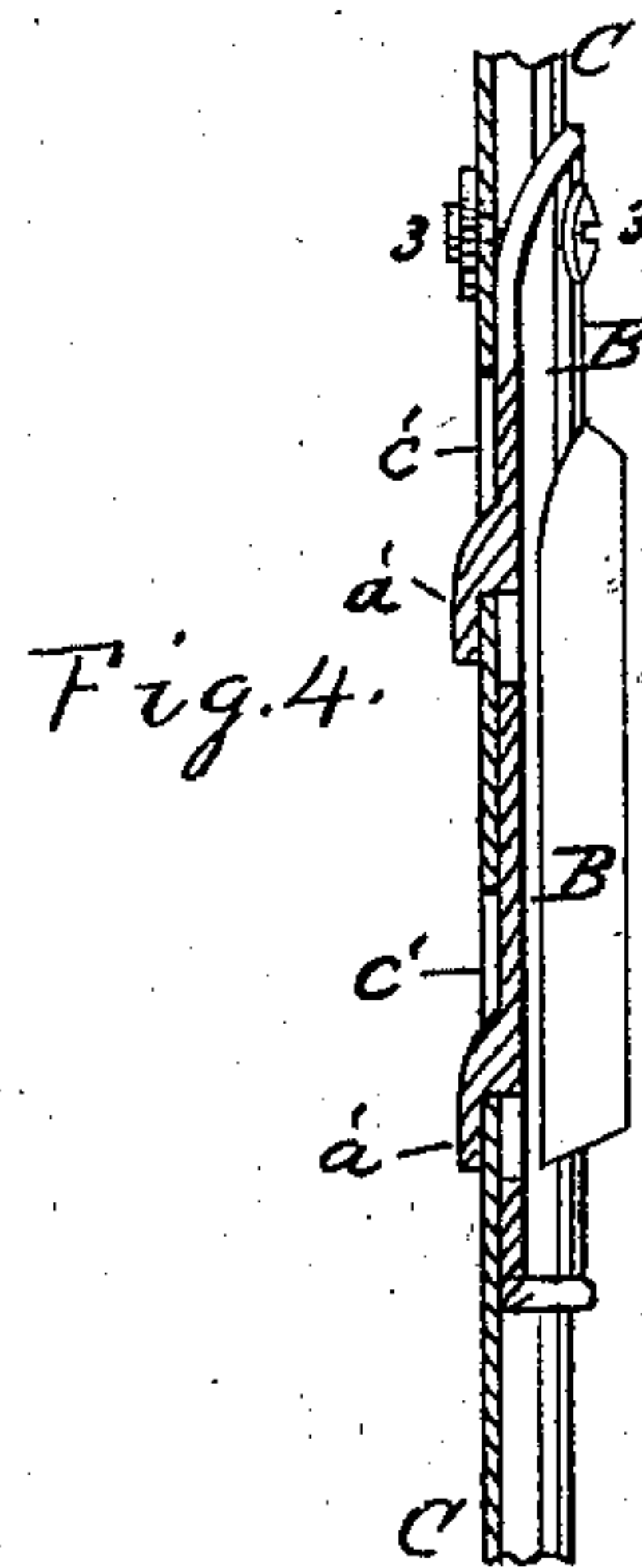
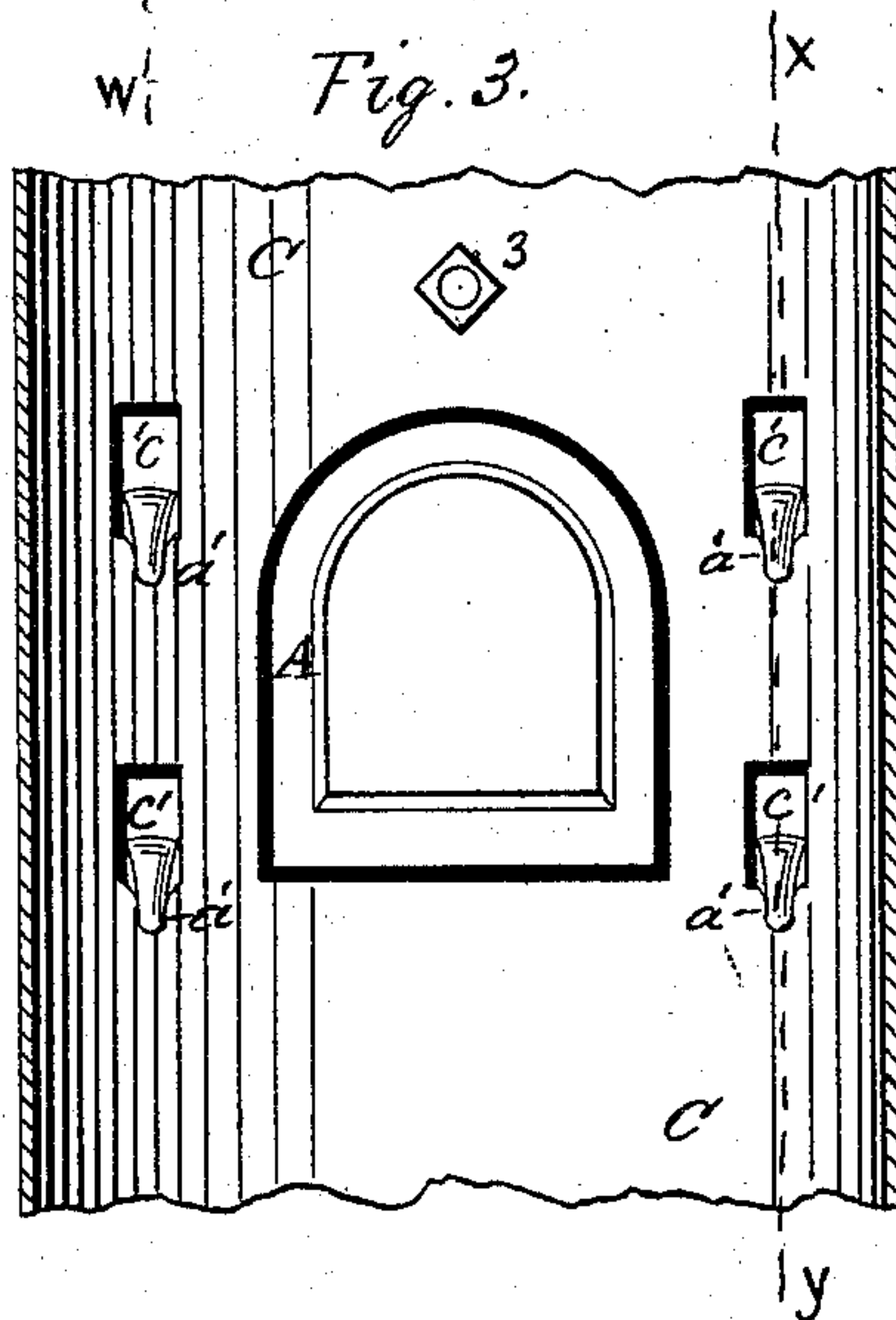
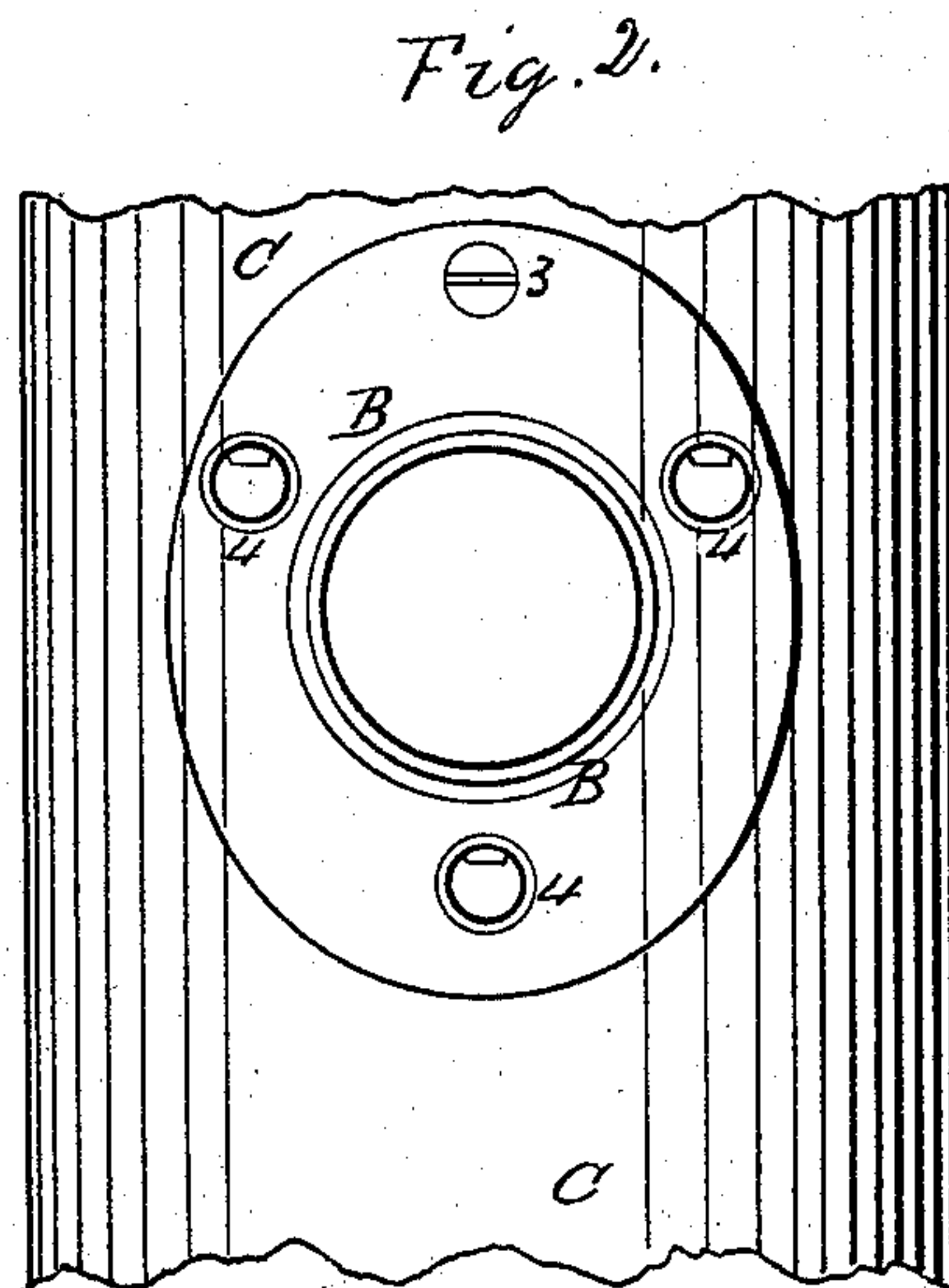
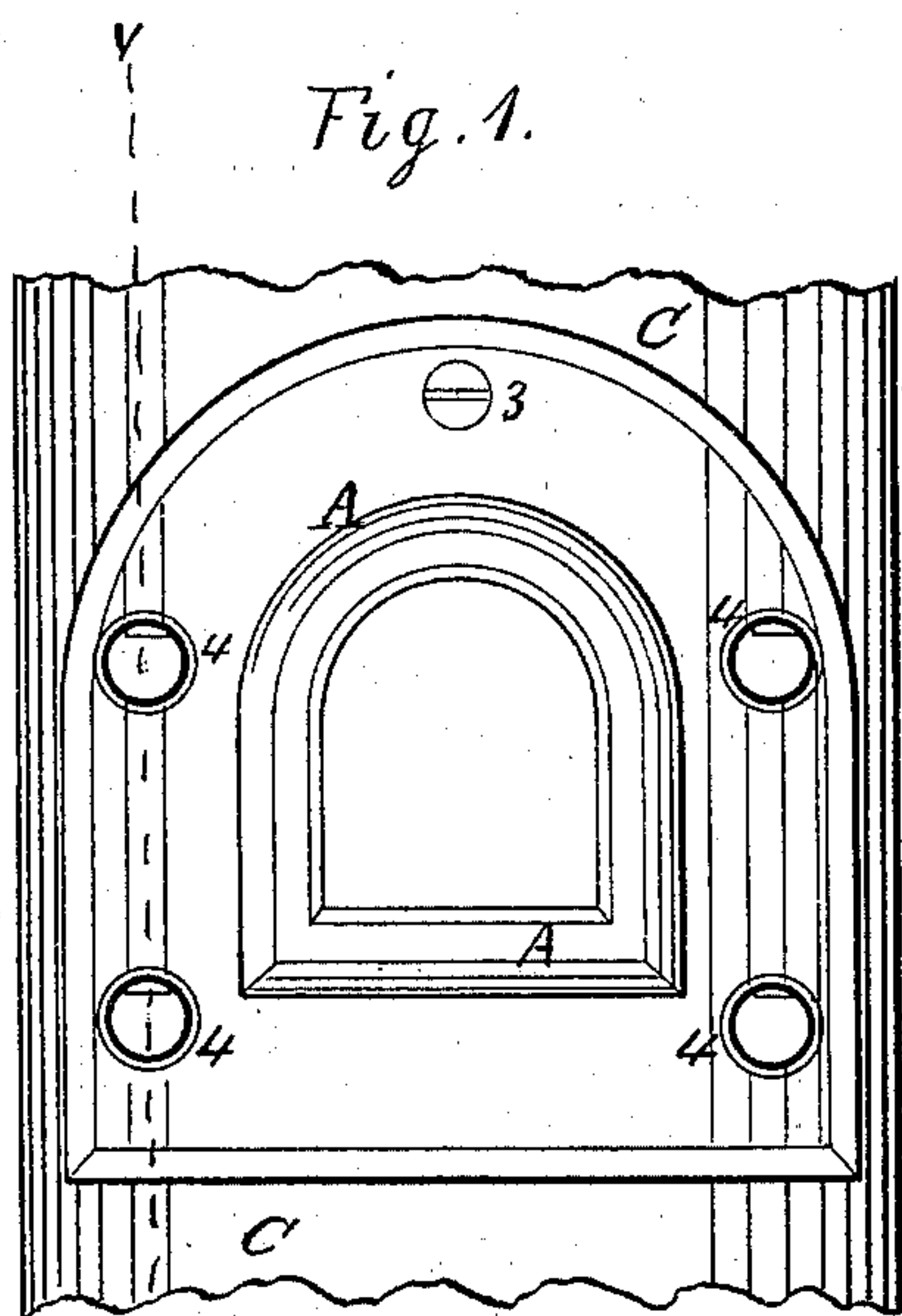


S. SMITH.
Stove-Door Frames.

No. 137,328.

Patented April 1, 1873.



WITNESSES:

Benj. Morison,
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INVENTOR:

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UNITED STATES PATENT OFFICE.

SAMUEL SMITH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STOVE-DOOR FRAMES.

Specification forming part of Letters Patent No. 137,328, dated April 1, 1873; application filed February 19, 1873.

To all whom it may concern:

Be it known that I, SAMUEL SMITH, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in the Mode of Attaching the Cast-Metal Door-Frames and the Smoke-Pipe Nozzles to the Sheet-Metal Bodies of Stoves, of which the following is a specification:

My invention relates to a series of downward-projecting hooks or studs, cast simultaneously with the frame or nozzle, on the inner face or surface of the same, so that the said hooks or studs will enter and catch upon the respective edges of corresponding slots or holes made for the purpose in the sheet-metal bodies of the stoves, when the said frames or nozzles are applied to the former, and thus hold the said frames or nozzles firmly in binding or close contact with the bodies of the stoves; the object of my said invention being to render the said frames and nozzles ready for application to the bodies of the stoves without any drilling or reaming of the former, and without requiring screw-bolts or rivets to secure the same to the bodies, as heretofore, and thus lessening the cost of the said frames and nozzles, and facilitating their subsequent application to the bodies of the stoves.

Figure 1 is a front view of a section of the cylindrical body of a stove, showing a door-frame applied thereto according to my invention. Fig. 2 is a front view of the stove-pipe nozzle applied to the opposite side of the section of the body of the stove, shown in Fig. 1, embodying my invention. Fig. 3 is a face view of the inner side of the section of the body of the stove, shown in Fig. 1, embodying my invention as applied thereto. Fig. 4 is a vertical section of the door-frame and the body of the stove on the right-hand side of the dotted line *vw*, of Fig. 1, or the left-hand side of the dotted line *xy*, of Fig. 3, showing my said invention applied to the said body of the stove.

A is the cast-metal door-frame; B, the cast-metal stove-pipe nozzle; C, the sheet-metal body of the stove; and *a' a'* the projecting hooks or studs on the inner side of the frame of the door or of the nozzle. The hooks or studs *a'* are cast on the inner or stove-body side of the frame A or nozzle B, so as to afford a sufficient open space between the free end of the same and the inner surface of the said

frame or nozzle. This I accomplish without making the pattern of the hook or stud as a detachable part of the frame or nozzle pattern, and also without the use of a "core-print," by simply making an opening, 4, through the flange of the said frame or nozzle, immediately below the point of attachment of the said hook or stud, so that the line of parting between the sand in the "flask-drag" and that in the "coping" will be in the surface-lines of the beveled edges of the opening 4 and the flat or concave side of the hook or stud *a'*, and consequently the lifting of the coping will clear the cavity bounded by the bevel-edges of the opening 4 and the concave face of the hook *a'*, and allow the pattern to be freely withdrawn from the "drag."

In applying these door-frames and nozzles to the stoves all that will be required of the stove-fitter will be, that he punch or cut holes through the sheet-metal body of the stove to correspond in positions with the relative positions of the hooks or studs *a'* on the said door-plate or nozzle, so that the said hooks or studs will be readily admitted and allowed to catch over and behind the sheet metal immediately below the holes in the said body of the stove, substantially as represented in Figs. 3 and 4, *c' c'*, being oblong rectangular holes for the purpose, when the said frame or nozzle is pressed downward sufficiently to cause that part of the sheet metal which is immediately below the holes *c'* to close the bevel-edged openings 4 in the flanges of the frame or nozzle, and at the same time cause the latter to be drawn closely and firmly against the outer surface of the body C of the stove, substantially as shown in Figs. 1, 2, and 4.

For the purpose of preventing the door-frame A or the nozzle B from being too easily or unintentionally lifted out of connection with the body of the stove, a small screw-bolt and nut, 3, may be inserted through the parts, as shown in the drawing.

It will be seen that my said improvement in the mode of attaching the cast-metal frames of doors and nozzles to the sheet-metal bodies of stoves, will afford facility in the operation, and therefore economy of time and labor, in that it dispenses with the drilling and reaming, and where the metal often becomes chilled, and therefore so hard as to require grinding,

dispensing with the latter necessity; because the whole frame or nozzle comes out of the flask in a condition ready for immediate application and secure attachment, and without the usual resort to numerous rivets or nutted screw-bolts for the purposes. Another advantage gained arises in cases where the sheet-metal body has become rusted or burned out, in that the door-frame and stove-pipe nozzle thereof can be readily detached and applied to the new body, without the necessity of cutting off rivets or rusted screw-bolts.

I claim as my invention—

The hooks or studs *a'*, in combination with the openings 4 in the door-frame A or nozzle B, or in either of them, the same being cast on simultaneously with the casting of the said door-frame or nozzle, substantially as and for the purposes hereinbefore set forth and described.

SAMUEL SMITH.

Witnesses:

BENJ. MORISON,
WM. H. MORISON.