

H. J. & W. T. WINTHERLICH.
 Process and Machine for Making Drop-Shot.
 No. 224,858. Patented Feb. 24, 1880.

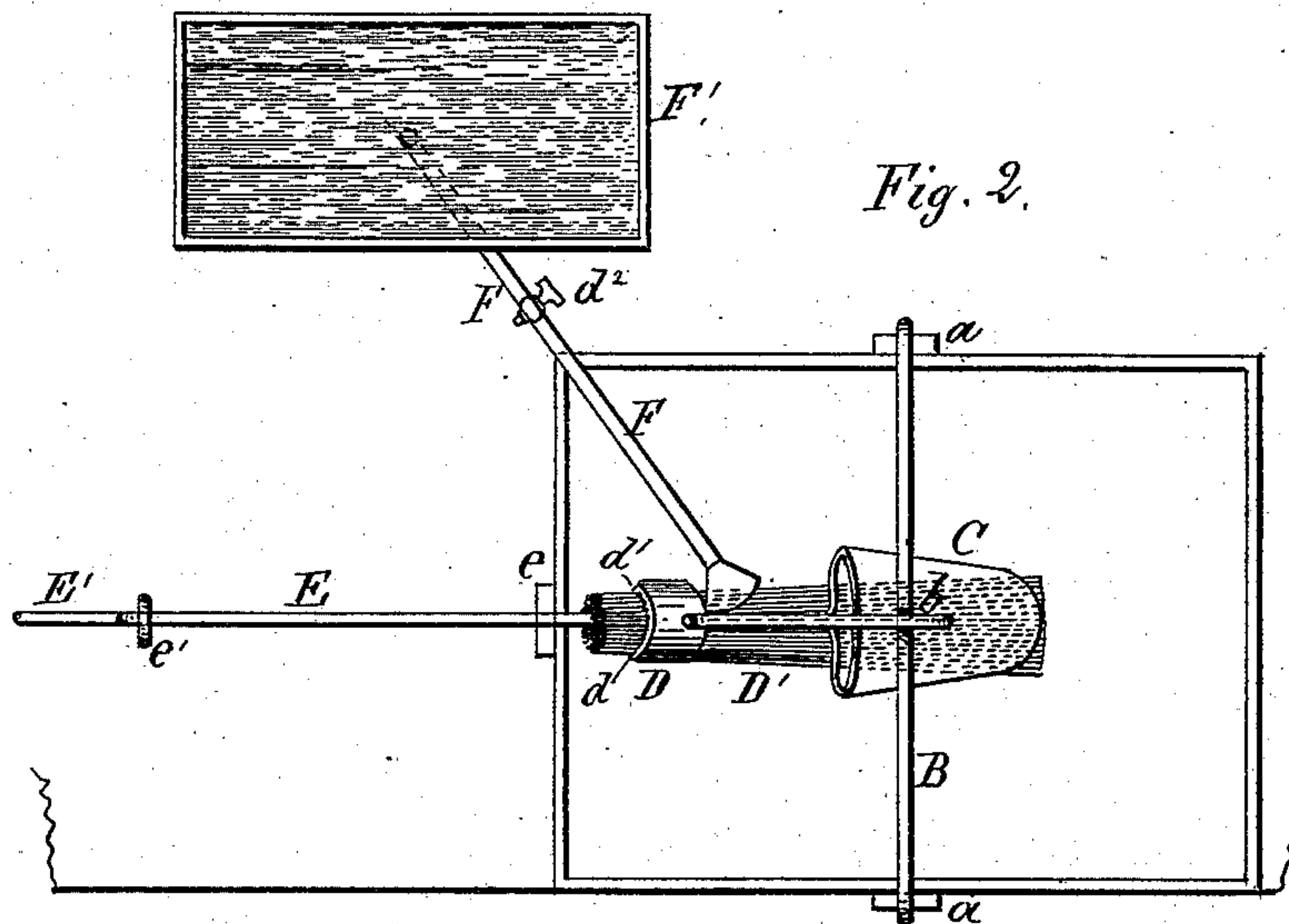


Fig. 2.

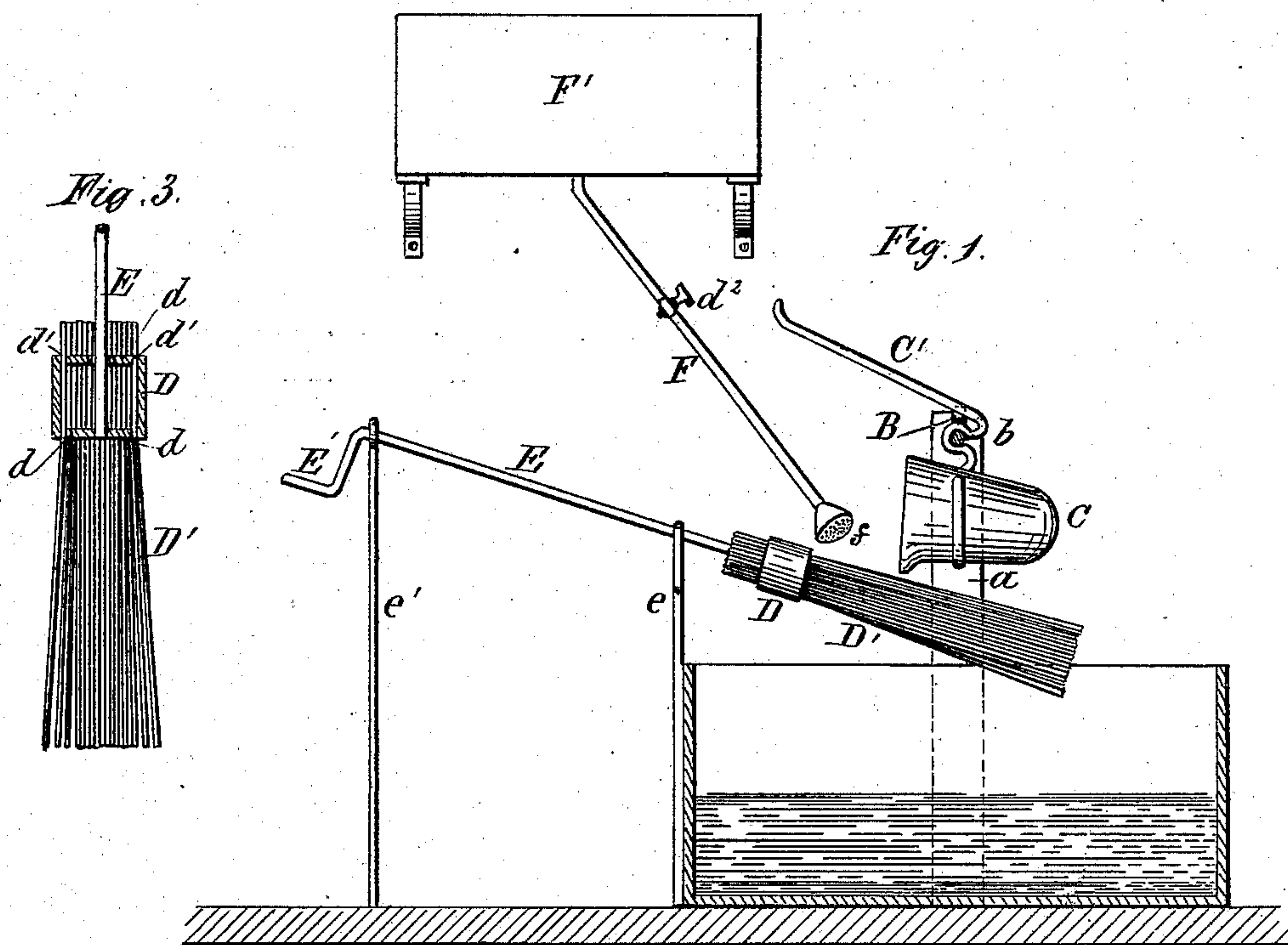


Fig. 1.

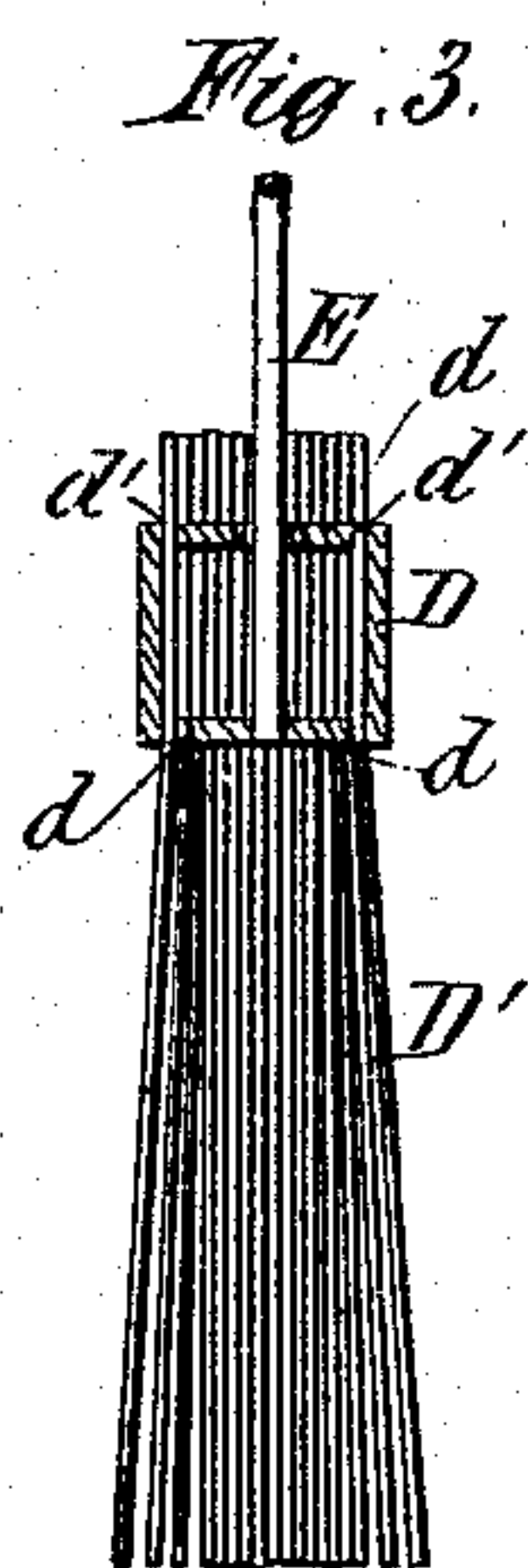


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

HANS J. WINTHERLICH AND WALDEMAR T. WINTHERLICH, OF CHICAGO, ILL.

PROCESS AND MACHINE FOR MAKING DROP-SHOT.

SPECIFICATION forming part of Letters Patent No. 224,858, dated February 24, 1880.

Application filed April 7, 1879.

To all whom it may concern:

Be it known that we, HANS J. WINTHERLICH and WALDEMAR T. WINTHERLICH, of Chicago, in the county of Cook and State of Illinois, have jointly invented a New Process and Machine for Making Drop-Shot from Iron, of which the following is a specification.

This invention consists, first, in the process of making the drop-shot from molten iron; second, in a machine by which the process is perfected.

In the drawing, A represents a water-tank, made of a proper size to accommodate the work to be done, and of any suitable material. A waste-pipe or water-escape is provided, so that the water will not overflow the tank.

a a are upright supports attached to the sides of the tank at the proper point and extending up to a proper distance to support a cross-bar or rod, B, in their upper ends, which are so made in form as to hold the rod in position without turning. Centrally of the length of rod B is a downward bend, *b*. This rod is removable at will.

C is a pot or crucible to hold fused iron. C' is a handle to lift and carry the pot C by from the furnace to the cross-bar B, when it is placed in the bend *b* of bar B.

Other constructions than the handle, such as cross-tongs, may be used to suspend the pot and allow its contents to be poured out by turning the pot partly over, as the object is to securely take hold of the heated pot or crucible by such means that the pot can be easily carried, and when in position be turned partly over to discharge its molten contents gradually.

D is a short cylinder with heads *d*, that are closely perforated with small holes *d'*, the holes in one head being coincident with or agreeing with those in the opposite head.

D' is a body of fiber, broom-like in form, which is constructed from wood fiber, or from any other suitable substance. One end of each fiber is inserted in the holes *d'* of the cylinder-heads D and the other end free, and the fibers forming the broom are so placed that, while they are in close proximity, they should not bear upon each other, and yet be free to yield to any pressure or force applied thereto.

E is a long crank-shaft firmly attached to

the head of the cylinder D opposite the brush D', and rests in supports *e* and *e'*, to be inclined, or the crank end E', considerably higher than the brush end, and so constructed that it and the brush can be easily rotated, or partially rotated, back and forth by the crank E' or other means. Shaft E may be hollow, and water be supplied to the fiber through it.

F is a hose or other pipe coming from a water-reservoir, F', or other water-supply, and has a finely-perforated rose, *f*, at its delivery end, and so located that the water passed through it impinges directly upon the brush D', and has proper cocks *d²* or means to regulate the amount of water passing through the rose *f*.

Operation: The molten iron is brought in the pot or crucible C from any convenient furnace for melting the iron, the crucible suspended by its handle or cross-tongs to the rod B. Water is flowing through the rose *f* onto brush D', which is being quickly rotated by the crank-shaft E, and at the same time the molten iron is gradually poured from the crucible to also fall upon the brush D', the action of the brush in revolution under the weight of the molten metal, together with the contact of the water on the fiber or splints, throws the molten metal from the brush into separate globules, which, according to natural law, assume the form of a perfect sphere of solid metal when they fall into the tank of water below to cool, and are then ready to be sized and polished or finished ready for sale.

Drop-shot made from iron, while of less specific gravity than lead, have greater hardness, a better polish or finish on the surface, and, by being smoother, have less friction in passing through the air, hence greater penetrating power; and iron being much cheaper than lead, shot made from iron would also be much cheaper than shot made from lead.

We are not aware that drop-shot were ever before produced by the process or machinery above described from any metal.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The process herein described of producing drop-shot from iron by first melting the

iron, then gradually pouring the molten iron upon a revolving broom composed of parallel fibers that are continually wet with water, which separates the molten iron into numerous
5 solid globules that then fall into water and are cooled, substantially as set forth.

2. In a machine for producing drop-shot from molten iron, the combination of a pot or crucible, C, containing the molten metal, the

revolving broom D', water-pipe F, having rose 10 f, with water-tank A, as and for the purpose described.

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Witnesses:

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