T. J. Lovegrove,

Casting Shot and Shell.

No. 48,022. Patented May 30, 1865.

Fig. 2.

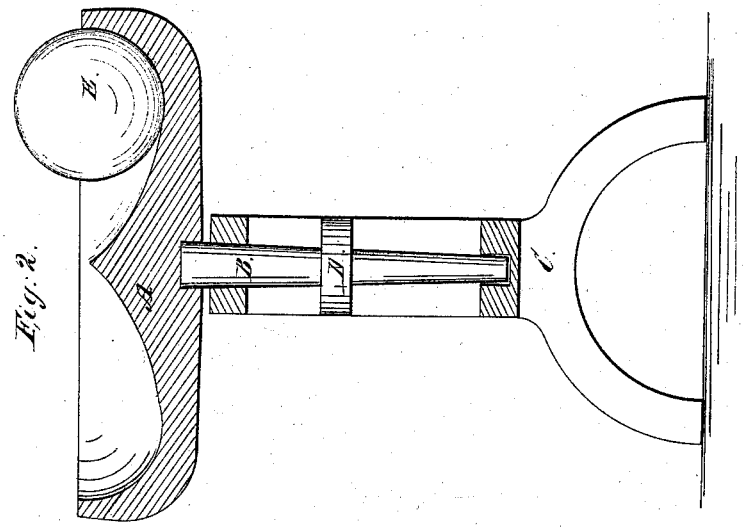
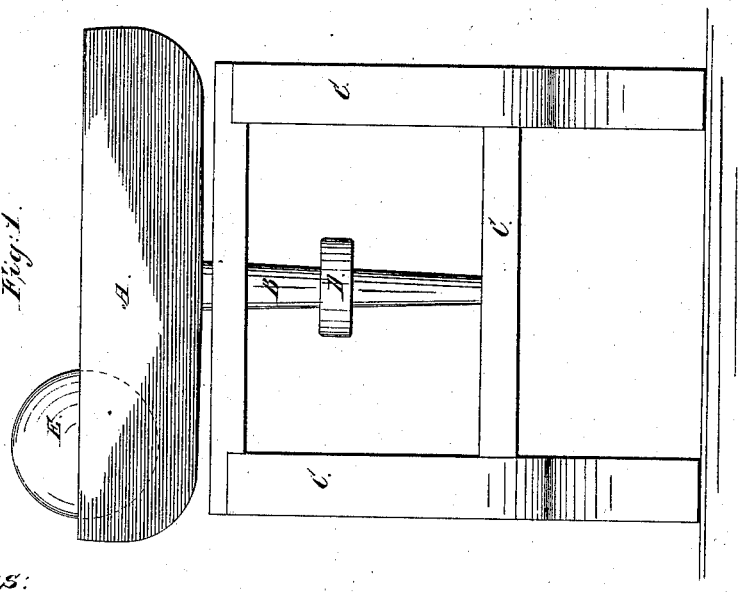


Fig. 1.



Witnesses:

Wm. W. Baldwin

John A. Zuberschmidt

Inventor:

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UNITED STATES PATENT OFFICE.

THOS. J. LOVEGROVE, OF PHILADELPHIA, PA., ASSIGNOR TO HIMSELF AND HENRY BALDWIN, JR., OF SAME PLACE.

IMPROVEMENT IN CASTING SHOT AND SHELL.

Specification forming part of Letters Patent No. **48,022**, dated May 30, 1865.

To all whom it may concern:

Be it known that I, THOMAS J. LOVEGROVE, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Casting Shot or Shell, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a view in elevation of my improved apparatus for carrying out the objects of my invention, and Fig. 2 a vertical central section through the same at right angles to the position shown in Fig. 1.

It is the object of my invention to cast shot and shell of uniform density, and thus promote the accuracy of their flight; and to this end my improvement consists in the use of a spherical mold placed loosely on a dish or table, to which a spinning motion is imparted, thus leaving the mold free to revolve in any direction.

In the accompanying drawings, which show one way of effecting the object of my invention, a dish, saucer, or table, A, is shown as mounted on a vertical axis, B, having its bearings in a stout frame, C, and being provided with a pulley, D, around which a band may pass, to give it the requisite rotation; or it may be rotated by gearing, if preferred. I prefer to make the dish A with a convex projection in the center, sloping outward toward the circumference, as shown in Fig. 2, as by this form of construction the spherical mold E is always kept near the circumference when accidental interruptions to its rotation may occur.

The operation of casting is as follows: The desired quantity of molten metal having been poured into the mold E through a gate, (and the gate closed with chalk or clay to prevent its escape,) the mold is placed upon the dish A, to which a rotary movement is imparted. The mold E is thus caused to roll about in various directions until the metal has been properly distributed and become set. It is obvious that a preponderance of weight at any point of the circumference of the mold would tend to depress that point, and thus alter the axis of rotation of the mold, thus insuring the uniform distribution of the metal in the shell. The mold can be made in hemispherical or other shaped sections, so as to permit the shell to be removed. It is obvious that when shot are cast instead of shell, the same law of rotation will produce an equalization of the density of all parts thereof.

It has been attempted heretofore to cast shells by using a mold revolving on a fixed axis; but this plan failed to secure the desired uniform thickness or density, owing to the fact that there was necessarily a fixed point in the mold around which the metal could settle without disturbance—viz., the axis of motion. This objection is, however, entirely obviated by my improvement, as the axis of rotation of my mold is constantly changing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Casting shot and shell in a spherical mold, and afterward rotating said mold on a concave or dished surface, substantially in the manner described, for the purpose set forth.

2. The combination of a rotating concave table having a raised conical center with a spherical mold rolling freely thereon, as described.

In testimony whereof I have hereunto subscribed my name.

T. J. LOVEGROVE.

Witnesses:

WM. D. BALDWIN,
HENRY BALDWIN.