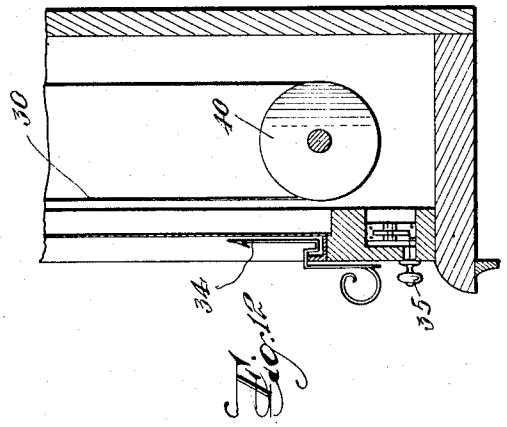


Fig. 12



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AUTOMATIC GOLF LINK

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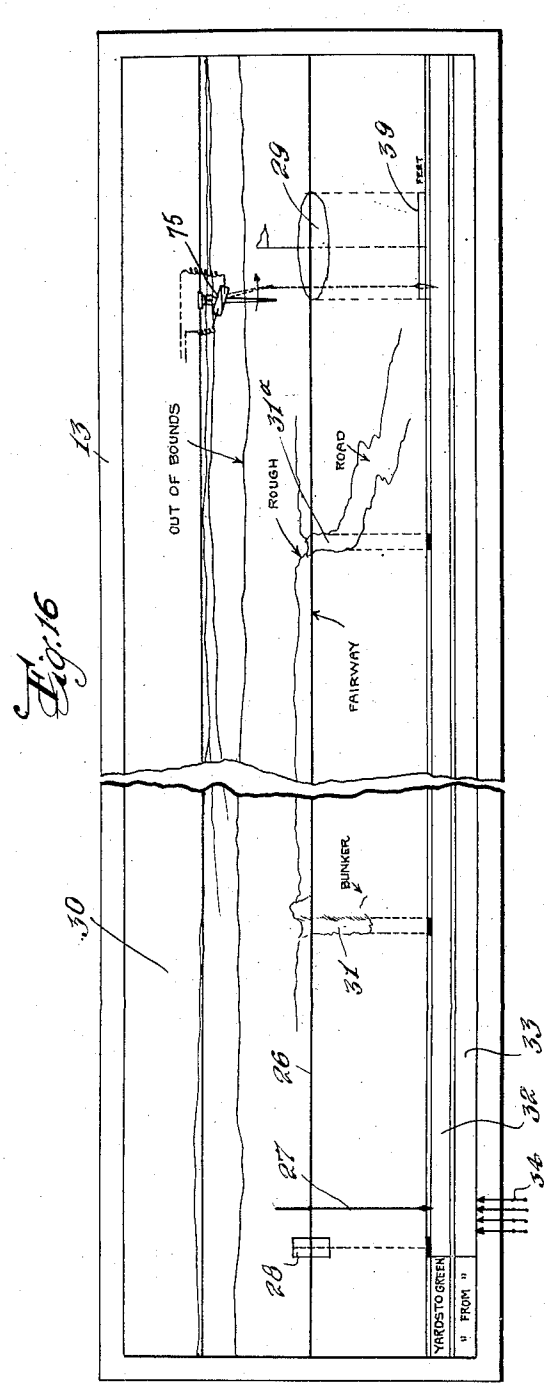


Fig. 16

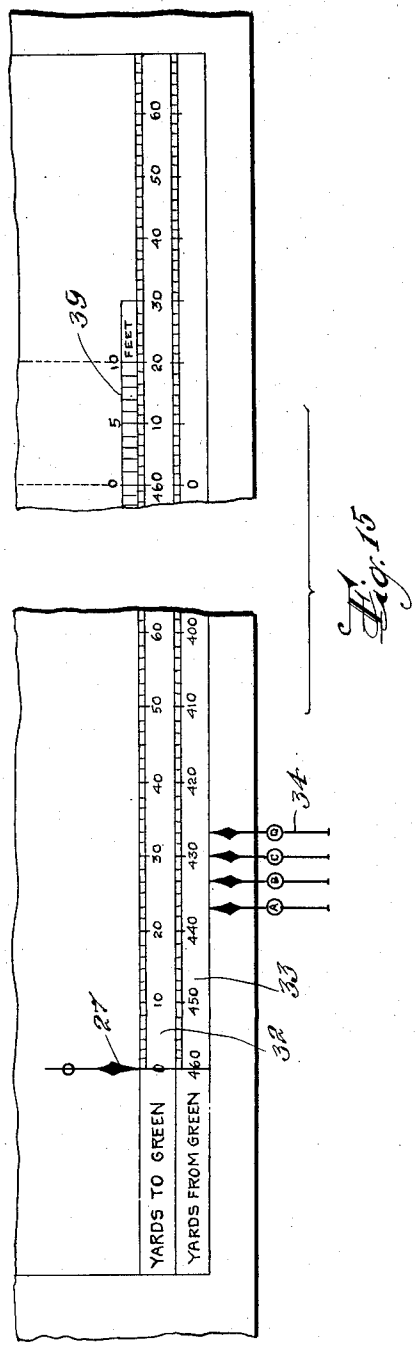


Fig. 15

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Patented June 3, 1930 1,761,317

UNITED STATES PATENT OFFICE

RICHARD H. STRASSER, OF NEWARK, NEW JERSEY, ASSIGNOR TO STRASSER AUTOMATIC GOLF SYSTEMS, INC., OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY

AUTOMATIC GOLF LINK

Application filed February 15, 1928. Serial No. 254,354.

My invention relates to a game apparatus and more particularly to an arrangement of apparatus by which the game of golf may be played indoors.

One of the objects of the invention is to provide a system and apparatus for playing the game of golf indoors or in a restricted area outdoors, whereon drives may be made simulating drives made on a natural golf course and their actual distance measured.

This is accomplished by providing a curtain to receive the impact of a driven ball, there being associated with the curtain an electrical contact device for completing an electric circuit to operate a device which registers the force of the impact upon a picture representing a hole of a natural golf course. This picture is contained in a cabinet conveniently located for ready reference.

Another object of the invention is to provide an apparatus by means of which drives may be made simulating drives made on a natural golf course and their directions indicated.

Another object of the invention is to provide an apparatus for simulating the drives made over a natural golf course with such hazards as bunkers, traps and water associated therewith and putting greens, whereby long drives may be made from the tee and intermediate or short drives may be made over and out of hazards (bunkers, traps and water) and the distance measured and the ball putted on the green, simulating putting on a natural golf course green.

Another object of my invention is to provide a system and apparatus for playing the game of golf indoors or in a restricted area outdoors, whereby drives may be made from tee to green, simulating conditions which prevail over a natural golf course for instruction, practice, exercise and amusement, without regard to weather conditions or exposure.

Another object of the invention is to provide an arrangement of apparatus including hazards (bunkers, traps and water) and a putting green within an enclosed area, whereby a number of players may be accommodated in playing the game of golf simultaneously without interference or confusion.

Another object of the invention is to provide a construction of bunker, trap and water hazards and putting green for playing the game of golf indoors or in a restricted area outdoors over and out of which the drives may be measured and their position or location on the course and putting green indicated.

Another object of the invention is to provide a series of pictures drawn in perspective and representing holes of a natural golf course; and indicating by scales the distance in yards from tee to green and the location of hazards (bunkers, traps and water) within the intervening distance, thus enabling players to visualize the requirements of the play.

Another object of the invention is to provide a cabinet containing a series of pictures representing holes of a natural golf course. Each series of pictures, representing a complete course of nine or eighteen holes is fastened to rollers in a cabinet, and allows players to progress from first to last hole by turning the rolls to change the pictures, thus simulating the progress over a natural golf course. The cabinet is provided with an indicator arranged to travel across the face of the pictures from tee to green indicating distances on the scales of each picture and showing the location of the ball on the course with reference to hazards and putting greens.

Another object of the invention is to provide a suspended curtain designed to simulate the layout of a natural course with certain areas representing the Fairway, Rough and Out of Bounds.

The object of the game of golf is to drive the ball from the tee to the green in the least number of strokes. Throughout the distance from tee to green are certain hazards, both natural and artificial, consisting of trees, streams, bunkers and sand traps. The centre of the course, known as the Fairway, is especially prepared for play by maintaining the grass in a neatly cut condition, while on the sides it is not prepared for play in that the grass is long; this area is known as the Rough.

In order to play the game each player has certain equipment, consisting of several wooden and iron clubs, comprising, among

others, a driver, brassie, mid-iron, mashie, niblic and putter. In beginning a game of golf the ball is placed on the tee and driven down the Fairway using the club known as the driver. The distance the ball has been driven on the first drive leaves the choice of the clubs to obtain the remaining distance at the option of the player until the ball has been driven on the green, when the player would use the putter and complete the play for the hole. The several clubs are used for making drives of various distances. The clubs known as the mashie and niblic, or similar clubs, are used in playing the ball over bunkers and from sand traps.

There are several kinds of shots which might occur from the drive, namely a straight drive, a drive pulling to the left, commonly known as a hooked ball, or a ball going to the right and known as a sliced ball, and a topped ball or dubbed drive which merely rolls off the tee. Hazards with particular reference to trees, streams, bunkers and sand traps occur at various distances and locations between the tee and green.

In the present invention I provide an apparatus for simulating the conditions prevailing on the outdoor nature golf course, whereby the game may be played by one or more players for amusement, exercise and practice without regard to weather conditions or exposure. Such an apparatus includes a device for measuring drives of hundreds of yards and short drives of a few yards, together with hazards, such as bunkers, traps and water and a putting green.

The drive made by a player on the automatic golf links or machine simulating the drive over a natural course is read directly in yards from the scales on the pictures representing typical holes of a natural golf course placed in a convenient location to permit player to visualize the requirements of the play and indicate the location or position of the ball on the course with reference to hazards and traps and indicating the distance in yards ball has been driven.

Each picture has two scales located at the bottom edge showing the distance from the tee to the green and the location of hazards (bunkers, traps and water) and putting greens. One scale reading from left to right indicates distance from tee to green; the second scale reading from right to left indicating the distance from green to tee yet to go after each stroke. A combined arrangement of the two scales indicates the exact distance from any point on the course to the green for any length of drive and may be read directly from the scales—no figuring being necessary.

In using the automatic golf links or machine the ball is placed on a tee and driven into a curtain thus completing an electric circuit and starting a motor and gear drive, thereby causing an indicator to travel across the face of the picture representing a hole of a natural course and indicating in yards the actual distance of each drive. Should the drive result in a hooked or sliced ball, lights corresponding thereto would indicate the direction. This is accomplished by an electric contact device associated with the curtain and impact frame and electric lights on the cabinet.

The position of the indicator relative to the reading on the scales on the picture determines whether the drive has placed the ball in a trap or its location on the course. Should the indicator show ball to have been driven into a trap, player would be required to place the ball in the trap and play over the bunker; the ball striking the curtain would indicate its position, and the distance obtained would be recorded by the indicator on the scales of the pictures.

Play is continued until the ball is on the green. This is accomplished by an electrical contact device associated with the scale on the green, and indicated by a green light placed on the picture cabinet. The distance a player is required to putt is determined from the scales on the pictures at the green. The scale representing the area of the green converts yards to feet on account of playing in confined areas, thus making it impossible to continue the play on the greens in yards.

The player locates the ball on the green in accordance with the reading of the scale on the pictures and the corresponding scale on the putting green and proceeds to putt out from that distance in the usual manner to complete the play for the hole.

By using the automatic golf links it is quite practical to play the entire game of golf indoors or in a restricted area outdoors under practically the same conditions as occur on a natural golf course, and under the rules and regulations of the outdoor game in an actual competitive contest, introducing all the elements of chance, luck and skill.

Players use all of the regulation clubs and drive standard golf balls, and may exert all the energy in driving the ball on the automatic golf links they would ever care to expend in an actual drive on an outdoor course.

The long drive of hundreds of yards giving the greatest thrill to the golf player has been so arranged for on the automatic golf links that a player may watch the flight of the ball over hazards, bunkers and traps on the course, as represented by the indicator traveling across the face of the pictures in the cabinet and requiring a lapse of time approximating the actual time a ball would be in flight including normal roll on a natural course.

When a ball is driven and results in a hook or slice striking the curtain in area designated as "Rough" and causing lights to flash, player would know the direction ball

has been driven off the Fairway into the rough or long grass and would be required to use an iron club for the next drive. Should player drive a ball and strike the curtain in the area designating "Out of Bounds", player would know ball had been driven off the course and assume the ball to be lost.

The pictures representing holes of a natural golf course may be drawn in perspective and colored to simulate and correspond with the layout of holes of well-known golf courses.

Other objects of the invention will be understood by reference to the following specifications and the accompanying drawings in which:

Figure 1 is a plan view showing one form of arrangement of the game apparatus.

Figure 2 is an elevation of the arrangement shown in Figure 1.

Figure 3 is a front view of the impact curtain used in the apparatus.

Figure 4 is a detail view of the impact curtain frame.

Figure 5 is a side view of the impact curtain frame.

Figure 6 shows a detail of the curtain frame.

Figure 7 shows details of the curtain frame.

Figure 8 is a side view of the electric contact device.

Figure 9 is a plan view of the electric contact device.

Figure 10 is a side view of the motor-gear drive.

Figure 11 is a plan view of the motor-gear drive.

Figure 12 is a cross sectional view of the picture cabinet.

Figure 13 is another sectional view of the picture cabinet.

Figure 14 is an elevational view of the picture cabinet.

Figure 15 is an enlarged view showing the arrangement of scales on the picture cabinet.

Figure 16 is a detail view showing the relative position of the scales with respect to a picture displayed in the cabinet.

In the drawings similar numerals of reference refer to similar parts throughout the several views.

Referring to Figure 1, the plan view shows a general arrangement of one form of apparatus having a frame work 1, for enclosing the playing area, the sides and top being covered with athletic netting 2. A ramp 3 is built upon a supporting surface and covered with carpet or similar material padded to deaden the sound of a falling ball and to cause balls to return within easy recovery distance of the tee 20. A safety curtain 4 is suspended from cross-bracing 1^a and is used to prevent the ball from striking the metal of the impact frame 7, and this curtain represents the area on a golf course known as "Out of Bounds" and is shown on the curtain design in Figure 3. The safety curtain is open in the center to allow the ball to pass through and strike the curtain 6, (Figure 3). This curtain is suspended from 1^a and is designed to represent the area on a golf course known as the "Fairway" and the "Rough"; and may include a circular target and bullseye, at which a player may aim when making drives (Figure 3).

An impact frame 7 of wood or metal construction is suspended from 1^a and associated with the curtain 6 and may be connected with the frame 1 by light canvas strips 23, to prevent ball passing through. This impact frame is free to swing in any direction and is covered with heavy athletic netting 8 on the face. Cross braces 7^a are set back at an angle to prevent the ball from striking metal when driven into the curtain 6. Theoretically, hundreds of individual contact points would be required at different points on the curtain 6 to obtain the desired results and complete an electric circuit at any point within the area of curtain 6 when struck by a ball, however, the heavy netting 8 on the impact frame 7 performs this function. The curtain 6 is flexible and prevents the ball from rebounding towards the tee 20 to the annoyance or possible injury of the players. Impact frame 7 may take many different forms as square, hexagonal or circular. In the arrangement illustrated a square frame is shown.

Cross braces 7^a are connected to the plate 7^b and act as a bumper for the electrical contact device 10, which completes an electric circuit hereinafter described. An electric contact device 22 and 22^a complete an electric circuit to indicate when impact frame 7 has been driven back at an angle, either to the right or left, corresponding to the area on the curtain 6 marked "Rough."

In Figure 2 is shown an electrical contact device 10 for completing an electric circuit between a source of power and an electric motor and gear drive 12. This electric contact device is supported by the pedestal 11, securely fastened to the floor and may take many different forms in type construction and location. For the purpose of this description and illustration of the invention a simple plunger type of electric switch is shown.

Referring to Figures 8, 9, it will be seen that this electric contact device 10 consists of a plunger 9, positioned to freely pass through an aperture 50 in the casing 51, the latter being hollowed out to enable the mounting therein of the spring members 51^a, 52, which are connected to the terminal of an electrical source. As is obvious, when the plunger 9 is not in contact with springs 51^a, 52, the circuit is open and no current will flow, and the longer the plunger 9 is in contact with the springs, the longer the current will flow to

operate the motor gear drive 12. The time of contact of the plunger with the spring member is determined by the distance the plunger is driven into the casing 51, and the resilient braking effect of the springs prevents the rapid withdrawal of the plunger. In order to adjust the speed of withdrawal of the plunger, a series of weights 54, mounted on a cord passing over a pulley 55, are connected with the plunger at 56.

The force of a ball driven into the curtain 6 is transmitted to the impact frame 7 causing it to swing backwards and force the plunger 9 between the spring members 51ª, 52 thereby completing an electric circuit. The force of the ball striking the curtain 6 and impact frame 7 determines the distance plunger 9 will enter in contact with springs 51ª, 52, and the time it remains in contact determines the time of operation of the motor 12 to register the force and distance of the driven ball. An electric motor and gear drive 12 is securely fastened to a base plate 12ª with bearings 12ᵇ for supporting shaft 12ᶜ, balance wheel 12ᵈ, worm 12ᵉ and worm gear 12ᶠ and pulley 12ᵍ all enclosed in a dust and water proof case 12ʰ.

A cabinet 13 contains therein a series of pictures representing holes of a natural golf course. These pictures are attached at each end to the rollers 40 in the cabinet 13 and may be rolled up or down by turning the handles 40ª. Each picture 30 represents a hole of a natural golf course drawn in perspective showing a tee 28 and a green 29 with hazards 31, 31ª (bunkers, traps or water) within the intervening distance. Each picture is provided with scales 32, 33 and 39. Scale 32, calibrated in yards shows the distance from the tee 28 to the green 29.

A scale 33 calibrated in yards shows the distance from the green 29 to the tee 28. A scale 39 shows the area of the green; this scale converts yards to feet for the purpose of playing in confined space. There is provided a series of pulleys 25 over which is run a cord 26 and attached to the cord 26 is an arrow indicator 27. Pully 25ª is attached to one end of a shaft having a large pulley fastened to the other end. This large pulley is connected by a belt 24 to the pulley 12ᵍ on motor and gear drive 12. A piece of clear glass protects the pictures 30, and four arrow indicators 34, may be placed at any point between the tee 28 and the green 29 to designate the positions of the several balls on the course or picture 30 after each drive.

A device 35 is attached to the cord 26 for replacing indicator 27 after each drive, or placing indicator 27 at any desired point between the tee 28 and the green 29 in accordance with the scales 32 and 33. Indicator 27 travels across the face of the pictures 30 between the tee 28 and green 29 simulating the progress of a ball over a natural golf course.

Two colored electric lights 36 and 37 are operated by an electrical device 22, 22ª which completes an electric circuit to indicate when a ball is driven off the course into the area marked "Rough" (Fig. 3) and also indicates the nature of the drive as a hook or a slice.

A colored electric lamp 38, preferably green, is operated by an electrical contact device when the indicator enters upon the area of the green 29 indicating the ball to be on the green 29 in proximity to the hole or cup 15. This electric lamp is in an electric circuit which is automatically closed when the indicator tilts the mercury switch 75, the latter being so positioned that it will be in engagement with the indicator only during the time the latter traverses the area of the green 29.

A green 14, constructed upon a supporting surface covered with carpet or similar material (preferably green) is shown with a hole or cup 15 into which a ball may fall when driven by a player on the green, and a scale 16, in feet is provided corresponding to the scale 39 on the green 29 upon which indicator 27 shows the distance the ball is to be played on the green 14 from the cup or hole 15. A station 17 is shown upon or in line with which players must place ball for putting, each number representing a green from hole #1 to hole #9.

A combination bunker and trap 18 is constructed upon a supporting surface and covered to simulate a bunker on a natural course. The bunker and trap is so located as to enable players to drive a ball from the tee 20 or from the trap 19, should the indicator 28 show the ball to have been driven into a trap 31. Bunker 18 when not in use is laid back over trap 19 and is raised to position when required.

A tee 20 is constructed upon a supporting surface and may be a combination of coco-mat upon which a ball may be placed for driving and a rubber mat upon which player may stand when making a drive, or it may be a regulation clay and sand tee similar to the regulation outdoor tee, or a combination of said and clay and coco-mat upon which ball may be placed for driving and clay and sand upon which a player may stand.

In operation, a player takes his position at the tee 20 and strikes the ball. Should the drive be faulty and the ball strike the portion of the curtain marked "Rough" the curtain will be forced backward at an angle and an electrical circuit will be completed by the contact members 22, 22ª to light one of the electric lamps 36, 37.

Should the drive be good and strike the curtain within the area marked "Fairway" the curtain and frame will be driven backwards carrying with them the plunger 7 which will close the circuit between member 51ª, 52 to energize the motor gear drive 12,

to cause the pulley to rotate to move the belt 24 to cause the large pulley adjacent 25ª to rotate to cause pulleys 25 to rotate carrying with them the cord 26 to cause pointer 27 to travel over the scales to indicate the distance the ball would have gone on an out-of-doors golf course. When the pointer reaches the portion of the scale indicated as 39, an electric circuit is closed to cause lamp 38 to light, thus indicating that the ball is now on the "Green." For the remainder of the play for that particular hole the player places the ball on putting green 14, laid out as shown in Figure 1, and proceeds to "putt" the ball in the hole 15 in the same manner as though he were on an actual golf links. After the hole is made, the rollers 40 are rotated to present the picture which shows the next hole on the course.

When the pointer indicates that the ball has fallen in a hazard, the player makes his next drive from the artificial bunker positioned in front of the tee 20.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously embodiments may be constructed including modifications without departing from the general scope herein indicated and denoted in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An apparatus for playing the game of golf comprising a suspended curtain adapted to receive the impact of a driven golf ball, a cabinet containing a picture representing a typical hole of a natural golf course, said picture having a scale thereon calibrated in yards, and means associated with the curtain to operate an indicator to register on the scale the exact distance the ball would have been driven on a natural course, and to indicate the position of the ball on the course.

2. An apparatus for playing the game of golf in a restricted area comprising a tee from which a golf ball may be driven simulating drives on a natural golf course, a curtain to receive the impact of the ball, a picture representing a typical hole of a natural golf course depicting traps, hazards, bunkers, etc., means associated with the curtain and picture to indicate the distance in yards the ball has been driven and show the position of the ball on the course, an artificial putting green for short drives, and an artificial bunker.

3. A game apparatus, comprising a suspended impact curtain against which a golf ball may be driven, an electric circuit, a sliding switch connected with the curtain for closing the circuit when a ball strikes the curtain, and means controlled by the said circuit to indicate the force of impact of the ball and curtain.

4. In a game apparatus, a curtain adapted to receive the impact of a missile, an electric circuit including a pair of spring contact members, a plunger connected with the curtain, said plunger being adapted to slidably engage the spring contact members and close the electric circuit when the curtain is struck by a missile, and means controlled by the electric circuit to indicate the distance the missile would have travelled had it not been obstructed by the curtain.

5. An apparatus for playing the game of golf, comprising a curtain adapted to receive the impact of a driven golf ball, a picture representing a typical hole of a natural golf course, said picture having a scale thereon calibrated in yards, and means associated with the curtain to operate an indicator to register on the scale the distance the ball would have been driven on a natural course.

This specification signed this tenth day of February, 1928.

RICHARD H. STRASSER.