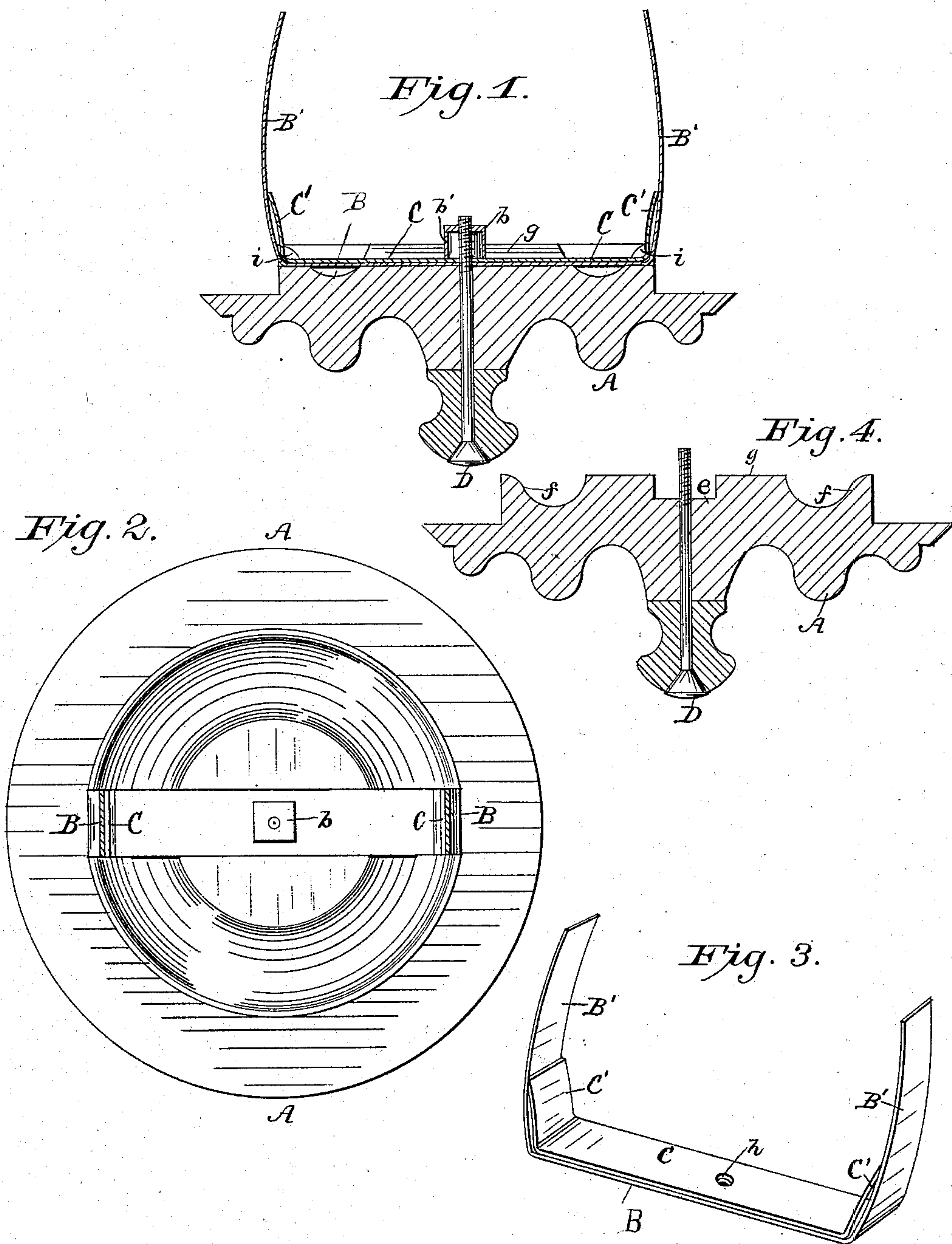


(No Model.)

F. G. ARTER.
FLUE STOPPER.

No. 255,755.

Patented Apr. 4, 1882.



WITNESSES

J. M. Burnham.
Wm. G. McMillan Jr.

INVENTOR

Francis G. Arter
By Hyland Macdonald

Attorney

UNITED STATES PATENT OFFICE.

FRANCIS G. ARTER, OF LIMA, OHIO, ASSIGNOR OF ONE-HALF TO GEORGE HALL, OF SAME PLACE.

FLUE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 255,755, dated April 4, 1882.

Application filed November 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS G. ARTER, of Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Flue-Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to stoppers for pipes and flues, whereby smoke, soot, hot air, &c., are prevented from escaping from said pipes or flues.

The invention consists in a stopper-cap made of porcelain or iron-ware and provided with a groove across its inside face to form a seat for a compound spring, which holds the stopper-cap in position when inserted in the chimney.

It further consists in details of construction that will be more fully set forth in the specification and claims and pointed out in the accompanying drawings, in which—

Figure 1 is a vertical section of the stopper and springs; Fig. 2, a plan view of the stopper; Fig. 3, a perspective view of the spring, and Fig. 4 a vertical section of the stopper-cap.

Heretofore stopper-caps have been made of plaster-of-paris, sheet metal, or wood. To each of these there is an objection. Plaster-of-paris will chip and break easily, and, moreover, is expensive. Metal will become indented. Wood is liable to warp, and may take fire from the hot air. To overcome these well-known objections I make my stopper-cap of porcelain, which is hard and not easily chipped or broken.

Referring more particularly to the drawings, A is the stopper-cap, having a groove, *e i*, cut across the inside face, so as to provide a seat for a compound spring, consisting of two metallic pieces, B C, having arms B' C' of unequal length, and having their ends curved in opposite directions. The arms B' are intended to enter the flue and press against the sides, and thus prevent the stopper from slipping from the flue. Now, in order to effectually do this, I make the arms C' of spring-piece C short and curved outward to the arms B'. This tends

to force the arms B' outward, at or near the bearing-point of said arms, against the sides of the flue, so that an ordinary jar or movement will not loosen the stopper. The stopper-cap is perforated for the reception of a bolt, D, which also passes through a central hole, *h*, in the spring. This bolt passes through a thimble, *b'*, resting on the spring-piece C, and enters a nut, *b*, on the thimble. This thimble *b'* and nut *b* prevent the spring from slipping up and down on the bolt. By seating the spring in the groove, as described, any tendency to slip or turn is obviated.

I am aware that flue-stoppers have been made with springs inserted in holes in the stopper. I am also aware that they have been made of plaster-of-paris, and with springs crossing each other and held by a pivot securing the movable register and flue-plate. I am not aware, however, that a flue-stopper cap has ever been constructed of porcelain and provided with a compound spring. Therefore,

Having described my invention, what I claim is—

1. The combination, with a flue-stopper cap made of porcelain, having a transverse groove across its inner face, of a holding-spring consisting of two parallel metallic pieces, B C, the arms B' C' of said pieces being of unequal lengths, substantially as shown and described, and for the purpose set forth.

2. A holding-spring for flue-stoppers, consisting of two parallel metallic pieces adapted to fit a transverse groove in the inside face of the stopper-cap, and having arms B' C' of unequal lengths, substantially as described, and for the purpose set forth.

3. The combination, with a flue-stopper cap made of porcelain, grooved and perforated as described, of the holding spring-pieces B C and thimble *b'*, substantially as described, and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANCIS G. ARTER.

Witnesses:

W. L. MACKENZIE,
ISAAC S. MOTTER.