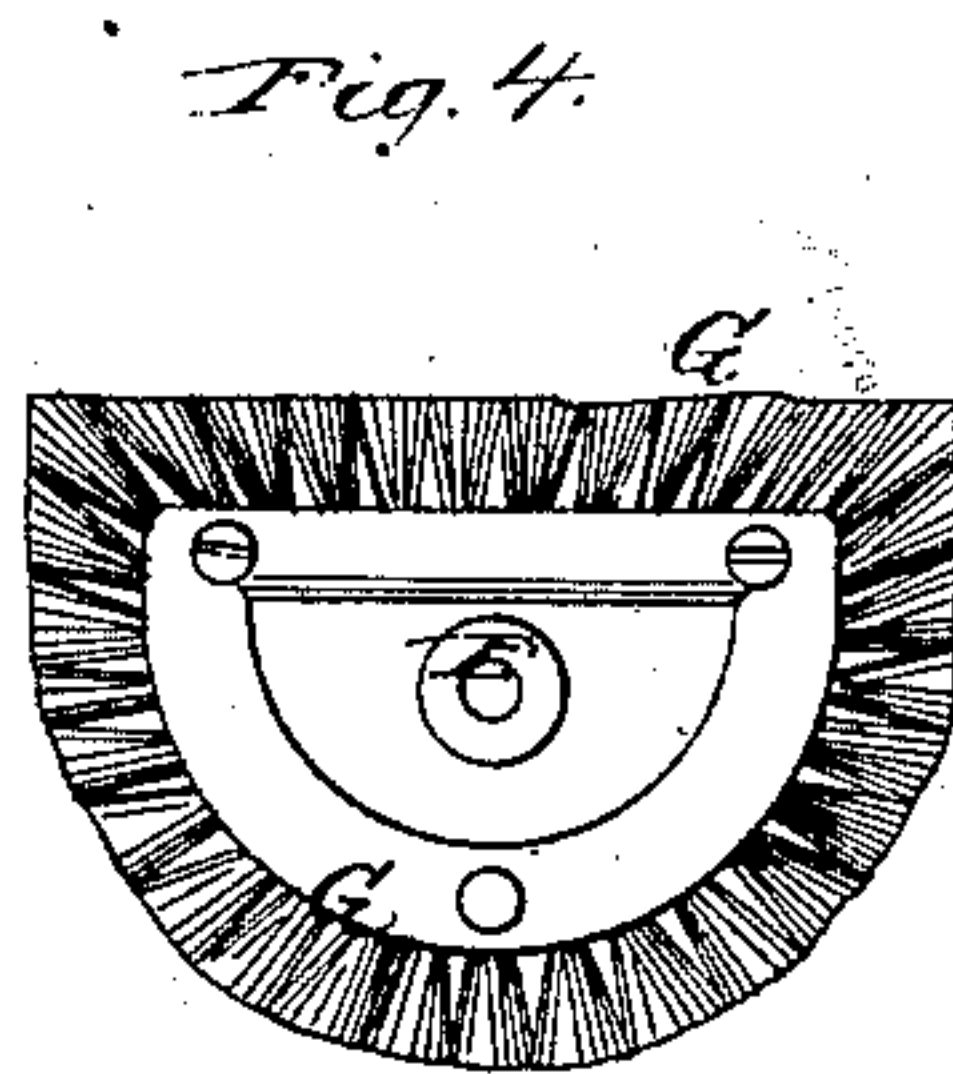
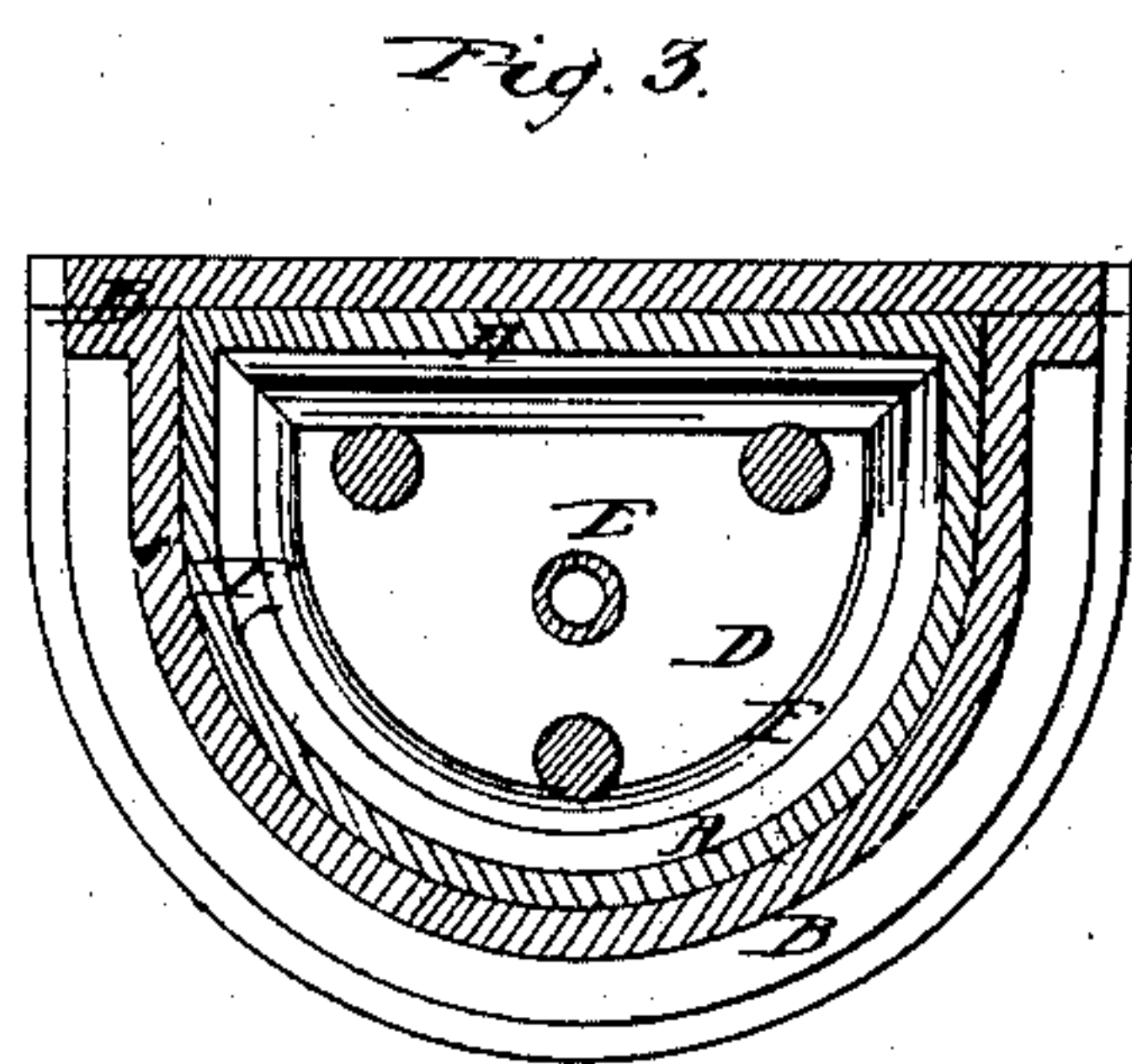
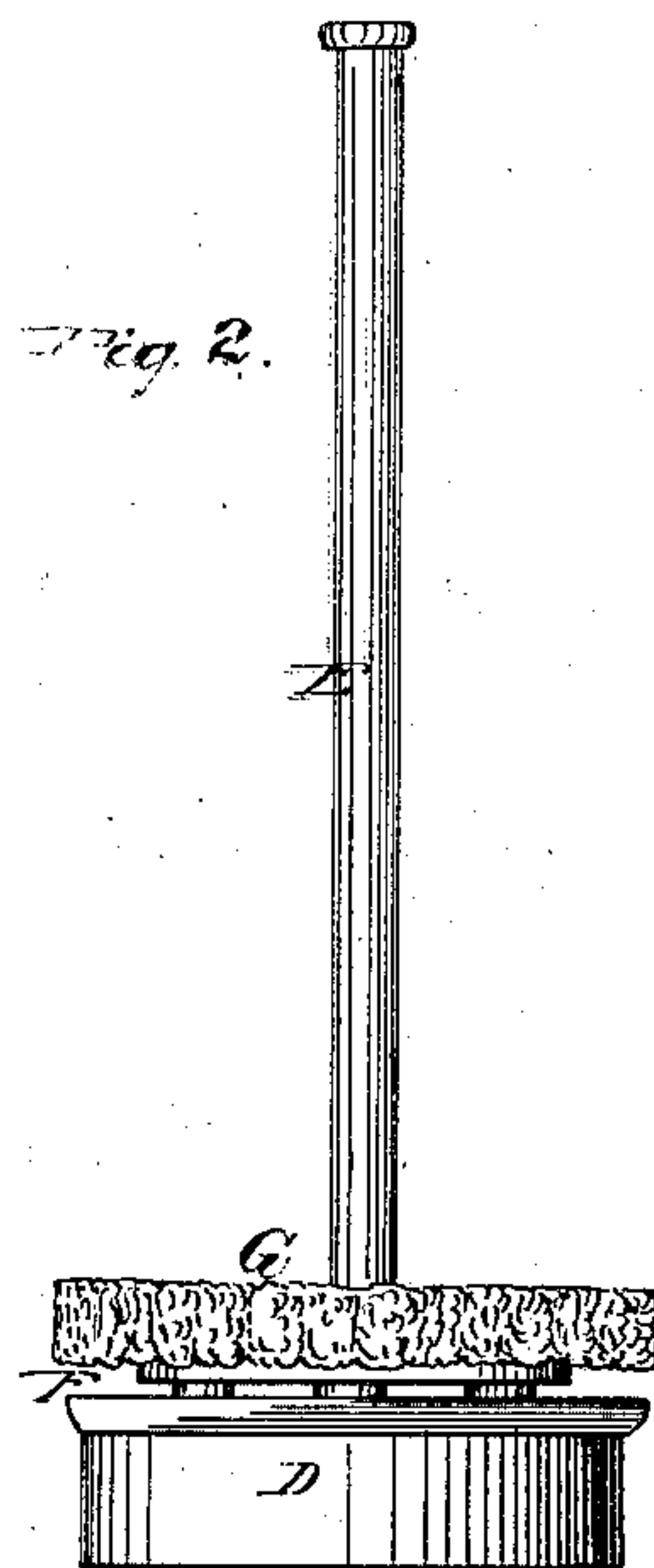
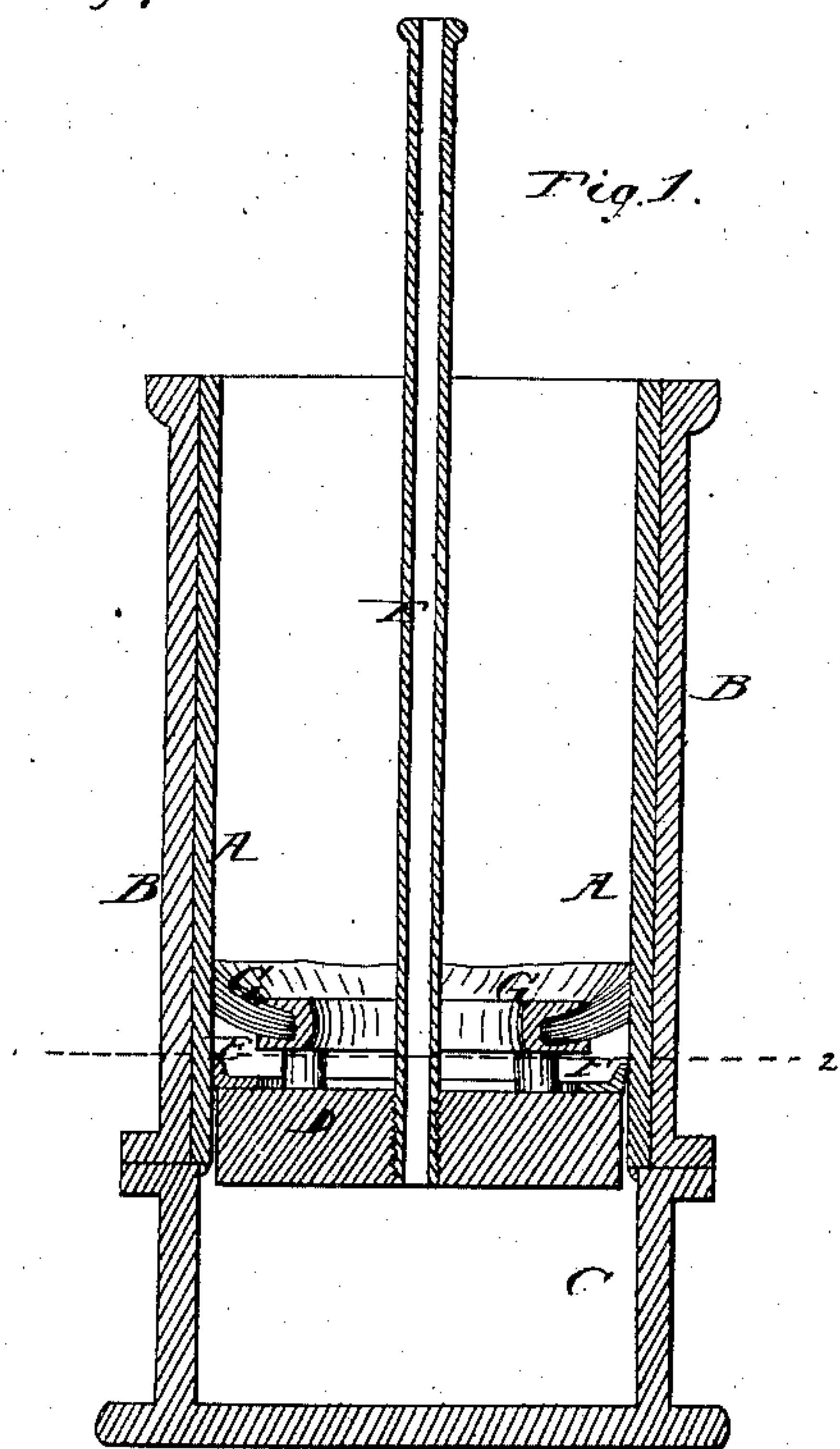


W. & D. Ferguson,
Blacking Pipe Molds.

N^o 27,438.

Patented Mar. 13, 1860.



Witnesses

E. Maher
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WILLIAM FERGUSON AND DAVID FERGUSON, OF NEW YORK, N. Y.

IMPROVEMENT IN BLACKWASHING MOLDS FOR CASTINGS.

Specification forming part of Letters Patent No. 27,438, dated March 13, 1860.

To all whom it may concern:

Be it known that we, WILLIAM FERGUSON and DAVID FERGUSON, of the city, county, and State of New York, have invented a new and useful Method of Blackwashing Retort, Pipe, and other Molds for Castings; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a vertical section of a retort flask and mold and the device for blackwashing the latter. Fig. 2 is an elevation of the piston and its attachments. Fig. 3 is a horizontal section of the retort flask and mold and the device for blackwashing at the line 1 2 of Fig. 1. Fig. 4 is a top view of the blackwash brush above the piston.

Similar letters in the figures refer to corresponding parts.

The nature of this invention consists in blackwashing the molds of retorts, pipes, or other castings by means of a piston attached to a hollow or other rod, and having felt cloth or other porous materials secured next the edges of its upper surface, and a brush above it corresponding with the form of the mold, or by either the piston-rod and felt cloth or other material or brush and rod alone, in such a manner as to enable the blackwash to be more expeditiously and equally distributed over the surface of the mold than by the system heretofore adopted for blackwashing.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The sand mold A represented in the drawings is designed for part of a retort, and is formed in the flask in the usual manner. The latter is provided with flanges at its lower end for securing it by clamps or other suitable means to the flanges of a corresponding-formed box, C, a little larger inside than the inner area of the mold. This box C is closed at the bottom, and may be either deposited in a pit or secured on the surface of the earth, as desired. The piston D is made a slight degree smaller than the mold, so as to freely pass through the same, and the rod E, by which it is moved, is made hollow, for allowing the escape of the air from below, and has a screw formed on its end, by which it is readily attached or detached, as occasion may require.

A doubled piece or strip of felt cloth, F or other suitable porous material is secured on the upper surface of the piston D, next to and entirely around the edges of the same, which cloth projects a short distance beyond the said edges, so that when inserted in the mold from above its flexible edges will be raised to the position represented in Fig. 1, and pressed against the inner surface of the mold A, and entirely prevent the passage of the blackwash. Immediately above the piston, and on short studs rising from the upper surface of the same, is secured a brush, G, corresponding in form with the mold. Its block or frame is open at the center to admit the passage of the blackwash, and, being attached to the studs by screws, it is detachable at pleasure. This brush G may be made of bristles, hair, or other suitable elastic material, and being larger than the mold, its outer portions are pressed against the said mold when inserted therein, and made to assume the position represented in Fig. 1.

The operation of blackwashing the mold is as follows: The piston D being inserted in the upper end of the mold so as to bring the flexible edges of the felt cloth F a short distance below the top of the same, the blackwash is poured upon the piston, and simultaneous therewith the said piston and its attachments are enforced entirely through the mold into the more enlarged space of the box C below. During the quick passage of the piston through the mold the air below it is allowed to escape through the hollow rod E, by which it is guided, and the saturated felt cloth F or other material around the edges of the piston D and the brush G are caused to press against the mold with the required degree of force to thoroughly and smoothly blackwash its entire inner surface. The hollow rod E is then unscrewed from the piston, and the flask B, containing the mold A, unclamped and removed from the box C below, as well as the piston and its attachments and blackwash.

The use of the brush G may be dispensed with, and the mold blackwashed by the felt cloth F alone; but it is preferable to combine the two, as the elastic force with which the bristles or other material of which the brush is formed is pressed against the mold smoothes the blackwash, and enables it to be pressed into the corners more effectually than it would

be by the cloth alone. In like manner the use of the cloth F may be dispensed with, and its place supplied by bristles, hair, or other suitable material so attached to the piston D as to form in fact a brush somewhat similar to the one described.

This system of blackwashing is applicable to all kinds of hollow molds, whether of the form represented in the drawings or circular, oval, octagonal, or other shape, and in case the mold contains grooves or other inequalities the use of the brush G is indispensable to properly lay the blackwash over their surfaces. In case the piston-rod E is made solid the box C must have a vent for the escape of the air during the descent of the piston.

What we claim as new, and desire to secure by Letters Patent, is—

Blackwashing retort, pipe, or other molds by means of the piston D, provided with the hollow rod E, and having felt cloth F or other material around its edges, and brush G, combined, or by either the piston and felt cloth or brush G separately, or equivalent devices supplied with the blackwash and operating as before described.

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DAVID FERGUSON.

Witnesses:

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ABM. BARTHOLF.