

D. M. SPRINGER.  
MOLD JACKET.

No. 506,950.

Patented Oct. 17, 1893.

Fig. 1.

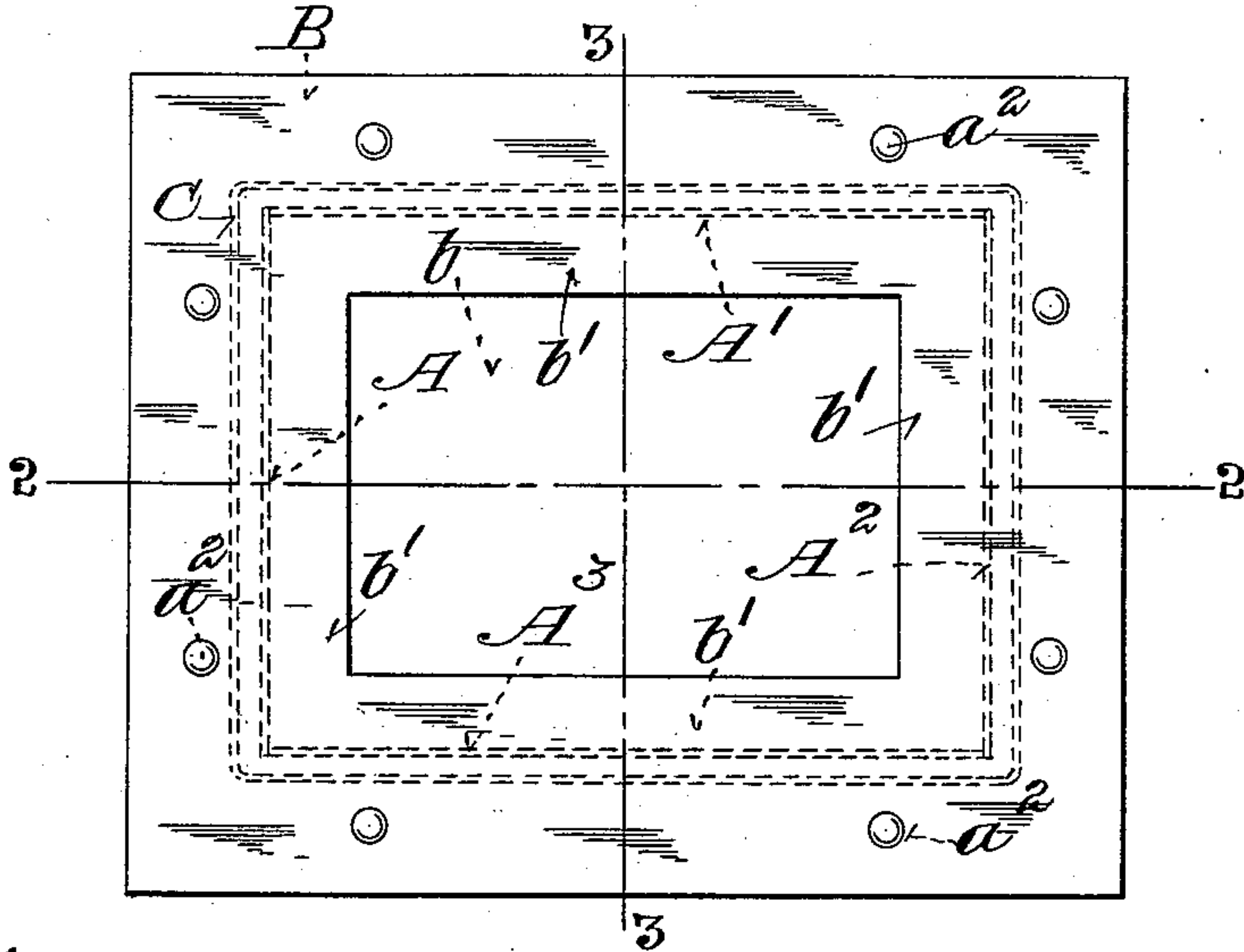


Fig. 2.

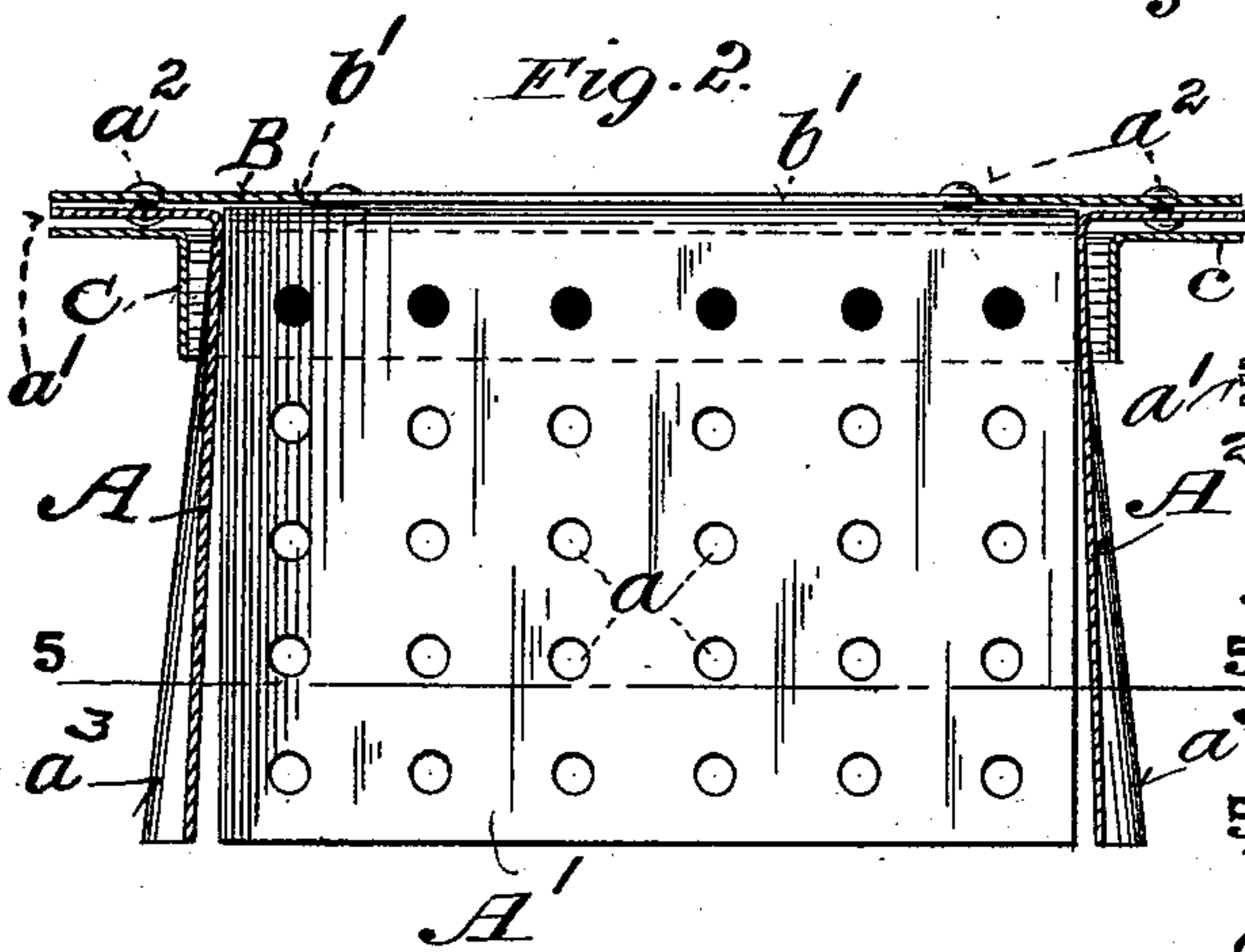


Fig. 3.

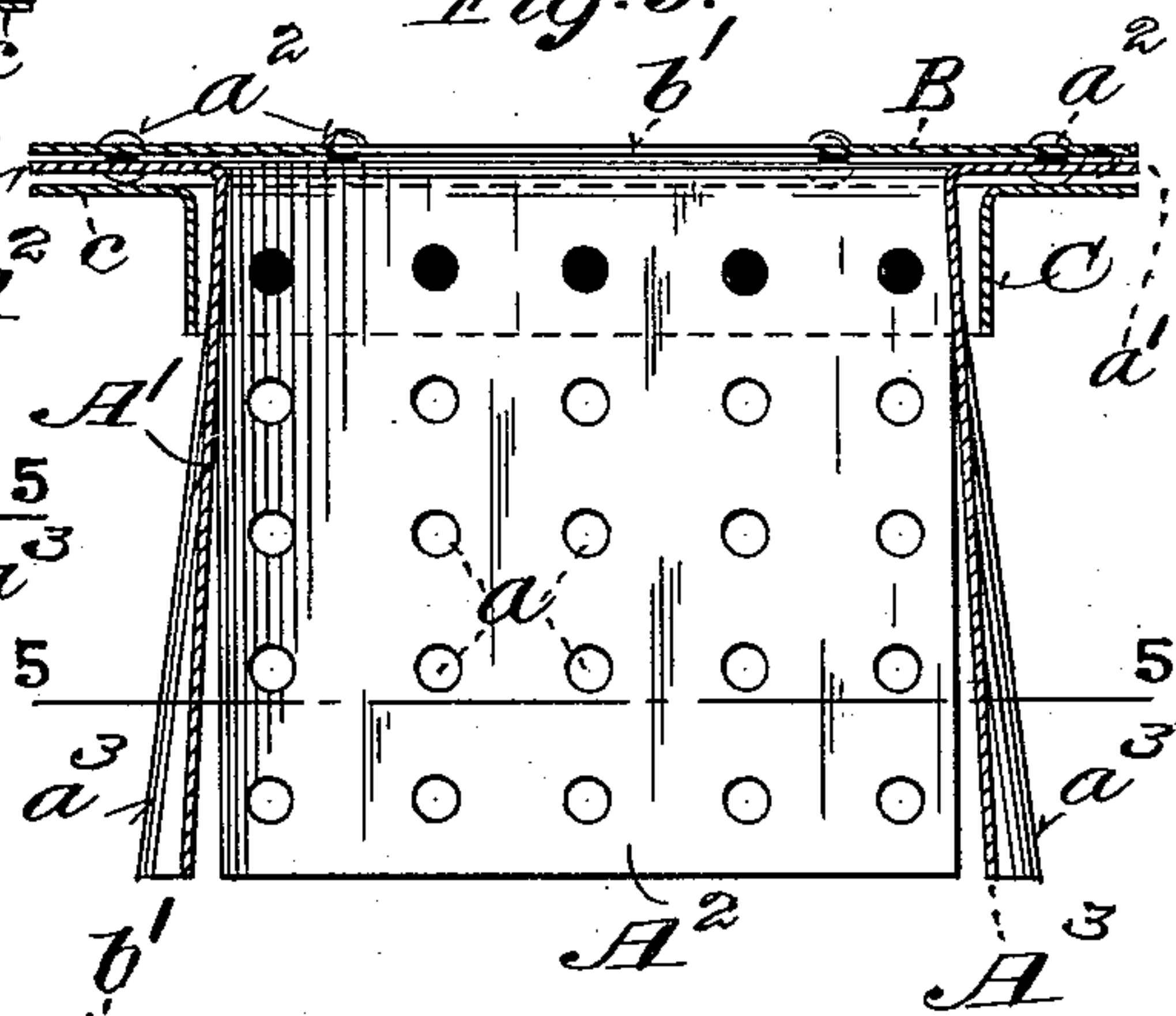
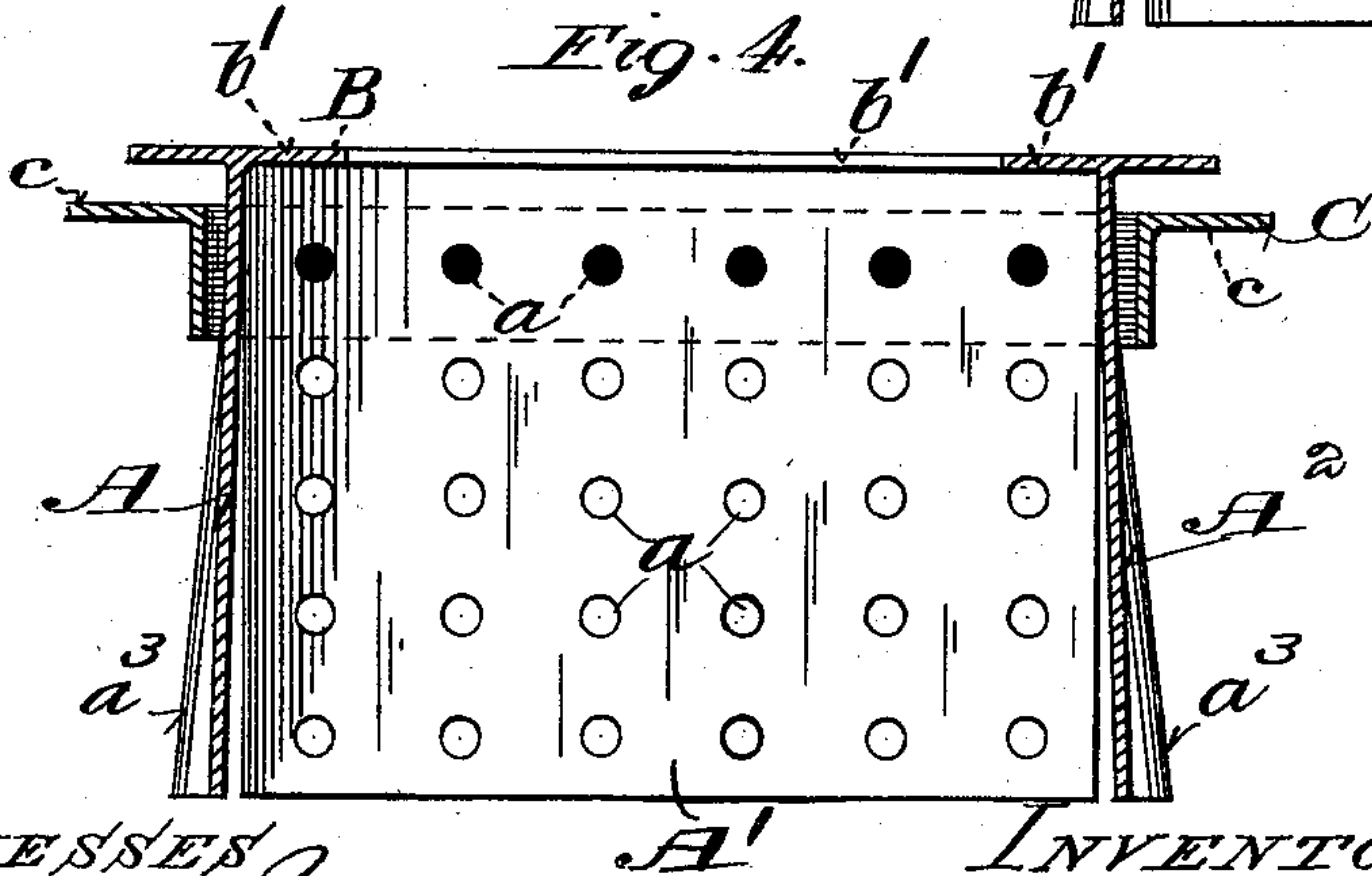


Fig. 4.



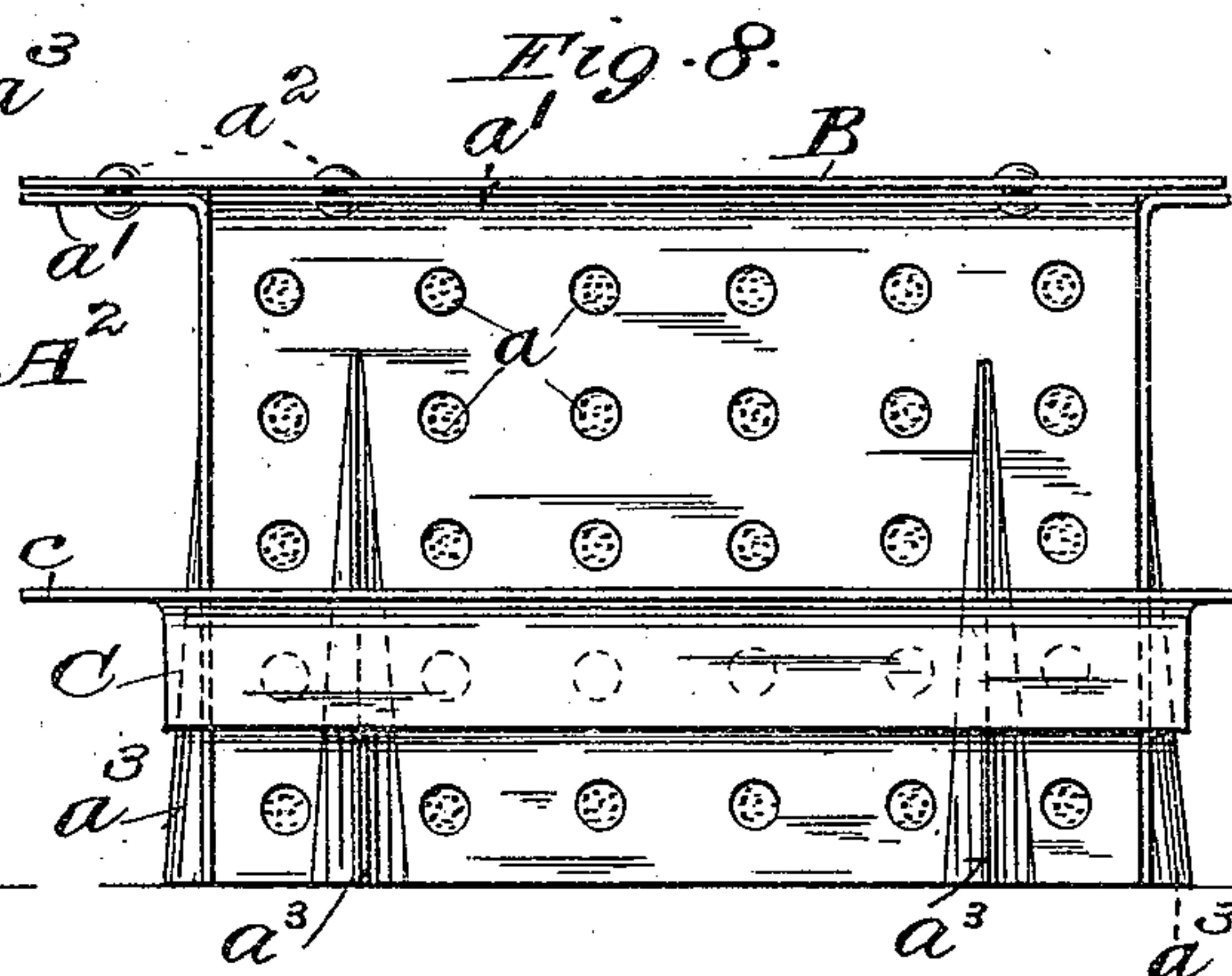
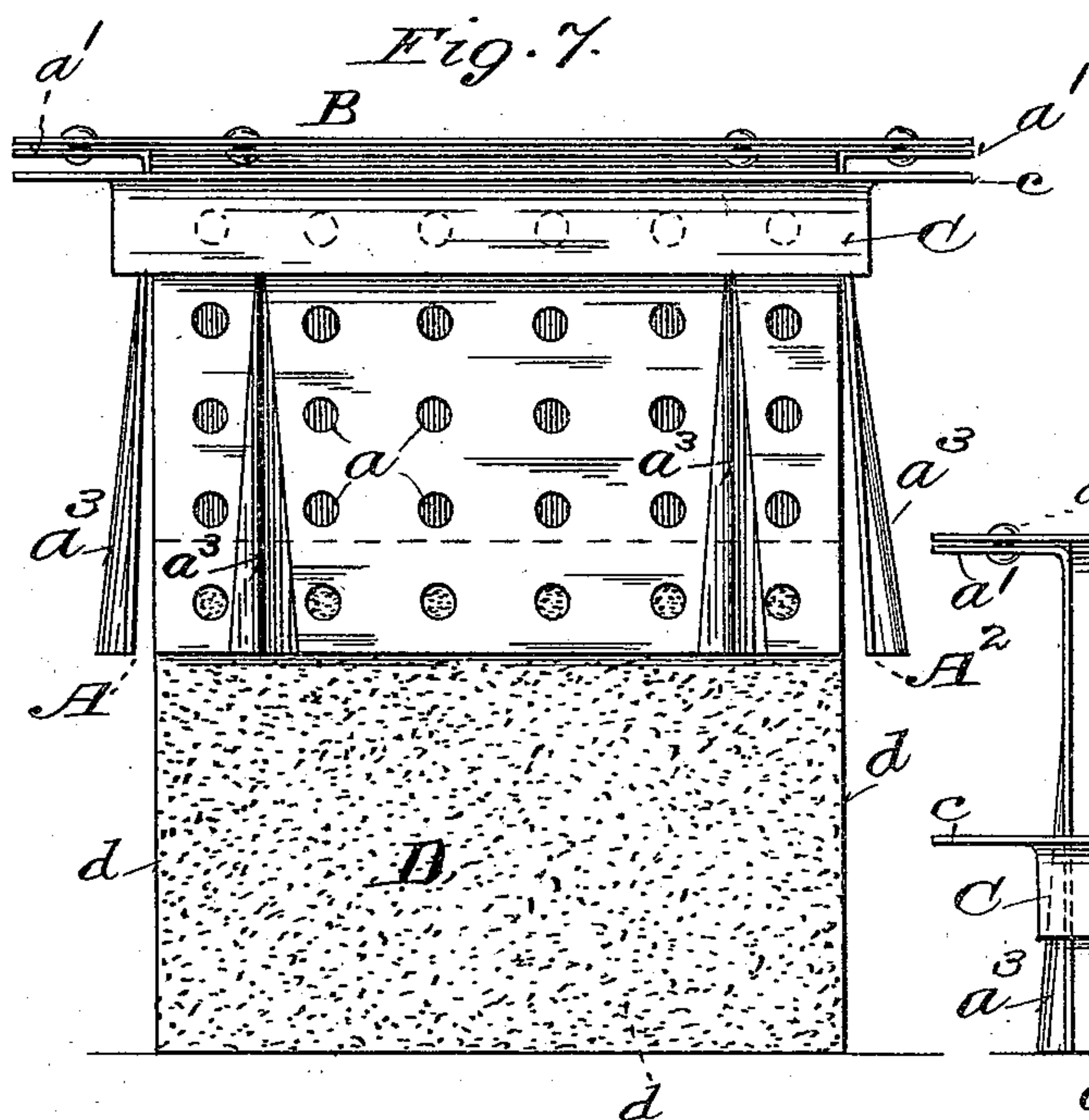
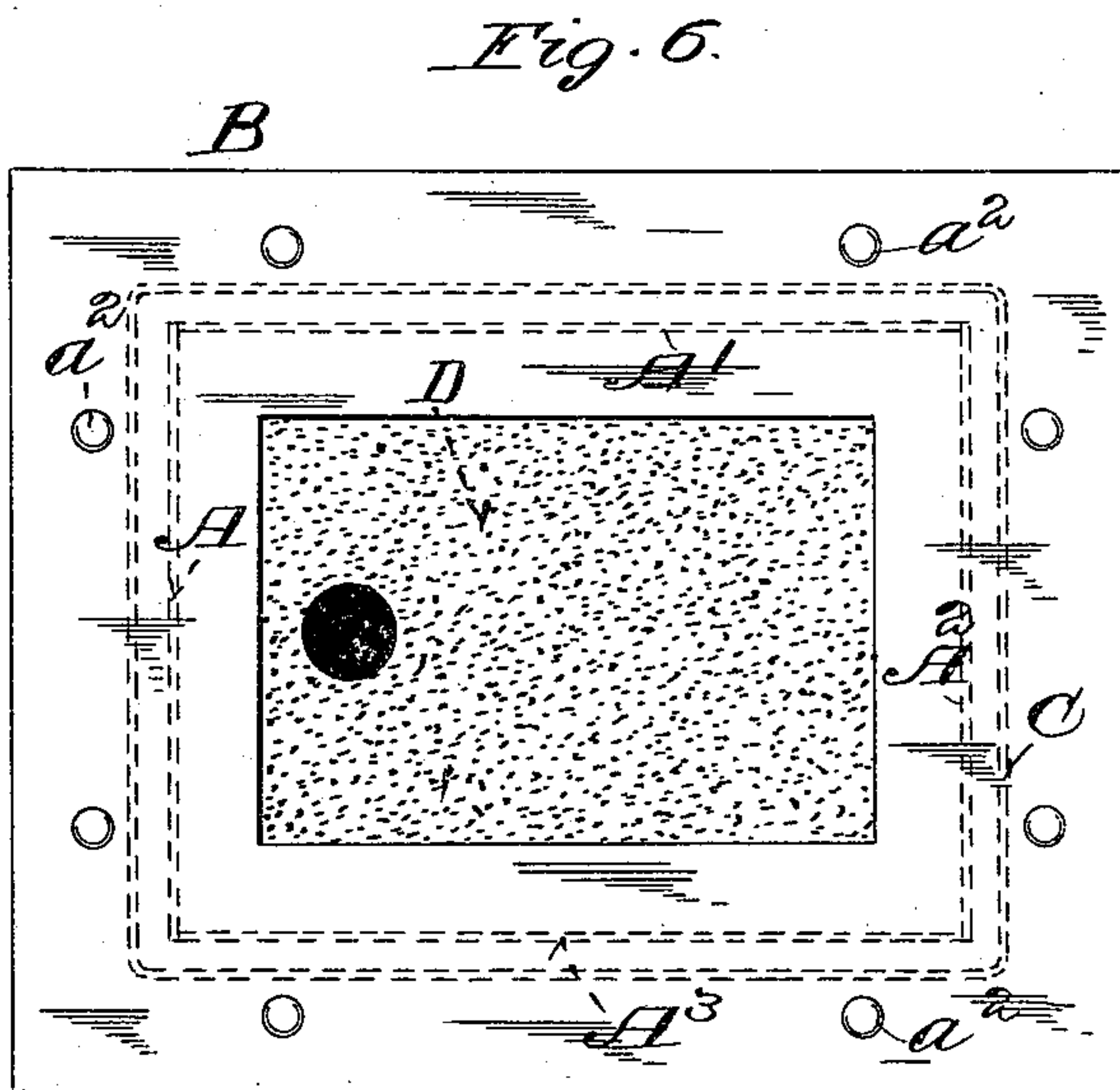
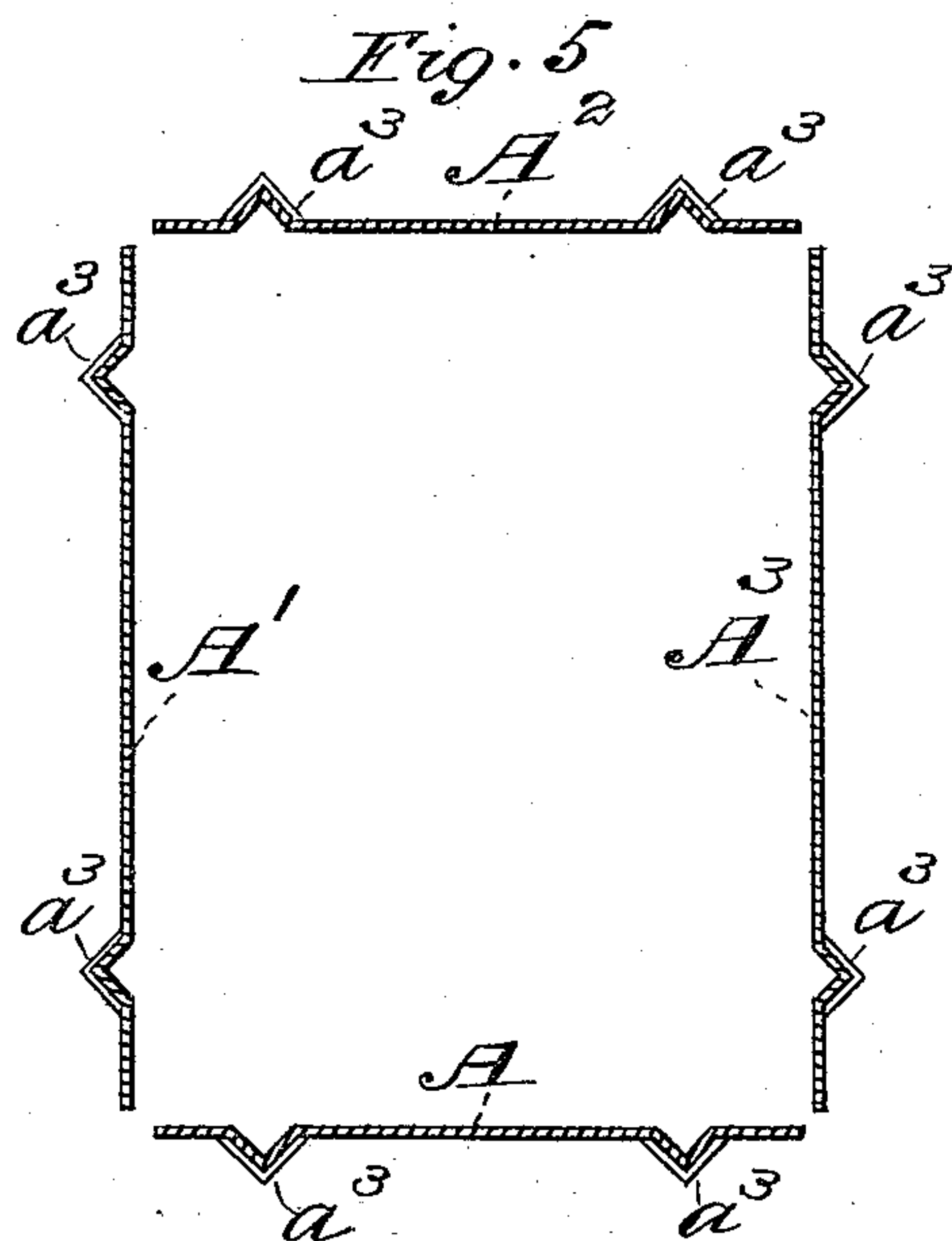
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# UNITED STATES PATENT OFFICE.

DANIEL M. SPRINGER, OF LITTLE ROCK, ARKANSAS.

## MOLD-JACKET.

SPECIFICATION forming part of Letters Patent No. 506,950, dated October 17, 1893.

Application filed October 26, 1892. Serial No. 450,074. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL M. SPRINGER, of Little Rock, Arkansas, have made a new and useful Improvement in Mold-Jackets, of which the following is a full, clear, and exact description.

The present improvement relates to that class of appliances which are used to sustain the sides, or sides and top, of a mold during the casting operation.

Hitherto for the purpose in question it has been customary to employ a rigid, band-like device made to accurately fit the mold, and applied by slipping it thereonto, and the top of the mold is confined by means of an additional part, usually a heavy plate which is laid upon the mold and held in place by reason of its gravity. Such a contrivance, while answering in a measure, is objectionable; the lower portion, or whatever is employed to bind the mold laterally, is necessarily required to fit the mold snugly as otherwise the walls of the mold would not be properly sustained; but when thus made it needs to be carefully manipulated when being applied to avoid injuring or disturbing the mold, and the operation cannot well be hurried. The top piece also is unsatisfactory in being heavy to handle and in being a separate piece from the other part of the clamping apparatus.

The difficulties mentioned are overcome, and a more desirable means provided for sustaining the mold, by means of the present improved apparatus which, when fully carried out, consists mainly in a clamping device adapted to confine the mold both at the sides and the top thereof, and whose lower portion, which is used to sustain the walls of the mold, is adjustable, enabling it to be quite readily applied to the mold and closely tightened thereupon, and whose upper portion, which takes the place of the weight above mentioned, is connected with the lower portion and thus capable of being made much lighter than the heavy plate mentioned, as well as being a means by which the apparatus can be lifted, all, together with other features, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a plan of the improved mold jacket; Fig. 2 a vertical section thereof on the line 2—2 of Fig. 1; Fig. 3 a vertical section on the line 3—3 of Fig. 1; Fig. 4 a vertical section analogous to that of Fig. 2, but showing a modification in respect to the mode of constructing and uniting the side and top parts of the jacket; Fig. 5 a horizontal section on the line 5—5 of Figs. 2 and 3; Fig. 6 a plan of the jacket in position upon a mold; Fig. 7 a view illustrating the application of the improved jacket to a mold, the jacket having been dropped part way onto the mold but not yet in position to be tightened thereon, and Fig. 8 a side elevation of the jacket in position upon and clamped to the mold as in use.

The same letters of reference denote the same parts.

A, A', A<sup>2</sup>, A<sup>3</sup>, represent the sides of the jacket.

B represents the frame or plate with which the sides in practice are usually connected.

C represents a band employed to clamp the jacket-sides against the mold.

The sides A, &c., in size and proportions, conform suitably to the sides, *d*, of the mold D, and they are adapted, when pressed or laid against the mold-sides, to properly sustain them against the pressure exerted or caused by the metal being cast. To this end the sides may be imperforate, but they preferably have a series of openings in them, substantially as shown at *a, a*, to provide outlets through which steam and gas generated in the mold can readily escape. Incidentally the openings serve an additional purpose. When the sides are clamped against the mold the earthy matter of the mold is apt to become more or less pressed into the openings, and the sides, when clamped, are thus held more firmly upon the mold, and more effectually held against any directly-upward pull which may be exerted upon them by reason of their being connected with the part B of the jacket. The leading feature however of the jacket-sides is their adjustableness with reference to the sides of the mold. That is, in applying and withdrawing the jacket from the mold, it is desirable for the sides to flare



or stand out sufficiently to entirely clear the mold-sides in order that the jacket may be quite readily dropped into position upon the mold, and then, when in position on the mold, to be closed and clamped against the mold-sides.

What I consider a desirable mode of connecting and supporting the jacket-sides is shown in Figs. 1, 2, 3, 7 and 8. The sides are each provided with an outwardly turned flange,  $a^1$ , which by any suitable means, such as the rivets  $a^2$ , is attached to the frame B, substantially as shown. In this form of connection the riveting is sufficiently loose to permit of the jacket-side to be moved as described, or if rigidly connected with the frame B the jacket-side is of such a thickness, shape or nature, as to permit of its being sprung against the mold-side when clamped, and to spring therefrom when unclamped.

In the form of connection shown in Fig. 4 the jacket-side is made integral with the frame B, but the jacket-side is of such thinness or nature as to enable it to be sprung against the mold-side when clamped and to open therefrom when released. As the jacket-sides can thus be variously connected with whatever constitutes the top portion of the jacket I desire not to be restricted to any particular method. I prefer however either of the methods just mentioned.

The frame B is in practice somewhat longer and wider than the mold, thereby forming a projecting edge for the jacket-sides to be fastened as described, and also providing means by which the apparatus can be easily lifted. The frame has a suitable opening,  $b$ , to provide for pouring the metal into the mold, but the inner portion,  $b'$ , of the frame extends sufficiently inward to cover the peripheral portion of the top of the mold, it being sufficient for the purpose under consideration if such peripheral portion is confined.

The preferable means for closing and holding the jacket-side against the mold is the band C. It is in shape made to conform substantially to the mold and jacket, and it is somewhat larger than the upper portion of the combined jacket-sides, and it is preferably furnished with an outward turned flange  $c$  which serves both to strengthen the band and also as a convenient means for raising it. When the band is raised, as in Fig. 7, it does not bind the jacket-sides, but when it is depressed it is made to clamp the jacket-sides against the mold as shown in Fig. 8. To accomplish this adjustment of the jacket-sides said sides are provided with or are constructed to form projections,  $a^3$ , which, in a downward direction, incline more and more away from the mold, thereby forming inclined planes or wedge-shaped ribs against which the band C bears more and more when it is pushed downward upon the jacket-sides. The band and jacket-sides may be relatively

shaped and proportioned in any other equivalent manner to enable the band, when depressed, to clamp the jacket-sides against the mold, and to release them when the band is raised.

The apparatus may be composed of any suitable material, sheet or cast metal for instance. In operating the apparatus the molder lowers the jacket onto the mold until the jacket-top rests upon the mold; the jacket-sides when free flare apart sufficiently for the jacket to be readily placed in position upon the mold, and when the jacket-sides are provided with flanges, and are hinged or jointed loosely to the top plate B, the operator can cause the jacket-sides to flare by allowing the jacket to be supported by means of said flanges. After the jacket is in position the operator slips the band C downward into the position substantially shown in Fig. 8 and thereby closes the jacket-sides against the mold.

I claim—

1. A mold jacket combining in its construction adjustable sides and a vertically adjustable band for holding said sides against the mold.

2. A mold jacket having an upper frame or plate, adjustable sides, and a vertically adjustable band, said upper frame being adapted to rest upon the mold, said sides being connected with said frame, and said clamp being adjustable to close and release said sides, substantially as described.

3. The combination of the sides A,  $A'$ ,  $A^2$ ,  $A^3$ , the top frame or plate B and the vertically adjustable band C, substantially as described.

4. The combination of the adjustable sides having the inclined projections, the top plate B and the vertically adjustable band C, substantially as described.

5. A mold jacket combining in its construction the top plate B, the adjustable sides, and the band C, said plate having a central opening and extended at its periphery as described, said sides having the inclined projections, and said band being flanged and being adjustable, substantially as described.

6. A mold jacket having perforated, adjustable sides and a vertically adjustable band, said sides and said clamp being relatively constructed to enable the band to be moved to close said sides and to release them, substantially as described.

7. A mold jacket combining in its construction the top plate, the perforated, adjustable sides, and a vertically adjustable band, said sides and said band being relatively constructed to enable the band and sides to be relatively adjusted to close said sides and to release them, substantially as described.

8. A mold jacket having a top plate adapted to bear upon the peripheral portion of the



top of the mold and perforated to admit of  
the introduction of the metal into the mold,  
and also having sides connected with said top  
plate and adapted to open from and close to  
5 the mold-sides, and a band for confining said  
jacket sides against said mold sides, substan-  
tially as described.

Witness my hand this 21st day of October,  
1892.

DANIEL M. SPRINGER.

Witnesses:

COS ATTENBERY,  
G. L. SCHAFER.