June 21, 1932. C. E. BROMAN ET AL 1,863,828

GOLF BALL MARKING MACHINE

Filed July 29, 1929 4 Sheets-Sheet 1

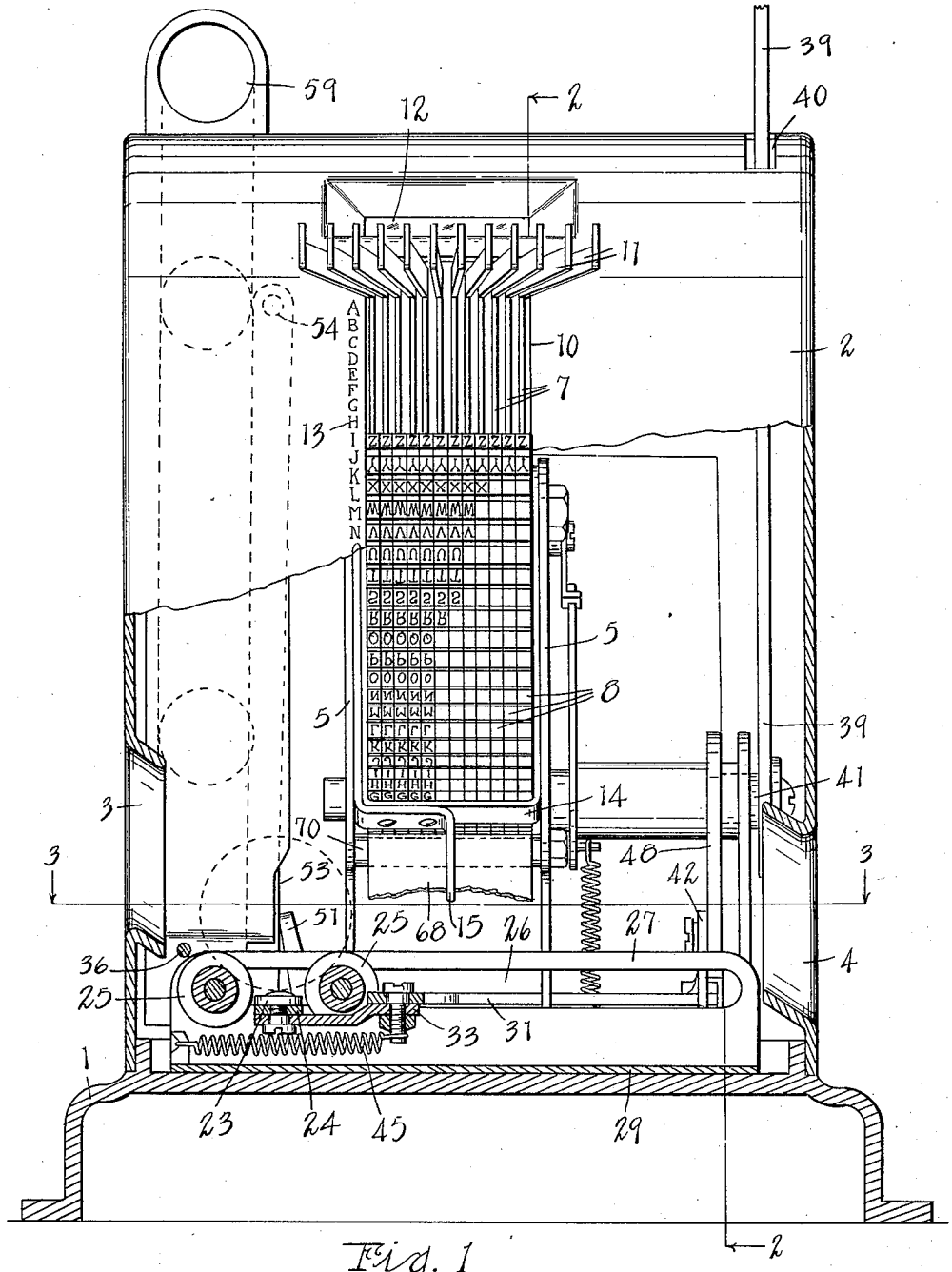


Fig. 1

INVENTOR
Charles E. Broman
Walter H. Nowak
BY Chappell & Earl
ATTORNEYS

June 21, 1932. C. E. BROMAN ET AL 1,863,828

GOLF BALL MARKING MACHINE

Filed July 29, 1929 4 Sheets-Sheet 2

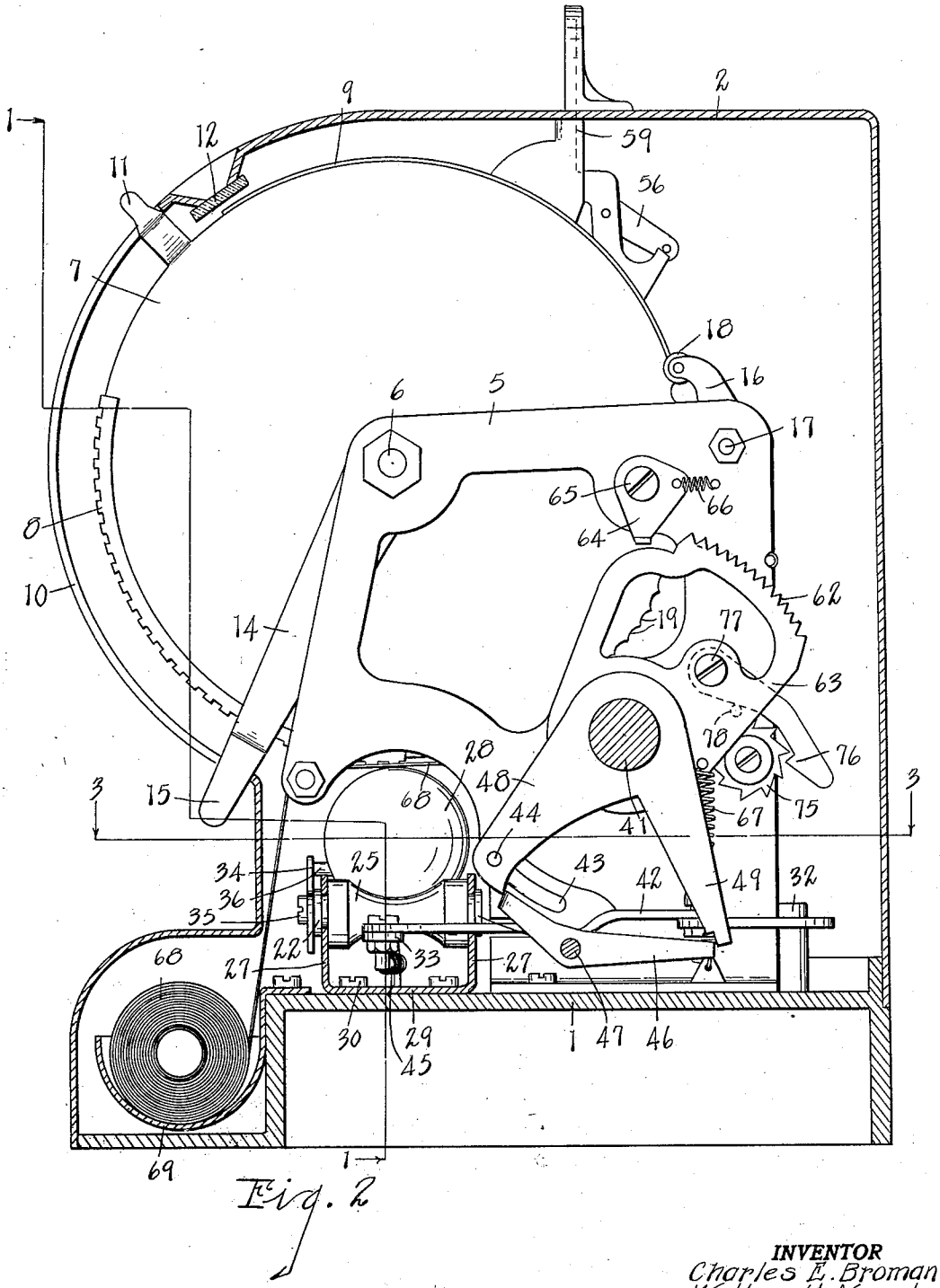


Fig. 2

INVENTOR
Charles E. Broman
Walter H. Nowak
BY
Chappell & Earl
ATTORNEYS

June 21, 1932. C. E. BROMAN ET AL 1,863,828

GOLF BALL MARKING MACHINE

Filed July 29, 1929 4 Sheets-Sheet 3

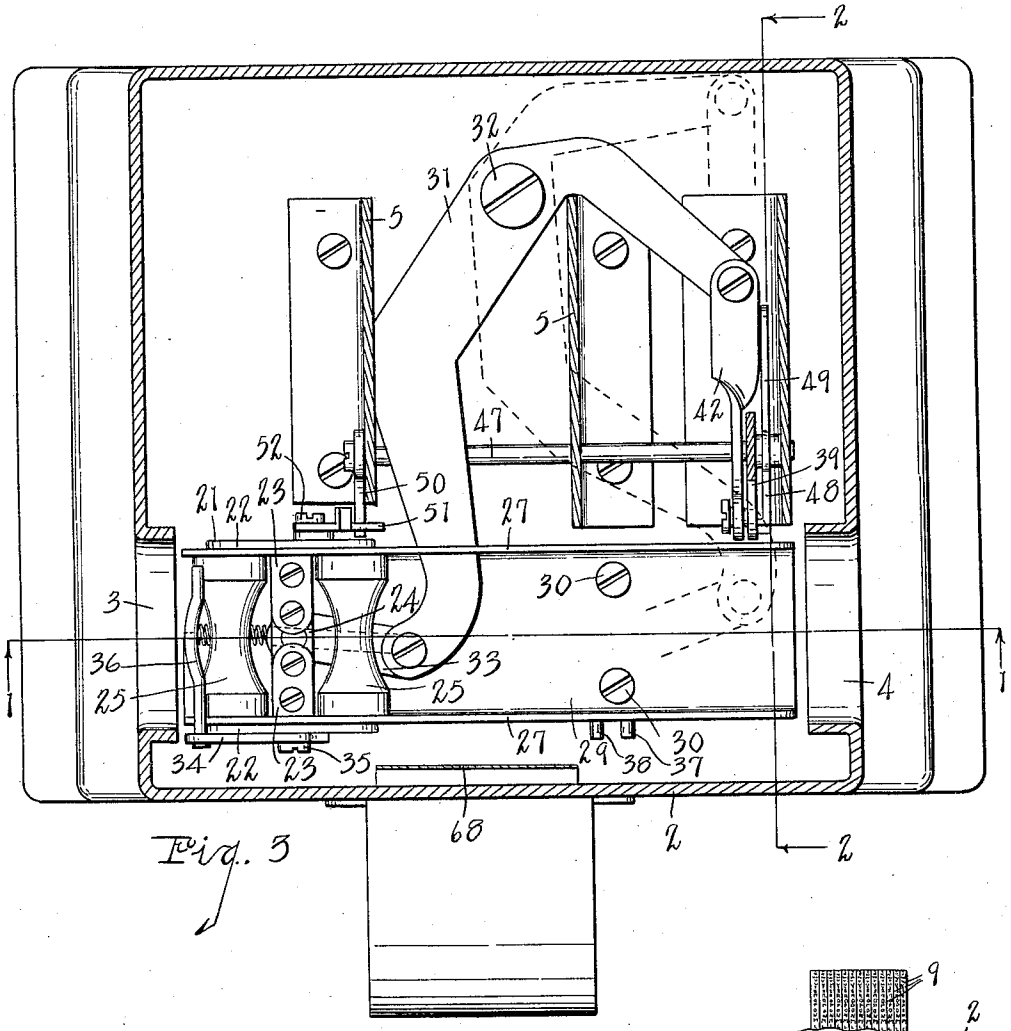


Fig. 5

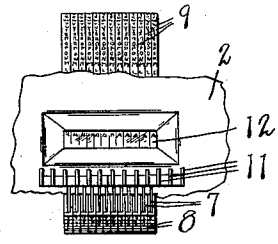


Fig. 6

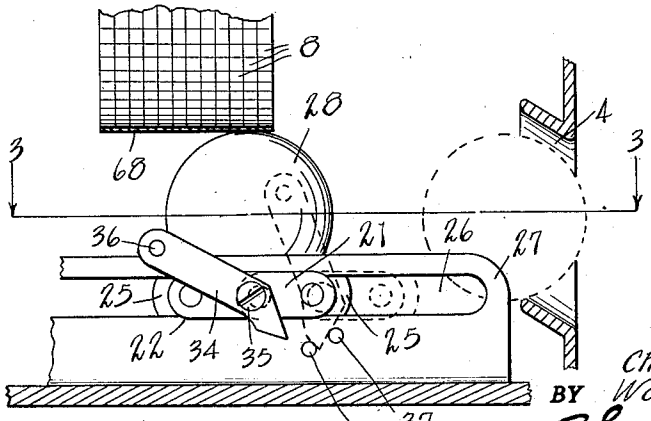


Fig. 4

INVENTOR
Charles E. Broman
Walter H. Nowak
BY Chappell & Earl
ATTORNEYS

June 21, 1932. C. E. BROMAN ET AL 1,863,828

GOLF BALL MARKING MACHINE

Filed July 29, 1929 4 Sheets-Sheet 4

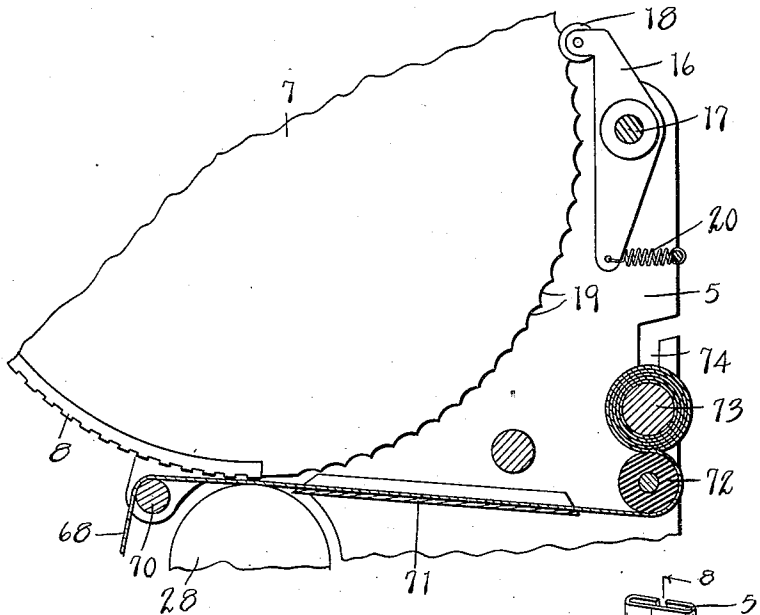
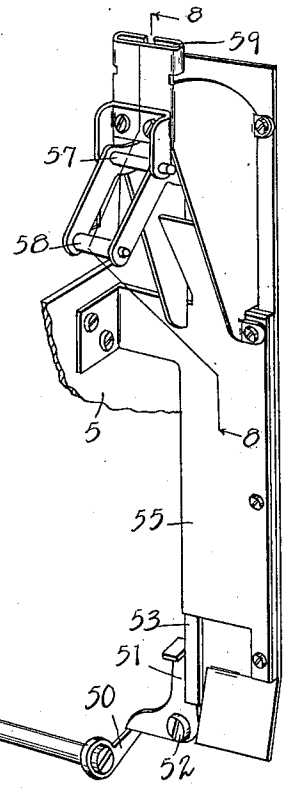


Fig. 5



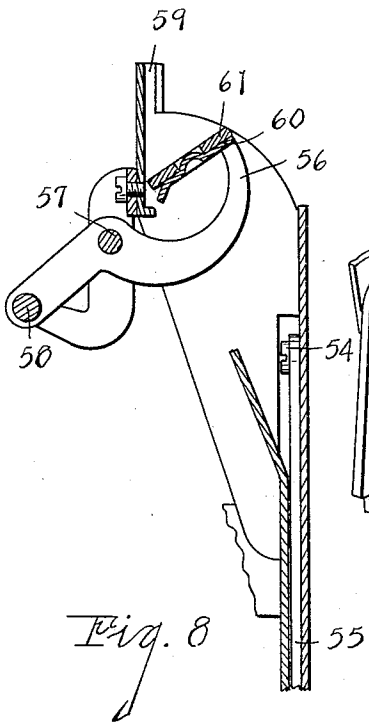


Fig. 8

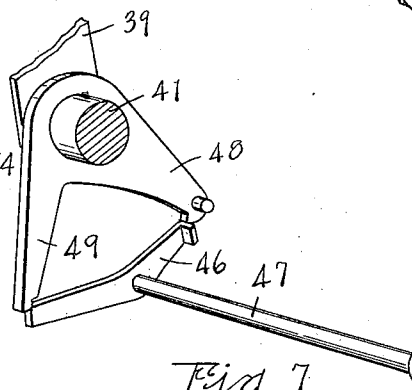


Fig. 7

INVENTOR
Charles E. Broman
Walter H. Nowak
BY Chappell & Earl
ATTORNEYS

Patented June 21, 1932

1,863,828

UNITED STATES PATENT OFFICE

CHARLES E. BROMAN, OF SPARTA, AND WALTER H. NOWAK, OF GRAND RAPIDS, MICHIGAN

GOLF BALL MARKING MACHINE

Application filed July 29, 1929. Serial No. 381,898.

The main objects of this invention are:

First, to provide a machine for marking golf balls which may be quickly set up for the desired name or mark and quickly and easily operated to mark the balls.

Second, to provide a machine having these advantages which is of large capacity, that is, it is capable of rapid operation to mark a series of balls.

Third, to provide a machine for marking golf balls producing clear marks having sharply defined outlines and without likelihood of smudging the surface of the ball as is likely to be the case where ink is manually applied by type or by means of an inking pad.

Fourth, to provide a marking machine for golf balls in which all of the series of characters or letters are uniformly printed.

Fifth, to provide a machine having these advantages which may be readily manipulated by an inexperienced person or operator, thereby rendering it practical for use as a coin operated machine.

Sixth, to provide a structure having these advantages which is comparatively simple and economical to produce and at the same time not likely to get out of repair.

Objects pertaining to details and economies of our invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of our invention is clearly illustrated in the accompanying drawings in which:

Fig. 1 is a fragmentary front view of our improved marking machine partially in vertical section on line 1—1 of Figs. 2 and 3.

Fig. 2 is a fragmentary view partially in vertical section on line 2—2 of Figs. 1 and 3.

Fig. 3 is a detail view partially in horizontal section on line 3—3 of Figs. 1, 2 and 4.

Fig. 4 is an enlarged detail sectional view showing a golf ball in operative relation to the marking device by full lines and in discharging position by dotted lines, the ejector being shown in normal position by full lines and in ejecting position by dotted lines.

Fig. 5 is an enlarged detail fragmentary view partially in vertical section showing further details of the indicia numbers and the marking ribbon.

Fig. 6 is a fragmentary plan view showing details of the character disks.

Fig. 7 is a fragmentary perspective view showing details of the coin controlled locking means.

Fig. 8 is a fragmentary sectional view on a line corresponding to line 8—8 of Fig. 7.

The embodiment illustrated in the accompanying drawings comprises a base 1 having a housing 2 in which the operating mechanism is enclosed. This housing is provided with an opening 3 to receive the balls to be marked and a discharge opening 4.

Mounted in spaced relation within the housing is a pair of plate-like brackets or frame members 5 constituting supports for various parts of the mechanism. These supporting members 5 carry the spindle 6 of the character disks 7. The character disks are disposed side by side for independent rotative adjustment, each disk carrying a character segment 8 and the embodiment illustrated containing all the letters of the alphabet. The disks are also provided with adjustment indicating character segments 9 containing the same characters as the segments 8.

The housing is provided with an opening 10 in the front thereof through which the finger pieces 11 of the character disks project. These finger pieces are bent or conformed so that their outer ends lie in a uniformly spaced relation for convenience in manipulation.

The housing is provided with a window 12 through which the indicia characters are visible so that the operator may determine by inspection through this window when the disks are brought into proper printing position for the desired name and the set-up inspected before the printing operation.

To further facilitate the adjustment of the character disks we arrange a set of characters 13 along one edge of the opening 10, as shown in Fig. 1, so that the positions of the disks may be determined by alining the finger pieces with this series of characters. This arrangement enables very rapid adjustment of the character disks and checking to deter-

mine whether or not the disks have been properly adjusted for the particular mark desired.

To clear the machine or return the character disks to their normal or initial position, we provide a yoke-like member 14, the arms of which are pivotally mounted on the spindle 6 at the outside of the outer disks with its cross piece lying adjacent the peripheries thereof so that, when this clearing member is swung upwardly, it engages the finger pieces on the character members, returning them to their initial position. The clearing member is provided with a finger piece 15.

To yieldingly hold the disks in their adjusted position, we provide a series of holding pawls 16 which are mounted on a rod 17 extending between the supporting brackets or plates 5, each of these pawls being provided with a roller 18 coacting with the serrations 19 on the character disks. The pawls are actuated by the springs 20.

The balls are carried into operative relation to the character disks with a rolling movement by means of a carriage designated generally by the numeral 21 which reciprocates or travels in a plane parallel to the axis of the rollers. This carriage comprises a pair of side members 22 having inwardly projecting arms 23 connected by the bar 24, these side members, the arms and bar in effect constituting the frame for the carriage.

The carriage is provided with a pair of rollers 25 journaled in the side members of the carriage frame, the journals engaging longitudinal slots 26 in the spaced way members 27. The rollers are spool-shaped, that is, they are formed with a longitudinal concave curvature and spaced so as to form rolling supports for a golf ball shown at 28. The journals of the rollers being in bearing engagement with the slots in the way members 27, the rollers are rotated as the carriage is reciprocated, thereby rolling the ball and supporting it in rolling engagement with the character members.

In the embodiment illustrated the way members 27, are formed integrally of a channel-shaped member 29 which is mounted upon the base 1 by means of screws 30 engaging the web of the member 29.

The carriage is reciprocated by means of the lever 31 which is pivoted at 32 and connected to the cross member of the carriage by means of the link 33. The lever projects through the slot of the adjacent way member. When the carriage is in its initial position it is adapted to receive a ball introduced through the opening 3 as shown in Fig. 1. When the carriage reaches the end of its forward stroke the ball is automatically ejected through the opening 4 by means of the ejector 34 which is pivoted at 35 on the carriage and provided with an arm 36 projecting transversely of the carriage above the way and at the rear of the ball. As the carriage approaches the end of its stroke the ejector engages the stop pin 37 so that continued forward movement swings the ejector to the position shown by dotted lines in Fig. 4, thereby ejecting the ball through the opening 4.

A second pin 38 is provided which is adapted to engage the nose of the ejector on the return movement of the carriage, thereby throwing or returning the ejector to its initial position. This stop pin 38 also serves to limit the forward throw of the ejector.

The lever 31 is actuated from the hand lever 39 projecting through a slot 40 in the housing 2. This lever 39 is pivoted at 41 and connected to the actuating lever 31 by means of the link 42. This connection is a lost motion connection for a purpose which will be hereinafter pointed out. The link has a slot 43 engaged by the pin 44 on the lever. The carriage is returned to its initial position by means of the spring 45.

To hold the actuating lever in its initial position we provide a stop 46 mounted on the rockshaft 47 and projecting at both sides of the rockshaft. One end coacts with the arm 48 of the actuating lever and the other end coacts with an arm 49 on the actuating lever, see Fig. 2, so that the lever is locked against movement in either direction when in its initial position.

The rockshaft is provided with an arm 50 operatively associated with a tripping dog 51 pivoted at 52 to cooperate with a coin actuated member 53. This member 53 is pivoted at 54 to lie vertically within the coin chute 55, it being held slightly off the perpendicular by its engagement with the dog 51. When a coin drops into the chute, the weight of the coin is sufficient to swing the member 53 on its pivot, thereby actuating the dog 51 and through it releasing the stop.

At the upper end of the chute is a coin deflector 56 pivoted at 57 and carrying the weight 58 at its outer end. This coin deflector normally lies below the slot 59 through which the coin is introduced. If a nickel be introduced, which is the coin for which the particular machine is designed, it drops upon the head 60 of the coin deflector, the weight being sufficient to swing the deflector on its pivot and deliver the coin into the chute. In the event a slug such as 61 is introduced (slugs commonly employed having holes therein), the slug will engage this head and is held thereby until the head swings past the mouth of the chute so that the slug is discharged outside of the chute.

To insure a complete stroke of the carriage and prevent reciprocating it back and forth, which might result in defective marking or permit manipulation whereby a number of balls might be marked with one freeing of the mechanism, we mount a rack 62 on an arm 63 connected to the actuating lever. This rack coacts with a stop pawl 64 pivoted

at 65 and supported yieldingly by means of the spring 66. As the lever is actuated to move the carriage forwardly, this pawl engages the rack, lying thereon until it passes off the end of the rack at the complete actuation of the carriage, which permits the lever being returned to its initial position.

The coiled spring 67 connected to this arm 63 acts to return the actuating lever to its initial position.

The marking material is preferably an indelible carbon ribbon 68 which is supported in a trough-like holder 69 at the front of the machine. This ribbon is carried over the guide roller 70 to the supporting plate 71, see Fig. 5, the roller and plate being arranged to support the ribbon in operative relation to the character disks.

A driving roller 72 is mounted at the rear of the plate 71 and above this is the winding roller 73 floatingly supported in the vertical slot 74 in the brackets 5. The driving roller is adapted to feed the ribbon and, owing to the fact that the winding roller rests on the driving roller, the frictional engagement thereof rotates the winding roller.

The driving roller is provided with a ratchet wheel 75 with which the pawl 76 coacts. This pawl is mounted on a pivot 77 on the arm 63. The pin 78 serves to limit the downward movement of this pawl.

Owing to the pin and slot or lost motion connection for the actuating lever to the link 42, the initial movement of the actuating lever will adjust the ribbon prior to actuation of the carriage. Continued movement of the actuating lever moves the carriage forwardly and, as stated, carries the ball into rolling engagement with the characters with the result that the name, initials or other identifying idicia is uniformly printed upon the surface of the ball.

Our improved marking machine may be quickly set up by unskilled persons as it is only necessary to adjust the character disks, introduce the ball, drop the coin (where the machine is coin controlled), and actuate the lever. Once set up the machine may be manipulated rapidly and may be quickly cleared for resetting. The marking medium is such that the character members do not become fouled or require cleaning. The result is that the machine requires very little attention to keep it in operative condition. Further, the parts are arranged so that they are not easily disarranged or broken.

We have illustrated and described our improvements in an embodiment which we have found highly practical. It is believed that this disclosure will enable those skilled in the art to embody or adapt our improvements as may be desired.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. In a machine of the class described, the combination with a casing provided with opposed receiving and discharge openings, a marking means disposed within said casing and comprising a plurality of indicia members capable of independent adjustment from the exterior of the casing whereby selected indicia may be brought into alinement, a way disposed in spaced relation to said indicia members, a carriage reciprocatingly mounted on said way and adapted to rotatably support a ball and carry it into rotative engagement with the alined characters, means for manually reciprocating said carriage, an ejector member pivotally mounted on said carriage, and a stop on said way with which said ejector member engages as the carriage approaches the end of its stroke whereby the ball is automatically ejected from the carriage through said discharge opening, the carriage in its initial position being adapted to receive a ball introduced through said receiving opening.

2. In a machine of the class described, the combination with a casing, a marking means disposed within said casing and comprising a plurality of indicia members capable of independent adjustment from the exterior of the casing whereby selected indicia may be brought into alinement, a way disposed in spaced relation to and transversely of said indicia members, a carriage reciprocatingly mounted on said way and adapted to rotate the work and carry it into rotative engagement with the alined characters, and means for manually reciprocating said carriage.

3. In a machine of the class described, the combination of a way comprising spaced longitudinally slotted members, a carriage comprising side members connected by a cross piece disposed through said slots and a pair of spaced concaved rollers having journals traveling in said slots and engaging said side members whereby the rollers are rotated on the actuation of the carriage and constitute means for supporting and rotating a ball as the carriage travels along the way, a plurality of character units each provided with a plurality of characters mounted for independent adjustment whereby selected characters may be brought into parallel relation to said way transversely of said character units and centrally of said rollers, and means for reciprocating said carriage.

4. In a machine of the class described, the combination of a way, a carriage provided with a pair of spaced concaved driven rollers constituting means for rotatably supporting and rotating a ball as the carriage travels along the way, a plurality of character units each provided with a plurality of characters mounted for independent adjustment whereby selected characters may be brought into parallel relation to said way, and means for reciprocating said carriage.

5. In a machine of the class described, the combination of a plurality of character disks having peripherally disposed characters mounted on a common axis for independent rotative adjustment, a carriage mounted to travel in a plane parallel to the axis of the character disks and transversely of the faces thereof, work supporting rollers on said carriage, and means whereby said rollers are rotated to roll the work transversely across the face of the character disks as the carriage is actuated.

6. In a machine of the class described, the combination of a way, a carriage provided with means for rotating the work as the carriage travels along the way, a plurality of character units each provided with a plurality of characters mounted for independent adjustment whereby selected characters may be brought into parallel relation to said way, and means for actuating said carriage.

7. In a machine of the class described, the combination of a reciprocatingly mounted work carriage, indicia members adjustably mounted side by side and each provided with a plurality of characters whereby selected characters may be alined transversely of said indicia members, a way disposed transversely of said indicia members, and a carriage reciprocatingly mounted on said way and provided with work supporting and rotating means actuated by the movement of the carriage on the way to roll the work across the alined characters on the actuation of the carriage.

8. In a machine of the class described, the combination of a plurality of character units, each provided with a plurality of characters whereby they may be adjusted to aline the desired characters transversely of said character members, a carriage way disposed transversely of said character units, and a carriage traveling on said way and provided with work supporting and rotating means whereby the work is rotated on the actuation of the carriage.

9. In a machine of the class described for marking golf balls, the combination of a reciprocatingly mounted work carriage, and marking characters disposed with their faces in a plane parallel to the path of the carriage, said carriage being provided with means actuated by the movement of the carriage for rotating the work as it is carried across the marking characters.

10. In a machine of the class described for marking golf balls, the combination with a marking means, of a carriage traveling in a plane parallel to the plane of the face of the marking means, work supporting rollers on said carriage, and means whereby said rollers are rotated to roll the work across the marking characters upon the actuation of the carriage.

11. In a machine of the class described for marking golf balls, the combination of a reciprocatingly mounted carriage, means for rotatably supporting the work on said carriage actuated to rotate the work by the actuation of the carriage, and marking characters disposed in a plane parallel to the path of the carriage so that the work is rotatably engaged with said marking characters upon the actuation of the carriage.

12. In a machine of the class described, the combination of a reciprocatingly mounted work carriage, character members mounted in opposed relation to said carriage, a marking ribbon, guiding and supporting means for said ribbon whereby it is supported in operative relation to said characters, an actuating lever having a lost motion operating connection to said carriage, a feed roller for said ribbon, and operating connections for said lever to said feed roller whereby the ribbon is advanced during the initial stroke of the lever and prior to the actuation of the carriage.

13. In a machine of the class described, the combination of marking characters, a marking ribbon operatively associated with said characters and provided with feed means, a work carriage for traversing the work across said characters in rolling contact with the ribbon, and a manually operated means for actuating said carriage having a lost motion connection with said carriage and operatively connected to said marking ribbon feed means whereby the marking ribbon is shifted in advance of the actuation of the carriage.

14. In a machine of the class described, the combination of a plurality of character units each provided with a plurality of characters and supported so that they may be adjusted to align the desired character transversely of the character units, means for rotating and simultaneously traversing the work across said character units, the work rotating means being independent of the rotation that results from the engagement of the work with the character units, and a marking element operatively connected to said work traversing means whereby the marking element is actuated by the carriage actuating means prior to the work stroke of the carriage.

15. In a machine of the class described, the combination of a plurality of character units each provided with a plurality of characters and supported so that they may be adjusted to align the desired character transversely of the character units, and means for rotating and simultaneously traversing the work across said character units, the work rotating means being independent of the rotation that results from the engagement of the work with the character units.

In witness whereof we have hereunto set our hands.

CHARLES E. BROMAN.
WALTER H. NOWAK.