Feb. 13, 1951 L. HIRSCH 2,541,358

DEVICE FOR APPLYING SPACED INDICIA TO AN OBJECT

Filed Oct. 22, 1947 2 Sheets-Sheet 1

Fig. 1.

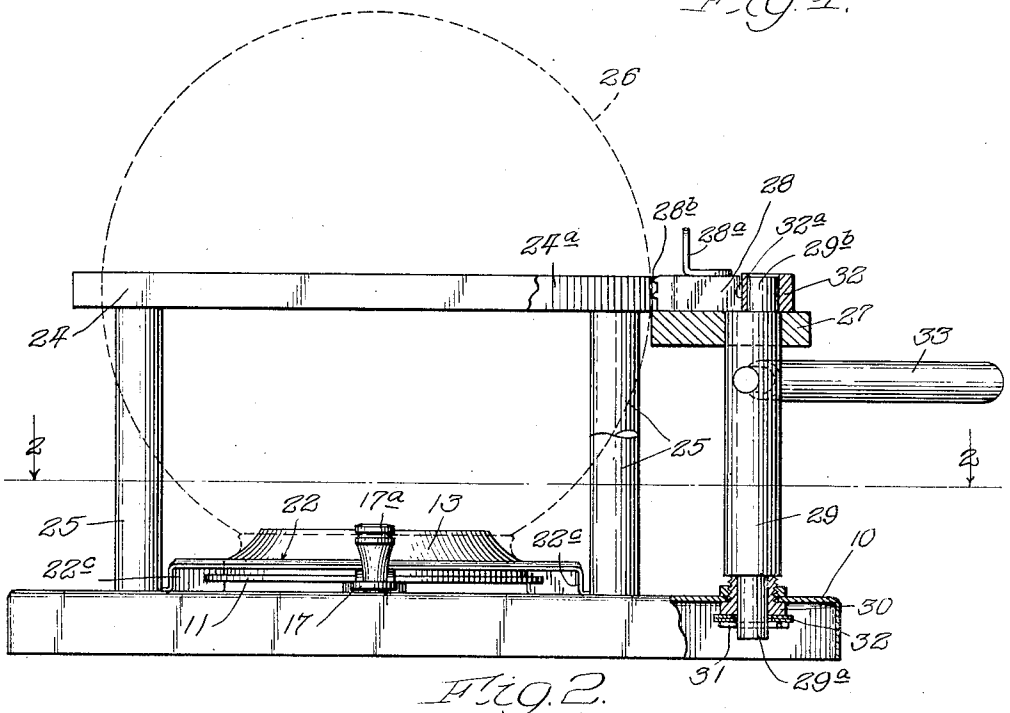
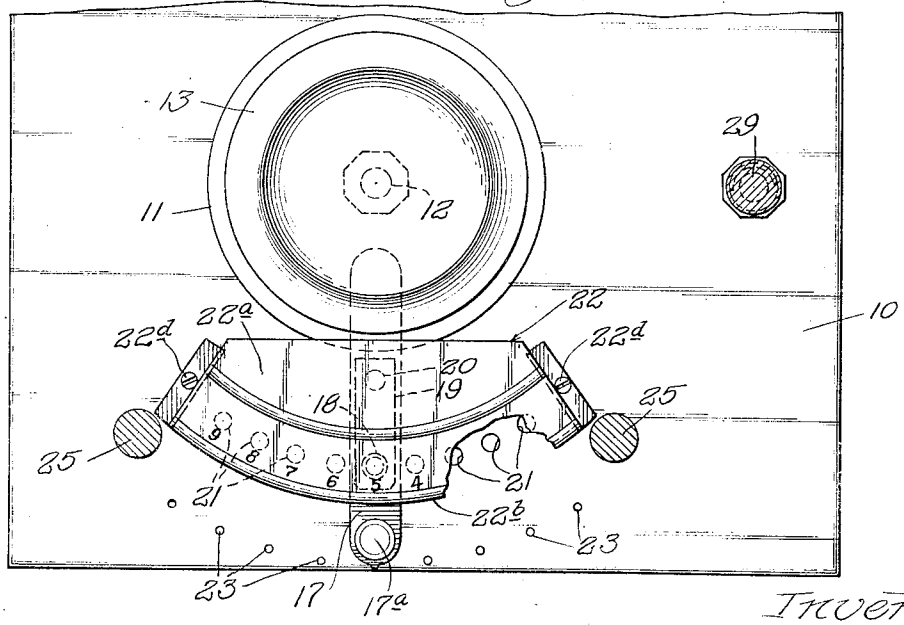


Fig. 2.



Inventor:
Louis Hirsch,
By Cushman, Darby & Cushman
his Attys.

Feb. 13, 1951 L. HIRSCH 2,541,358

DEVICE FOR APPLYING SPACED INDICIA TO AN OBJECT

Filed Oct. 22, 1947 2 Sheets-Sheet 2

Fig. 3.

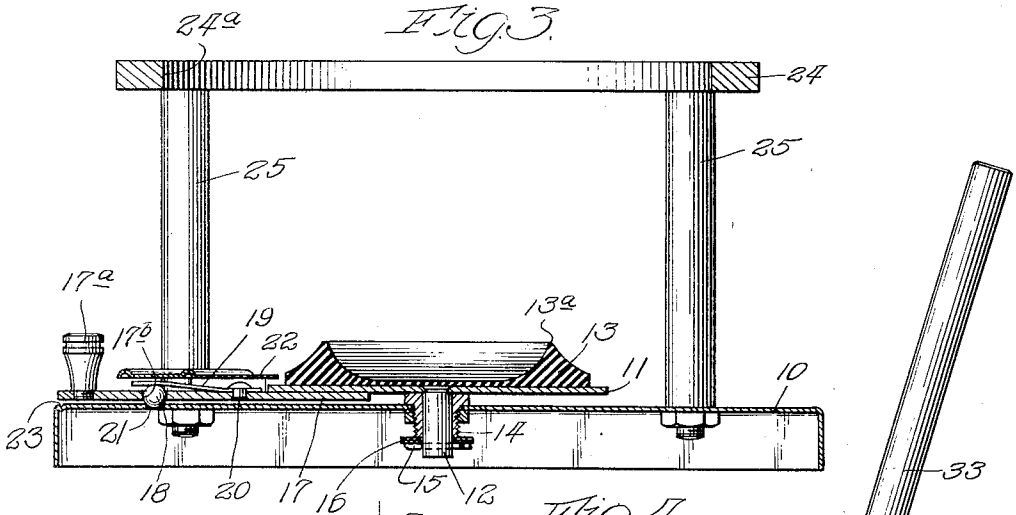
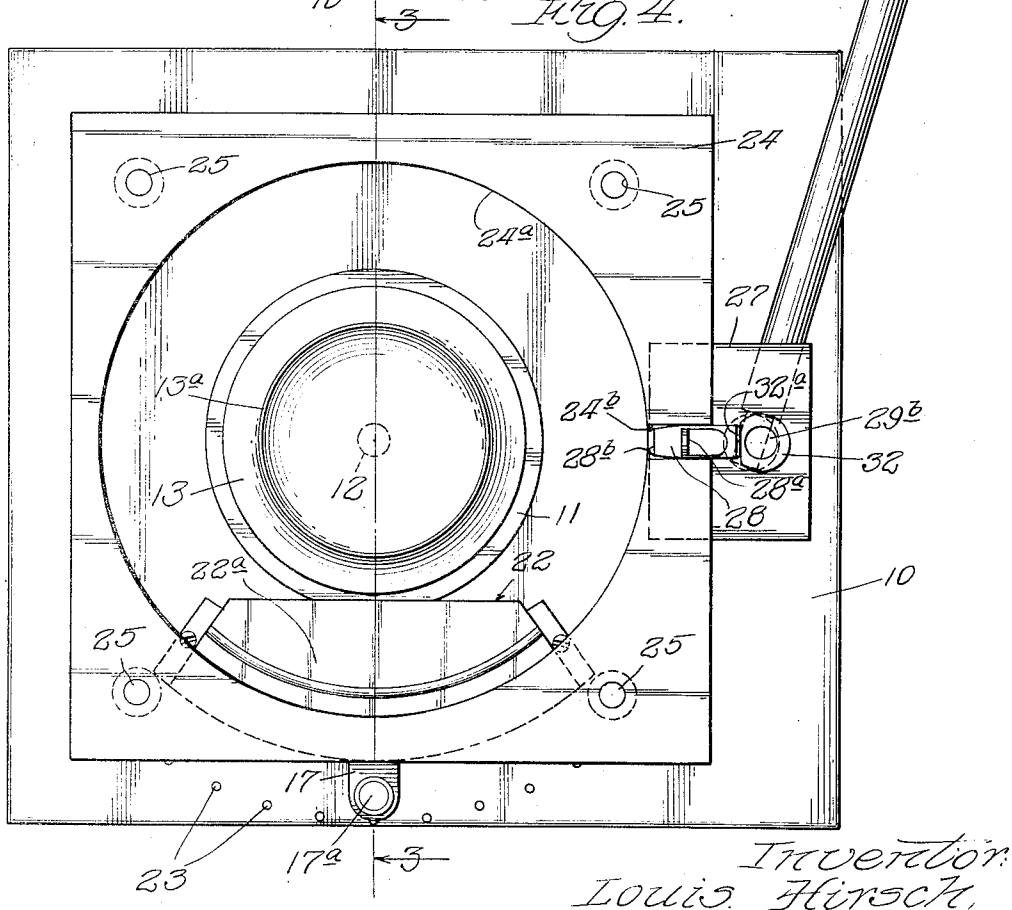


Fig. 4.



Inventor:
Louis Hirsch,
By Cesare Conley & Rose
his Attorneys.

Patented Feb. 13, 1951

2,541,358

UNITED STATES PATENT OFFICE

2,541,358

DEVICE FOR APPLYING SPACED INDICIA TO AN OBJECT

Louis Hirsch, Chicago, Ill., assignor to The Brunswick-Balke-Collender Company, Chicago, Ill., a corporation of Delaware

Application October 22, 1947, Serial No. 781,464

9 Claims. (Cl. 101—4)

1

This invention relates to a device for applying spaced indicia to an object and relates particularly to such a device for applying numbers, letters, or combinations thereof to a ball such as a bowling ball, and the like.

In applying spaced indicia such as numbers, letters or combinations thereof to the surface of an object, it is desirable that the indicia be evenly spaced and aligned so as to result in a pleasing appearance. The attainment of these results is particularly difficult when applying the indicia to the surface of a ball, such as a bowling ball. Ordinarily numbers or letters or combinations of numbers and letters are applied to the bowling ball by using a series of dies having the faces thereof provided with the desired number or letter. The individual dies are pressed into the surface of the ball so as to form depressions therein. Where individual dies are employed, it is difficult to obtain even spacing between adjacent indicia and to achieve alignment of the indicia.

One of the objects of this invention is the provision of an improved device for applying evenly spaced and aligned indicia to the surface of an object such as a ball wherein the device comprises a rotatably mounted support for supporting the ball and a laterally fixed but longitudinally movable indicia applying means for applying indicia to a portion of the ball surface.

A further object of the invention is the provision of such a device wherein means are provided for rotating the support equal increments of movement to bring succeeding portions of the ball into alignment with the indicia applying means.

Another object of the invention is the provision of such a device wherein the indicia applying means comprises an indicia member such as a die removably mounted for movement toward and away from the object when the object is in place on the support and cam means adapted to bear against the indicia member and force it toward the object.

More specifically, it is an object of this invention to provide a device for applying spaced indicia to an object such as a ball wherein the device comprises a base member, a support for the ball rotatably mounted on the base member and comprising a cup-shaped member having a substantially circular rim of a resilient rubbery material adapted to receive and hold frictionally the ball, an arm extending outwardly from the support and located adjacent and substantially

2

parallel to the base member, a spring-pressed detent such as a ball located on the arm on the side thereof adjacent the base member and adapted successively to engage substantially equally spaced openings arcuately arranged in the base member with the arc having its center of curvature substantially coinciding with the center of rotation of the support, a raised platform supported on the base member and arranged substantially parallel thereto with the platform being substantially aligned with a circumference of the ball and having a circular opening therein through which the ball may be inserted to rest on the support with the opening having a diameter slightly greater than the diameter of the ball, and indicia applying means adapted to be located adjacent a portion of the surface of the ball and supported from the platform with the indicia applying means being laterally fixed with respect to the platform but being movable toward and away from the ball and means for moving the indicia applying means.

Still another object of the invention is the provision of such a device wherein the indicia applying means comprises a die removably held in a slot in the platform extending from the platform opening through the outer edge thereof, a post rotatably mounted on the base member and having its top adjacent the outer end of the slot with the post being provided with a stud extending upwardly from the top surface thereof and arranged at one side of the axis of rotation of the post, a bearing member rotatably mounted on the stud and having a portion of its surface arranged to contact the outer end of the die and handle means for rotating the post to cause the bearing member to contact the die and move it into contact with the ball mounted on the ball support.

Other objects and advantages of the invention will become readily apparent from the following detailed description taken in connection with the accompanying drawings, of which:

Fig. 1 is a side elevation of a device embodying the invention, with portions broken away for clarity of illustration.

Fig. 2 is a partial horizontal section taken along line 2—2 of Fig. 1.

Fig. 3 is a vertical section taken along line 3—3 of Fig. 4.

Fig. 4 is a plan view of the device of Fig. 1.

While the invention is susceptible of embodiment in many different forms, there is shown in the drawings and herein described in detail only

one such embodiment, with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment described. The invention is to be construed broadly within its spirit and scope as set out in the appended claims.

In the device shown in the accompanying drawings, there is provided a base member 10, a rotatable support member 11 in the form of a circular metal plate having a downwardly extending stud 12 at substantially the center thereof and a holding element 13 of natural or synthetic rubber or similar resilient material attached to the top surface of the support member 11. This holding element 13 is of shallow cup-shape and is provided with a substantially circular edge portion 13*a* adapted to engage frictionally a ball placed therein, as shown in dotted lines in Fig. 1. The stud 12 is rotatably held in a bushing 14 that extends through the base member 10 and is fastened thereto. This stud is locked in position by means of a pin 15 or the like held in the outer end of the stud beyond the bushing 14. A washer 16, or the like, is arranged between the stud 14 and the pin 15.

The support member 11 is provided with an arm 17 attached to the underside thereof and extending radially outwardly. The outer end of this arm extends a considerable distance beyond the edge of the support member 11 and is provided with a handle portion 17*a*. The arm 17 is provided with an opening 17*b* between the handle portion 17*a* and the edge of the support member 11. Within this opening there is located a ball 18 that is held in place by means of a leaf spring member 19 attached to the arm 17 and bearing against the top of the ball 18. The leaf spring member is fastened in place by means of a rivet 20 or the like. As can be seen in Fig. 3, the spring member bears against the top of the ball 18 and serves to urge it downwardly. This ball is adapted to engage successively a series of small holes 21 or openings in the base member 10. Each hole 21 has a diameter considerably less than the diameter of the ball 18 while the opening 17*b* in the arm 17 has a diameter slightly greater than that of the ball 18. Movement of the arm 17 forces the ball out of one opening 21 and causes it to engage the next succeeding opening. All the openings 21 are arranged in an arc (Fig. 2) whose center of curvature substantially coincides with the center of rotation of the support member 11. This center of curvature and center of rotation coincides with the longitudinal axis of the stud 12.

The extent of movement of the arm 17 and thus of the support member 11 is controlled by a plate 22 that is attached to the top surface of the base member 10. This plate 22 has a raised body portion 22*a* located above the arm 17 and serves to hide the ball 18, spring member 19 and holes 21. This body portion 22*a* is provided with an arcuate front edge 22*b* arranged substantially parallel to the arc described by holes 21, and is also provided with vertical side portions 22*c*, each arranged radially with respect to the support member 11. Each side portion 22*c*, therefore, serves as a stop to limit the extent of movement of the arm 17. The plate 22 may be attached to the base member 10 by any means desired, such as the screws 22*d*. The plate may also be provided with a series of numbers beginning at the right-hand side of the plate and extending to the left-hand side, as shown in Fig. 2.

Each number is preferably located above and in front of a hole 21 in the base member 10. These numbers serve to indicate the relative location of the arm 17. In order to further indicate these relative locations, the base member may be provided with a series of small indentations 23 with each indentation being located opposite the outer end of the arm 17 when the ball 18 is in engagement with a hole 21. The indentations 23 and the numbers serve as a scale. The function of this scale will be described in detail hereinafter.

Located above the base member 10 and arranged substantially parallel thereto is a platform 24. This platform is mounted on four posts 25 with each post being adjacent a corner of the platform 24 and all posts being mounted on the base member 10. The platform 24 is provided with a substantially circular opening 24*a* located above the support member 11 and the holding element 13. The circular opening 24*a* has a diameter slightly larger than the diameter of a ball 26, shown in dotted lines in Fig. 1, that is adapted to be retained by the holding element 13 and on the support member 11. The platform 24 is located a distance above the base member 10 so that the platform will be substantially aligned with the horizontal circumference of the ball. The opening 24*a* in the platform is slightly larger than the diameter of the ball so that the ball may be inserted through the opening and rest on the support. This support comprises a combination of the support member 11 and the holding element 13.

One edge of the platform 24 is provided with a slot 24*b* having substantially parallel sides. This slot is arranged radially with respect to the support member 11 and has its inner end communicating with the platform opening 24*a* and its outer end extending through the outer margin of the platform 24. As is shown in Fig. 4, the slot is arranged at one side of the platform 24. The bottom of the slot is closed by a plate 27 attached to the bottom of the platform 24 and extending beyond the edge of the platform.

The slot 24*b* is adapted to hold a removable die 28 having a width slightly less than the width of the slot. As can be seen in Fig. 1, the die 28 rests on the plate 27 so as to be movable toward and away from a ball held in the platform opening 24*a*. The die is longer than the slot 24*b* and provided with a raised marking end portion 28*b* with this portion being adapted to be arranged adjacent a ball.

In order to move the die 28 into contact with a ball resting on the device, there is provided cam means adapted to bear against the outer end of the die. This cam means comprises a rotatably mounted post 29 extending between the base member 10 and the plate 27. The lower end of the post is provided with a downwardly extending stud 29*a* held in a bushing 30 that is positioned in the base member 10. The stud 29*a* has a diameter smaller than that of the post 29 so that the post rests on the bushing. The outer end of the stud is provided with a pin 31 extending therethrough and there is provided a washer or the like arranged between the bushing 30 and the pin 31. The upper end of the post 29 is rotatably held in the plate 27 with the top surface of the post being substantially aligned with the top surface of the plate 27.

The top surface of the rotatably mounted post 29 is provided with an upwardly extending stud 29*b* whose longitudinal axis is substantially parallel to the longitudinal axis of the post 29. This

stud 29b is arranged at one side of the longitudinal axis of the post and this longitudinal axis is also the axis of rotation of the post (Fig. 1). With this arrangement, rotation of the post 29 causes the stud 29b to move in a circle toward and away from the platform 24.

The upwardly extending stud 29b is provided with a bearing member 32 rotatably mounted thereon. This bearing member is generally circular but is provided with a flattened side portion 32a adapted to be arranged against the outer end of the die 28. With this arrangement, rotation of the post 29 results in movement of the bearing member 32 toward and away from the platform 24. As the bearing member is adapted to be arranged against the outer end of the die 28, this also causes movement of the die toward and away from a ball held in the device. As the path of movement of the bearing member 32 is of generally circular shape, the flattened side portion 32a will have a sliding contact with the outer end of the die 28 during operation of the device. In order to assist in the rotation of the post 29, there is provided an outwardly extending handle 33 attached to the post. This handle, which is preferably removably attached to the post, serves as a lever to increase the force on the die 28 and results in a clean indentation being made by the die into the ball.

In operating the device, a ball such as a bowling ball is inserted through the opening 24a so as to rest on and be frictionally held by the rubber holding element 13. As is shown in Fig. 1, the weight of the ball serves to distort the top edge 13a of the holding element outwardly. The resiliency of the rubber holding element permits lateral movement of the ball and forms a vacuum seal therewith. After the ball is in position on the device, the arm 17 may be moved until the ball 18 engages a hole 21. This serves to hold the support member 11 and holding element 13 against accidental movement. A suitable die 28 is placed in the slot 24b and the handle 33 of the cam means is moved in a clockwise direction, as viewed in Fig. 4. This movement of the handle causes the die 28 to be pressed into the portion of the ball surface that is opposite the slot 24b. As considerable leverage is obtained, the die 28 makes a deep clean-cut impression on the ball surface. The handle is then moved back to its original position and the die 28 removed by means of the handle portion 28a thereon. The impression on the surface of the ball may then be examined to see if it is of sufficient depth. As the ball has been held rigid during the operation, the die may be replaced and a deeper impression made if the first impression is not deep enough. In order to make a second impression in the ball surface, the handle 17 is moved to the left (Fig. 2) until the ball 18 engages the next succeeding hole 21. The same or another die may be placed in the slot 24b and the operation repeated to make another impression in the ball. With the device herein described, as many as nine die impressions may be made. The entire series will be evenly spaced and will be aligned in a substantially straight line on a major circumference of the ball.

In marking bowling balls, it has been discovered that a more pleasing appearance will be achieved if the center indicia of any series of odd numbered indicia is located immediately beneath the thumb hole of the ball. When marking a bowling ball with an odd number of letters, the arm 17 should be arranged immediately beneath the number "5" on the scale with the ball 18 engaging the corresponding hole 21. The bowling ball should then be placed in the device with the thumb hole immediately above the slot 24b. Where three indicia are to be used, the arm 17 should be moved until it is immediately beneath the number "6" on the scale. The first die may then be inserted in the slot and an impression made in the ball. After this impression has been checked to see if it is of sufficient depth, the arm 17 is moved back to its original position under the number "5". A second impression is then made on the ball by using the same or a different die and the arm is moved to a position immediately beneath the number "4". The third impression is then made. Where more than three indicia are to be applied but the total number is still an odd number, the arm 17 will be initially aligned under the number "5" and moved to the left (Fig. 2) a number of positions equal to one-half the number of indicia minus one that is to be applied.

When an even number of indicia are to be applied to the ball, the arm 17 is arranged one-half the distance between the numbers "5" and "6" on the scale and held in this position while the bowling ball is located in the device with the thumb hole thereof immediately above the slot 24b. The arm 17 will then be moved to the left (Fig. 2) a number of spaces equal to one-half the number of indicia. As each indicia is applied, the arm 17 will be moved one space to the right until the whole series has been applied.

The series of indentations 23 opposite the outer end of the arm 17 and the numbers of the scale that are located on top of the plate 22 are used in aligning the arm 17 and thus the ball in its proper position. The arm is locked in position by the ball 18 engaging a hole 21. As these holes are equally spaced from each other, the indicia applied to the ball will also be equally spaced. In order to make the numbers and the indentations readily visible, they may be colored with a distinctive and eye-catching color. The impressions in the ball may also be made to stand out by filling them with white lead, or a similar material.

Although the invention has been described as pertaining to an embodiment where dies are used for the marking of the object, it is believed obvious that other means such as printing type or the like could be used.

I claim:

1. A device for applying spaced indicia to a ball, said device comprising a base member, a support for the ball rotatably mounted on the base member, a raised platform above the base member and having an opening therein through which the ball may be inserted to rest on the support, said platform being substantially aligned with a circumference of the ball and the opening having a width slightly greater than the diameter of the ball said platform having an indicia applying means guideway radially aligned with the opening therein, an indicia applying means movable in said guideway but movable toward and away from the ball when the ball is on said support, means for moving said indicia applying means, and means for rotating said support to bring a succeeding portion of the surface of the ball into indicia receiving position.

2. A device as set forth in claim 1 wherein said support comprises a cup-shaped member having a substantially circular rim of a resilient rubbery

material adapted to receive and hold frictionally said ball.

3. A device as set forth in claim 1 wherein said platform is supported from said base member and is arranged substantially parallel thereto.

4. A device as set forth in claim 1 wherein the means for moving said indicia applying means comprises a rotatable cam member.

5. A device as set forth in claim 1 wherein the means for moving said indicia applying means comprises a post rotatably mounted on said base member and having its top adjacent the platform and adjacent the indicia applying means, said post being provided with a stud extending upwardly from the top surface thereof and arranged to one side of the axis of rotation of said post, a bearing member rotatably mounted on said stud and arranged to contact the outer end of the indicia applying means, and means for rotating said post to cause the bearing member to contact the indicia applying means and move it toward a ball mounted on the ball support.

6. A device for applying spaced indicia to a ball, said device comprising a base member, a support for the ball rotatably mounted on the base member and comprising a cup-shaped member having a substantially circular rim of a resilient rubbery material adapted to receive and hold frictionally said ball, an arm extending outwardly from said support and located adjacent and substantially parallel to the base member, a spring-pressed ball located on said arm on the side of the arm adjacent the base member and adapted successively to engage substantially equally spaced openings arcuately arranged in the base member, said arc having its center of curvature substantially coinciding with the center of rotation of the support, said base member being provided with an arcuately arranged scale adjacent the arm, a raised platform supported on said base member and arranged substantially parallel thereto, said platform being substantially aligned with a circumference of the ball and having a circular opening therein through which the ball may be inserted to rest on the support, with the opening having a diameter slightly greater than the diameter of the ball said platform having an indicia applying means guideway radially aligned with the opening therein, an indicia applying means adapted to be located adjacent a portion of the surface of the ball and supported from the platform, said indicia applying means being laterally fixed in said guideway with respect to the platform but being movable toward and away from the ball, and means for moving said indicia applying means.

7. A device as set forth in claim 6 wherein the means for moving said indicia applying means comprises a rotatable cam member.

8. A device as set forth in claim 6 wherein the means for moving said indicia applying means comprises a post rotatably mounted on said base member and having its top adjacent the platform and adjacent the indicia applying means,

said post being provided with a stud extending upwardly from the top surface thereof and arranged to one side of the axis of rotation of said post, a bearing member rotatably mounted on said stud and arranged to contact the outer end of the indicia applying means, and means for rotating said post to cause the bearing member to contact the indicia applying means and move it toward a ball mounted on the ball support.

9. A device for applying spaced markings to a bowling ball or the like, said device comprising a base member, a support for the ball rotatably mounted on the base member and comprising a cup-shaped member having a substantially circular rim of a resilient rubbery material adapted to receive and hold frictionally said ball, an arm extending substantially radially outwardly from said support and located adjacent and substantially parallel to the base member, a spring-pressed ball located on said arm on the side of the arm adjacent the base member and adapted successively to engage substantially equally spaced openings arcuately arranged in the base member, said arc having its center of curvature substantially coinciding with the center of rotation of the support, said base member being provided with an arcuately arranged scale adjacent the arm, a raised platform supported on said base member and arranged substantially parallel thereto, said platform being substantially aligned with a circumference of the ball and having a circular opening therein through which the ball may be inserted to rest on the support, with the opening having a diameter slightly greater than the diameter of the ball, said platform having a slot therein extending from the platform opening through the outer edge thereof and adapted to hold removably a die that is longer than said slot, a post rotatably mounted on said base member and having its top adjacent the outer end of said slot, said post being provided with a stud extending upwardly from the top surface thereof and arranged at one side of the axis of rotation of the post, a bearing member rotatably mounted on the stud and arranged to contact the outer end of said die, and handle means for rotating said post to cause the bearing member to contact the die and move it into contact with a ball mounted on the ball support.

LOUIS HIRSCH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,467,073	Solmson	Sept. 4, 1923
1,553,451	Lyon	Sept. 15, 1925
1,611,722	Cross	Dec. 21, 1926
1,814,312	Heene	July 14, 1931
1,953,992	Seagers	Apr. 10, 1934
1,982,158	Gould	Nov. 27, 1934
1,999,647	Atti	Apr. 30, 1935
2,213,831	Bates	Sept. 3, 1940