Dec. 10, 1963 J. G. LIVINGSTONE 3,113,780

GOLF PRACTICE-SWING DEVICE

Filed May 12, 1960 3 Sheets-Sheet 1

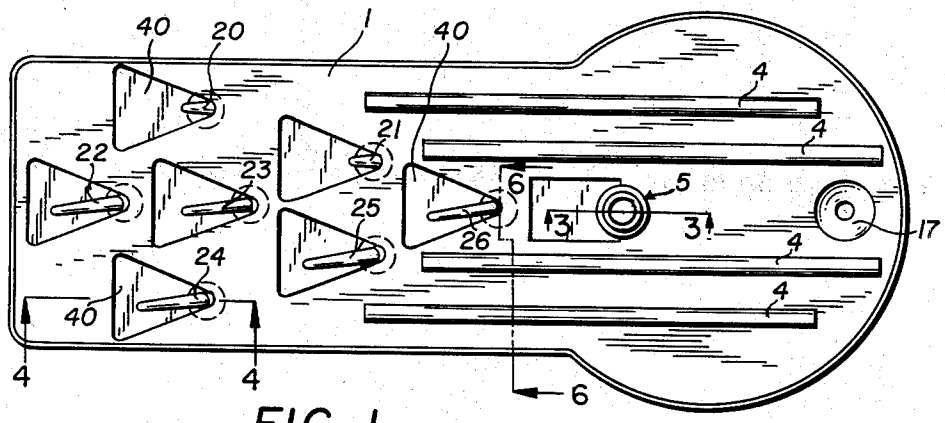


FIG. 1

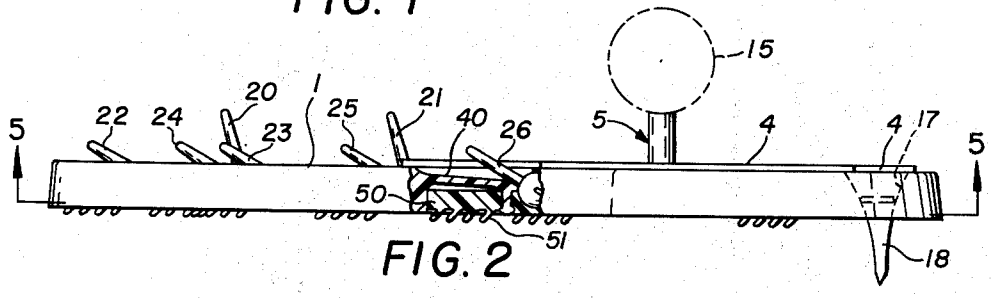


FIG. 2

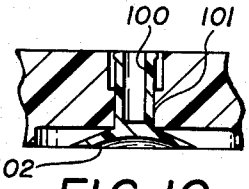


FIG. 10

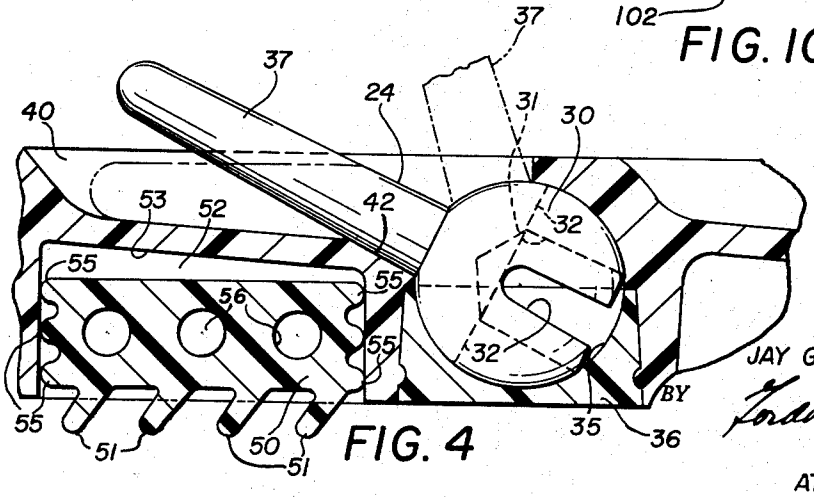


FIG. 4

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GOLF PRACTICE-SWING DEVICE

Filed May 12, 1960 3 Sheets-Sheet 2

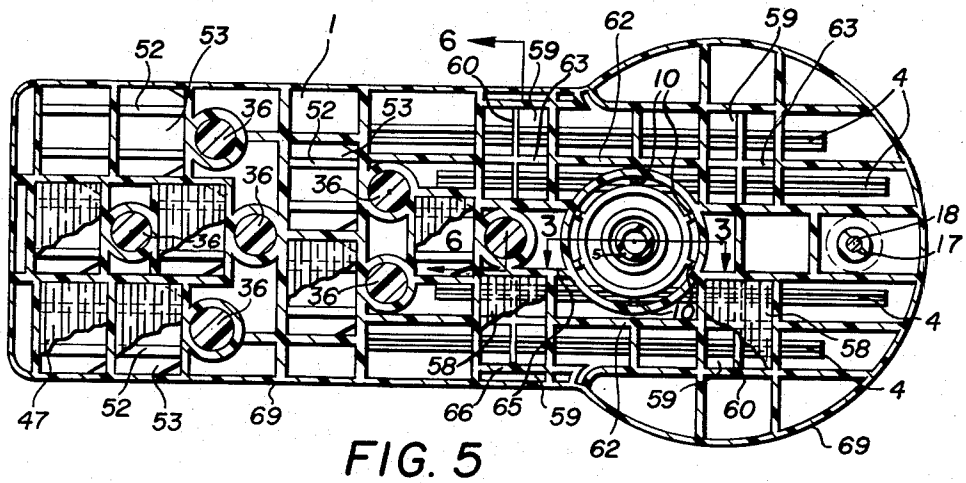


FIG. 5

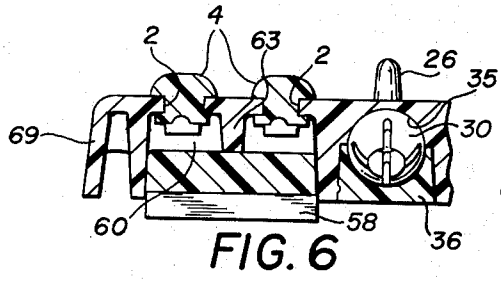


FIG. 6

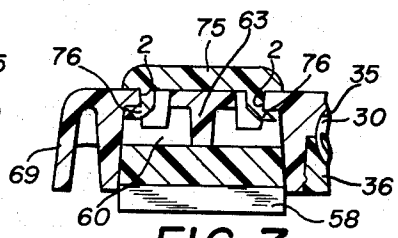


FIG. 7

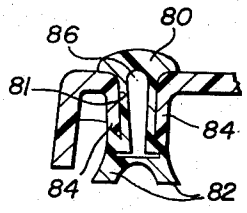


FIG. 8

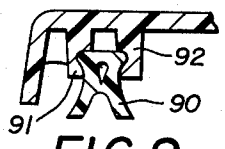


FIG. 9

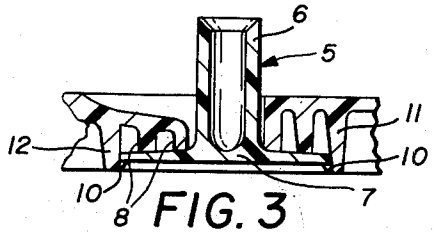


FIG. 3

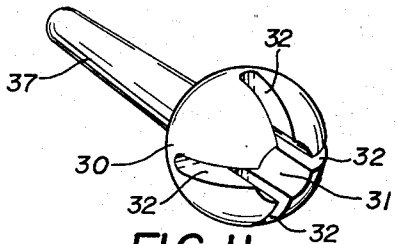


FIG. 11

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GOLF PRACTICE-SWING DEVICE

Filed May 12, 1960 3 Sheets-Sheet 3

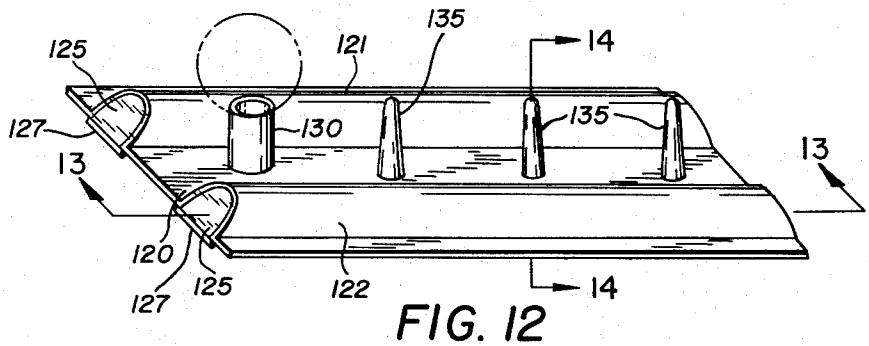


FIG. 12

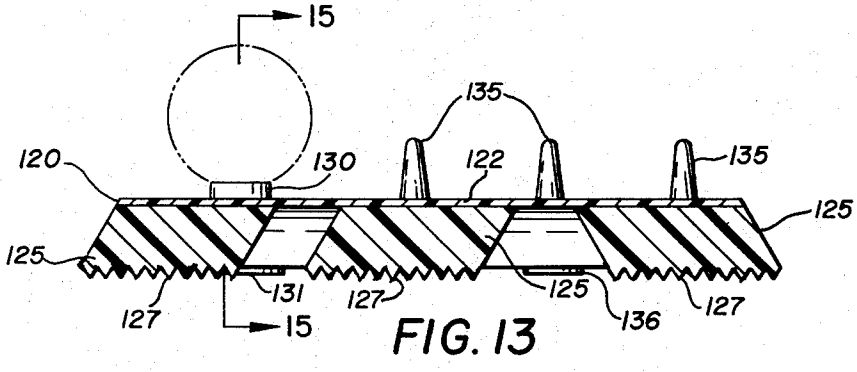


FIG. 13

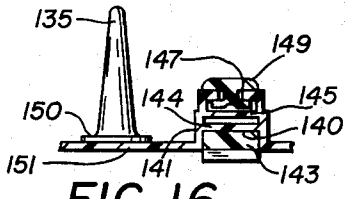


FIG. 16

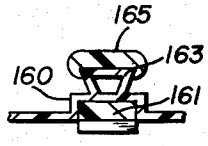


FIG. 17

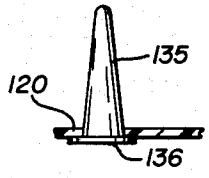


FIG. 14

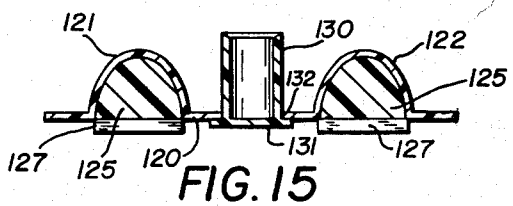


FIG. 15

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United States Patent Office 3,113,780
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3,113,780

GOLF PRACTICE-SWING DEVICE

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Filed May 12, 1960, Ser. No. 28,797
1 Claim. (Cl. 273—186)

This invention relates to a golf practice-swing device. It includes a tee to support a golf ball and a plurality of indicator pins, preferably all in front of the tee, although there may also be one or more behind the tee. The pins in front of the tee are scattered over a generally fan-shaped area so that when a club is swung to hit a tee (whether or not there is a ball on the tee), the follow-through of the club will hit only those pins in a particular path, whether the follow-through be straight in front of the ball or to the right or left of it.

The device is small, generally not more than a foot or two in its overall dimensions. It may be used out-of-doors, but is designed particularly for use in the house with a soft ball or without any ball.

In a preferred embodiment of the invention, the pins are arranged in tight-fitting sockets so that after a swing the pins which are hit retain their forward position rather than the upright position in which they were before the swing. In a different embodiment the pins are of relatively limp plastic material and are bent by the swing, but due to the type of material from which they are made they slowly return to the upright position or can be assisted to the upright position by use of the club head or other means.

The invention will be further described in connection with the accompanying drawings, in which:

FIG. 1 is a plan view of a preferred embodiment of the invention, with certain of the pins in the forward position;

FIG. 2 is a side view, partly broken away;

FIG. 3 is a detail on the line 3—3 of FIGS. 1 and 5;

FIG. 4 is an enlarged detail on the line 4—4 of FIG. 1;

FIG. 5 is a bottom view of the device on the line 5—5 of FIG. 2, showing only part of the non-skid inserts it will accommodate, each of these inserts being partly broken away;

FIG. 6 is a section on the line 6—6 of FIGS. 1 and 5 with two resilient strips added;

FIG. 7 is an identical section to that shown in FIG. 6, but a single resilient strip is shown;

FIGS. 8 and 9 are sections of modified constructions to provide non-skid support and shock-absorbing strip for the device, as will be explained in what follows;

FIG. 10 is a section through a type of hold-down device;

FIG. 11 is an enlarged isometric view of one of the pins shown in FIGS. 1, 2, 4 and 6;

FIG. 12 is a view in perspective of a modified device;

FIG. 13 is a section on the line 13—13 of FIG. 12;

FIG. 14 is a section on the line 14—14 of FIG. 12;

FIG. 15 is a section on the line 15—15 of FIG. 13; and

FIGS. 16 and 17 are sections through alternative tunnel structures.

The plaque 1 which forms the body of the device is molded from a stiff, slightly resilient plastic. A large portion of the undersurface is cut away to save plastic, leaving webs to strengthen the plaque. To prevent a club from gouging into the plaque with possible damage to the club in the event the swing is too deep, slots 2 (FIG. 6) are provided in the plaque in which long, resilient strips of rubber or the like 4 are inserted. These serve as shock absorbers to deflect low swings. They can be replaced readily when damaged. There are four of these strips that extend from a position in back of the tee 5 to a position in front of it, two on each side of the tee.

Different types of tees may be employed. That shown in FIGS. 1, 3 and 5 comprises the hollow, cylindrical, upright tee member 6 with the broadened base 7 which is engaged between the bottom of the circular ribs 8 and the nubs 10 on ribs 11 and 12. The top of the plaque, just forward of the tee (see FIG. 3) is hollowed out, to provide space to receive the tee when bent forward. When the club head bends the tee forward into the hollowed-out portion of the plaque, only a small amount of it is contained in the hollowed-out portion, and the balance remains above the top of the plaque and aids in absorbing the force of the blow.

An advantage of this structure is that a tee which has become damaged in use (and the life of any tee will be relatively short) can be pushed down out of the plaque and readily replaced by another tee. The nubs 10 may form a continuous ring, but are preferably spaced to facilitate disengagement of the base 7 of a worn tee, and replacement of thee base 7 of a new tee. One or more downward projections from the base 7, or other means may be provided to prevent the tee from sagging. FIG. URE 2 shows the ball 15, in dot-dash lines, on the tee ready to be hit.

The rear end of the plaque is provided with a tapered opening 17 to receive a pin or tee 18 (FIG. 2) if the device is used on a surface which will receive such holding means. If the device is held by a pin or tee, it is not necessary to use the non-skid pads which will be described in what follows. Alternatively, if the non-skid pads are employed it is not necessary to use a pin or tee to hold the plaque in place. Both a pin or tee and the non-skid pads may be used at the same time, if desired.

The device shown includes seven indicator pins 20, 21, 22, 23, 24, 25 and 26. Pins 20 and 21 are upright, the position of all of the pins before a swing. Pins 22 to 26 are tilted to the forward position and somewhat to the left (when seen from behind the tee), the position they would be in after someone had sliced his shot in a practice swing. It will be observed that those pins which have been tilted forward can easily be returned to the upright position by the tip of the club head, even without moving forward from the general location where a player stands for a swing at the tee.

The pins are identical in structure, and the sockets, etc., in which they are held are identical. In describing this structure, reference is made to the detailed section shown in FIG. 4, and the enlarged showing of an individual pin in FIG. 11.

Each pin includes a base member 30 (FIG. 11) which is hollowed out in the center 31 and separated into sections by the spaces 32 of which four are shown, although there may be any suitable number. The base member is generally spherical and fits into the spherical opening 35 (FIG. 4) in the base, formed partly by the plaque and partly by the insert 36. Each pin comprises a slender, elongated upper portion 37 which is stiff, though flexible. The base 30 is a few thousandths of an inch larger in diameter than the cavity 35. The spaces 32 permit the base of each pin to be squeezed to a reduced size to fit into the cavity 35. Because the opening is smaller than the hollowed-out base, there is assurance that when a pin is tilted forward to any position, it will remain in that position. The friction produced by movement of the pin in the cavity, insures maintenance of the position to which the pin is hit, until someone moves it.

From the cavity 35, the portion of the plaque immediately forward of each pin is depressed to form a triangular depression 40 (FIGS. 1 and 4). The portion 42 of the bottom of this depression immediately forward of the opening 35 slants gradually upward. When a pin has been hit forward, the lower part of the tapered portion 37 will ordinarily be brought into contact with this sur-

face 42 and the upper part of the tapered portion 37 will strike forward to the position shown in dot-dash lines. When in this position, the pin is below the top level of the plaque and the club head will slide easily over it without exerting sufficient pull on the pin to pull it from the cavity. After the club head has passed over the pin, the upper portion 37 will straighten out to the position shown in full lines in FIG. 4, and also shown in FIGS. 1 and 2. FIGURE 4 shows how the end of the tapered portion 37 extends above the top surface of the plaque 1 after the tapered portion has straightened out. This makes it a simple matter for the person who has made a practice swing to use his club head to return the tilted pins to the upright position.

If the follow-through is directly forward of the tee, the pin 26 will be tipped forward and possibly also the pins 23 and 22, depending upon the course of the follow-through. If the ball is sliced it will be the pins 26, 25 and 24 that are tipped forward, and they will usually be tipped toward the left. If the ball is hooked, the pins 26, 21 and 20 will be tipped forward. By determining the pins which are tipped forward and the angle at which they are tipped, the person using the device can analyze his stroke. He can see whether it is directly forward or to the right or to the left, and also whether he has followed through properly or shortened his arc and pulled up too soon.

The cavity for the base 30 of each pin is formed partly in the plaque and partly by the insert 36 (FIG. 4) which is snapped into position and held there by friction. Any suitable means may be employed. When a pin becomes damaged in use the plug 36 is removed and the pin pushed out through the opening thus formed, a new pin is put in its place, and the plug 36 is then replaced.

Other cavities are formed in the underside of the plaque to receive non-skid inserts. The insert 50 (FIG. 4) is illustrative. There are seven such inserts 50, one in front of each pin. (In FIG. 5, inserts in front of pins 24 and 25 are not shown, to more clearly illustrate the structure of the cavities that hold them.) Each insert comprises a plurality of webs 51 which extend crosswise of the plaque and project forwardly downward. They resist any forward motion of the plaque imparted by the swing of the golf club. The ribs 52 in each of the seven cavities 53 which receives one of these inserts 50, taper down toward the back of the plaque so that each of the cavities will receive an insert of uniform height. (The cavities are deeper at the front than at the rear, in order to make their roofs of uniform thickness.) The inserts are cheaply made by extrusion of a rubber or other plastic which is relatively stiff, although sufficiently flexible so that the ribs 51 prevent slippage on the surface on which the plaque rests. Beads 55 (FIG. 4) on the front and back walls of the inserts 50 hold the inserts in the cavities by friction. Parallel openings 56 through the inserts make them more resilient, and facilitate bending the inserts while inserting them in the cavities and removing them from the cavities.

There are other non-skid inserts, including the inserts 47 in the two forward corners of the plaque, which may be of the same size as the inserts 50, and four inserts 58 of the same size in the openings 59 around the opening for the tee. It is not necessary that all of these inserts be used. Provision may be made for additional inserts of this type, as desired. The size, number and location of such inserts is not critical. The top of each insert might fit flush with an undersurface of the plaque, but it is preferable to have the undersurface of the plaque or the upper surface of the insert ribbed to provide an additional cushion.

FIGURE 6 illustrates the use of the insert 58. The rib 60 is continuous under both of the openings 2 and prevents these openings from spreading. Thus it holds the inserts 4 in the openings.

Beside the location for the tee and extending longitudinally of the plaque are the ribs 62. These extend to the bottom level of the plaque. Over the insert 58, this rib is shortened as shown at 63 (FIG. 6) in order to provide a central support for the insert 58. Thus, there is an air space or cushion between the insert 58 and the undersurface of the plaque.

The longitudinal ribs 65 and 66 provide edge supports which retain the inserts 58. There is an outside rib 69 surrounding the entire underside of the plaque. Thus for each insert there is an enclosure of ribs. Also, there are preferably two shallow ribs above each insert to give cushion support for the plaque which would not be obtained if the undersurface of the plaque were in flush contact with the upper surface of the insert.

If two separate cushions or shock absorbers 4 are inserted in the elongated openings 2, each preferably is flared at the base as well as the top to form tight engagement with each slot opening. Instead of individual cushions, a shock absorber 75 may be provided as shown in FIG. 7, in which case there will be two downwardly extending engaging ribs 76 which run the length of the openings and engage the cushion 75 in them.

Other types of inserts or other cushion supports may be employed and this may necessitate redesigning the plaque. Thus, in FIG. 8 the shock absorber 80 protrudes slightly above the elongated opening 81 in the plaque, and the bottom portion of this cushion is flared out to the feet 82 to support the plaque. These feet may be continuous or they may be ribbed with each rib projecting forwardly much as the ribs on the bottom of the inserts 50 project forwardly. Thus the same member may provide a shock absorber at the upper surface of the plaque and a support at its under surface, which latter is preferably of non-skid design. To engage the insert, the sides of the opening 81 are provided with downwardly extending ribs 84 which are sharply pointed to firmly engage the inserts. The center 86 of the shock absorber is hollow to facilitate insertion in, and removal from, the opening 81.

FIGURE 9 shows an alternative type of supporting insert which includes a shock absorber on the upper surface of the plaque. Separate shock-absorber means may be employed, or it may be omitted altogether. The support is a bifurcated insert 90 the feet of which may be ribbed and extend forwardly much as the feet of the insert shown in FIG. 8. This insert 90 is engaged between two stiff ribs 91 and 92 on the undersurface of the plaque.

Where supports such as shown in FIGS. 8 and 9 are employed, they may be located at any positions on the undersurface of the plaque. They may replace or supplement inserts such as 58.

FIGURE 10 shows means for holding the plaque to a surface, which may replace the pin 18. The stem 100, is vertically movable in the opening 101 in the plaque which may be located at the rear of the plaque where the hole 17 of FIG. 1 is located. The bottom of the stem flares into the suction cup 102. By pressing the stem 100 down, the suction cup firmly grips the surface on which the plaque rests. The suction cup prevents, or aids in preventing creepage of the plaque, which would otherwise be created by the swing of the club. Several such suction cups may be used.

The plaque of FIGS. 12 to 15 is of an alternative design. The body portion 120 is of extruded stiff vinyl material or other plastic which will support the low portion between the tunnels 121 and 122 off of the floor. In the tunnels 121 and 122 are non-skid members 125. Their undersurfaces 127 are saw-toothed or otherwise designed to prevent creepage of the plaque in use. The tee 130 is made of relatively stiff plastic but is so flexible that it gives when hit. It is preferably hollow. It is formed with a flange 131 at the bottom and the pin projects through an opening 132 in the extruded plastic. The flange 131 is cemented or otherwise fastened to the bottom surface of the extruded sheet.

To prevent the tunnels from spreading, it may be desirable to provide spacers which extend from one side of each tunnel to the other side of the tunnel. The ends of these spacers may be engaged with the tunnel walls in any suitable manner.

The pins **135** are of softer plastic and tip forward at about the middle when hit. They are of such a composition that when bent over, they slowly return to the upright position, or they may be made of flexible material with no spring back, in which case, it is necessary to return them to their erect position after each swing of the club, as by nudging them with the club head. Each is provided with a flange **136** at its base, and this is cemented or otherwise fastened to the bottom of the extruded sheet **120**.

The tunnels **121** and **122** located on opposite sides of the tee and pins **135**, prevent them from being hit near the base, which would be apt to damage them.

If preferred, there may be a small, weak, flexible wire insert in each of the pins to give a slower return.

After the tee or pin has become damaged through use, it can easily be removed and replaced.

FIGURE 16 shows an alternative structure in which the top **140** of the lower part of the tunnel **141** is flat and the walls are vertical. The inserts **143** for such a tunnel can be extruded in a long strip with a non-skid bottom, and then simply be cut to length. Such inserts are placed endwise in the tunnel, with more or less space between them. The lower cross-webs **144** and **145** keep the tunnel in shape. There is a slot **147** along the top of the tunnel for insertion of a soft shock-absorbing strip **149** of rubber or the like. The base **150** of the pin is cemented to the top of the extrusion **151**. FIGURE 16 shows but one tunnel, it being understood that there is a second tunnel, as in FIGURE 12.

FIGURE 17 shows a still further alternative tunnel structure. But one of the tunnels **160** is shown. The non-skid inserts **161** are of the type shown in FIGURE 16. Above the portion of the tunnel which holds the inserts is the portion **163** which is wider at the top than at its base. The shock absorber **165** of rubber or other cushioning material is snapped on to it.

Modifications in the practice devices shown will suggest themselves to the man skilled in the art.

The invention is covered in the claim that follows:

What I claim is:

A golf practice-swing device which includes a plaque and near one end means for teeing a golf ball above the top surface thereof, and positioned across the line of swing in front of the tee a plurality of indicator pins to determine the direction of the swing of a person practicing his swing at the tee with a golf club, the plaque having a plurality of generally spherical openings therein for the respective pins, each pin having a stiff though flexible, slender, elongated portion extending from a generally spherical, hollow resilient base which when separated from the plaque is slightly larger than its opening and having at least one closed-end elongated opening in its base opposite said elongated portion, with portions adjoining said elongated portion separated into segments by virtue of which the base is squeezed to a reduced size in its opening whereby each pin is capable of being tilted forward in a plurality of directions by movement of its base within its opening, a depression in the upper surface of the plaque immediately in front of each pin, the bottom of the portion of the depression adjacent the pin being slanted upward away from the pin at substantially the same angle as the upper portion of the pin when the pin is tilted forward with said slanted portion being sufficiently extensive to always cause the end of the knocked-over pin to extend out of the depression and above the top surface of the plaque, and with the depression in front of said portion thereof deep enough and large enough to accommodate the top of the pin below the top surface of the plaque when said top of the pin above said portion of the depression immediately forward of the pin is bent forward as by a golf-club swing aimed generally at the tee.

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