

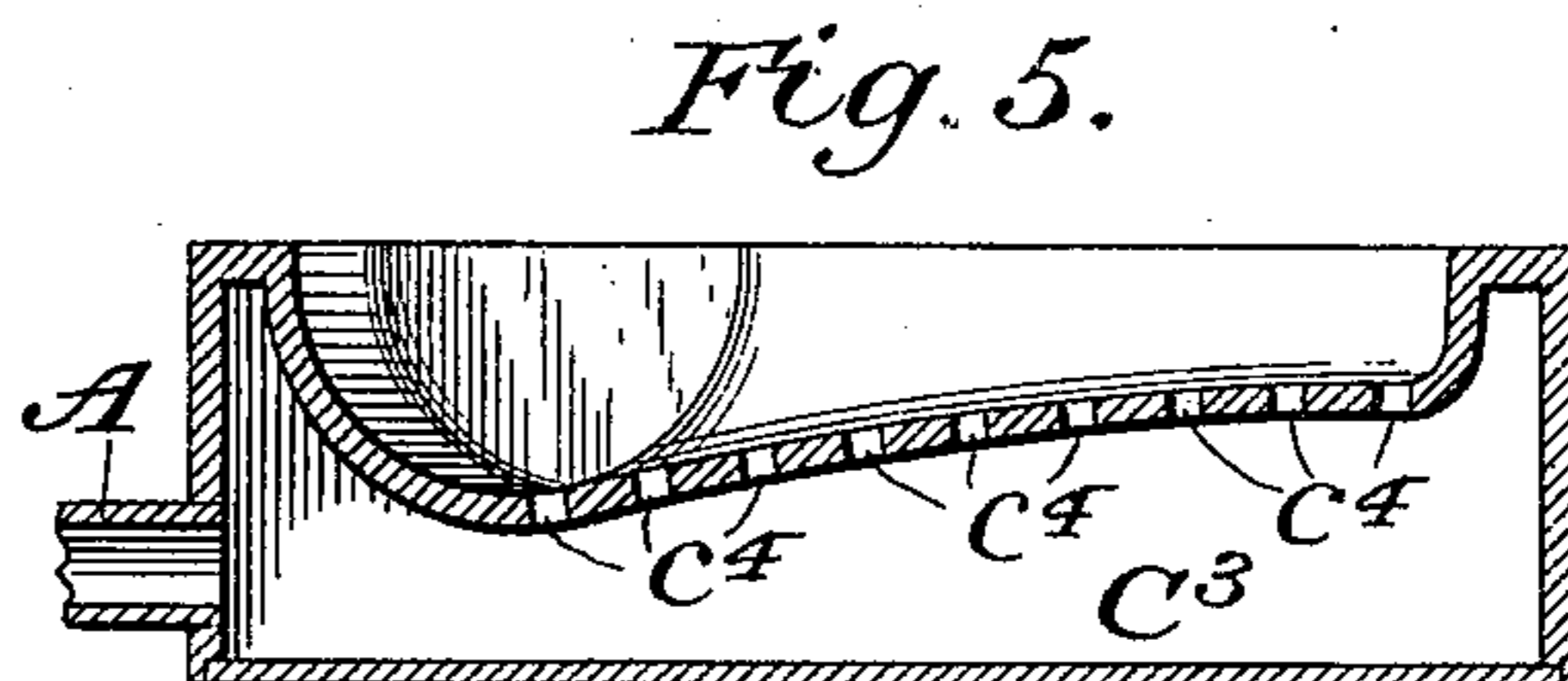
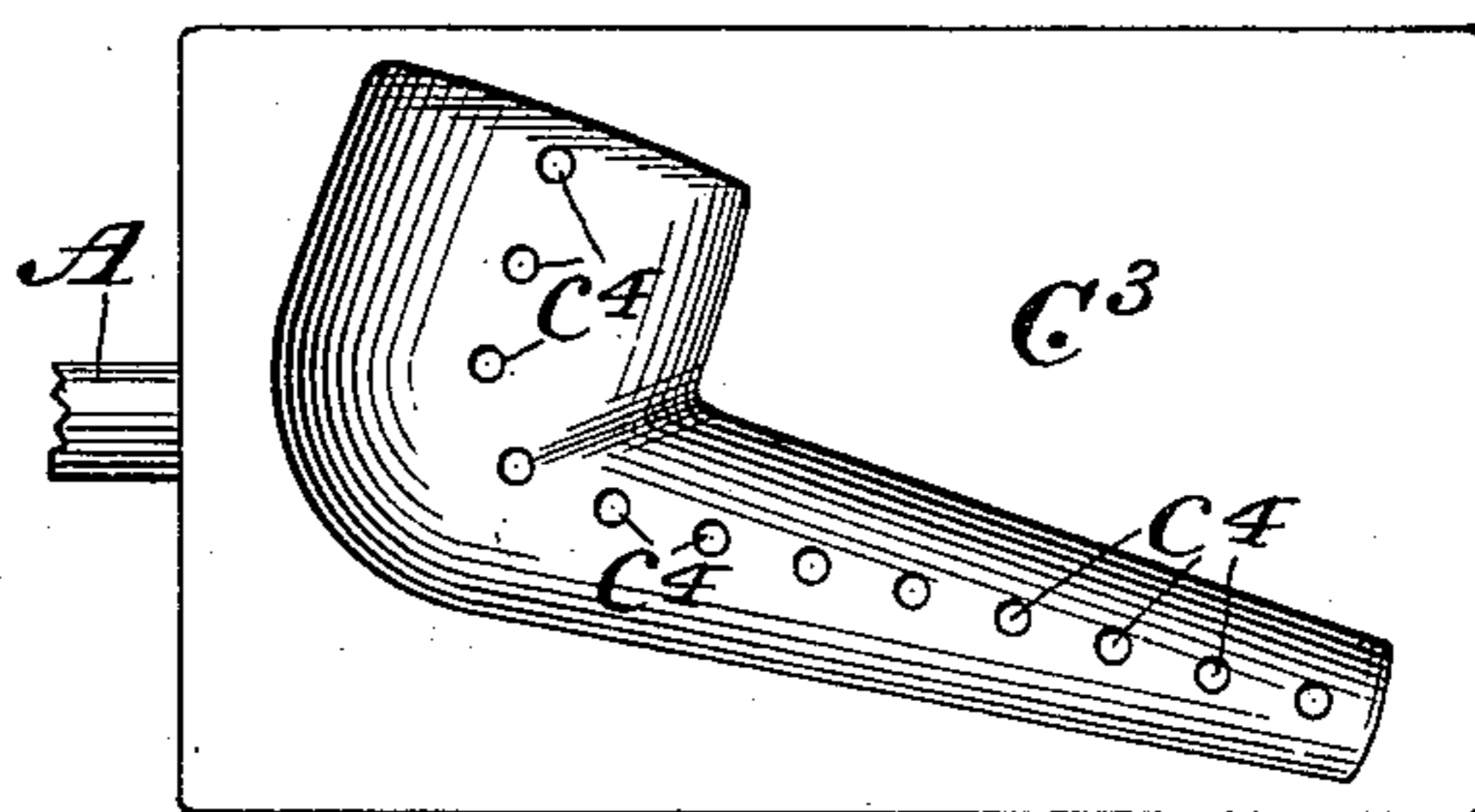
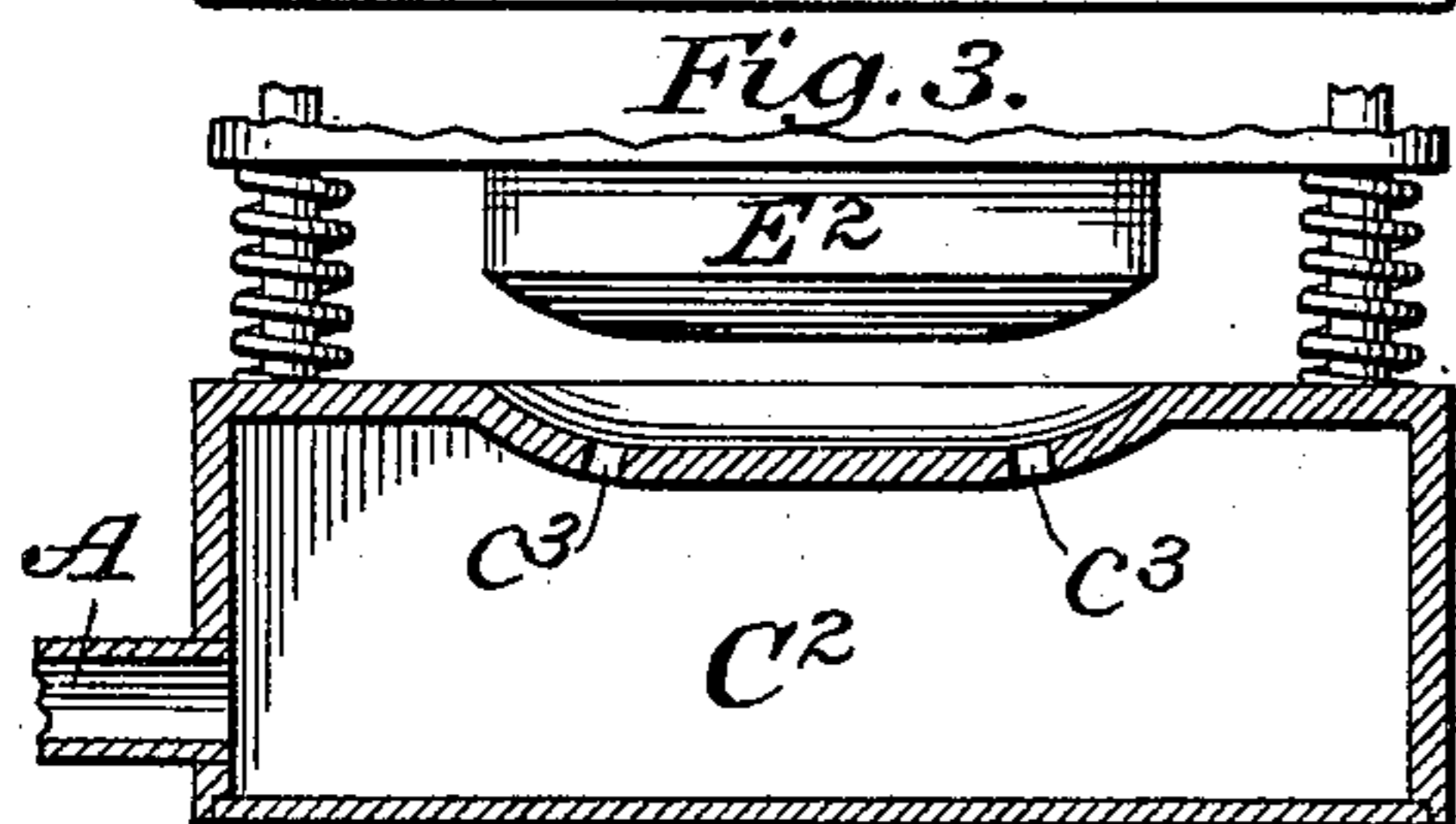
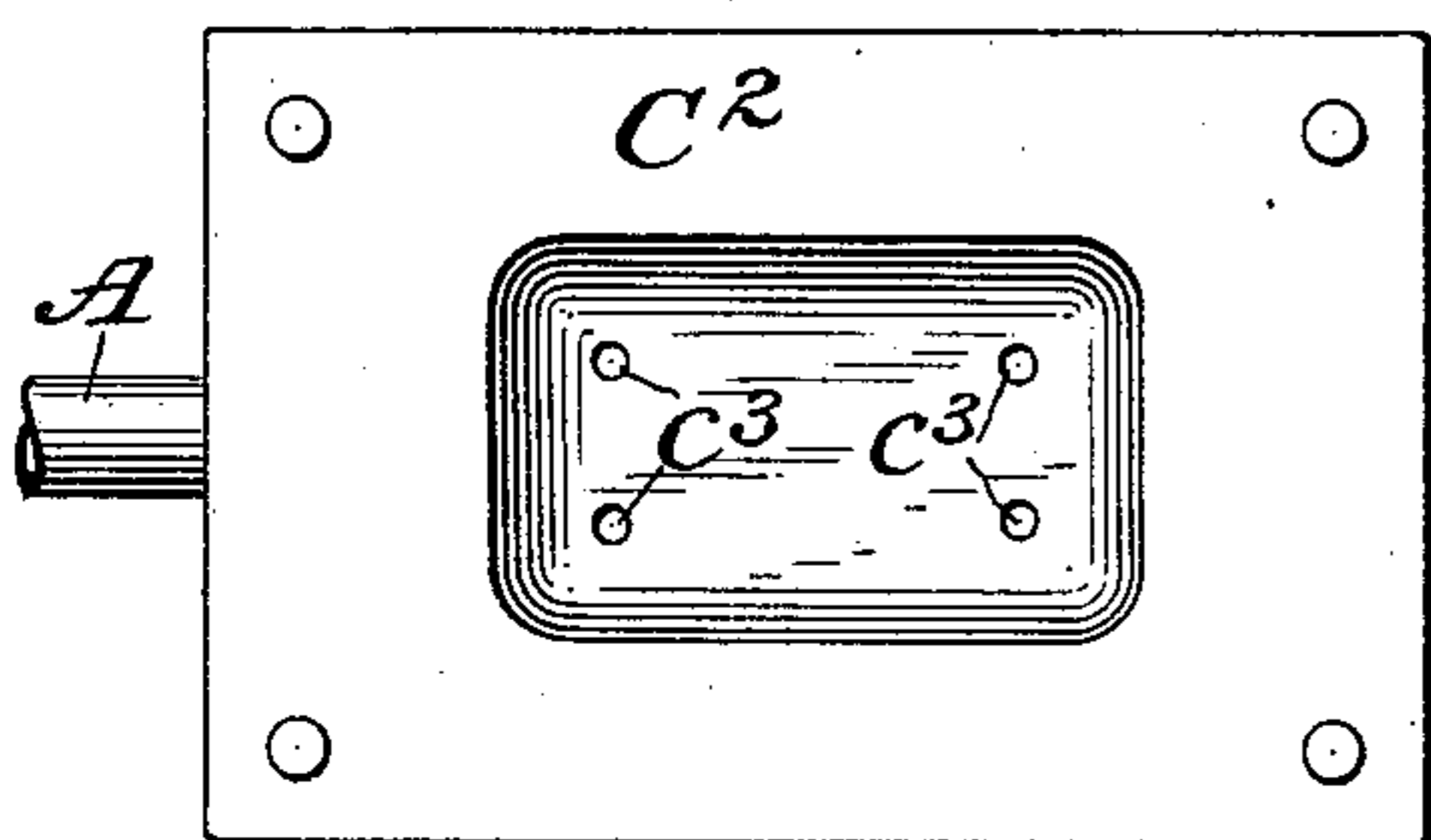
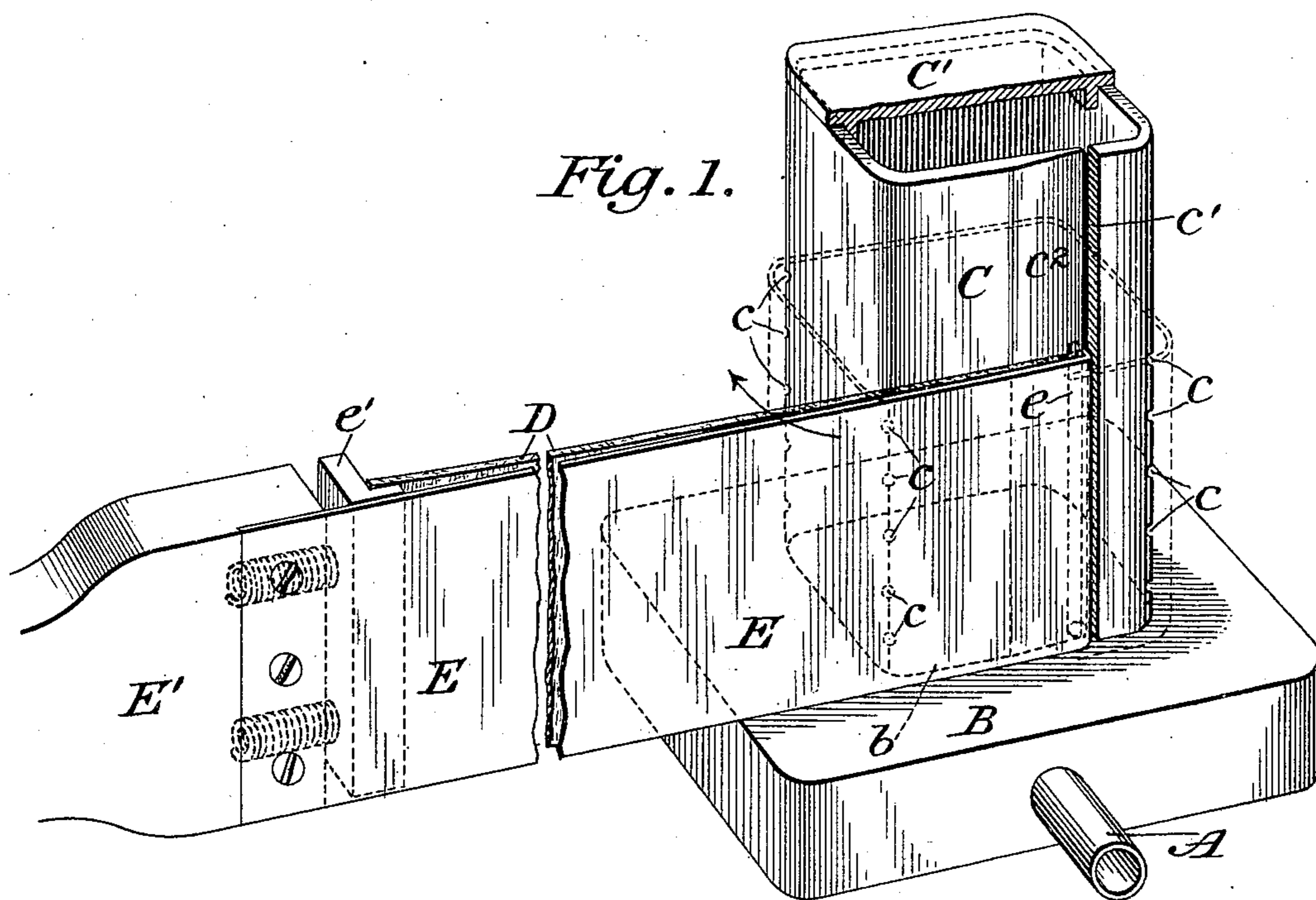
**No. 613,725.**

**Patented Nov. 8, 1898.**

**H. F. J. SCHMIDT.**  
**APPLIANCE FOR BENDING WOOD.**

(Application filed Mar. 14, 1898.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## APPLIANCE FOR BENDING WOOD.

SPECIFICATION forming part of Letters Patent No. 613,725, dated November 8, 1898.

Application filed March 14, 1898. Serial No. 673,710. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY FREDERICK JACOB SCHMIDT, a citizen of the United States, residing in Newark, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Appliances for Bending Wood, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

10 This invention relates to the art of forming wood, especially in thin strips or sheets or boards, into various shapes, while the wood is softened and made more pliable by cooking or steaming.

15 It is well known that when wood is removed from the cooking or steaming vessel and applied to the mold by which it is to be shaped the outer fibers of the wood are more or less chilled no matter how quickly the transfer is effected, with the result that the wood often-  
20 times does not conform exactly to the precise shape of the mold and with the further result that the wood frequently breaks or splinters at the line or point of greatest flexure.

25 It is the object of the present invention to overcome as far as possible the difficulties which have been alluded to and to enable the production of articles of better shape with less waste on account of breaking and splin-  
30 tering.

The invention is applicable to the formation of articles of different kinds, and especially to the manufacture of boxes or cases.

35 The invention is illustrated in the accompanying drawings in certain convenient and practical embodiments thereof, which will be more fully described hereinafter.

In the drawings, Figure 1 is a perspective view of an apparatus or appliance for bend-  
40 ing a strip of wood to form the body of a box or case. Fig. 2 is a plan view of a mold for forming the top or cover of such a box or case. Fig. 3 is a sectional view of such a mold, a portion of the cooperating die being also  
45 shown. Figs. 4 and 5 are views similar to Figs. 2 and 3, but showing a mold for the formation of a case for a tobacco-pipe.

50 In the several embodiments of the invention the mold upon or in which the wood is to be shaped is supplied with steam, and orifices are provided at the points or lines of greatest flexure to permit the steam to issue there-

from directly against the wood at the point or in the line where the bending is mainly to be effected, so that the outer fibers of the wood  
55 which have become chilled during the transfer of the wood from the steaming or cooking vessel to the mold shall be again softened and rendered pliable simultaneously with the bending thereof, whereby it is possible to  
60 shape the wood more closely to the mold and the breaking and splintering of the wood is wholly prevented.

In the apparatus or appliance shown in Fig. 1 the steam is admitted through a pipe A to  
65 a suitable hollow base B, upon which is secured the mold C. The latter is hollow, and communication with the hollow base is had through a suitable opening b. The mold here  
70 shown is substantially a square in cross-section, being adapted for the formation of the body of the box. At the angles or lines where the greatest bending takes place the mold is provided with perforations c c, through which  
75 the steam is permitted to escape from the interior of the mold into direct contact with the strip of wood D as the same is bent about the mold. For convenience in manipulating  
80 the strip of wood, and especially for the purpose of forming a proper lap-joint, the mold is slotted, as at c', and the wall of the mold adjacent to the slot, on one side thereof, is  
85 beveled off on its outer surface toward the slot, as indicated at c<sup>2</sup>. A flexible strip of metal E, preferably of zinc and having at-  
90 tached thereto a suitable handle E', is provided to aid in laying the strip of wood about the mold. For this purpose the said strip E is provided with an enlargement or is otherwise  
95 formed, as at e, to engage the edge of the mold at the slot c', and at its other end a yielding abutment e' is arranged. The end of the strip of wood which has been previously squared  
100 off is laid upon the mold in proximity to the slot c', while the other end rests against the spring-pressed abutment e'. By means of the handle E' the two strips are laid together  
about the mold and are drawn tightly, so that the strip of wood shall conform closely to the mold. As the wood is bent around the angles  
105 of the mold the steam which issues from the perforations c c softens the fibers which have become chilled during the transfer of the strip from the steaming or cooking vessel,

and therefore makes it possible for the strip to be bent exactly to the shape of the mold without splintering or cracking at the bends. A cover C' is applied to the open end of the mold C to prevent the escape of steam, being made removable for convenience in applying the strip E and also for convenience in the subsequent handling of the mold. When the strip of wood has been applied, as already described, clamps are also applied to press the strips snugly against the sides of the mold, and the mold, with the strips thereon, is left to permit the wooden strip to dry thoroughly and set. When the bent strip is finally removed from the mold, the joint may be glued and finished in a manner well understood.

For forming a dished cover for such a box or case as that already referred to a mold C<sup>2</sup>, as shown in Figs. 2 and 3, is provided. This is hollow and supplied with steam, as before, and at the points or lines of greatest flexure perforations c<sup>3</sup> are formed to permit the steam to issue from the mold into direct contact with the wooden blank. A suitable die E<sup>2</sup> is arranged to coöperate with the mold.

The mold C<sup>3</sup> shown in Figs. 4 and 5 is substantially the same as that shown in Figs. 2 and 3, but adapted for the production of another form. Perforations c<sup>4</sup> are provided to permit the steam to issue against the wooden blank, as before.

It will be readily understood that the feature of the invention which is common to the several embodiments already described can be applied to different kinds of apparatus according to the form and character of the article to be produced. Hence the invention is not to be limited to the precise form and construction herein shown and described.

I claim as my invention—

1. A hollow steam-supplied mold for bending wood having perforations to permit the steam to escape from within against the wood as the wood is bent.

2. A mold for bending wood having a steam-

supply and having perforations at the points or lines of greatest flexure to permit the steam to escape from within against the wood as the wood is bent.

3. A mold for bending wood for box-bodies and the like, having a slot in one side, in combination with a flexible strip to lay the strip of wood upon the mold, said strip having at its end an enlargement to engage the mold in said slot.

4. A mold for bending wood for box-bodies and the like, having a slot in one side and extending to the edge, and a detachable cover for the end of said mold, in combination with a flexible strip to lay a strip of wood upon the mold, said strip having at its end an enlargement to engage the mold in said slot.

5. A hollow mold for bending wood for box-bodies and the like, said mold having a steam-supply and having perforations at its angles to permit the steam to escape from within against the wood as the wood is bent.

6. A mold for bending wood for box-bodies and the like, having a slot in one side and perforations at its angles, in combination with means to supply steam to the interior of said mold to escape through said perforations against the wood as the wood is bent, and a flexible strip to lay a strip of wood upon the mold, said strip engaging the mold in said slot.

7. A mold for bending wood for box-bodies and the like, said mold being hollow and having perforations at its angles, in combination with a steam-supplied base to support the mold and having apertures to permit the escape of steam into the mold, and means engaging said mold to lay a strip of wood upon the mold.

This specification signed and witnessed this 10th day of March, A. D. 1898.

H. F. JACOB SCHMIDT.

In presence of—

A. N. JESBERA,

F. M. EGGLESTON.