

B. O'Neill,
Steam-Boiler Furnace.
N^o 7,962. *Patented Mar. 4, 1851.*

Fig. 2.

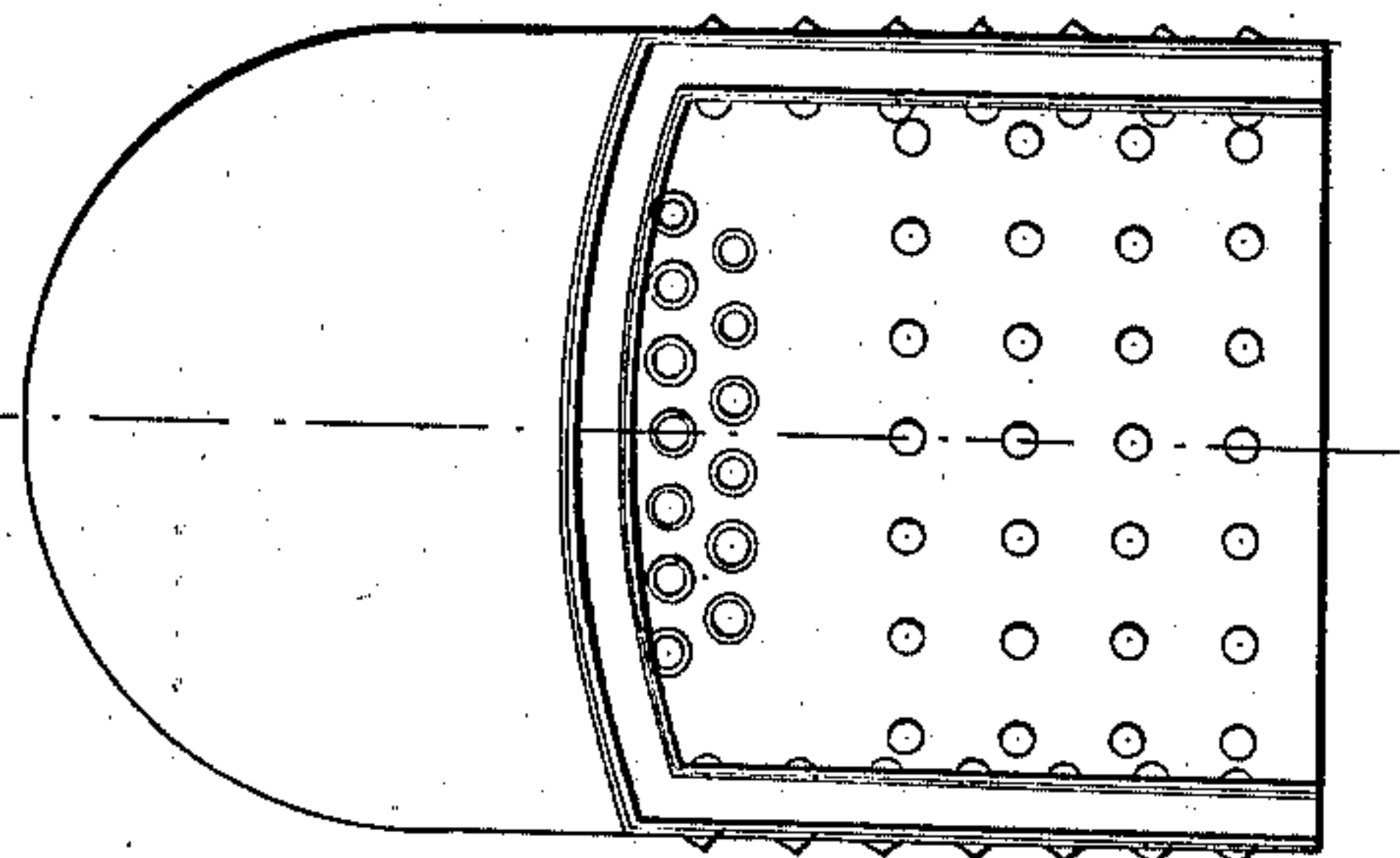


Fig. 4.

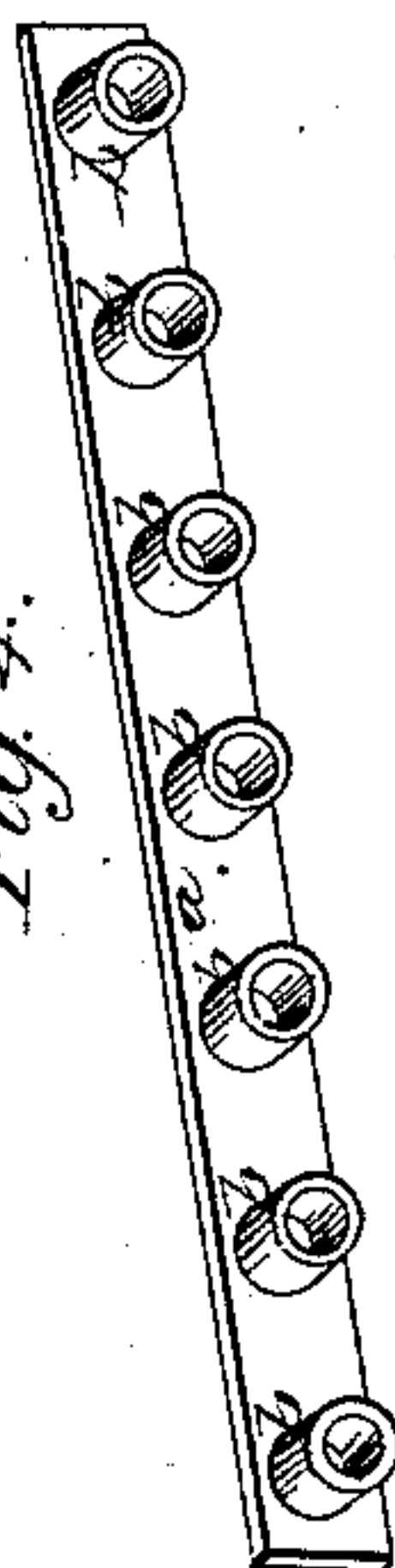


Fig. 1.

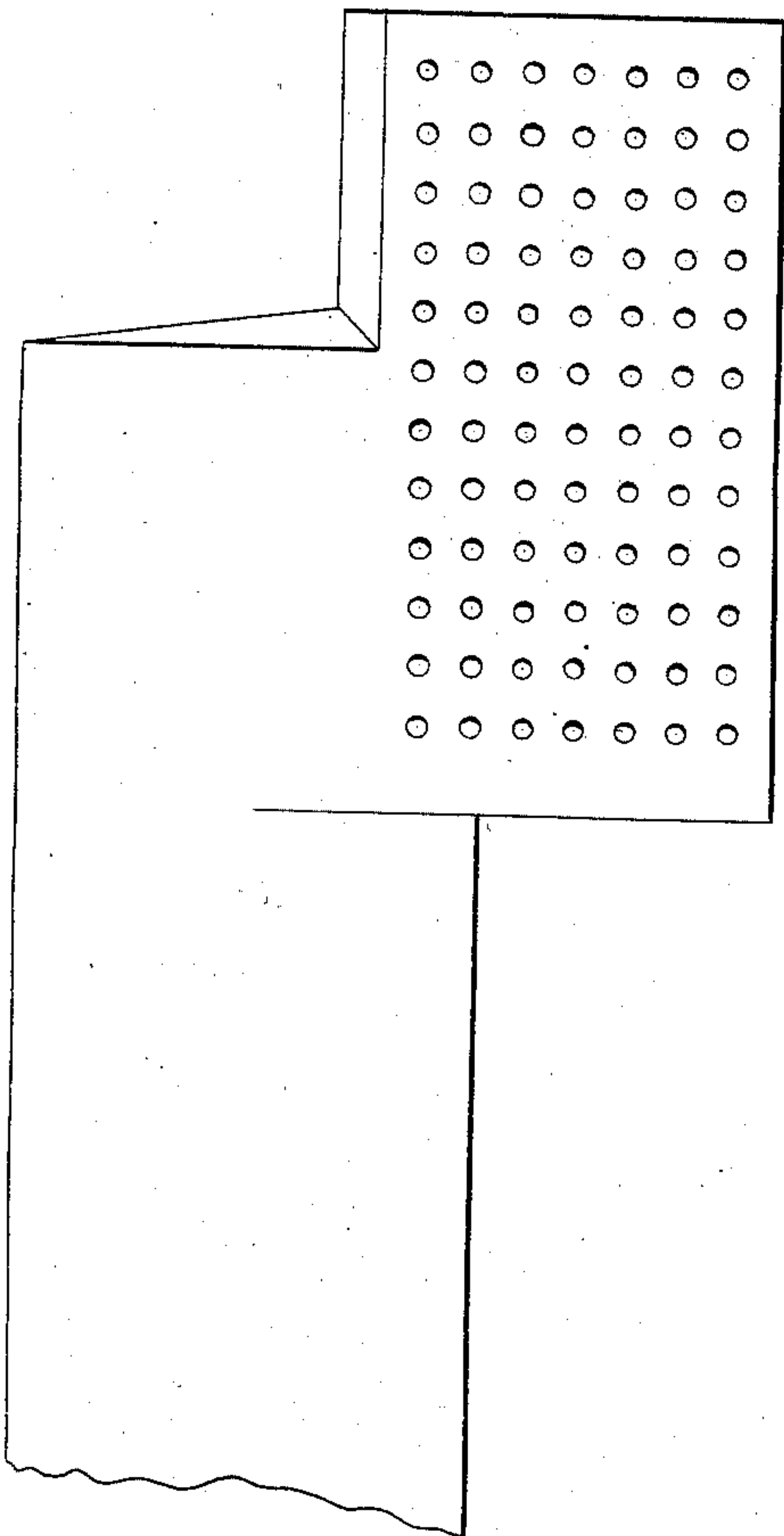
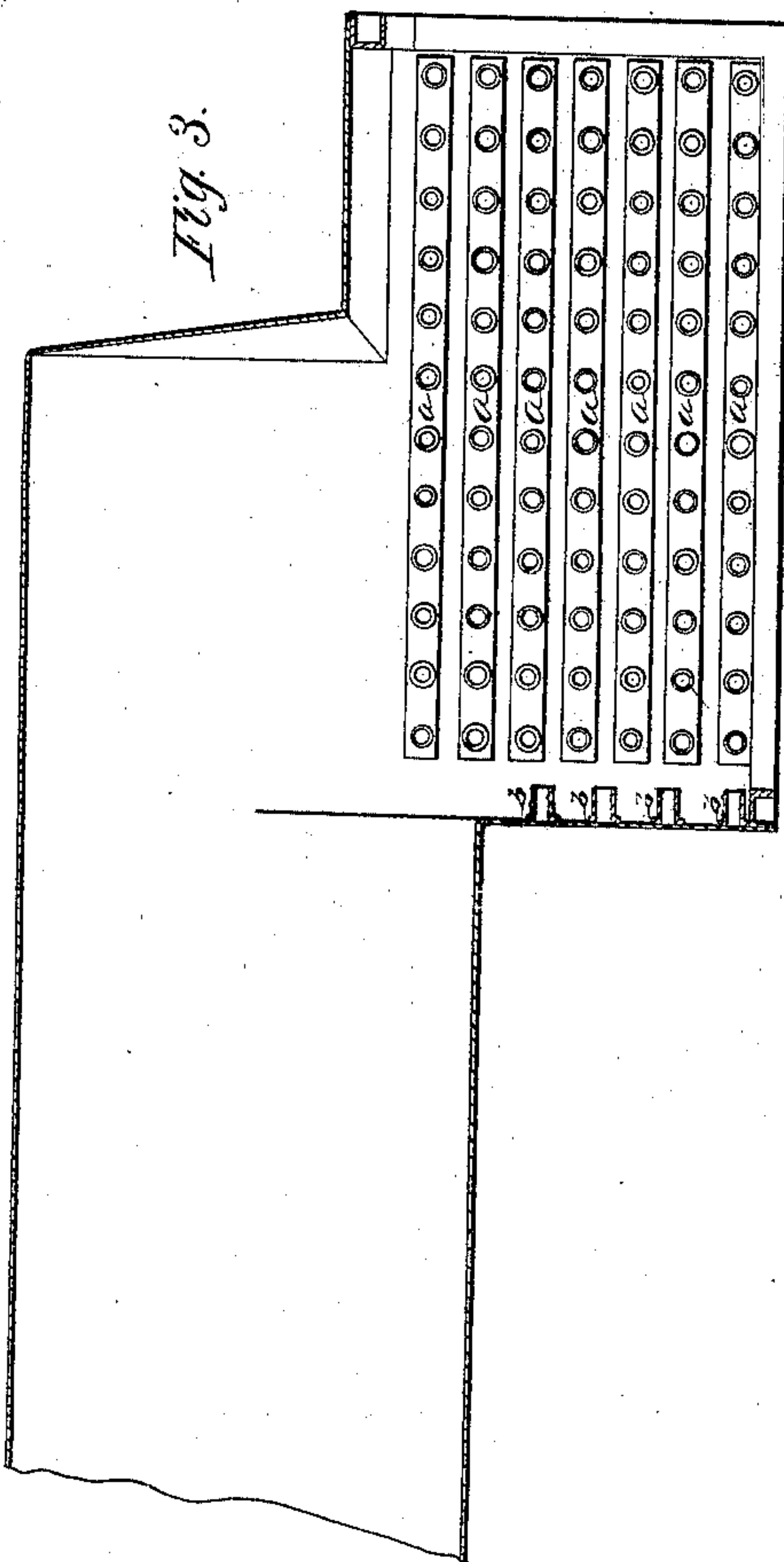


Fig. 3.



UNITED STATES PATENT OFFICE.

BERNARD O'NEILL, OF READING, PENNSYLVANIA.

IMPROVED METHOD OF BRACING THE WATER-SPACES OF BOILERS.

Specification forming part of Letters Patent No. 7,962, dated March 4, 1851.

To all whom it may concern:

Be it known that I, BERNARD O'NEILL, of Reading, in the county of Berks and State of Pennsylvania, have invented a new and useful Improvement in Constructing Boilers or Fire-Boxes of Locomotive and other Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description, and which distinguishes it from all other things before known, reference being had to the accompanying drawings, making part of the same, in which—

Figure 1 represents a side view of a locomotive boiler and fire-box; Fig. 2, an end view; Fig. 3, a longitudinal vertical section through the fire-box and boiler with the inside shell removed. Fig. 4 represents one of the ribbons of sleeves or ferrules detached and here shown on an enlarged scale.

Similar letters in the several figures represent the same parts.

The nature of my invention consists in the use of stationary sleeves or ribbons of sleeves in the construction of boilers, fire-boxes, &c., for locomotive and other engines for bracing and supporting the shells of said boilers or fire-boxes.

Heretofore in the construction of boilers, &c., the sleeve or ferrule through which the bolts pass has been made and used separate, and when a bolt has to be removed to cure a leak or any other defect in driving back said bolt the ferrule or sleeve falls down between the shells and is with the greatest difficulty and with great loss of time put back in place again. By my method of using the ribbon of sleeves or stationary sleeve the bolt may be backed out without allowing the sleeve to drop out of place, and also giving a support to the shells while backing out the old and riveting the new bolt; or, if a sheet is to be renewed in the fire-box, the heads of the bolts are cut off and backed out, and the sleeves remaining in place serve as a guide for marking the new sheet, and also protect the bolt-holes from being enlarged by driving back the bolt.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The ribbon *a*, Fig. 4, upon which the sleeves are attached, may be of sufficient thickness

to give it the required strength without contracting the water-way around the fire-box. Said ribbon may be either of cast or wrought metal. When cast, the sleeves *b b b*, &c., are also cast on it, and may be made of any desired length, curved or straight, the sleeves being at such intervals on said ribbon as may be desired for the bolts. When wrought, the sleeves may be welded or riveted to the ribbon, or secured in any well-known manner of joining metal. These ribbons are placed against the outer shell of the boiler, as seen in Fig. 3, as here shown as horizontal, but may be placed vertical or at any inclination with the plane of the boiler—as, for instance, in the dome of a locomotive—or the metal when cast may be malleable, so as to allow the ribbon to be bent or sprung into the desired shape of the shells which they are intended to brace and support. When the ribbon of sleeves is in proper place, the inside sheets may be riveted without the least trouble, the sleeves being always in the proper place. The manner now in use of keeping the sleeves in place is by the use of plugs of wood passed through the bolt-holes and sleeve, it being necessary that every sleeve should be in place before the riveting commences, and the greatest care will not entirely prevent the falling of these sleeves when replacing the wooden plug by the bolt, and when the sleeves do drop between the shells it is very difficult to get them back in their places.

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

The method herein described for bracing and securing the shells of boilers or fire-boxes of locomotive and other engines by means of ribbons of sleeves or stationary sleeves, so that when a bolt or bolts are to be removed to cure leaks or to renew the sheets in the fire-box the sleeves will remain in place, serving as a guide to punch the new sheets by and affording greater support to the shells both in backing out the old and riveting the new bolts, as herein fully described and shown.

BERNARD O'NEILL.

Witnesses:

MATTHIAS MENGEL,
WM. G. YOUNG.