

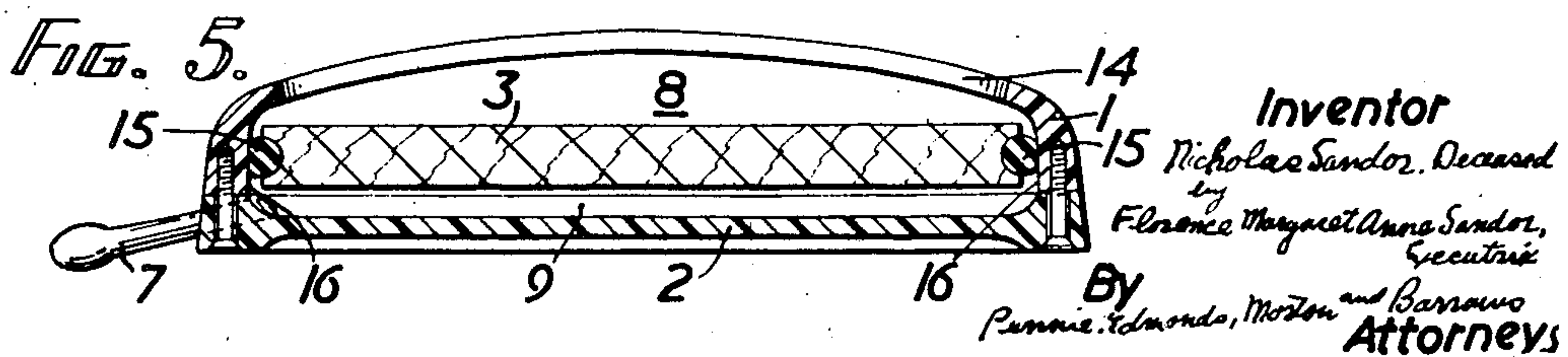
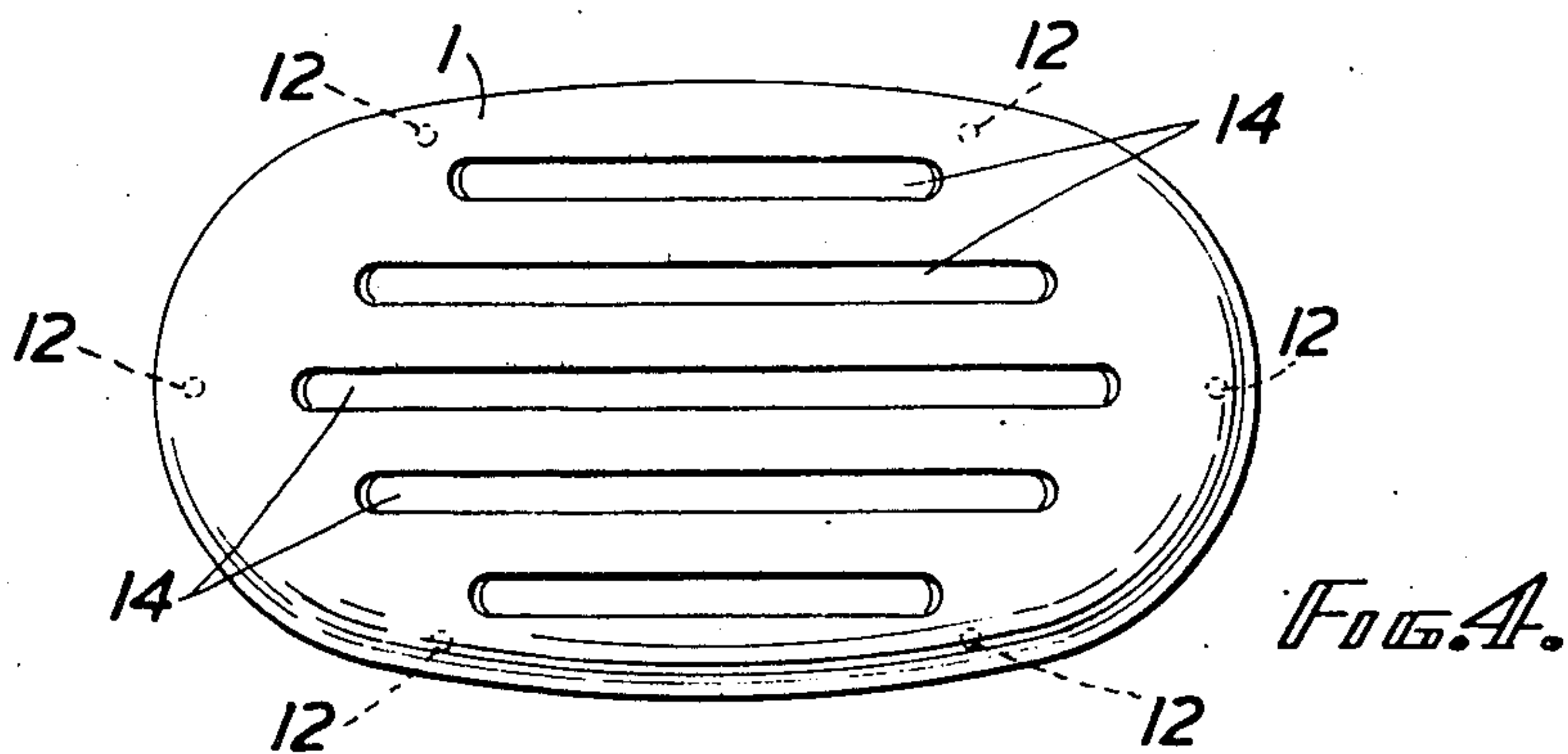
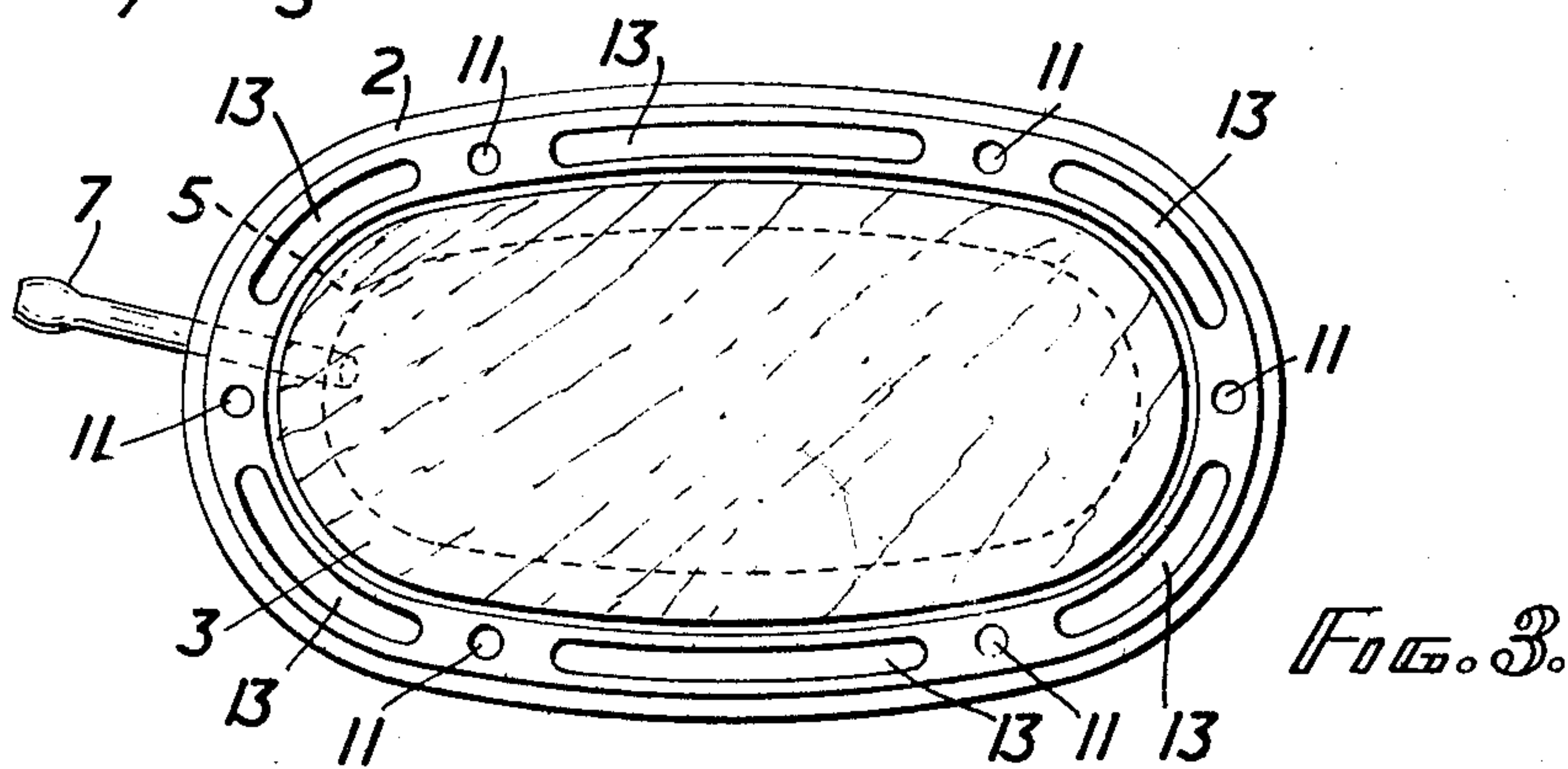
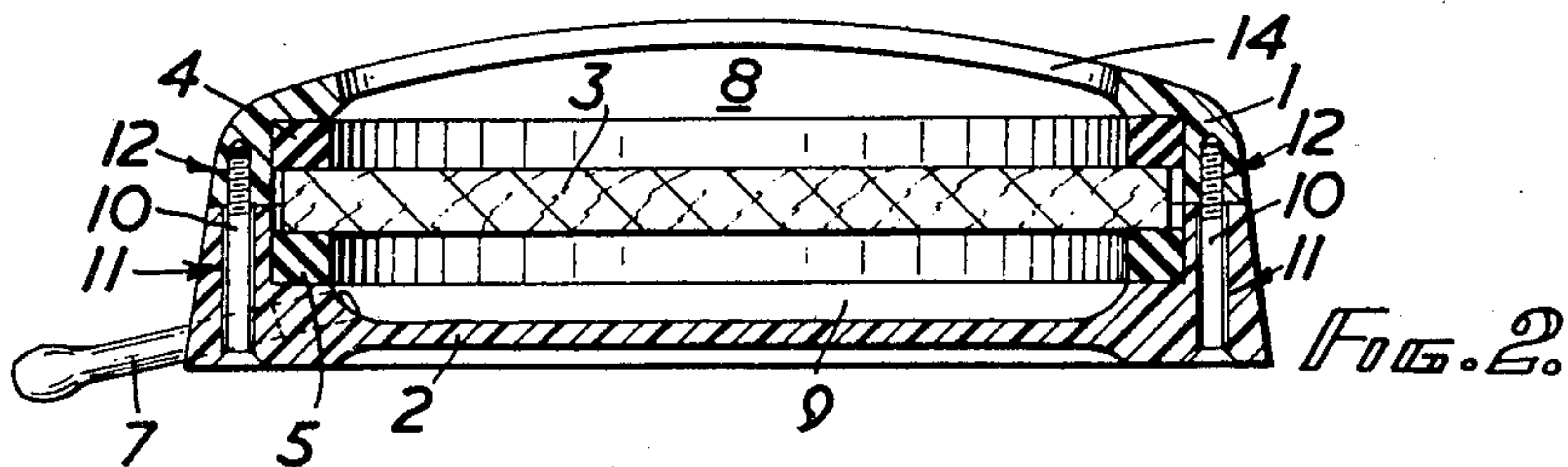
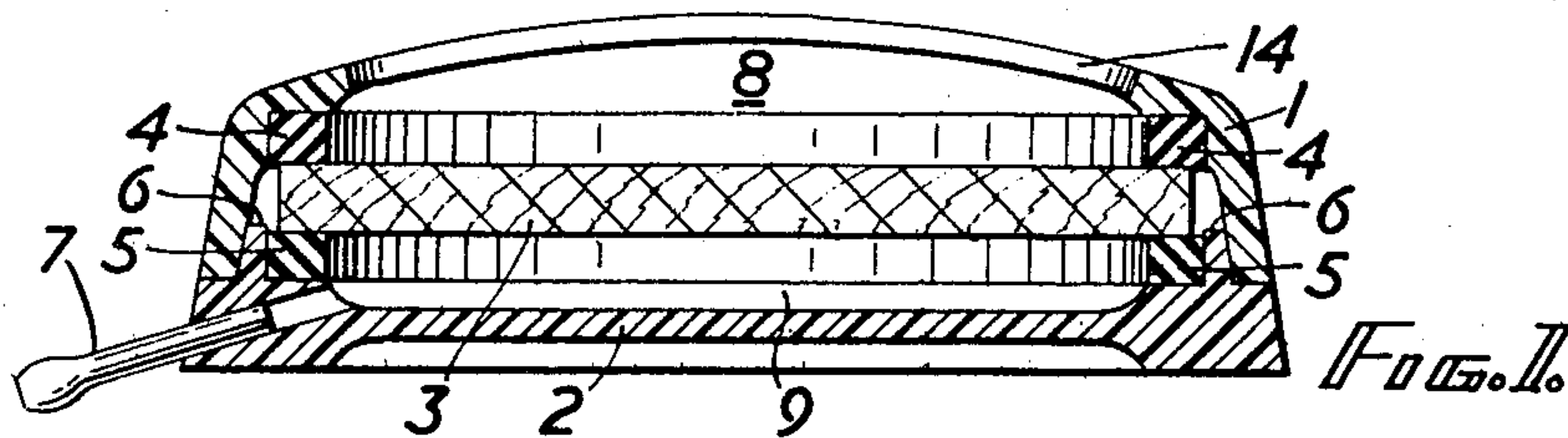
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2,659,582

FOAM FORMING DEVICE

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UNITED STATES PATENT OFFICE

2,659,582

FOAM FORMING DEVICE

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3 Claims. (Cl. 261-122)

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This invention relates to foam forming devices and has for an object to provide a simple construction of foam forming device for use in the home, office or factory for producing a neutral foam replacing ordinary soap, for washing the hair or the hands and face.

Foam forming devices have previously been provided using connected wood blocks or plates inserted in a container of water to which has been added a foam forming medium such as saponin, air being forced through the pores of the blocks or plates to produce a fine bubbled foam on the surface of the water. The wood blocks are cut so that the pores extend at substantially 45° to the exposed face.

A serious disadvantage of such devices consists in the fact that the wood shrinks when dry and if the device is used before the blocks have become swollen again by immersion in water for a sufficient length of time the air under pressure leaks around the junction of the blocks and does not pass through the pores therein and foam is not formed. It is an object of the present invention to overcome this defect.

In accordance with this invention I avoid the difficulties due to shrinkage and expansion of the wood by disposing the wood block or plate between the halves of an enclosing casing to one half of which air under pressure is supplied for passage through the pores in the wood and on the other half of which are provided openings for ingress of liquid and discharge of foam and by disposing elastic sealing means between the wood block or plate and the casing which sealing means permit expansion and contraction of the wood block or plate without breaking of the seal and therefore without leakage of air. The sealing means may be disposed between the upper and lower sides of the wood block and the casing or may be located in a peripheral groove in the wood block or plate.

In order that the invention may be more clearly understood the same will now be described with reference to the accompanying drawings in which:

Fig. 1 shows one embodiment of the device in section.

Fig. 2 shows another embodiment illustrating a different method of securing the parts of the casing together.

Fig. 3 is an inverted plan view of the casing shown in Fig. 2.

Fig. 4 shows a plan view showing the top part of the casing.

Fig. 5 shows a further embodiment illustrating

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a different method of sealing the wood block or plate.

Referring to Fig. 1, 1 and 2 indicate the upper and lower parts of a casing enclosing a foraminous plate, or block of wood 3, which is suitably cut so that the pores extend at substantially 45° to the upper and lower faces of the plate. The upper half of the casing is provided with openings 14 for ingress of liquid and discharge of foam. Recesses are provided in upper and lower parts of the casing to receive sealing rings 4, 5 of rubber or like material. The two halves of the casing overlap, an upwardly extending rim 6 adjacent the periphery of the lower part of the casing fitting within the edge of the upper part of the casing as shown. The edges of the two parts of the casing are permanently cemented together under pressure.

An air inlet pipe 7 is embedded in the lower casing material or attachment to a tube receiving air from a rubber inflator (not shown). Air spaces 8, 9 are left between the plate 3 and the parts 1, 2 of the casing. Any expansion or contraction of the wood block is taken up by the rubber rings.

In the embodiments of Figs. 2, 3, 4 the same reference characters refer to the same parts as shown in Fig. 1. In this embodiment however the parts of the casing are secured together by screws which extend through clear holes 11 in the lower part to screw-threaded recesses 12 in the upper part. Preferably when the parts are tightened up there will be a small clearance between the meeting edges and the rings 4, 5 will be compressed.

In order to reduce the weight of the casing recesses 13 may be provided in the lower part of the casing as shown in Fig. 3.

In the embodiment shown in Fig. 5 a single sealing ring 15 of circular section of rubber or the like is provided this ring being disposed in a peripheral groove in the plate 3 and wedged within the walls 16 of the upper part of the casing. The two parts of the casing are secured together by screws 10a as in the embodiment shown in Fig. 2. The embodiment of Fig. 5 makes a very compact unit.

It will be seen that in the various constructions when the device is immersed in the liquid from which the foam is to be formed and air under pressure is supplied to the space beneath the plate 3 by means of the inflator (not shown) such air can only pass through the pores of the plate or block, other means of escape being prevented by the sealing means.

What is claimed is:

1. A foam-forming device comprising a rigid casing including an upper part and an imperforate lower part, said parts of the casing being secured together, a porous plate of material which shrinks on drying and expands when wet mounted in the casing, said porous plate being mounted in spaced relation to at least a portion of said lower imperforate part of the casing to provide an air space therebetween and being provided with an outwardly facing peripheral groove, an elastic sealing means mounted in said peripheral groove in the plate, said elastic sealing means projecting outwardly beyond the periphery of the porous plate and engaging the inner peripheral surface of one of said parts of the rigid casing with an air-tight seal when the porous plate is dry, said elastic sealing means being adapted to be compressed between the rigid casing and the porous plate when the porous plate is wet and expands, and means for supplying air under pressure to the space between the lower imperforate part of the casing and the porous plate, whereby air is forced through the pores of the porous plate.

2. A foam-forming device as claimed in claim 1, in which the upper part of said casing includes a portion overlying the porous plate forming a collecting chamber for the foam above the plate, said portion being perforate, said upper part of said casing having a peripheral inside surface opposite the periphery of the porous plate, said elastic sealing means mounted in the peripheral groove of the wood plate being wedged against said inside peripheral surface of the upper part of the casing.

3. A foam-forming device comprising a rigid casing including an upper perforate part and an

imperforate lower part secured together, one of said parts having an imperforate inner peripheral surface, a porous wood block which contracts on drying and expands when wet mounted in the casing opposite to and in spaced relation to said inner peripheral surface, said porous block being provided with an outwardly facing peripheral groove, an elastic rubber sealing means mounted in said peripheral groove in the block, said elastic sealing means projecting outwardly beyond the porous block in air-tight contact with said inner peripheral surface, an air space in the casing below and above the block, and means for supplying air under pressure to the air space below the porous block whereby air is forced through the pores of the porous plate, said elastic rubber sealing means permitting the expansion and contraction of the wood block without permitting the leakage of air around the block from the air space therebelow.

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