

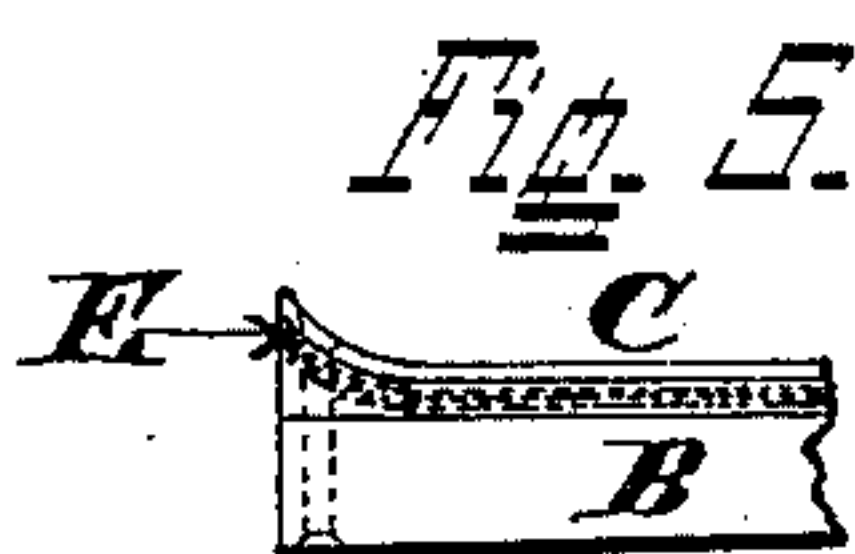
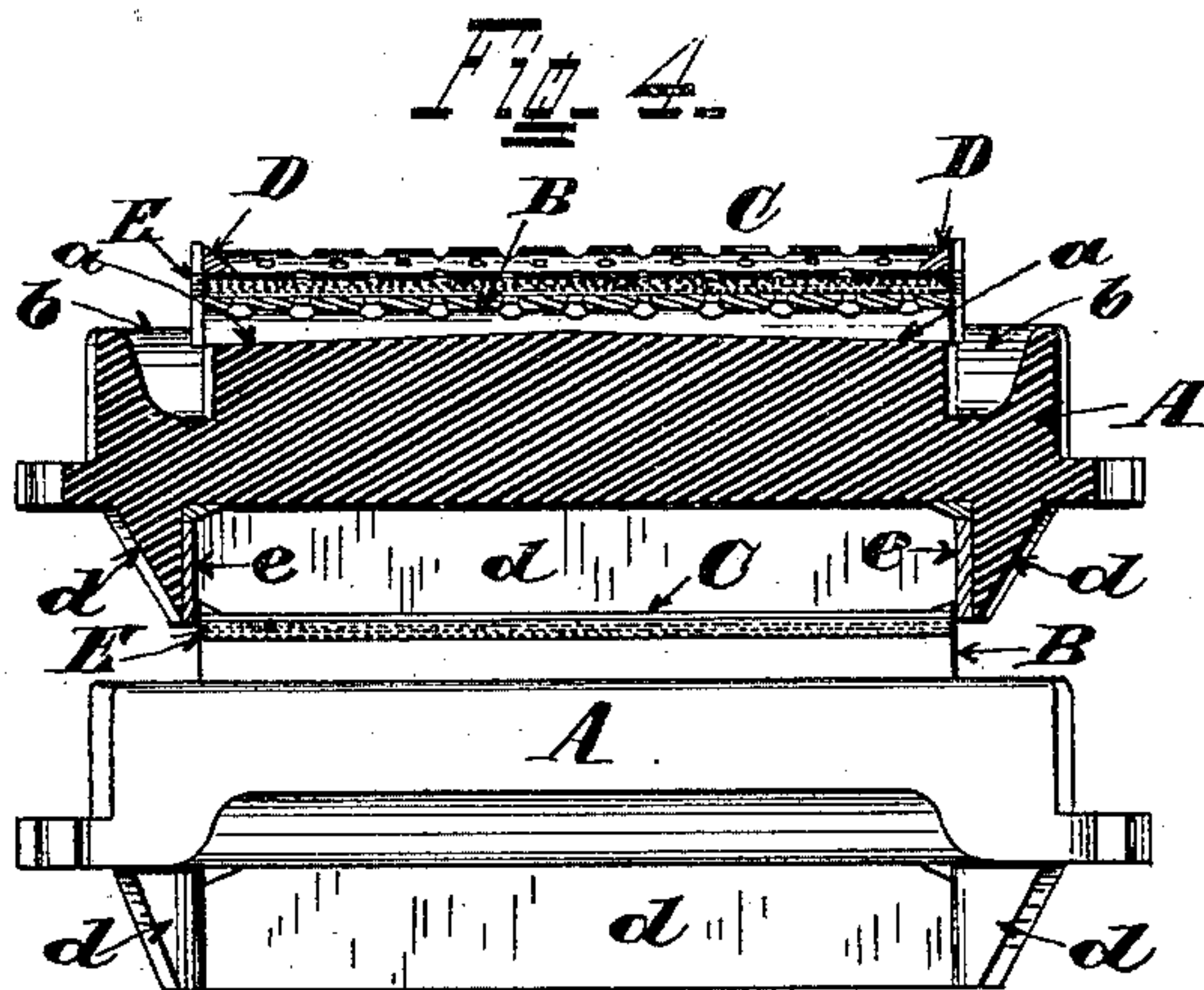
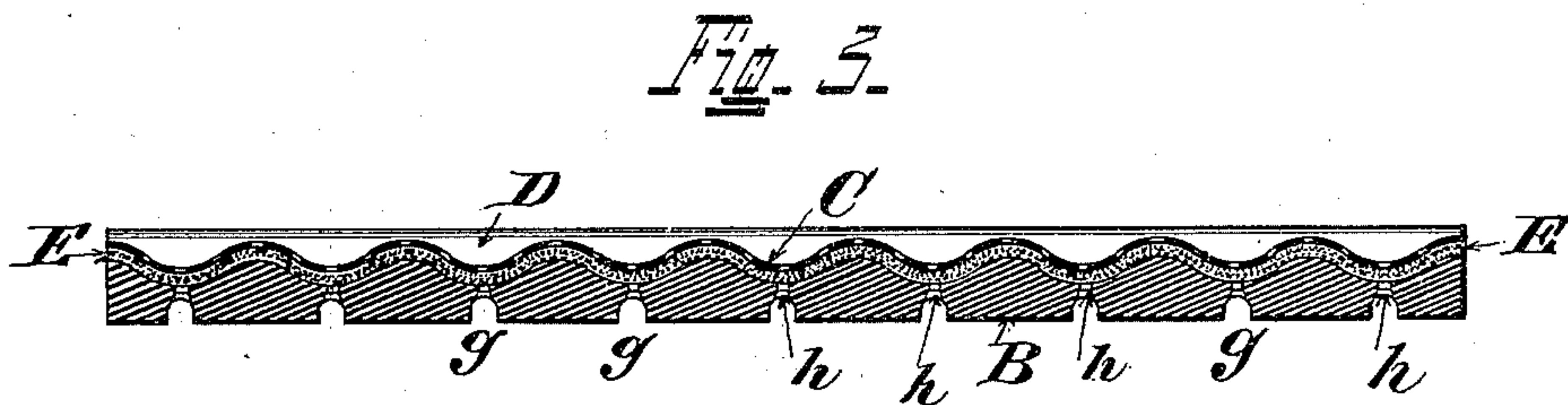
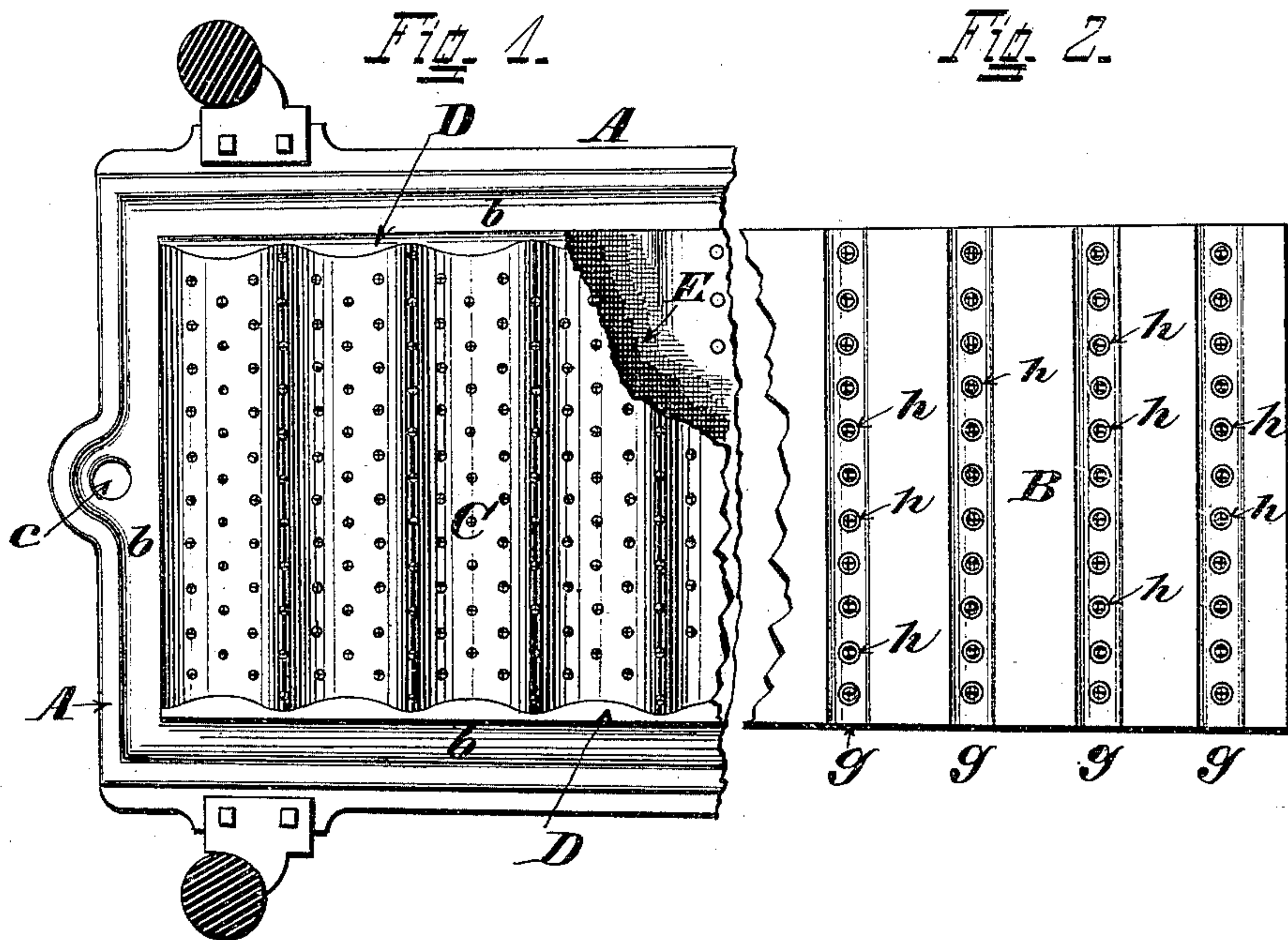
(No Model.)

W. P. CALLAHAN.

OIL PRESS.

No. 299,958.

Patented June 10, 1884.



Attest
Carl Spengel
E. M. Rector

Inventor
Wm. P. Callahan
by *Sturtevant* his Att'y's.

UNITED STATES PATENT OFFICE.

WILLIAM P. CALLAHAN, OF DAYTON, OHIO.

OIL-PRESS.

SPECIFICATION forming part of Letters Patent No. 299,958, dated June 10, 1884.

Application filed March 29, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. CALLAHAN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Oil-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an improvement in presses for extracting oil from seeds or meal—such as cotton-seed or other oleaginous seed—and has for its object, primarily, the production of novel metal mats or meal-pans which rest upon the division-plates or tops of the boxes, whereby I obtain the maximum amount or yield of oil from any given quantity of meal or seed, and whereby the reabsorption of the oil into the cake, by capillary attraction or otherwise, after it has been once expressed is prevented.

The novelty of my invention consists, essentially, of a metal mat composed of a bottom plate whose upper surface is ribbed or corrugated, preferably transversely, whose under surface is grooved or guttered either longitudinally or transversely, and with countersunk perforations through the plate in the depressions of its corrugations and opening into the gutters on its under side; a coincidently-corrugated sheet-metal plate fitted upon and suitably secured to the bottom plate, but separated therefrom by one or more interposed layers of wire-cloth or other interstitial material, and with perforations through the upper plate opening into the chamber or space between the two plates formed by the wire-cloth; also in the details of constructions and combinations of the parts, all as will be here-with set forth and specifically claimed.

In the accompanying drawings, Figure 1 is a top plan view of one of my improved mats applied to the division-plate or box of the press, showing, however, but half of the same, and with a portion of the sheet-metal top plate broken away. Fig. 2 is a bottom plan view of half of the mat. Fig. 3 is a longitudinal central section of the mat. Fig. 4 is a sectional end elevation of two of the boxes or division-plates of the press with the mats ap-

plied thereto. Fig. 5 is a sectional end elevation, in detail, representing a modification in the construction of the mat.

The same reference - letters are used for identical parts in all the figures.

A A represent the usual or any suitable division-plates or boxes having on their upper sides a raised platen or bearing-surface, *a*, surrounding which are the usual or any suitable gutters or oil-runs, *b*, communicating with each other and provided with outlets *c*, to permit the expressed oil to pass from one box or division-plate to the one below it, and so on out into the usual or any oil-receptacle. The top or platen *a* is unbroken and slants slightly from a longitudinal central line to each side to permit the oil to flow off the more readily; or, as seen in Fig. 4, its surface may be slightly convex in transverse section. The under side of the boxes, as seen in Fig. 4, may have pendent side and end walls, *d*, against the inner sides of which are suitably fitted steel lining-plates *e*, with spaces *f* between them, as is usual in this class of presses. The tops of the under sides of the boxes between the side walls are corrugated transversely, and may have fitted thereto correspondingly - corrugated sheet-metal plates.

The metal mats or meal-pans which constitute my present invention, and which rest upon the platens of each of the boxes, are composed of a bottom plate, B, whose under side is slightly concave, or so shaped as to fit snugly to the platen at all points of its contact, and has its under side provided with gutters or channels *g*, running either transversely or longitudinally of the same, preferably the former, as shown in Figs. 2 and 3. The upper surface of the plate B is corrugated from side to side, as shown, and perforations or holes are made through the plate in the depressions of the corrugations, which perforations *h* open into the channels *g*, and are countersunk on their under side, as shown.

Upon the plate B, I place one or more layers of wire-cloth, E, three layers being preferred, and over this wire-cloth is fitted a corrugated sheet-metal plate, preferably of brass, whose corrugations conform to the corrugations upon the top of the plate B.

To secure together or unite the plates B and

C and interposed wire-cloth, I make use of the side strips, D, whose under sides are shaped to fit the corrugations of plate C, on which they rest, and whose upper sides are beveled inwardly, as shown. These side strips, D, may be fastened by bolts or rivets, which pass likewise through the plates B and C, and serve to unite all the parts of the mat. The upper plate, C, is provided with rows of perforations in the ridges and depressions of its corrugations, and other rows between these, if desired, as shown in Figs. 1 and 3, which perforations enter into the space occupied by the wire-cloth.

Instead of placing the strips D upon the plate C, they may be placed between the plate B and the wire-cloth, as shown in Fig. 5; or they may be dispensed with by so shaping the top of plate B that its sides will be raised, the only purpose of these strips being to make the upper surface of the mat dished or concave transversely to prevent the pressing out too far laterally of the meal-cake. From this construction it will be seen that I have provided for the most free and speedy escape of the oil from the meal, both through the mat vertically and out at its sides between plates B and C, by the provision of the wire-cloth, which serves not only to form an air-chamber to prevent a vacuum and the reabsorption of the oil into the cake after pressure has been removed, but enables the upper plate to be filled with many more perforations than would be consistent with the strength of the mat if made of a single piece.

While I have described my mat as preferably constructed with gutters or channels on its under side, I do not thereby limit myself to these gutters or channels formed in the under side of the mat, for it is perfectly obvious that the under side of the mat might be unbroken, except by the perforations through it, and gutters or channels for the escape of the oil might be provided in the upper side or platen of the division-plates or boxes on which the mat rests, care only being taken that the perforations in the mat should come over or open into the gutters or channels. Furthermore,

while I have described wire-cloth as preferable, because more durable, to interpose between the upper and lower plates of the mat, yet I do not limit myself to wire-cloth alone, as a hair matting might be used with the same effect, or layers of hair-cloth, or any other suitable interstitial material which would serve to separate the two plates and form an air-chamber.

Having thus fully described my invention, I claim—

1. The combination, with the division-plates or boxes of the oil-press, of metal meal pans or mats composed of a lower perforated plate, an upper perforated and corrugated plate, and interposed interstitial material, whereby an air-chamber is formed between the two plates.

2. The combination, with the division-plates or boxes of an oil-press, of metal meal pans or mats composed of a lower perforated plate, an upper perforated and corrugated plate, and interposed wire-cloth in one or more layers.

3. An oil-press mat or meal-pan composed of a bottom plate whose under side is guttered, whose upper surface is corrugated with perforations from the depressions of the corrugations and opening into the gutters, a superimposed perforated and correspondingly-corrugated sheet-metal plate, and interposed wire-cloth in one or more layers, substantially as described.

4. An oil-press mat or meal-pan composed of a bottom plate whose under side is concave transversely, and provided with gutters or channels whose upper surface is corrugated from side to side with perforations from the depressions of the corrugations and opening into the gutters, which perforations are countersunk or enlarged at their lower ends, a superimposed perforated and correspondingly-corrugated sheet-metal plate, and interposed wire-cloth in one or more layers, substantially as described.

WM. P. CALLAHAN.

Witnesses:

E. W. RICTOR,
OTTO RICHTER.