

No. 725,038.

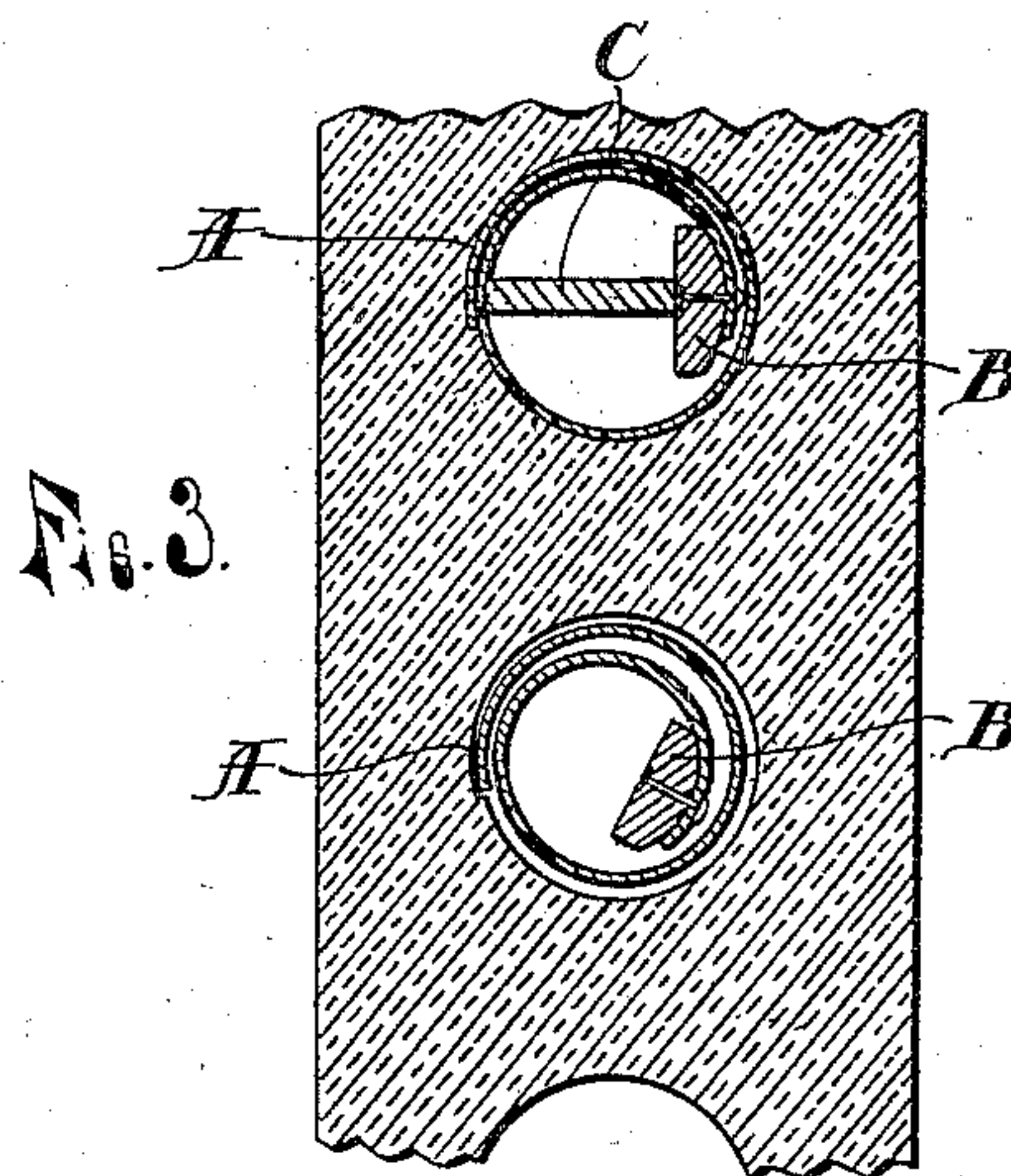
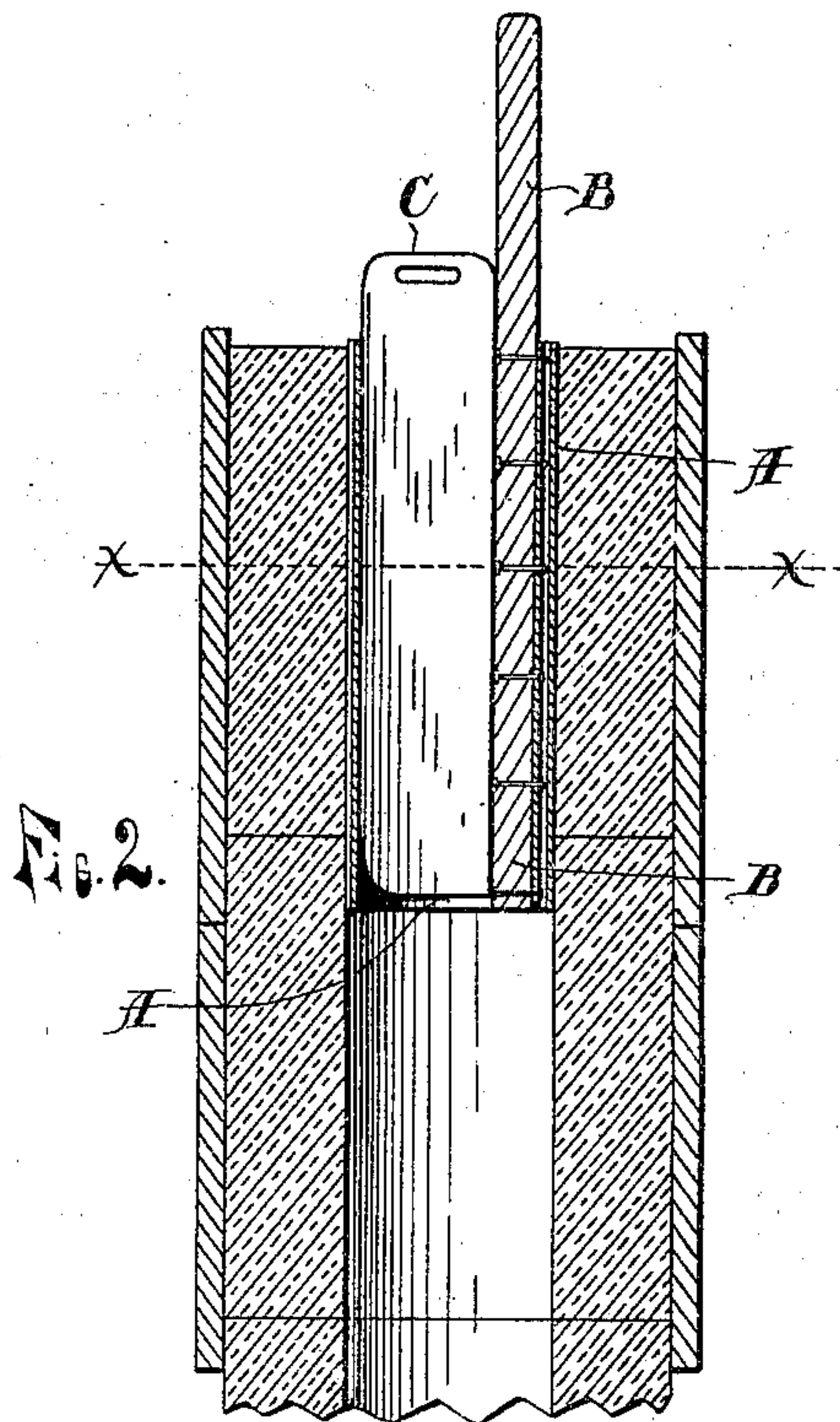
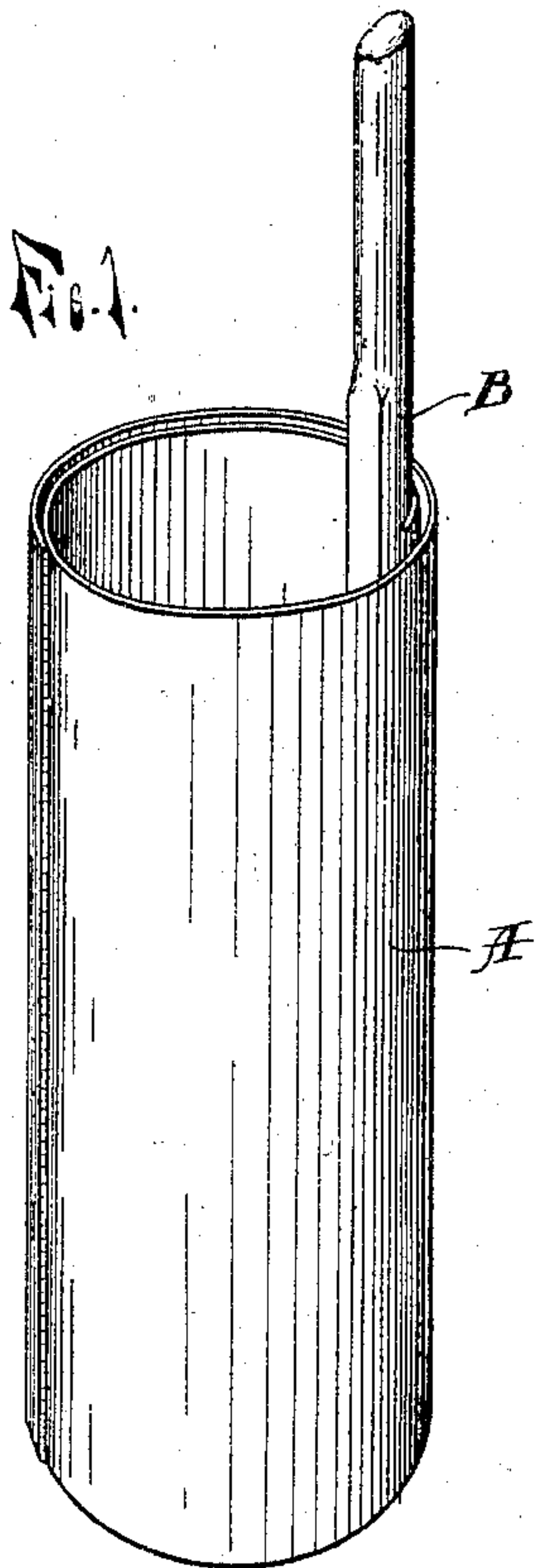
PATENTED APR. 14, 1903

W. H. CADWELL.

DEVICE FOR BUILDING CEMENT OR CONCRETE STRUCTURES
WITH HOLLOW WALLS, FLUES, &c.

APPLICATION FILED OCT. 13, 1902.

NO MODEL.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM H. CADWELL, OF WAYNE, MICHIGAN.

DEVICE FOR BUILDING CEMENT OR CONCRETE STRUCTURES WITH HOLLOW WALLS, FLUES, &c.

SPECIFICATION forming part of Letters Patent No. 725,038, dated April 14, 1903.

Application filed October 13, 1902. Serial No. 127,013. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CADWELL, a citizen of the United States of America, residing at Wayne, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Devices for Building Cement or Concrete Structures with Hollow Walls, Flues, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates more specifically to the art of building structures of cement and concrete with hollow walls, chimney-flues, and like openings by placing a suitable device or former into the outside mold and pouring the cement or concrete around it, the former being withdrawn after the cement or concrete has set sufficiently to maintain itself.

The object of my invention is to make a collapsible former of simple and inexpensive construction and adapted to be used in lieu of the ordinary tin or metal tube now in use for the purpose; and to this end my invention consists in a collapsible metal tube formed of a coiled sheet of metal, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved former. Fig. 2 is a vertical central section showing my improved former in position in a cement wall. Fig. 3 is a horizontal section on line *x x* of Fig. 2, showing one former in position for use and another in its contracted condition within the wall.

A is an open-ended tube formed with overlapping and unsecured edges by rolling or coiling a single piece of sheet metal of suitable size into tubular or equivalent form, and B is a bar secured to the inner edge thereof and projecting outwardly at one end beyond the end of the tube.

In practice the former is placed in the mold in the usual manner, and the material is then filled in, and after it becomes sufficiently set so that it will stand alone the former is withdrawn, thereby having a flue or hollow space in the wall. With non-collapsible tubes the withdrawal is attended with great difficulties on account of the surface adhesion between the cement and the former and the workmen resort to hammering and like means to loosen the tube, and this not only soon batters the

tube out of shape, but the walls of the flue are thereby injured. This is overcome by my construction, which permits of loosening the tube by giving the bar B, which serves as a handle in withdrawing it, a rotary or twisting motion, the effect of which is to slightly contract the tube, thereby breaking it loose from the cement or material without the least injury to the wall of the flue, as the contraction is not due to a radially-operating force, as in the usual construction of collapsible formers, but to a rotatorily-operating force, as in winding a clock-spring.

In many cases it will be found necessary to prevent the former from being contracted through the mere pressure of the material, and to prevent this I provide a suitable core-piece, which when inserted into the interior of the former braces its inner wall against outside pressure. An ordinary block of wood of a size to fit the interior of the former will serve the purpose; but preferably I only use a board C, which when placed diagonally across the interior space, as shown in Fig. 3, is ordinarily sufficient to brace it interiorly. This brace is preferably made a little longer than the former and provided with a suitable handhold to facilitate its insertion and withdrawal, and it will be understood that it has to be withdrawn from the former before the former itself is taken out of the material. The bar B may also be provided with a cross-bar (not shown) or any other form of handhold for facilitating the application of power to the former for the purpose of contracting it. The necessity of an interior core or brace of course depends largely upon circumstances and also upon the nature of the material from which the former is made, for which I consider sheet-steel, such as used for stovepipe, well adapted. Also tin, galvanized sheet-iron, or like material may be used.

In building hollow cement walls it will often be necessary to have formers of different sizes. This necessity I obviate in a large measure by providing a considerable overlap, so that within certain limits the diameter of the former may be enlarged or reduced, and in connection therewith I use braces or cores of various sizes, all of which will be readily understood.

It is to be understood that the former need

not be precisely a cylinder, but may be any form approaching the cylindrical, and such forms are included within the scope of my invention, and it is also obvious that my invention is adapted to other modifications, such as making the bar B detachable, whereby a single bar may be used with a number of formers.

My invention may also be applied for building horizontal flues, openings, and the like in cement-work of every kind.

Having thus fully described my invention, what I claim is—

1. A flue-former for cement walls, &c., composed of an open-ended tube of resilient material and having overlapping portions wholly free and disconnected from each other, and means on the inner lapping portion of the tube for applying a winding force tending to contract the tube similar to winding a clock-spring upon an arbor.

2. A flue-former for cement walls, &c., composed of an open-ended tube of sheet metal having unsecured and overlapping portions and a bar secured to the inner lapping portion of the tube parallel to the axis of the

tube and projecting without the tube at one end thereof, said bar adapted to form a coiling-arbor for contracting the tube.

3. A flue-former for cement walls, &c., composed of an open-ended tube of resilient material and having unsecured and overlapping edges whereby said tube may be temporarily contracted, a bar secured to the inner one of said edges and projecting beyond one end of the tube, and a core or interior brace for the tube.

4. A flue-former for cement walls, &c., composed of an open-ended metallic tube having overlapping longitudinal edges, a bar secured to the inner one of said edges and projecting endwise through one end of the tube and means removably inserted within the tube for interiorly bracing it against outside pressure.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. CADWELL.

Witnesses:

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