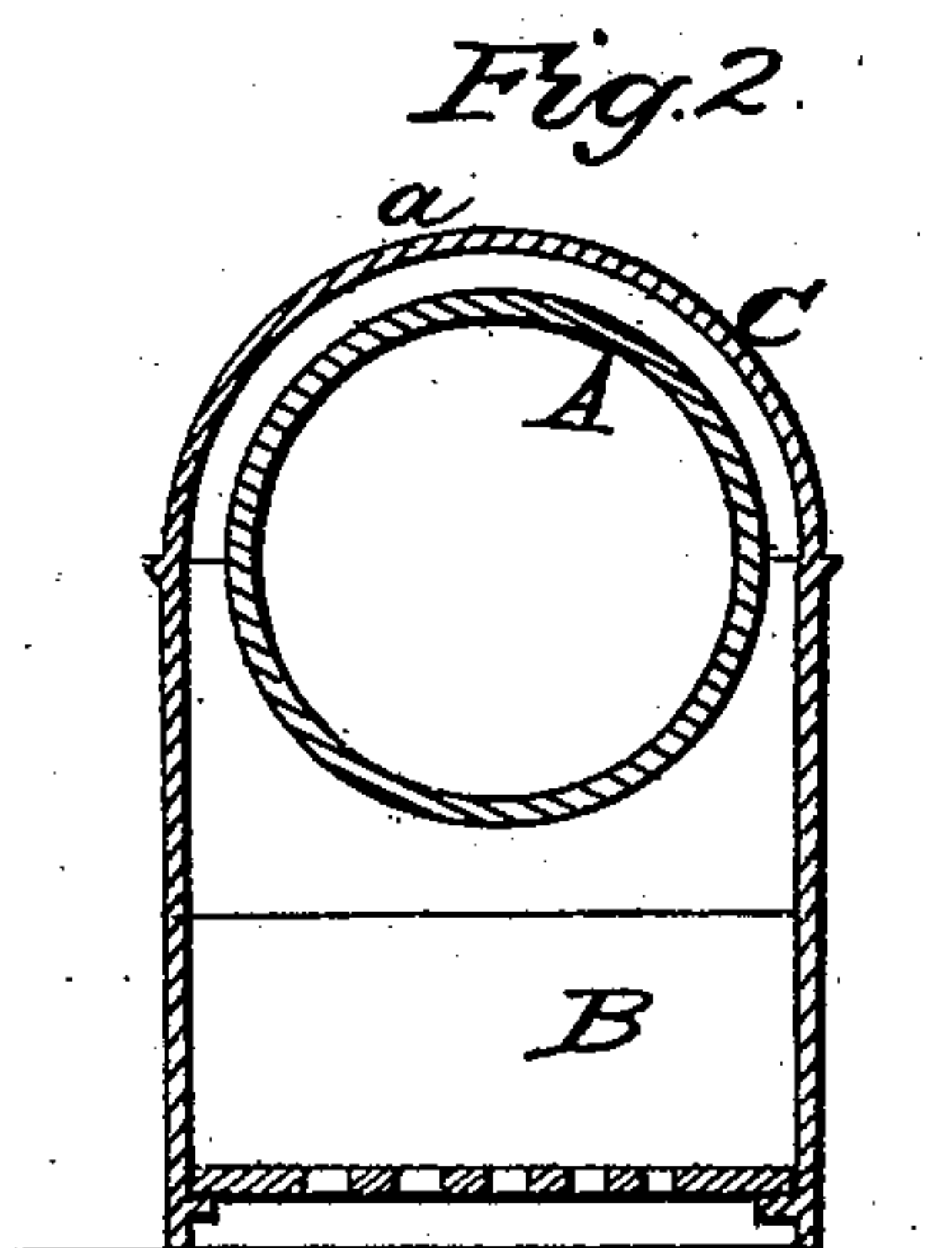
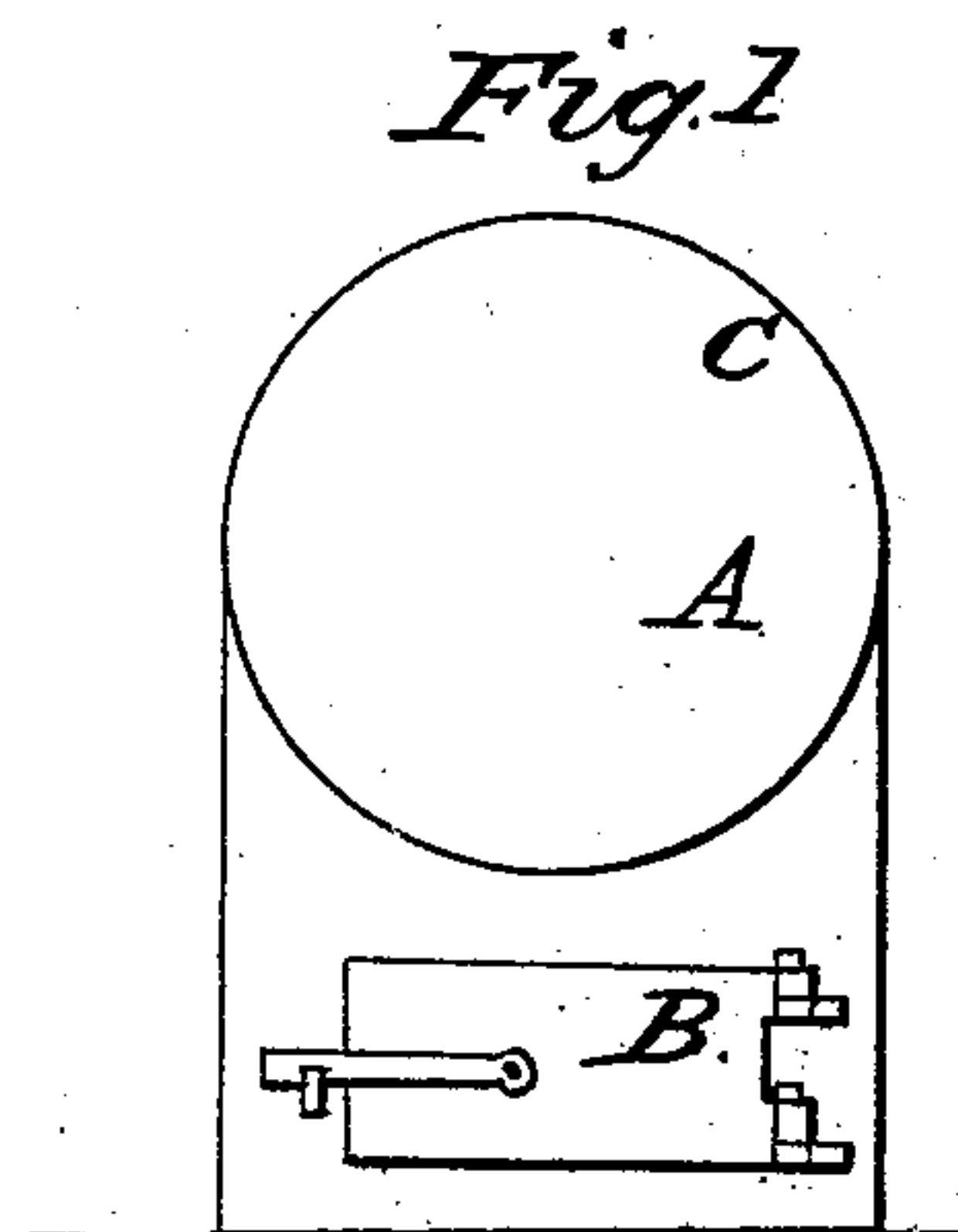
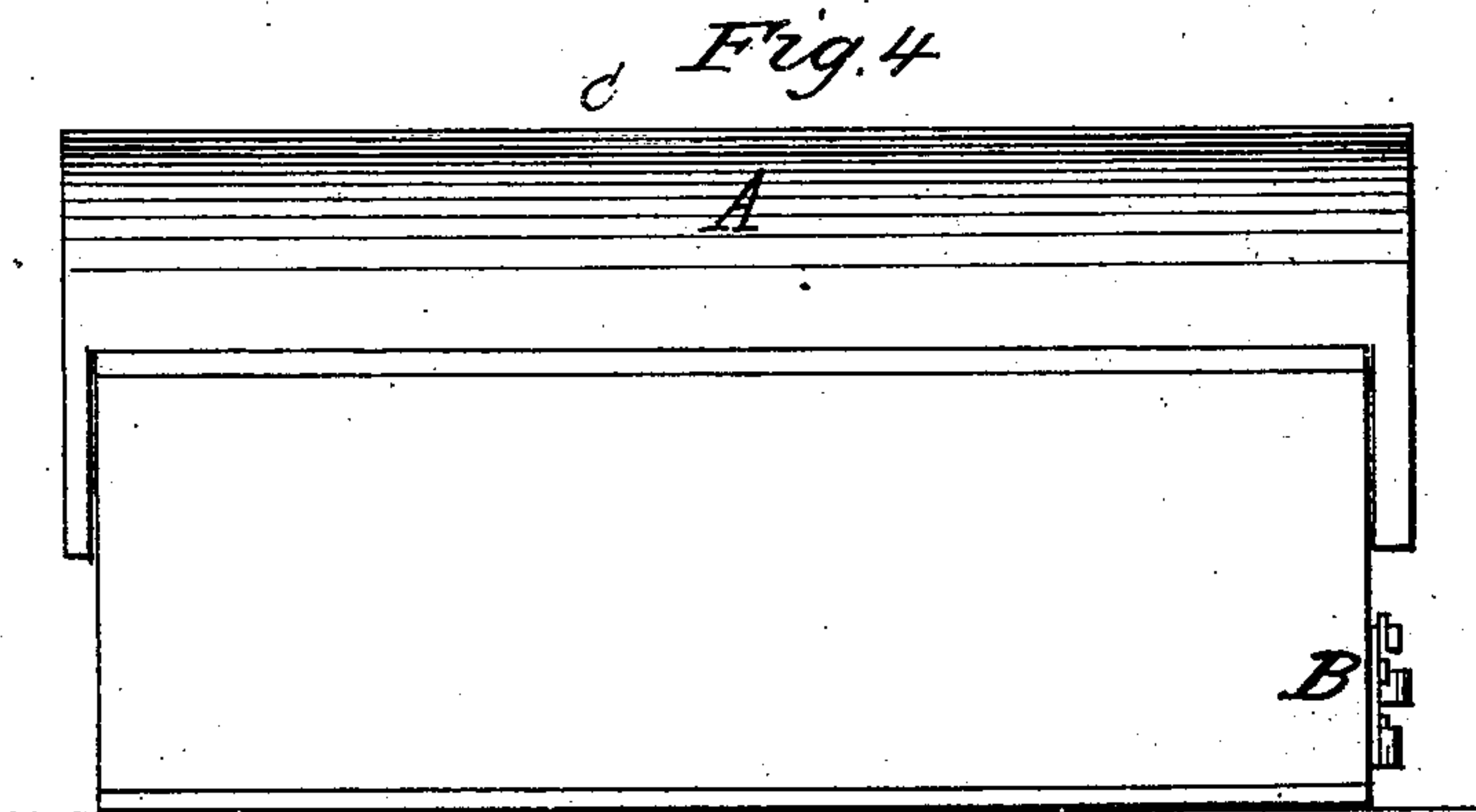
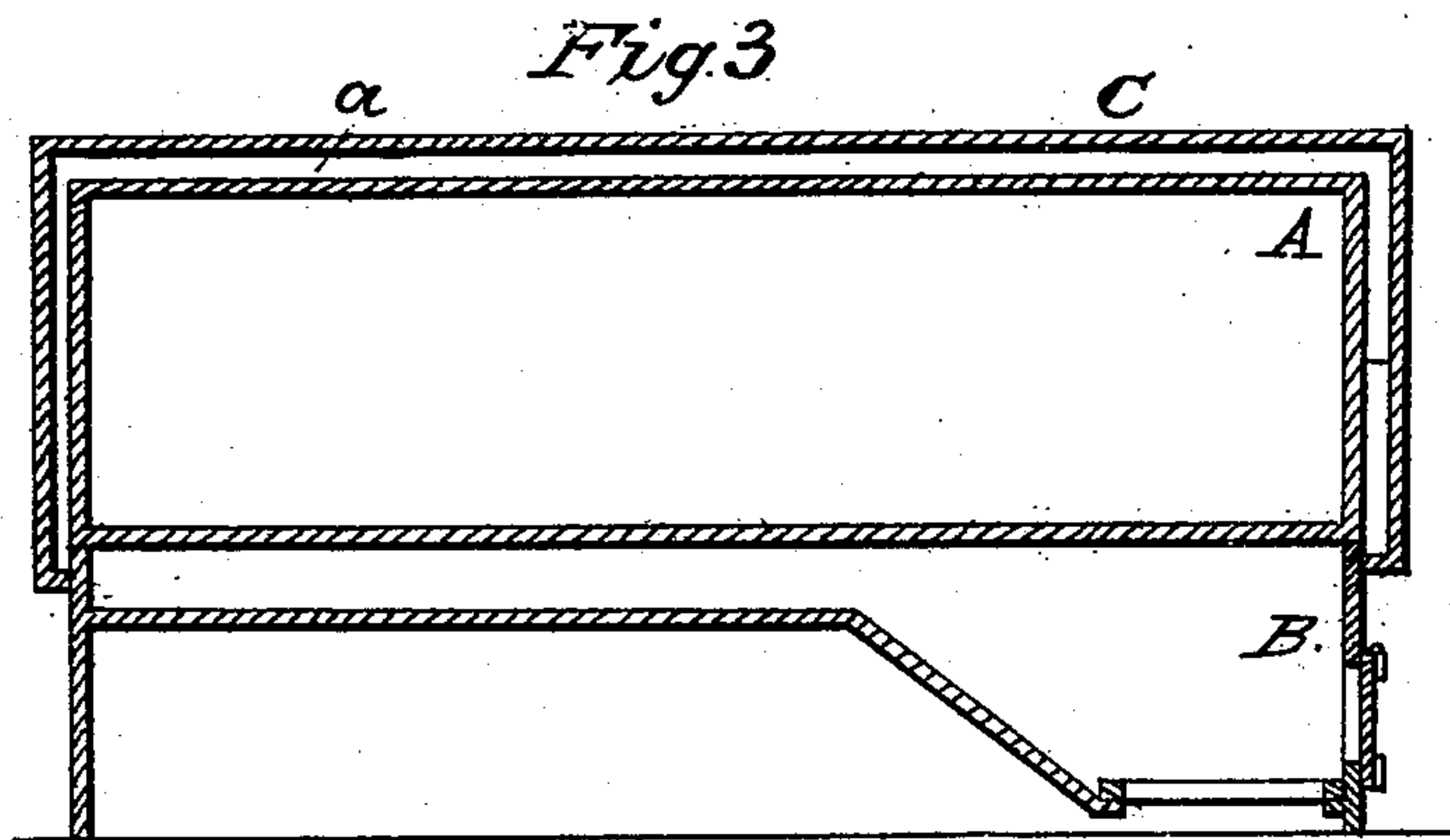


J. HARSHMAN.
Domestic Boiler.

No. 13,168.

Patented July 3, 1855.



UNITED STATES PATENT OFFICE.

JACOB HARSHMAN, OF DAYTON, OHIO.

IMPROVEMENT IN STEAM-BOILERS.

Specification forming part of Letters Patent No. 13,168, dated July 3, 1855.

To all whom it may concern:

Be it known that I, JACOB HARSHMAN, of Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in the Construction of Steam-Boilers, Stoves, and all Metallic Heat-Diffusing Apparatuses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a front view of a steam-boiler with my improvement applied to it. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a longitudinal vertical section of the same. Fig. 4 is a side view of the same.

This invention relates to a new and useful improvement in the construction of steam-boilers, stoves, and all metallic heat-diffusing apparatuses.

The nature of the invention consists in inclosing or covering the exterior surfaces of steam-boilers, stoves, &c., wholly or partially with sheet-copper.

A steam-boiler is represented in the drawings with my improvement applied to it.

A represents the boiler, which may be constructed in any of the known forms, the cylindrical form being represented in the drawings.

B is the fire-chamber underneath the boiler A.

The boiler A is covered with sheet-copper C, the covering extending over its upper part and down the sides as far as the fire-lines, as clearly shown in Figs. 2 and 3. The copper does not fit closely to the outer surface of the boiler. A space, *a*, is allowed between. (See Figs. 2 and 3.) The exterior surfaces of stoves, drums, and all heat-diffusing devices I also cover with sheet-copper, or such portions of the exterior surfaces as are exposed to heat.

By the above improvement I maintain that in the case of steam-boilers the copper covering holds a peculiar government over the elements within a boiler in affinity with certain external elements; that in certain localities there are elements surrounding the steam-room of boilers that will under certain conditions of heat unite in explosive proportion with the elements within, which results in terrific explosions. The copper covering C will conduct off the excess of caloric in such cases, which prevents the explosive union of these gases, so that violent explosions will be prevented. Ruptures, however, may take place if the pressure is raised beyond the strength of the boiler-plates; but such will seldom be the case. Besides, notice of ruptures is always obtained in consequence of leakages.

By applying the copper covering to stoves or any heat-diffusing device or apparatus the surrounding atmosphere is prevented from being vitiated by deleterious gases which emanate from the ordinary iron stoves in use. The heat is radiated more uniformly throughout a room—that is, the heat near the stove is not very much greater than that at the more remote parts of the room. The improvement is also well adapted to air-heating stoves, whereby pure and agreeable air may be conveyed to different apartments.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

Forming an external casing or covering of copper for stoves and all heat-diffusing devices or apparatuses and steam-boilers, in the manner and for the purpose as herein shown and described.

JACOB HARSHMAN.

Witnesses:

GEO. W. HANK,
B. F. EAKER.