Nov. 1, 1966 J. R. BRANDELL 3,282,200

BALL MARKER

Filed Oct. 5, 1964 3 Sheets-Sheet 1

Fig. 1

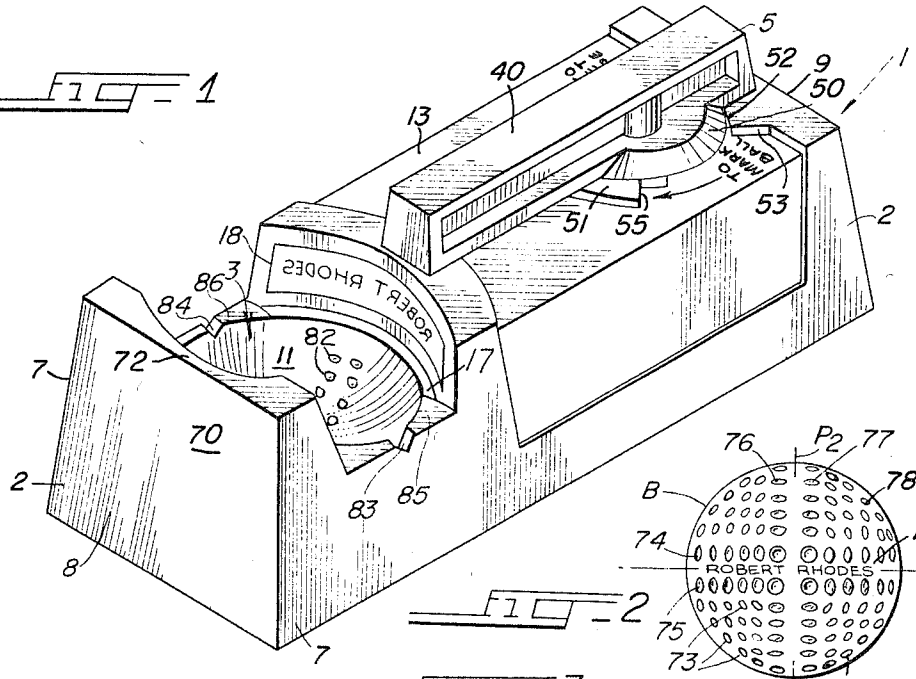


Fig. 2

Fig. 3

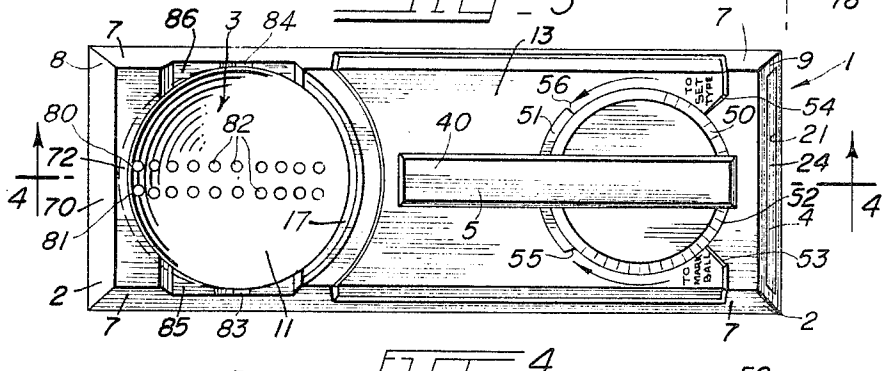
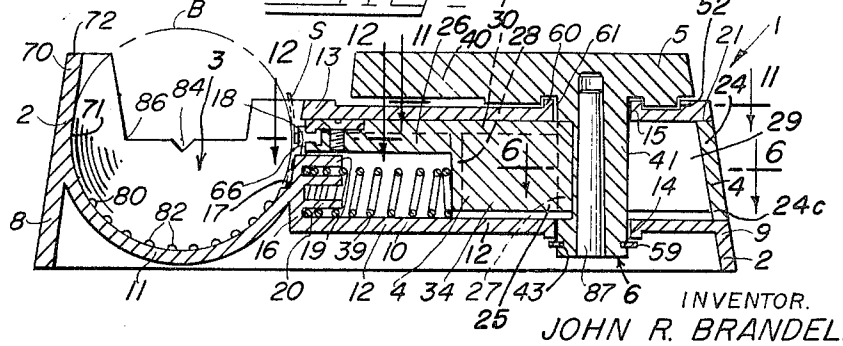


Fig. 4



INVENTOR.
JOHN R. BRANDELL

BY Marzall, Johnston, Cook & Root
ATTYS

Nov. 1, 1966 J. R. BRANDELL 3,282,200

BALL MARKER

Filed Oct. 5, 1964 3 Sheets-Sheet 2

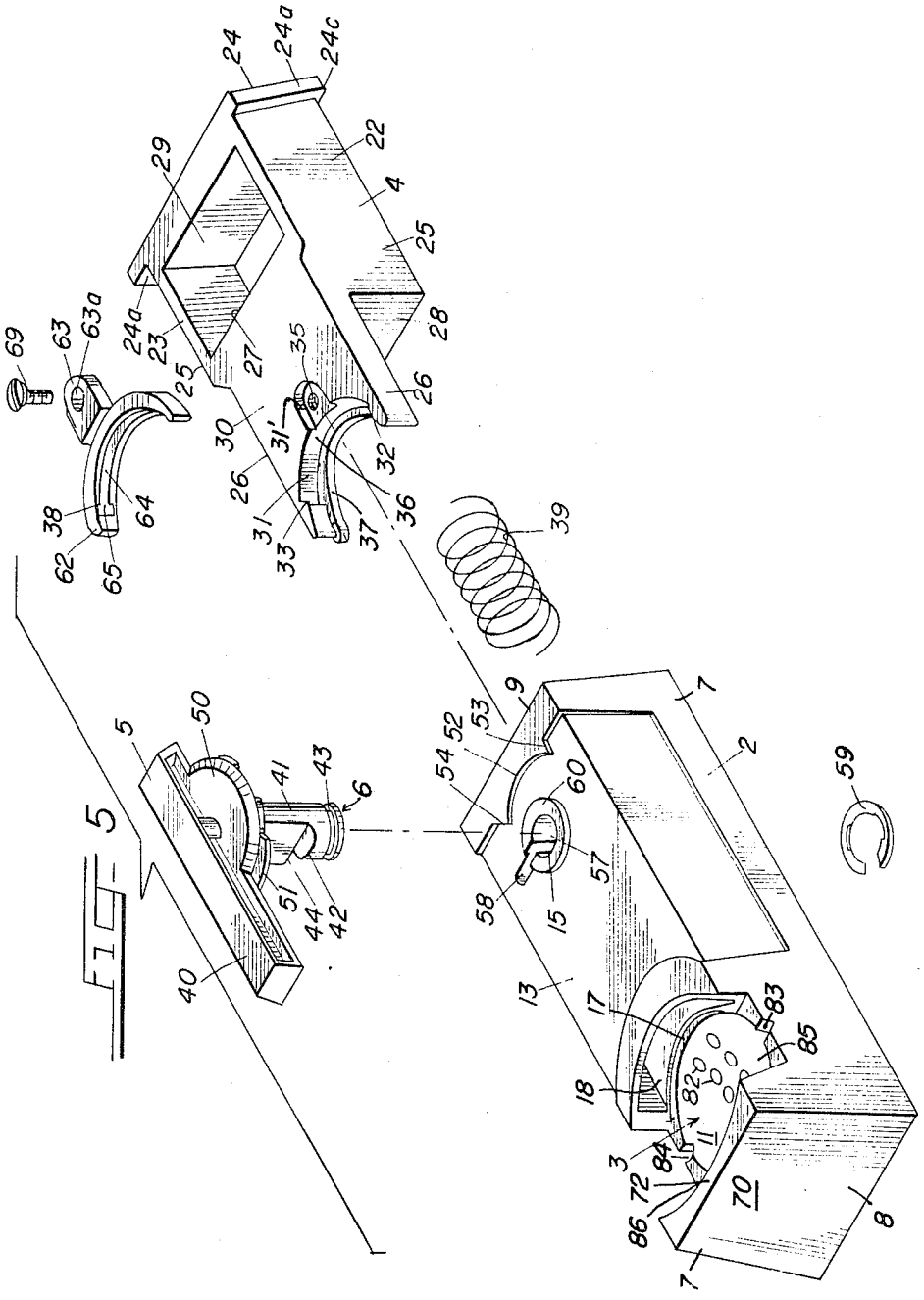


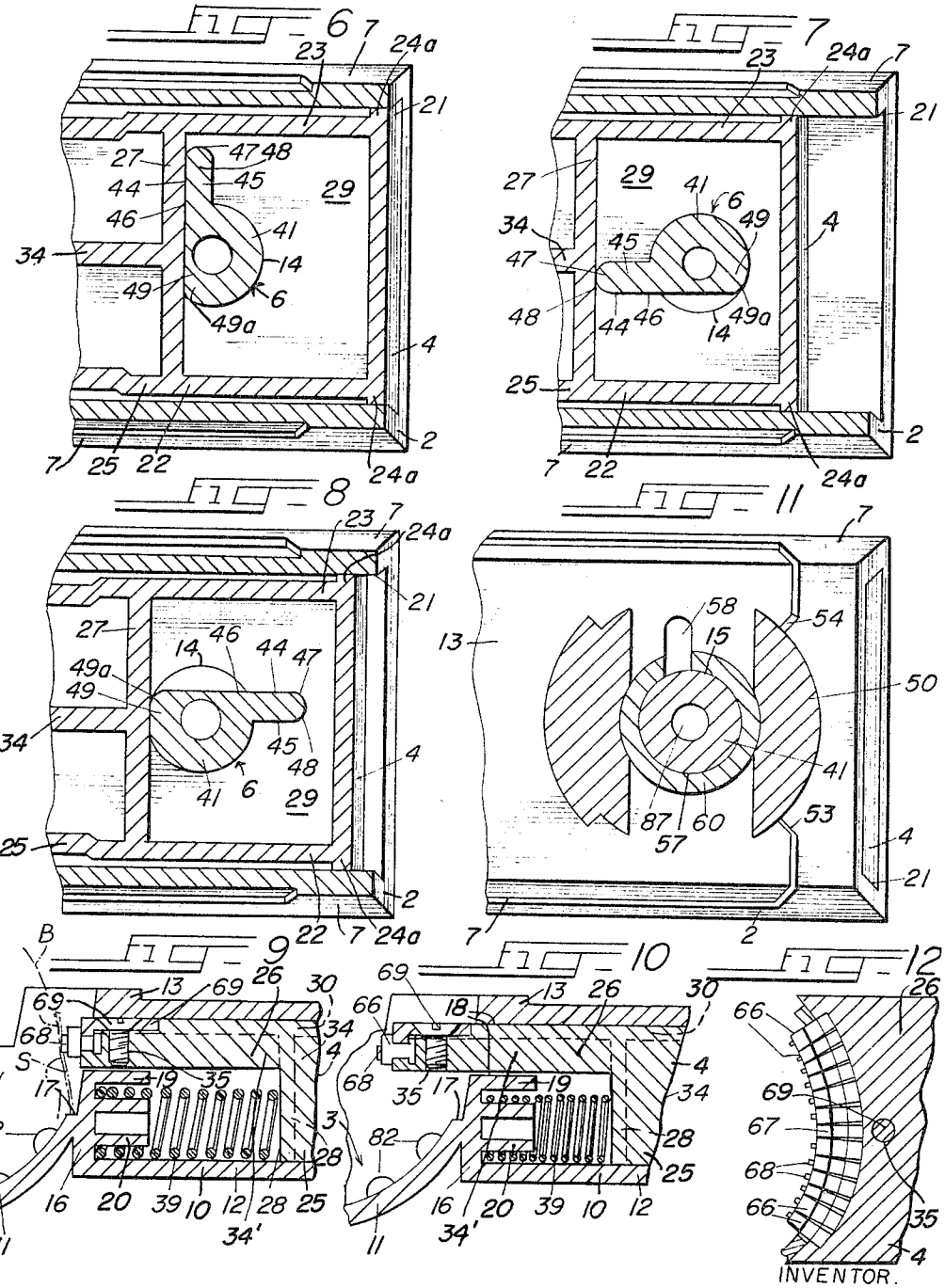
FIG. 5

INVENTOR.
JOHN R. BRANDELL
BY
Marzall, Johnston, Cook & Root
Attys

Nov. 1, 1966 J. R. BRANDELL 3,282,200

BALL MARKER

Filed Oct. 5, 1964 3 Sheets-Sheet 3



INVENTOR.
JOHN R. BRANDELL
BY
Marzall, Johnston, Cook & Root
ATTYS.

United States Patent Office 3,282,200 Patented Nov. 1, 1966

3,282,200

BALL MARKER

John R. Brandell, 300 N. State St., Chicago, Ill.

Filed Oct. 5, 1964, Ser. No. 401,328
18 Claims. (Cl. 101—4)

This invention relates in general to ball marking apparatus, and has more particular reference to apparatus that is well adapted for marking golf balls.

An important object of the present invention is to provide compact, lightweight, low cost and efficient apparatus for marking balls.

A further object of the present invention is to provide marking mechanism readily adjustable to apply selected alphabetic characters or other desired identifying indicia upon ball surfaces.

Another object is to provide for marking balls by impressing or embossing identifying indicia into the surfaces thereof.

A further object is to provide for marking balls in such fashion that the markings will effectively withstand vigorous and repeated scrubbing, as with detergent and the like, without losing legibility.

Golf ball markers that have been provided heretofore have been large and cumbersome; complicated in construction and operation; difficult and clumsy to operate; ineffective to impress or emboss the indicia into the surface of the ball; and difficult, if not impossible, to operate in applying the indicia on the ball in position avoiding the surface dimples of commercially available golf balls; and it is an important object of the present invention to overcome such disadvantages.

Another important object of the present invention is to provide a ball marker that is effectively operable by persons of average strength.

Another object is to provide a ball marker that is readily operable to apply marking indicia upon dimple-free portions of the ball being marked; a further object being to enable a golf ball to be quickly and easily indexed in the market, for dimple-free indicia reception, by persons having little or no mechanical skill.

Yet another object is to provide a ball marker wherein changeable marking type may be quickly and easily inserted into operative position, and as quickly and easily removed and replaced.

A further object is to provide a ball marker wherein the ball is firmly held in the marker during printing operations.

Another object is to provide a ball marker wherein the printing members are moved into and out of printing relationship with the ball by means of a novel and powerful, yet lightweight mechanism.

A further object is to provide for constructing the marker of inexpensive, lightweight plastic components capable of effectively impressing or embossing desired identification marks into the surface of commercially available golf balls.

The foregoing and numerous other important objects, advantages, and inherent functions of the invention will become apparent as the same is more fully understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment of the invention.

Referring to the drawings:

FIG. 1 is a perspective view of a golf ball marker embodying the present invention;

FIG. 2 is an elevation view of a conventional golf ball marked in accordance with the teachings of the present invention;

FIG. 3 is a top plan view of the golf ball marker shown in FIG. 1;

FIG. 5 is a longitudinal section view taken substantially along the line 4–4 in FIG. 3;

FIG. 5 is an exploded perspective view of the golf ball marker shown in FIG. 1;

FIGS. 6, 7 and 8 are enlarged fragmentary sectional views taken substantially along the line 6–6, in FIG. 4, and relatively shifted positions;

FIGS. 9 and 10 are enlarged fragmentary sectional views of a portion of the golf ball marker shown in FIG. 4, and respectively showing the parts disposed in relative positions corresponding with the positions shown in FIGS. 8 and 7; and

FIGS. 11 and 12 are enlarged fragmentary sectional views respectively taken substantially along the lines 11–11 and 12–12 in FIG. 4.

To illustrate the invention, the drawings show a golf ball marker 1 embodying an elongated frame forming a housing 2 having an upwardly opening pocket 3 in one end portion thereof for holding a ball B in position to be marked, and a marking slide 4 movable by an actuating cam 6 into marking relation with a ball mounted in the pocket 3, the cam being drivingly connected with a manually operable handle 5.

The housing 2 may be of box-like shape, having upwardly and inwardly sloping side walls 7, front and rear walls 8 and 9, and a bottom wall 10, FIGS. 3 and 4. The bottom wall 10 may be supported on the walls 7–9 in position spaced upwardly of their lower edges. The front portion 11 of the bottom wall preferably has upwardly concave, hemispherical shape to form the bottom of the pocket 3. The rearward portions 12 of the bottom wall 10 may be substantially flat between the rear of the wall portion 11 and the rear wall 9.

The housing 2 may also include a top wall 13 extending substantially parallel to the wall portion 12, between the side walls 7, from the pocket 3 to the rear wall 9, FIG. 4. The bottom and top walls 12 and 13 have vertically alined openings 14 and 15 formed therein, to accommodate the shaft of the slide actuating cam 6.

A partition 16 extends upwardly between and interconnects the bottom wall portions 11 and 12 at their meeting ends, FIG. 4, the rear of the wall portion 11, at the partition 16, forming a substantially flat, upwardly facing arcuate shoulder 17 which extends across the rear side of the pocket 3. The partition 16 extends between the spaced side walls of the frame and terminates at its upper edge, in downwardly spaced relation to the top wall 13 to define an opening 18, FIGS. 1 and 4, through which the front end of the slide 4 may be reciprocated into and retracted from the pocket 3 in the operation of the golf ball marker 1, the opening 18 being disposed opposite and in horizontal alinement with equatorial portions of a ball in marking position in the pocket.

A flange 19, FIG. 4, extends rearwardly from the upper edge of the partition 16 in spaced parallel position below the top wall 13 and defines the lower side of the opening 18. Rearwardly of the partition 16, the interior of the housing 2 is open, the rear edges of the side walls 7, and of the bottom and top walls 12 and 13, defining an opening 21, FIGS. 3 and 4, through which the slide 4 may be inserted into and removed from the housing 2.

The slide 4, FIG. 5, may include side walls 22 and 23 which slope upwardly and inwardly toward each other at the same angle as the side walls of the housing. A rear wall 24 extends between and interconnects the rear edges of the side walls 22 and 23. The rear wall 24 has side flanges 24*a* and 24*b*, which extend outwardly from the side walls 22 and 23, respectively, and a bottom flange 24*c* projecting downwardly below the side walls 22 and 23. Each of the side walls 22 and 23 has a deep rear end portion 25 and a shallow front end portion 26 projecting

forwardly from the upper edge portions of the respective rear end portions 25. A partition wall 27 extends between the side walls 22 and 23 parallel to the rear wall 24. Another partition wall 28 extends betwen the side walls 22 and 23 parallel to the partition wall 27, the wall 28 forming a front wall for the slide 4 below its front end portions 26 at their junction with the rear portions 25.

The slide 4, between the walls 22, 23, 24, and 27, is formed with a vertically extending opening 29 therethrough, FIG. 5, and has a top wall 30 extending, between the side walls 22 and 23, forwardly of the partition wall 27, to the front end of the slide 4, said wall 30 enclosing the top of the slide 4 forwardly of the partition wall 27. An arcuate wall 36 closes the front end of the slide portion 26. A forwardly concave, elongated and substantially arcuate recess 31 is formed in the front wall 36 and extends across the entire width thereof, the recess 31 having two radially inwardly projecting shoulders 32 and 33 in respective opposite end portions thereof. Another recess 31' is formed in the upper face of the top wall 30 and extends rearwardly from the recess 31 along the longitudinal center line of the slide 4. A reinforcing rib 34 in the form of an upright partition wall extends between the partition walls 27 and 28 and downwardly from the top wall 30 along the longitudinal center line of the slide 4 in parallel relation to the side walls 22 and 23, the reinforcing rib having a continuation 34' extending forwardly of the partition 27 and being complementary in size and shape to the portions 26 of side walls 22 and 23 which project forwardly of the partition wall 27. A screw hole 35 extends downwardly from the bottom of the recess 31' in the top wall 30 into the reinforcing rib 34. A forwardly projecting flange 37 defines the bottom of the recess 31 and affords a shelf for supporting a type bar 38.

The slide 4 may be inserted into the housing 2 by moving it forwardly, through the rear opening 21 of the housing 2, into position wherein the front end portion 26 of the slide is disposed in the opening 18 immediately behind the pocket 3, FIG. 4, and rear wall 24 is disposed within the housing 2. In such position, the slide 4 is supported and held against lateral movement by the engagement of its rear and front end portions within the housing 2, the front and rear end portions of the slide 4 respectively resting on the flange 19 and in the opening 18, and the rear wall 24 engaging the side, bottom and top wall portions of the housing, with a relatively snug yet freely slidable fit.

A compression spring 39 is mounted in the housing 2 in position to bear oppositely upon the wall 16 of the housing and the wall 28 of the slide, FIG. 4, in position to yieldingly urge the slide 4 in a rearward direction relative to the housing 2. As shown, the spring may conveniently comprise a helical element having an end mounted on a boss 20, formed on the housing wall 16, the spring extending thence to bear at its opposite end upon the front face of the slide wall 28.

The handle 5 includes an elongated hand grip portion 40 mounted on the upper end of a substantially straight, elongated shaft or stem 41 which projects perpendicularly therefrom to form the cam 6. The lower end 42 of the shaft 41 is substantially round in transverse section, and may have a peripheral groove 43 formed therein. The cam may comprise a portion 44, FIGS. 5–8, formed on the shaft 41 immediately above its lower end 42, the cam including a slide extending blade or ear 45 projecting laterally outwardly of the shaft 41. The cam portion 44 has a flat face 46 disposed chordally across the shaft 41. The free end portion 47 of the ear 45 is preferably rounded, as shown in FIGS. 6 and 8.

The cam 6 embodies oppositely extending long and short lobes 48 and 49. The long lobe 48 is provided by the ear 45. The short lobe 49 is provided by the flat portion 46 of the shaft 41 and its junction with the arcuate periphery of the shaft 41, as at 49*a* where said junction is curved on a relatively small radius of the order of ⅛ inch. When the handle 5 is disposed in normal at-rest position in the assembled golf ball marker 1, the flat face 46 of the cam extends in facing engagement with the rear face of the slide wall 27, to thereby afford a stop for holding the slide 4 in retracted position, under the influence of the spring 39. In this position, the cam holds the slide 4 against withdrawal from the housing 2, and serves as a stop for limiting rearward movement of the slide 4 under the urging of the spring 39.

The handle 5 is formed with a plate or disc 50 between the hand grip 40 and the cam 44, said disc extending radially outwardly of the shaft 41 and having an elongated ear 51 projecting forwardly from its front edge and extending therealong transversely of the hand grip 40, FIG. 3, to form abutments 55 and 56 at the opposite ends of the ear. When the handle 5 is assembled in the housing 2, the plate 50 overlies the top wall 13 within a forwardly concave recess 52 extending between two outwardly facing shoulders 53 and 54 formed on the rear portions of the top wall 13, FIG. 5. The shoulders 53 and 54 are disposed in position to engage and form limiting stops, respectively, with the end abutments 55 and 56 of the ear 51, when the handle 5 is turned a quarter of a revolution in either direction from its normal at-rest position, viewing FIG. 3.

The opening 15 in the top wall 13 of the housing 2 is of keyhole shape, having a round main portion 57, complementary in size and shape to the shaft 51, and a connected slot 58 extending outwardly from the main portion 57, which slot 58 is complementary in shape and size to the ear 45 of the cam. The opening 14 in the housing bottom 12 is sized and shaped to form a journal for the lower end of the shaft 41. Thus, it will be seen that the shaft 41 may be inserted downwardly through the opening 15 into position with the disc 50 overlying the top of the housing and covering the slot 58, the handle remote end of the stem extending in the journal formed in the housing wall 12 at the opening 14. The main portion of the shaft 41 thus may pass downwardly through the round portion 57 of the opening 15, while the cam ear 45 passes downwardly, through the slot 58, until the ear 45 rests on the bottom wall 12. If desired, the shaft may be made long enough to project out of the opening 14 to receive a snap ring 59, FIGS. 4 and 5, in the annular groove 43, to thereby secure the stem and handle 5 in operating position in the housing 2. An arcuate reinforcing shoulder or boss 60 may be formed around the main portion 57 of the opening 15, FIGS. 4 and 5, and may project upwardly into a complementary recess 61 formed in the lower face of the plate 50.

In assembling the ball marker, the compression spring 39 may be inserted into the housing 2 through the rear opening 21 into position with one end mounted against the wall 16, as on the boss 20. The slide 4 may then be inserted forwardly through the opening 21 into position with the forward end of the slide 4 resting upon the flange 19 within the opening 18, and the rear wall 24 extending in the rear end portions of the housing 2. The slide 4 may then be pushed forwardly manually against the spring 39 to aline the slide opening 29 with the housing openings 14 and 15. The shaft 41 may then be inserted downwardly through the alined openings 15, 29 and 14, with the hand grip portion 40 extending in normal at-rest position.

Rotation of the handle 5 in a counterclockwise direction, through ninety degrees, from its rest position, will turn the long cam lobe 48 forwardly into position wherein its free edge 47 abuttingly engages the rear face of the partition wall 27, as shown in FIG. 7. When the cam is in such position, the forward or type carrying end of slide 4 will extend a substantial distance into the pocket 3, as shown in FIG. 10, thereby affording ready access to the type carrying end of the slide to facilitate the changing of type thereon. Rotation of the handle 5 in a clockwise direction, through ninety degrees, from its rest position, will move the short cam lobe 49 forwardly into posi-

tion wherein its curved end edge 49*a* abuttingly engages the rear face of the partition wall 27, as shown in FIG. 8. When in such position, the lobe 49 is effective to project the slide 4 a short distance forwardly into marking position in which marking type, mounted on the forward end of the slide, is pressed against equatorial portions of a ball in the pocket to embossingly mark the same.

The hand grip 40 of the handle 5 is preferably several times longer than the cam lobes 48 and 49. For example, the hand grip 40 may have an overall length of the order of three inches, with its front end extending radially from the axis of the shaft 41 a distance of the order of 2 5/16 inches, as compared with a radial dimension of the order of 2/3 and 1/4 inch for the lobes 48 and 49, respectively. The flat face 46 of the cam lobe 49 being spaced from the axis of the shaft 41 a relatively short distance, of the order of 1/6 inch, a relative small turning force on the hand grip 40 is effective to emboss slide mounted type into the facing surface of a ball in the pocket 3. In this connection, the spring 39 always tends to return the handle 5 to its central, at-rest position, when displaced therefrom in either direction.

The type bar 38, FIGS. 4 and 5, has a substantially arcuate, forwardly concave body portion 62 having an ear 63 projecting rearwardly from the rear upper edge portion thereof. An elongated slot 64 opens through the body portion 62 of the type bar 38 and extends longitudinally thereof, terminating at its opposite ends inwardly of the ends of the body portion 62. The slot 64 has an enlarged type loading opening 65 at one end, which is sized to receive type pieces 66 of H-shaped configuration and carrying printing characters formed thereon. The type pieces 66, FIGS. 4 and 12, may be inserted into the slot 64 through the opening 65, and may then be moved along the slot 64 into position retained against lateral movement by engagement of the slot defining edges of the type bar 38 with the center portions of the type pieces 66, as shown in FIG. 4. Spacer pieces 67, FIG. 12, identical to the type pieces 66, except that they are devoid of printing characters 68, may be mounted between type pieces 66 to properly space the type pieces from each other in printing a desired mark. In the operation of the golf ball marker 1, shown in the drawings, the slot 64, of course, may be completely filled with desired type and spacer pieces from the inner edge of the opening 65 to the opposite end of the slot 64. After loading with type and spacer pieces, the bar 38 may be assembled in the recess 31, with the body portion 62 on the shoulder 37, and the ear 63 in the recess 31'. When the type bar 38 is so mounted, the shoulders 32 and 33 respectively extend at the inner edge of the opening 65, and at the other end of the slot 64, with the rear ends of the type and spacer pieces 66 and 67 disposed snugly in the recess 31, between the shoulders 32 and 33, whereby said type and spacer pieces are rigidly secured on the slide 4.

The type bar 38 may be secured in mounted position on the slide by suitable fastening means, such as a screw 69 applied through an opening 63*a* in the ear 63, and threaded into the hole 35 in the top wall 30 of the slide 4, FIGS. 4 and 5. When the slide 4 is in its normal rest position, the type pieces 66 in the type bar 38 will be disposed outwardly of the pocket 3 in close proximity to the surface of a ball in the pocket.

In mounting the type bar 38 on the slide 4, the handle 5 may first be turned counterclockwise, from the position shown in FIG. 3, through a quarter turn to dispose the cam in the position shown in FIG. 7, and thereby move the slide 4 to the type bar mounting and dismounting position shown in FIG. 10. When the slide is in such position, its type bar mounting recess 21' will be disposed outwardly of the slideway opening 18. When the cam is in the position shown in FIG. 7, with its ear 45 perpendicular to the partition wall 27, the cam 44 will be effective to latch the slide 4 in its fully extended position in the pocket 3, with the recesses 31 and 31' readily accessible from above, so that the type bar mounting screw 69 may be quickly and easily removed from and applied into type bar mounting position, and the type bar 38 quickly and easily dismounted from and applied into its seat. After the type bar 38 has been mounted in the front end portion of the slide 4, the cam 44 may be returned to normal position by turning the handle 5 in a clockwise direction sufficiently to unlatch the slide 4 for movement rearwardly by action of the spring 39, the rearward movement of the slide 4 turning the cam and, therefore, the hand grip 40 back to their normal at-rest positions.

The ball holding pocket 3 may be defined by the concave, hemispherical front end portion 11 of the bottom wall 10 and the upper portion 70 of the front housing wall 8, which forms a rearwardly inclined concave surface extending above the horizontal plane through the equatorial portions of a ball B in marking position in the pocket, to thereby aid in retaining the ball in the pocket during the marking operation, the rearward inclination of the wall from the vertical being preferably of the order of 0.129 inch per inch. The front wall of the pocket thus provides a rearwardly facing abutment 71 for engaging equatorial portions of a ball in the pocket diametrally opposite the front, type carrying end of the slide, in the opening 18. Accordingly, the ball may be marked by squeezing antipodally disposed, equatorially located portions of the ball in the pocket by and between the abutment 71 and the type pieces mounted on the forward end of the slide. Since the rear face 72 of the front wall 8 slightly overhangs the equatorial portions of the ball B, marking pressure of the type pieces 66 will not dislodge the ball upwardly from marking position in the pocket 3.

Golf balls commonly embody a plurality of surface dimples or recesses 73, FIG. 2, usually disposed in parallel circumferential rows. The dimples 73 are normally arranged so that a pair of rows, such as the rows 74 and 75, in FIG. 2, are parallel and on opposite sides of a plane P1 extending through the center of the ball B; and two other rows, such as the rows 76 and 77, in FIG. 2, are likewise parallel and on opposite sides of another plane P2, through the center of the ball B and normal to the plane P1. The dimples are also arranged to form another pair of parallel rows disposed on opposite sides of a third plane through the center of the ball B and normal to both planes P1 and P2. This third plane is not indicated in the drawings, but extends behind and parallel to the dimple row 78, FIG. 2, and between it and the dimple row immediately behind and parallel to the row 78, in FIG. 2.

Commonly available golf balls thus have three narrow, mutually normal, circumferential zones that are dimple free, and afford smooth, peripheral surfaces well suited for marking; and means is provided on the ball marker 1 to facilitate the orientation of a ball in the pocket 3 into position to be marked in any of its dimple-free zones. To this end, a ball B may be disposed in the pocket 3, with one of its planes, say, the plane P1, extending medially through the type characters on the slide mounted pieces 66, that is to say, in the plane defining the top of the hemispherical pocket bottom 10. Another of the three planes, say, the plane P2, may be arranged to coincide with the plane extending longitudinally of the housing 2, and diametrally through the pocket. When the ball is in such position, its third mutually normal plane will extend transversely of the pocket through its axis.

With the ball B thus disposed in the pocket 3, slide movement to its marking position will press the type pieces 66 into the ball, between dimple rows 74 and 75 on opposite sides of the plane P1. Under such circumstances, the marking N, FIG. 2, is applied entirely on a smooth dimple-free surface.

To facilitate the orientation of a golf ball in a desired

marking position in the pocket, rows **80** and **81** of bosses or nubs **82** may be formed on the convave surface of the wall **11**. The rows **80** and **81** are preferably parallel to and equally spaced on opposite sides of the medial longitudinal plane of the housing which also extends diametrally of the pocket **3**. Index means, such as notches **83** and **84**, may be formed in the housing side walls **7**, in horizontal alinement with each other in the transverse plane extending through the pocket **3**, such notches being adapted to serve as pointers to indicate the desired position of the third mutually normal plane of the ball. The nubs **82** are complementary in size and shape to the dimples **73** in the ball B, and rows **80** and **81** are spaced as are the dimples **73** in forming the rows on opposite sides of the aforementioned mutually normal dimple separating planes. Accordingly, the ball to be marked may be set in the pocket to interfit its dimple rows **76** and **77** with the nubs **82**, thereby disposing the plane **P2** of the ball in the longitudinal plane of the housing **2** which extends diametrally of the pocket.

Although the nub rows **80** and **81** are shown disposed in a position extending longitudinally of the housing **2**, they could be disposed in other positions, as, for example, in rows extending transversely of the housing **2**, without departing from the purview of the present invention. The nubs **82** may also be disposed in other suitable ball orienting patterns, as, for example, in circular row or rows concentrically arranged about the axis of the pocket, in position to engage one or more of the circular rows of dimples **73** disposed parallel to and outwardly of the rows **74–78**.

To facilitate the insertion, orientation and removal of a ball B into, in and from the pocket **3**, the side walls **7** of the housing **2** are preferably formed with alined openings **85**, **86** at the opposite sides of the pocket **3**, FIGS. 1 and 4, through which openings the ball may be grasped. The indexing pointers **83** and **84** are preferably formed in the lower edges of the openings **85** and **86** in position to aline with the dimple-free zone extending normal to the zone on which it is desired to apply a marked impression. The pointers thus afford means whereby the operator may quickly and easily cross check the orientation of a ball in proper marking position in the pocket **3**.

In marking a ball in the pocket **3**, an ink transfer sheet S may be inserted into the space between the ball B and the slide mounted type pieces **66**. The transfer sheets S are preferably in the form of elongated strips, sized for disposition between the ball B and the type pieces **66**, with a longitudinal edge of the strip supported on the shoulder **17** at the rear of the pocket **3**, the upper edge of the strip S extending slightly above the top wall **13** of the housing **2** and the strip extending across the entire width of the opening **18**. Any suitable ink transfer material may be employed, but the strips S are preferably of the sort made of a tough, pliable material, such as cellophane or polyethylene, having a face thereof coated with printing ink. In mounting a strip in ball marking position, its ink carrying surface is, of course, turned toward the surface of the pocket mounted ball to be marked. Accordingly, the marking type will be pressed into the ball, through the ink transfer strip, and the indentations formed in the ball will be coated with printing ink transferred from the sheet S thereinto.

Normally, the handle **5** will not have to be rotated completely through a full quarter turn, a somewhat lesser rotation of the handle **5** being usually sufficient to move the type pieces **66** into proper marking relation to the ball B. However, it is desirable to provide the shoulder **54** on the housing and the end abutment **56** on the ear **51** to limit handle movement to a quarter turn. If the handle **5** has been rotated through a complete quarter turn, it may be moved back sufficiently to retract the cam lobe **49** from dead-center position, at which time the spring **39** becomes operable to return the slide **4** to its normal retracted position, and thereby turn the handle **5** back to its normal rest position, with its cam axis remote end extending toward the center of the pocket, whereby the marker forms a neat, compact, readily pocketable and convenient unit. If handle **5** is rotated through less than a right angle in marking a ball, it is merely necessary to release the handle **5**, the spring **39** being effective to return the slide **4** immediately to its retracted position.

After retraction of the slide **4** from ball marking position, the strip S and the marked ball may be removed from the marker and the outer surface of the ball B, exteriorly of the marked impressions therein, may be wiped clean of foreign material, including any excess printing ink, and the marked surface portions of the ball B may then be coated with a suitable sealant, such as clear acrylic lacquer, and the latter may then be permitted to harden. The coating of lacquer, overlying the printing ink in the embossed impressions, effectively prevents removal of the printing ink from the impressions, even by repeatedly scrubbing the ball with detergents.

The novel golf ball marker **1** may be made of any suitable material. However, all of the parts thereof, except the spring **39**, the snap ring **59**, the type bar **38**, the type and spacer pieces **66**, **67**, and the bolt **69**, preferably comprise a suitable molded plastic material such as high impact polystyrene, fiberglass reinforced polyester resin, or the like. If the handle **5** and cam **6** are made from such a plastic material, the stem **41** thereof may be reinforced, if desired, by applying a reinforcing rod or bar **87** axially therein, FIG. 4, the reinforcing member **87** being formed from any suitable material, such as steel.

From the foregoing, it will be seen that the present invention affords novel means for and method of marking golf balls, wherein the marked indicia is embedded in the ball surface, and protected in situ, so that substantially permanent marking is obtained. The present invention also provides a ball marker that is relatively simple in construction and operation, that may be operated easily and effectively by persons having little or no mechanical ability, and by people, including children, who normally have relatively little physical strength.

In addition, the present invention provides a ball marker that is light in weight, compact, readily portable, practical and efficient in operation, and adapted for production at low cost.

It is thought that the invention and is numerous attendant advantages will be fully understood from the foregoing description, and it is obvious that numerous changes may be made in the form, construction and arrangement of the several parts without departing from the spirit or scope of the invention, or sacrificing any of its attendant advantages, the form herein disclosed being a preferred embodiment for the purpose of illustrating the invention.

I claim:

1. A ball marker comprising an elongated frame forming an upwardly opening pocket, at one end of the frame, for receiving a ball in position to be marked, said pocket embodying a front, rearwardly facing wall portion circularly curved in conformity with the circumference of the ball to be marked and forming an abutment for engaging equatorial portions of a ball in the pocket, a type carrying member forming marking means having a type carrying portion disposed at the side of the pocket diametrally opposite said abutment, said member being mounted in said frame for motion in a longitudinal path therein from a normally retracted position toward a marking position in which type on said carrying portion is markingly pressed upon equatorial portions of the ball disposed antipodally with respect to the abutment engaging equatorial portions thereof, and a cam turnable about an axis disposed at the pocket remote end of the frame and extending normal to the equatorial plane of a ball seated in the pocket, said cam operatively engaging said marking means for moving the same between said

retracted and projected positions to perform a ball marking stroke in response to turning movement thereof.

2. A ball marker as set forth in claim 1, wherein the rearwardly facing wall portion of the pocket, upwardly of said ball engaging abutment, is inclined inwardly to aid in retaining a ball being marked in the pocket, during the ball marking stroke of the marking means.

3. A ball marker as set forth in claim 1, wherein the pocket forming portions of the frame provide lateral openings, on the opposite sides of the pocket, extending substantially at and upwardly of the equatorial portions of a ball in marking position in the pocket, said openings being disposed between the opposite ends of said rearwardly facing wall portion of the frame and the frame portions which support the type carrying portion of the marking means, at the side of the pocket opposite the abutment, whereby to facilitate thumb and finger engagement with a ball in the pocket in turning the same to desired marking position therein.

4. A ball marker as set forth in claim 3, including a positioning index formed on the frame opposite an equatorial portion of a ball in the pocket to aid in orienting the ball to a desired marking position therein.

5. A ball marker as set forth in claim 1, wherein the frame comprises an elongated body having the upwardly opening pocket formed at one end of the body and a channel forming a slideway extending longitudinally of said body, said channel opening at its opposite ends, respectively, into said pocket, at the side thereof opposite said abutment, and at the pocket remote end of said body, for receiving and guiding said type carrying member in its path of movement.

6. A ball marker as set forth in claim 5, wherein the elongated body comprises an integral molded element of molded plastic material.

7. A ball marker as set forth in claim 1, wherein the marking means comprises an elongated slide having a type carrying end movable toward and away from the ball engaging abutment, and wherein the cam embodies a lobe operable to move the slide toward said abutment through a predetermined distance, into ball marking position, in response to rotation of said cam in one direction from a starting position, and another lobe operable to move said slide toward said abument through a substantially greater displacement, to present said type carrying end in type mounting position in the pocket, when said cam is turned in the opposite direction from said starting position.

8. A ball marker as set forth in claim 1, wherein the type carrying member is provided with a cam engaging face extending normal to the path of movement of said member and facing away from said pocket, and spring means normally biasing said member in a direction to press its cam engaging face against the cam, said cam having oppositely extending lobes respectively of lesser and greater radial dimension, measured from the turning axis of the cam, and a land between the lobes in position to engage said face and hold the member in retracted position, so that, by turning the cam in one direction, to engage the lobe of lesser dimension with said face, the member may be moved to present its type carrying portion in ball marking position in the pocket, and, by turning the cam in the opposite direction, to engage the lobe of greater dimension with said face, the type carrying portion of said member may be advanced into the pocket, beyond said marking position, to permit changing of type on said carrying portion when the pocket is ball free.

9. A ball marker as set forth in claim 1, wherein the marking means comprises a slide and the frame is formed with a slideway opening at one end upon the pocket opposite the ball engaging abutment and, at the other end, upon a wall of the frame remote from the pocket, whereby the slide may be assembled into the way through its pocket remote end, said slide having a cam receiving opening therethrough, a side of said opening providing a cam engaging face and said cam comprising a stem having a radially extending cam portion in position for engagement with said face, said frame having alined stem receiving openings for journaling the stem on opposite sides of said way, so that the stem may be assembled axially into operative position in said stem receiving openings and in the cam receiving opening of the slide, after assembly of the slide in said slideway, whereby the stem, when thus assembled, serves to retain the slide in the way.

10. A ball marker as set forth in claim 9, wherein said stem is formed with an axially facing shoulder in position to abut an oppositely facing shoulder on the slide when in assembled position, and spring means on the frame and biasing the slide in a direction away from marking position and into retracted position presenting said shoulder of the slide in abutting relation with respect to the axially facing shoulder of the stem, whereby the slide serves to interlock the stem in the frame, against axial removal therefrom when the slide is in retracted position.

11. A ball marker as set forth in claim 9, wherein the stem receiving opening in said frame on at least one side of said slideway is configurated to receive, axially therethrough, the radially extending cam portion of said stem, when in a predetermined relative angular position with respect to the frame, said radially extending cam portion having an end edge forming a shoulder in position to engage the frame radially of the configurated stem receiving opening in all relative angular positions of the stem other than said predetermined angular position, whereby the engagement of the shoulder forming edge of the radially extending cam portion with said frame serves to interlock the stem in the frame, against axial removal therefrom except when in said predetermined angular position.

12. A ball marker comprising an elongated housing having front and rear ends, and an upwardly opening pocket formed in the housing at said front end for supporting a ball in position to be marked, means for marking a ball in said pocket including a slide having forward and back ends, means for mounting marking type on the forward end of the slide, said slide being mounted in the housing for sliding movement between a retracted position, presenting such mounted marking type in spaced facing relation with respect to the surface of a ball to be marked in said pocket, and a marking position in which said type is markingly pressed upon the surfaces of the ball, and means in said housing and operatively engaging said slide for moving the same between said retracted and marking positions, including a stem journaled for turning movement about its axis in the rear end portions of said housing, cam means formed on said stem in position to engage a rearwardly facing bearing wall on the slide, and a handle connected with said stem, said cam including a flat surface on said stem and disposable in position to facingly engage said bearing wall to hold said slide in retracted position, and a radilly extending slide actuating lobe fromed on the stem along an edge of said flat surface in position for engagement with said bearing wall, with said flat surface making a rearwardly opening angle with said bearing wall, when said slide is disposed in marking position, said handle being disposed outwardly of said housing for manual operation to turn the stem and thereby selectively engage the flat surface and the lobe of the cam means with said bearing wall.

13. A ball marker as set forth in claim 12, including a compression spring mounted in said housing in position to yieldingly urge the slide toward retracted position.

14. A ball marker as set forth in claim 12, in which said handle has a portion projecting outwardly of said stem a distance several times greater than the radial dimension of the cam lobe.

15. A ball marker as set forth in claim 14, wherein the cam means includes a slide extending blade projecting

radially of the stem at the side of said flat surface, remote from said slide actuating lobe, said slide extending blade having a side face, lying substantially in the plane of said flat surface, and an outer slide extending edge disposed a greater distance radially of the axis of the stem than said slide actuating lobe, whereby said side face of said slide extending blade is disposed in facing engagement with said bearing wall, when said slide is in retracted position, said blade being turnable, by operation of said handle, into position with its outer slide extending edge disposed in abutting engagement with said bearing wall and said side face thereof extending normal to said bearing wall, to thereby move said slide into said pocket and to support the same in an extended position therein disposed forwardly of said marking position.

16. A ball marker as set forth in claim **1**, wherein said frame is formed with a shelf in position to support a sheet of printing material between the type on said carrying member, when in retracted position, and the facing surface portions of a ball in marking position in said pocket.

17. A ball marker as set forth in claim **1**, wherein the frame portions forming the upwardly opening pocket are provided with a lateral opening on at least one side of the pocket between the rearwardly facing wall portion and the opposite forwardly facing wall portions of said pocket, said lateral opening extending substantially opposite the equatorial portions of a ball in marking position in the

pocket, and a ball alining index formed on the frame in said lateral opening opposite the equator of a ball in the pocket, to aid in orienting a ball in the pocket precisely in position to be marked.

18. A ball marker as set forth in claim **11**, wherein the stem receiving opening is configurated with an outwardly extending slot for the accommodation of the radially extending cam portion of the stem, and a disc-like cover on and extending radially of said stem in position to overlie and cover said slot outwardly of said stem receiving opening, said disc-like cover being spaced axially from and facing said shoulder forming end edge of the radially extending cam portion.

References Cited by the Examiner

UNITED STATES PATENTS

1,284,932	11/1918	Russell et al.	101—381
1,555,029	9/1925	Russell	117—12
1,863,828	6/1932	Broman et al.	
1,953,992	4/1934	Seagers	197—6.2
2,002,847	5/1935	Atti	101—381
2,593,212	4/1952	Smith	101—42

ROBERT E. PULFREY, *Primary Examiner.*

W. McCARTHY, *Assistant Examiner.*