E. F. BACHELLER & J. H. STEWART,
MACHINE FOR MARKING GOLF BALLS.
APPLICATION FILED NOV. 13, 1916.

1,228,736.

Patented June 5, 1917.

INVENTORS,
EDWARD F. BACHELLER
JOHN HAMMOND STEWART

by Knight & May
ATTORNEYS
To all whom it may concern:

Be it known that we, EDWARD F. BACHELLER and JOHN HAMMOND STEWART, citizens of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented and useful Improvements in Machines for Marking Golf-Balls, of which the following is a specification.

The subject of the present invention is a machine or device adapted to mark the owner's name on the surface of a golf ball, printing the same legibly and at the same time preferably with a sufficiently deep impression to make it as durable as possible. Among other objects which we have had in view in developing the invention are the following: First, to produce a machine of this character which can be adjusted to print with as deep an impression as may be desired, and can be adjusted to produce equal effects on balls of different diameters. Second, to provide a machine having means by which the balls may be aligned accurately with the types or printing plate in the minimum of time, and capable of performing the printing operation rapidly and efficiently. Third, to provide a machine which in itself is relatively inexpensive in construction, and of which the types or printing elements are relatively inexpensive. Fourth, to furnish in connection with such a machine a device for use in inking the types which is effective to confine the deposit of ink to the faces of the letters. The means by which the above named, and other objects, are effected, in which, and the underlying principles thereof, our invention consists, are described in the following specification in connection with a detailed description and illustration of an operative concrete embodiment of the invention. In the drawings,

Figure 1 is a perspective view of a machine embodying our invention.

Fig. 2 is a cross section of the machine on a larger scale.

Fig. 3 is a longitudinal vertical section.

Fig. 4 is a perspective view of the guard for use in inking the printing types with which the machine is provided.

The machine includes a base 7 which is adapted to rest upon a table or other support to which it may be secured by fastenings passed through lugs 8. In the base is a channel 9 forming the guideway for a sliding bed or carriage 10. Rising from the base are separated posts 11 on which a head 12 is mounted to slide, such head having long guiding sleeves 13 which surround the posts. The head carries a guide 14 projecting laterally so as to overhang the bed 10, said guide having converging walls making what is in effect an inverted trough extending parallel to the line in which the bed 10 travels. The walls of the guide may have any form, curvature, and angular relation provided only they provide two separated lines, located at opposite sides of the plane including the printing type and the center of the ball, along which the ball may roll in such fashion that its center remains in the same plane.

Thus the trough or guide 14 positions the balls with respect to the type or printing plate 15 which is carried by the bed 10.

Between and parallel to the posts 11 is a rod 16 extending through the head 12, having a nut 17 threaded upon its outer end upon the head, and being surrounded by a spring 18 between the under side of the head and the base. The spring is sufficient to lift the head and keep it at all times in contact with the nut 17, which forms an adjustable abutment, and such nut may be screwed down in order to bring the head nearer to the base and so diminish the distance between the guide 14 and the printing member 15, and also to regulate the pressure with which the ball is held in contact with the printing element.

As the printing element or plate we may use a slug having a line of letters of which the length is only limited by the circumference of the ball. Such slug or printing element 15 is removably confined in the slot 19 in the bed 10, wherein it is secured by a set screw 20 pressing against a pressure distributing piece 21. The letters on the face of the printing element or slug rise above the face of the bed whereby to perform the double function of indenting the face of the ball more or less deeply, according to the pressure applied by the guide 14, and of causing the letters or raised parts of the type to act similarly to the teeth of a gear element in rolling the ball along the guideway, these projecting parts sinking into the surface of the ball giving a positive engagement which obviates all danger of the ball slipping. The points of contact of the guide with the ball, being on opposite sides of the
thrust applied by the printing element to the ball, effectually retain the latter in proper alinement and make it impossible for the ball either to fall or roll out of the true line.

A handle or head 22 on the sliding bed 10 provides a means by which manual power may be applied to move the latter in printing the ball.

In operating the machine to mark a golf ball the slide is moved in one direction or the other until the marking element is entirely out from under the guide 14, or nearly so. Then the ball is placed on the bed adjacent the end of the printing slug nearest to the guide, and extending far enough under the latter to be securely engaged thereby. The nut 17 is adjusted to place the guide where an impression of the desired depth will be produced. I prefer to provide a ledge or rib 23 at the end of the bed and at the sides adjacent thereto so as to provide a shallow pocket near the end of the printing plate in which the ball may be set preparatory to this adjustment. Now the bed is moved endwise in the direction which brings the line of type toward the ball, the faces of the type being caused to indent and roll the ball along the guide until the entire printing plate has passed the ball, the linear travel of the ball being of course half that of the bed.

We prefer that the type should be inked, as thereby the printed impression is much more distinct, and in connection therewith we provide a guide fastened to the face of the bed and the shoulders of the type from being inked as well when the faces of the type are inked. Such a device is shown in Fig. 4, and indicated by dotted lines in Fig. 3, identified by the character 24. It consists essentially of a bar or plate the thickness of which is slightly less than the distance by which the faces of the type project above the face of the bed. It is formed with a slot sufficiently long and wide to admit the line of type. This guard is laid on the bed so as to embrace the type when the latter are to be inked. When the inking roller is passed over the type those parts of the roller which extend beyond the faces of the types are prevented by the guard from touching either the shoulders of the type or the face of the bed, thereby the ball is guarded from being inked except at the exact points desired. The guard is removed of course before the marking operation is performed; its construction enabling it to be applied and removed instantaneously.

We have used the terms "types," "printing plates," or "member," and other terms differently to describe parts of the machine, the part or parts by which the printed impression is applied to the ball, for the purpose of indicating that we do not limit this feature of the invention to any particular kind of types or printing element. We may use individual types, or a solid plate, block, or slug having letters formed by cutting, casting, or otherwise in its face, the only limitation being that the line or lines of letters should be sufficiently narrow in width and spaced to impress the convex face of a golf ball without needing an excessively heavy pressure.

The form and arrangement of the guide 14 evidently enable the ball to be placed in position for printing instantly and to be rolled along while the printing operation takes place without danger of slipping out of the proper position. Thus the operation may be started and completed in the minimum of time with perfect results as to legibility and finish of the impression. The quick adjustment provided by the nut 17 enables the guide 14 to be set for any size of ball, and to carry any desired weight of impression in the least possible time. In particular there is no need to spend time in carefully placing a ball in position and securely clamping it there before printing.

A feature of the utmost importance is that the right line movement of the bed and the rolling arrangement of the ball enable the letters of the printing plate or types to be arranged in a straight line. Thus the types and printing slugs of ordinary character made by common and widely used methods and machines may be employed in our machine, and it is unnecessary to provide specially formed printing elements.

The term "golf ball" used in the foregoing specification and in the following claims is a term of description and not of limitation, indicating one of the uses of the invention but not implying a limitation of such use to the marking only of the specific article embraced within the definition of "golf ball." In this use of the term we have intended it to embrace balls of any sort, and indeed other articles which are spherical or comprise zones or segments of spheres. It is also within our contemplation to adapt the principles of the machine for the purpose of marking on curved surfaces other than spherical surfaces by means of a printing element in which the letters are arranged in a straight line, and the article printed upon is rolled over the face of the printing element.

What we claim and desire to secure by Letters Patent is:

1. A golf ball marker comprising a base having a guideway, a bed fitting and movable along said guideway having projecting types, a post rising from said base, a ball guide mounted on said post near the top of the same, a ball bed, being adjustable toward and away from the bed, and means for rigidly limiting the distance of said guide from said bed.

2. A golf ball marker comprising essen...
tially a trough shaped ball guide along which a golf ball is adapted to roll, a carriage having type constructed for indenting the material of a golf ball, a guide for the carriage, means for holding said guides parallel to one another, and means for adjusting one of the guides toward and away from the other and rigidly limiting separation of the adjustable guide from the other.

3. A golf ball marking machine comprising a base having a guideway, a carriage mounted to slide in said guideway, a plurality of posts rising from said base beside the carriage, a head mounted on said posts to embrace and slide on the same, a ball guide in the form of an inverted trough connected with said head overhanging the base and extending parallel with the carriage guideway, one of said posts being threaded, and a nut adjustably screwed upon said post at the opposite side of the head from the base, to adjust the ball guide with respect to the base and provide a rigid abutment to limit positively separation of the ball guide from the base, said carriage having projecting types adapted to indent the material of a golf ball.

4. A golf ball marking machine comprising a base, a bed movable on said base, a printing element carried by said bed having letters arranged in a straight line parallel to the path of the bed, a guide overhanging the bed and having walls arranged to engage a golf ball at points on opposite sides of a plane passing through the said line of letters and the center of the ball and an adjustable abutment arranged to sustain said guide against the thrust of the printing member upon the ball, and being adjustable to regulate the pressure of such thrust.

5. The combination with a golf ball marker of a bed, a series of printing types projecting from the face of said bed, of a guard constructed to embrace said types and bear against said face, the said guard having an outer surface below the faces of the type.

6. The combination with a golf ball marking machine having a bed and a line of printing devices carried by said bed and projecting therefrom, of a guard constructed to embrace said line of types and being of such dimensions as to lie between the faces thereof and the face of the bed.

In testimony whereof we have affixed our signatures.

EDWARD F. BACHELLER.
JOHN HAMMOND STEWART.