

(No Model.)

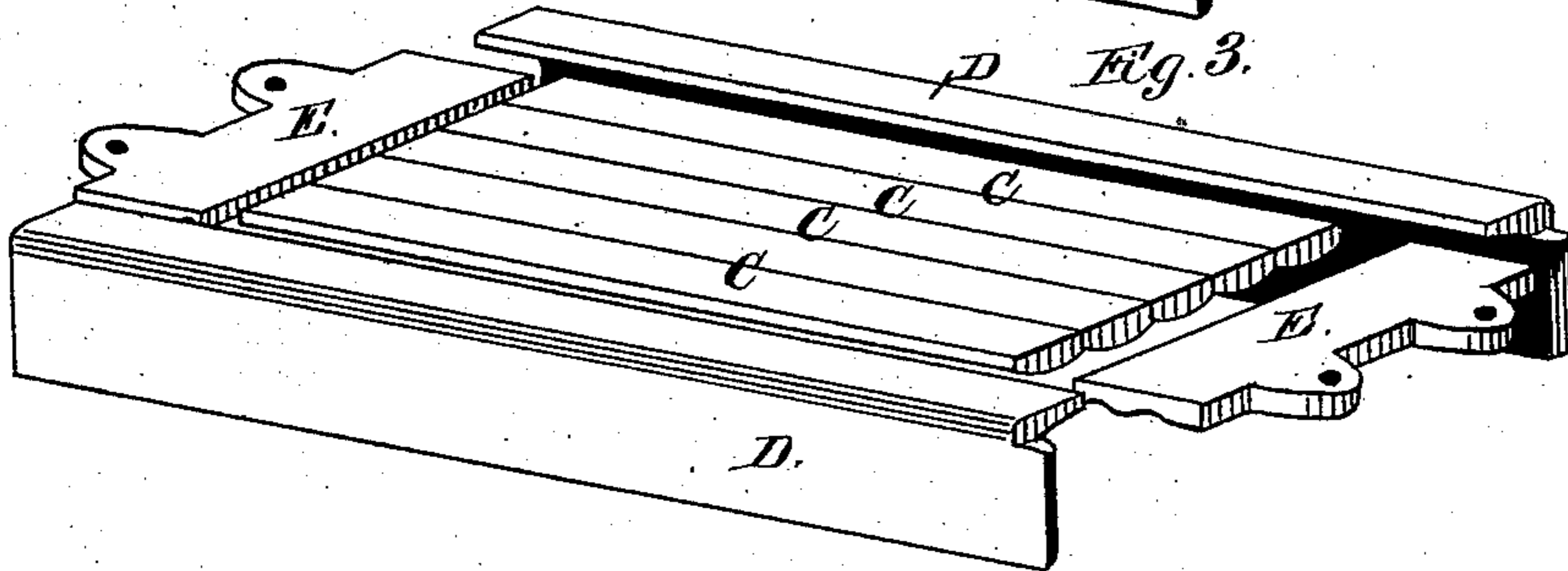
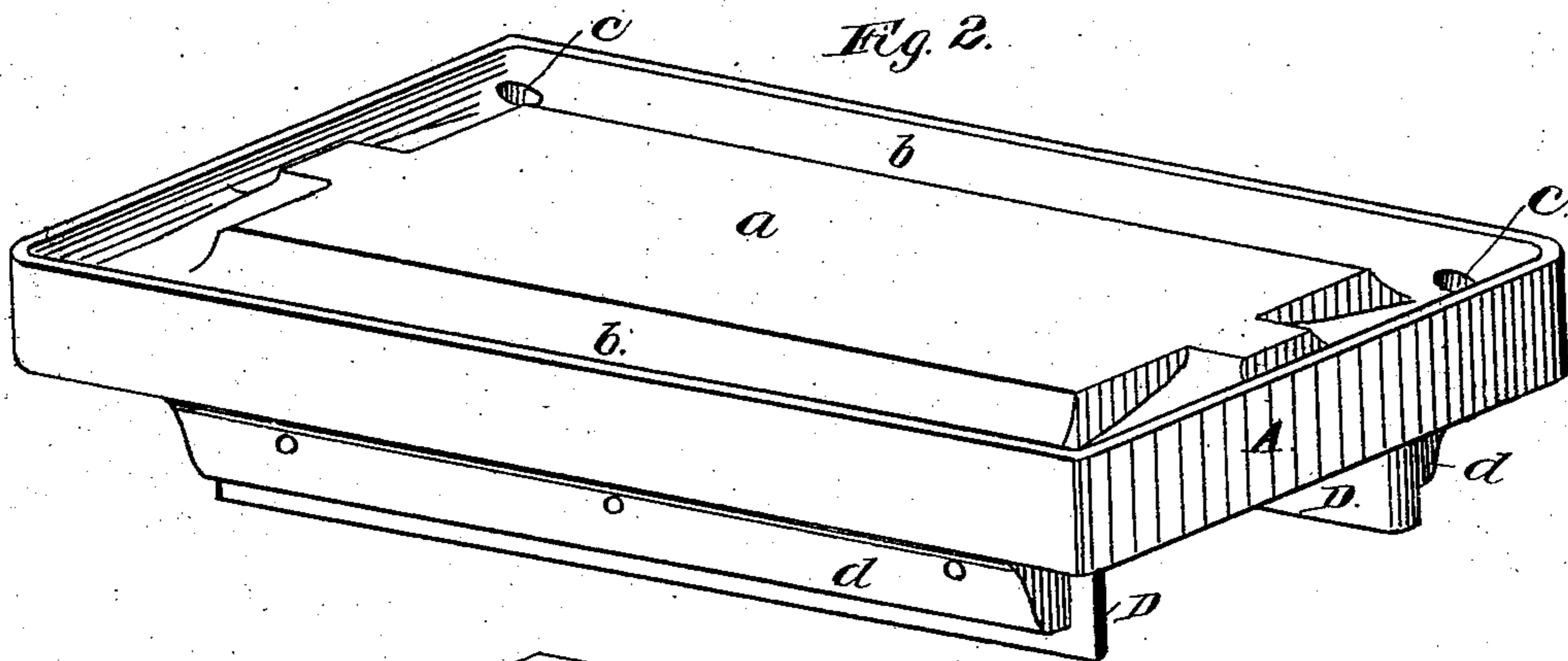
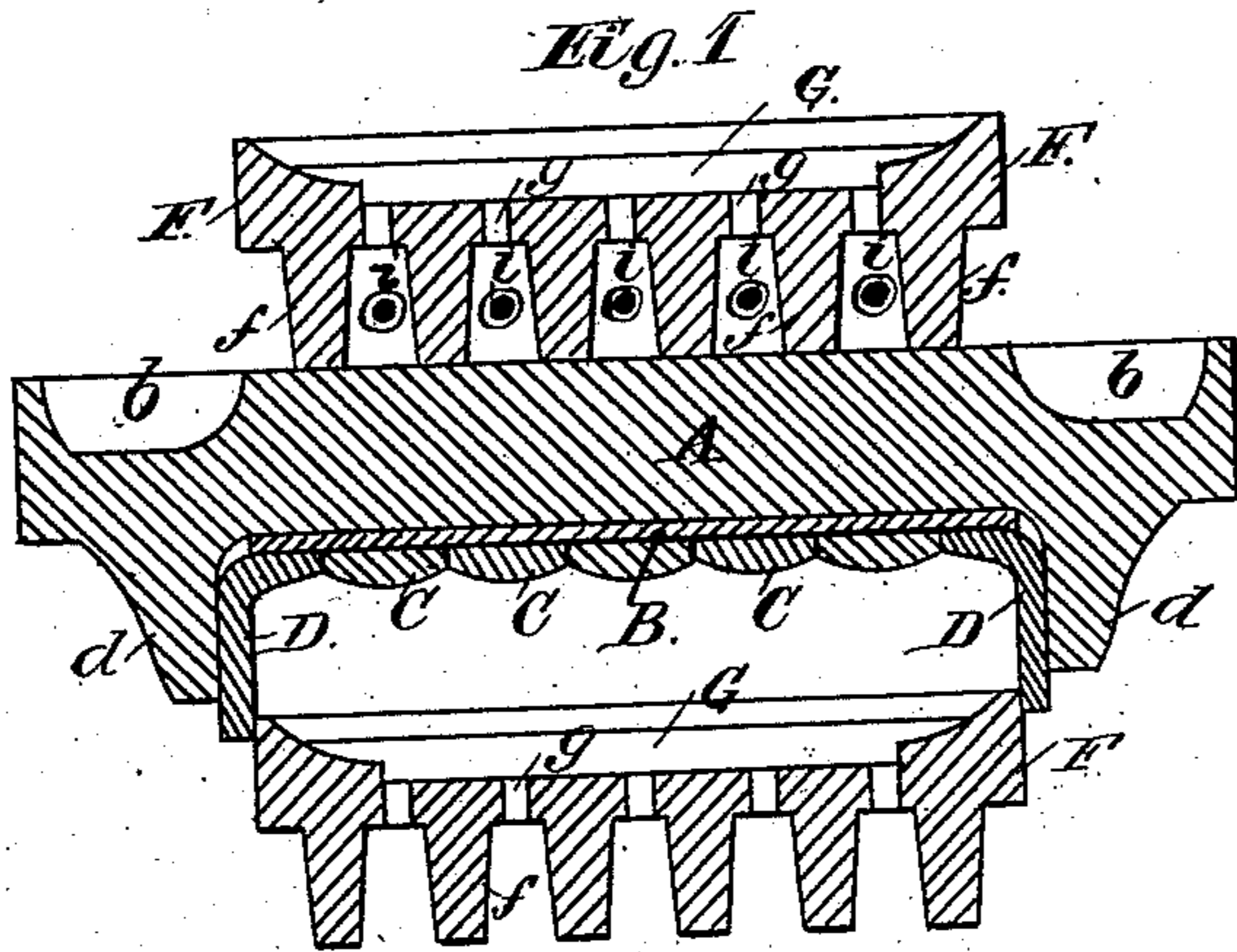
3 Sheets—Sheet 1.

J. H. VAILE.

OIL PRESS.

No. 291,112.

Patented Jan. 1, 1884.



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(No Model.)

3 Sheets—Sheet 2.

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Fig. 4.

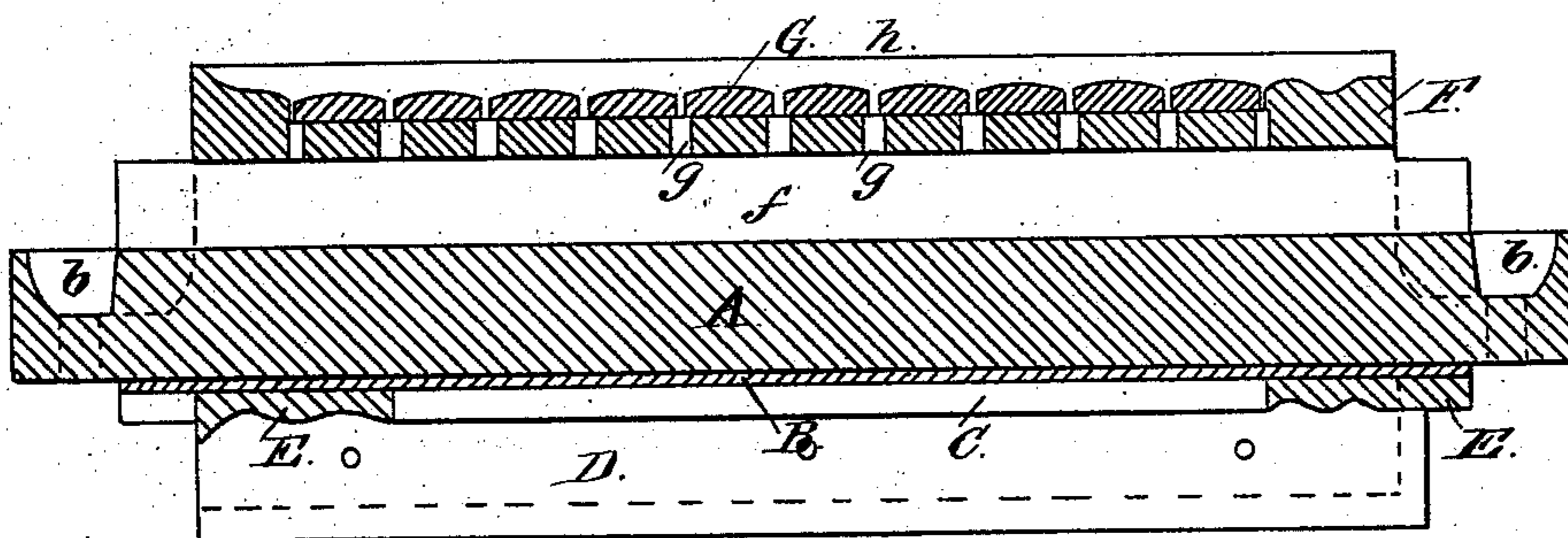
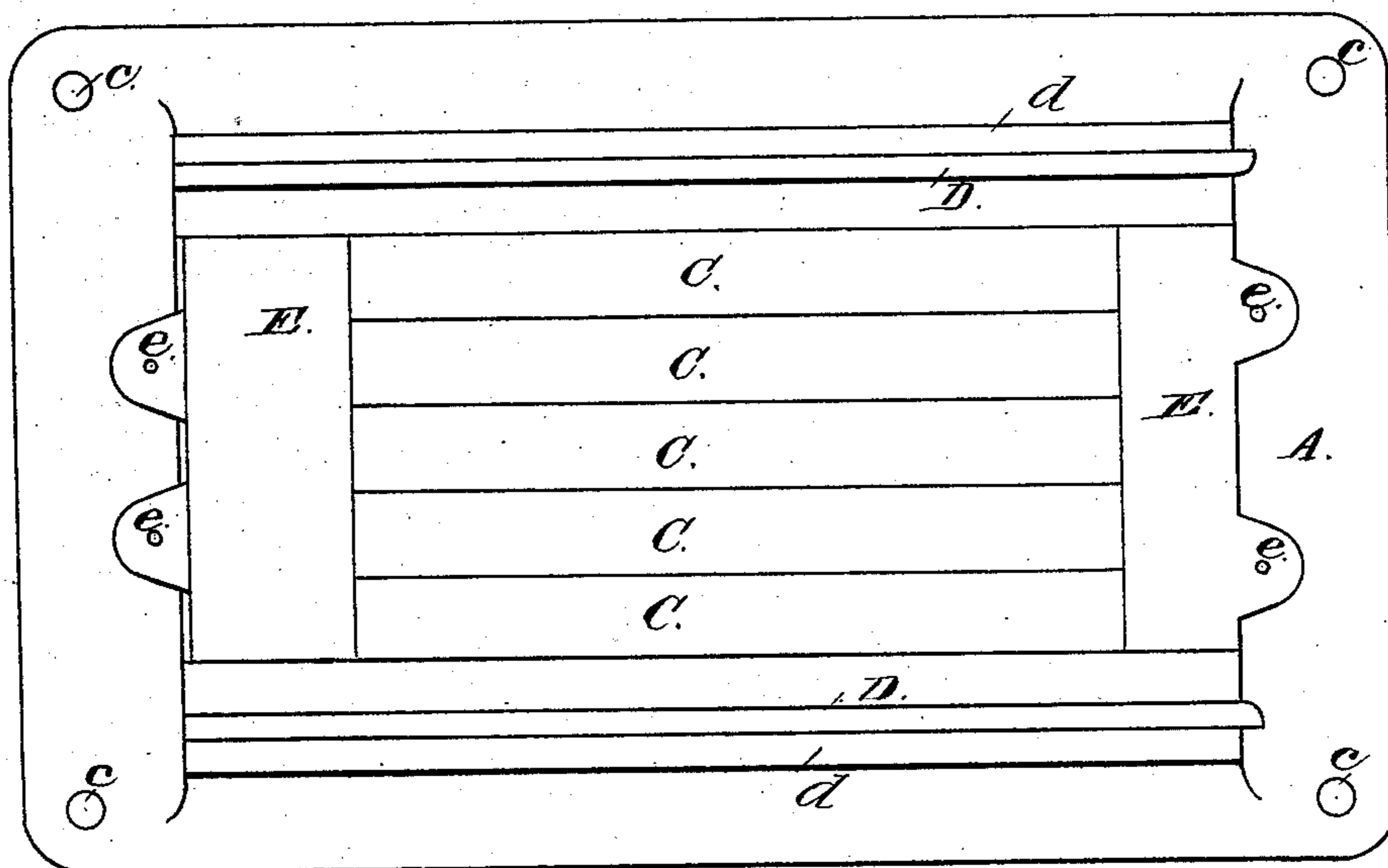


Fig. 5.



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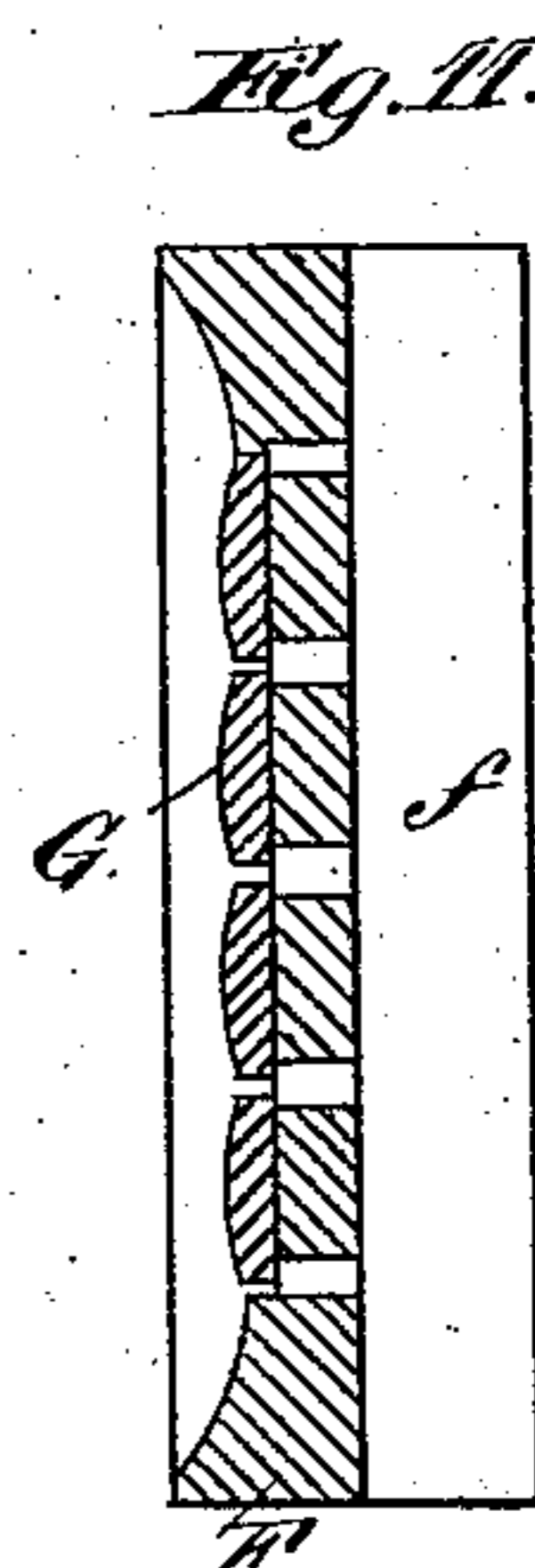
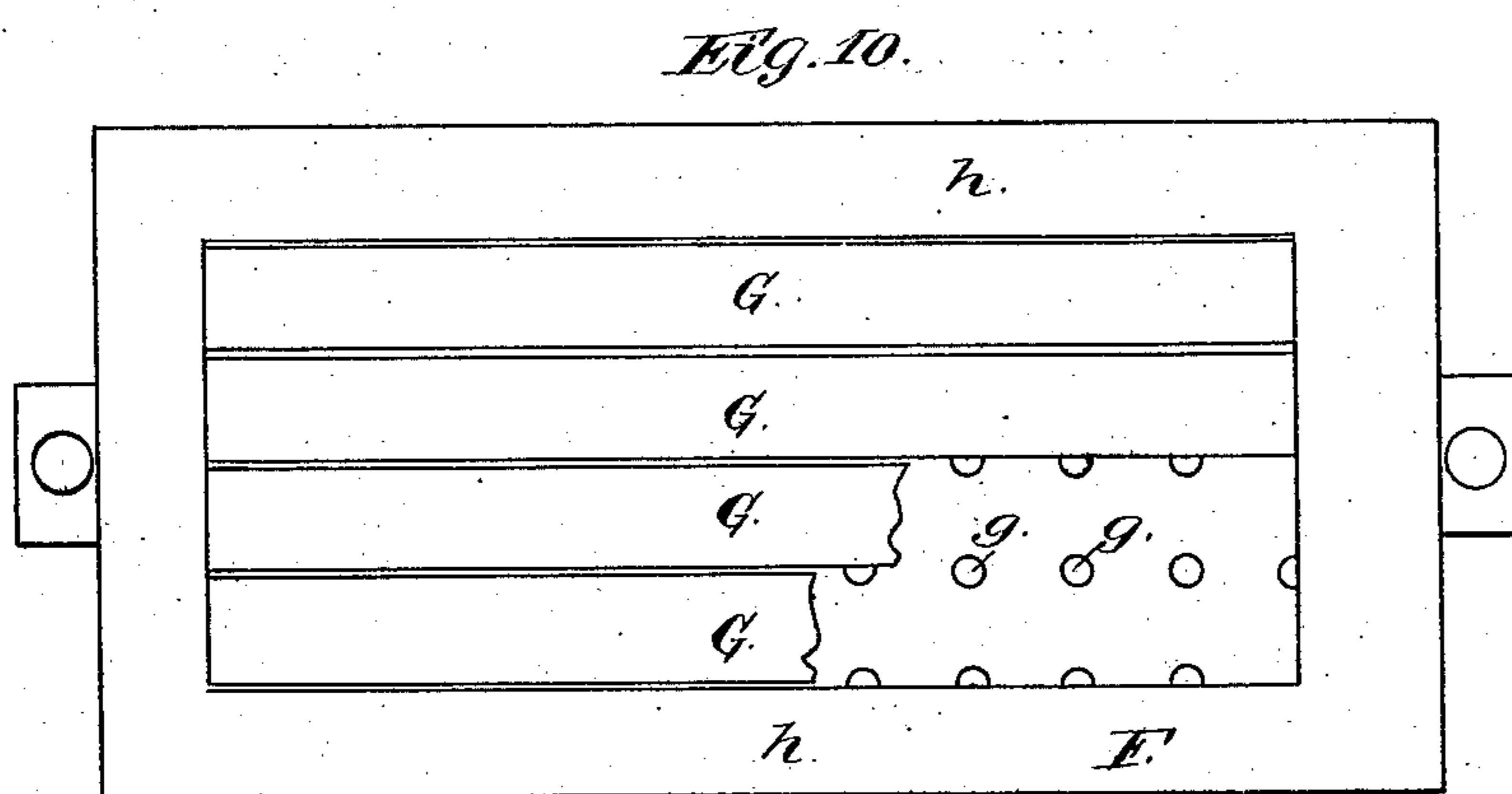
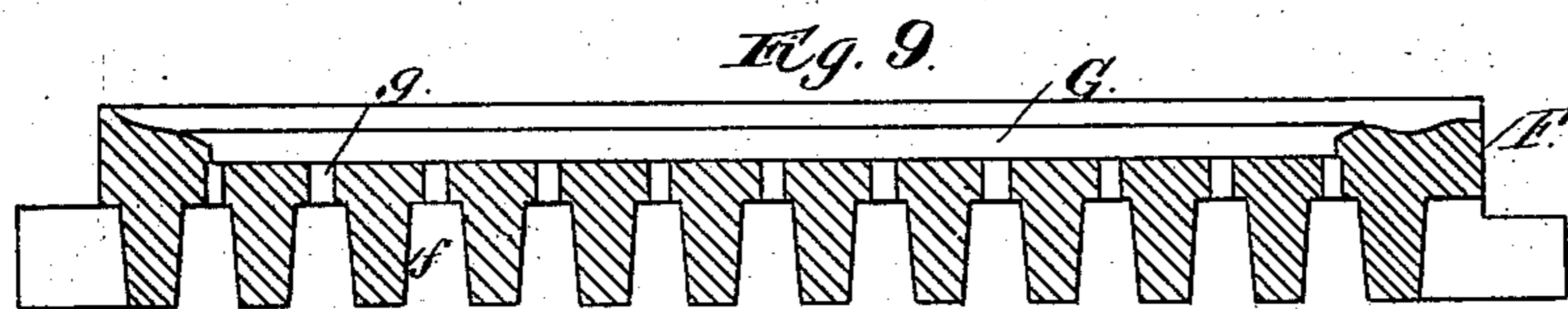
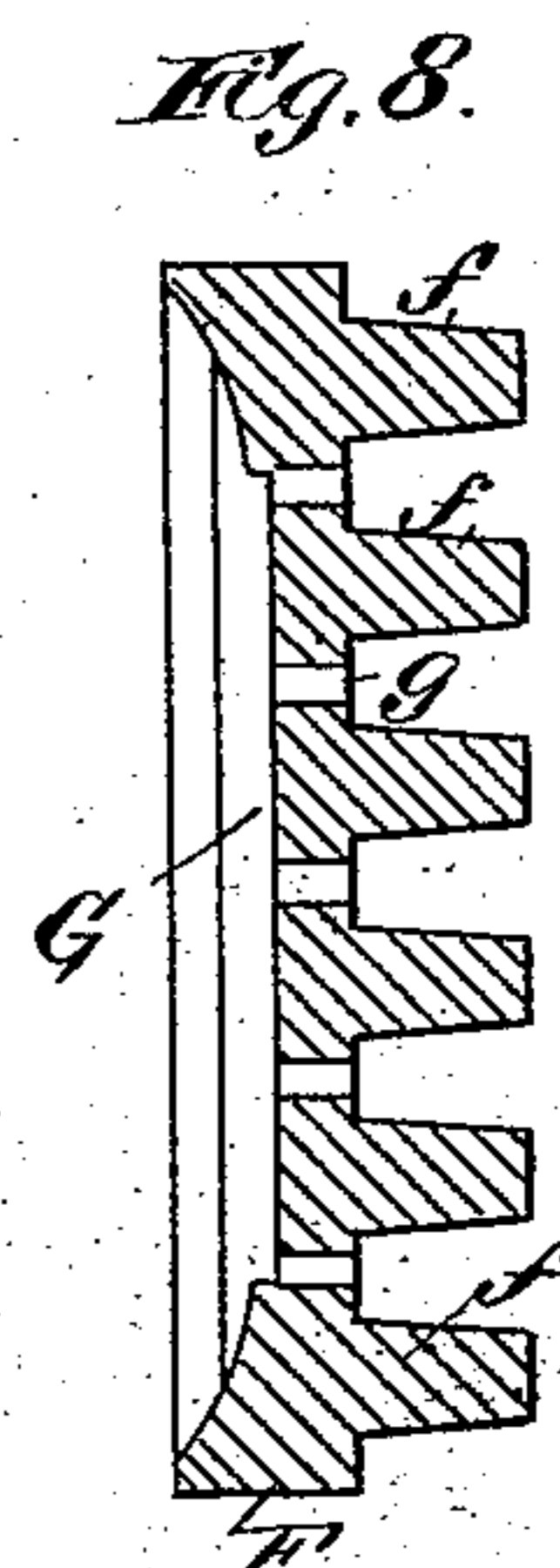
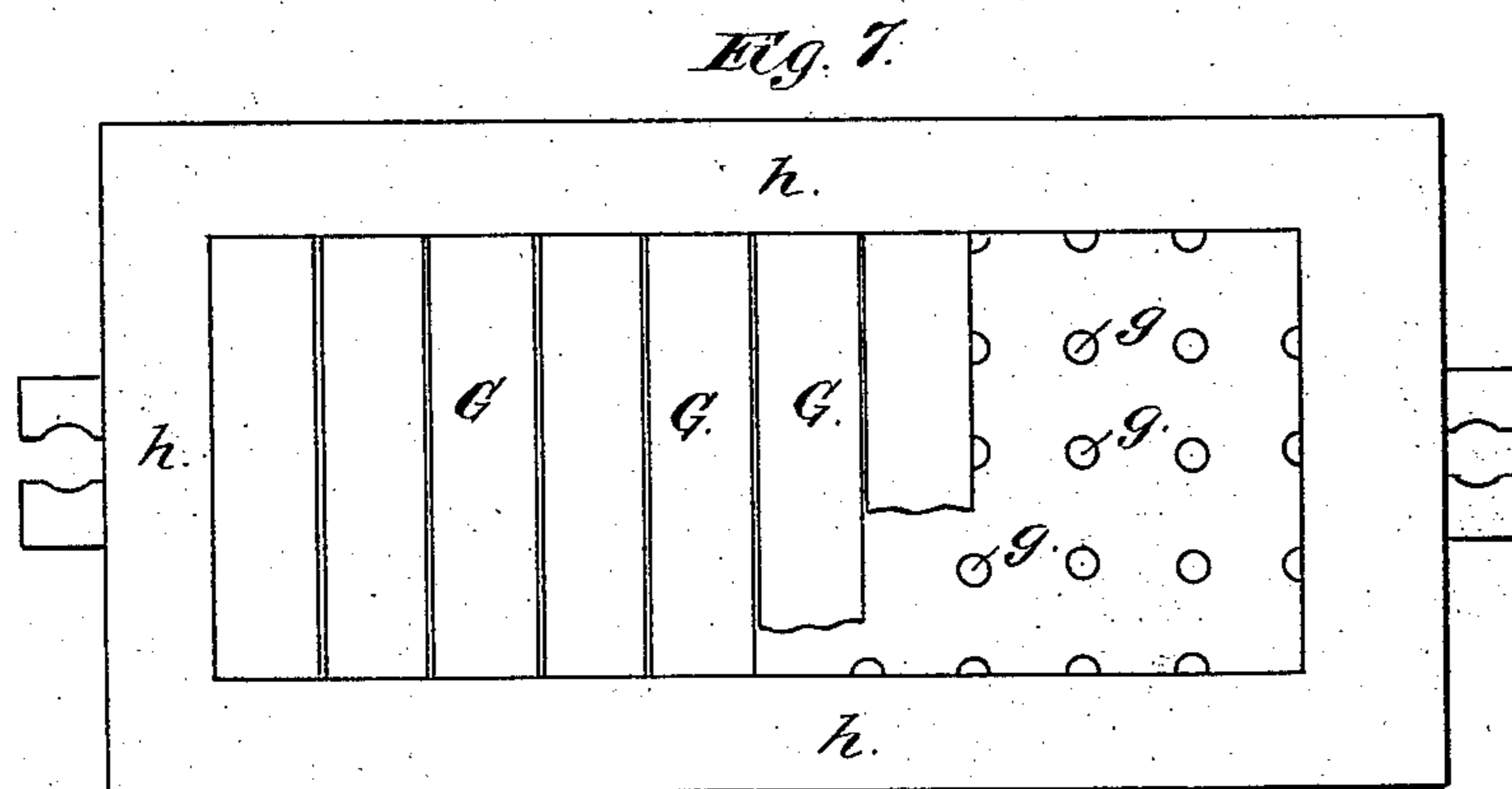
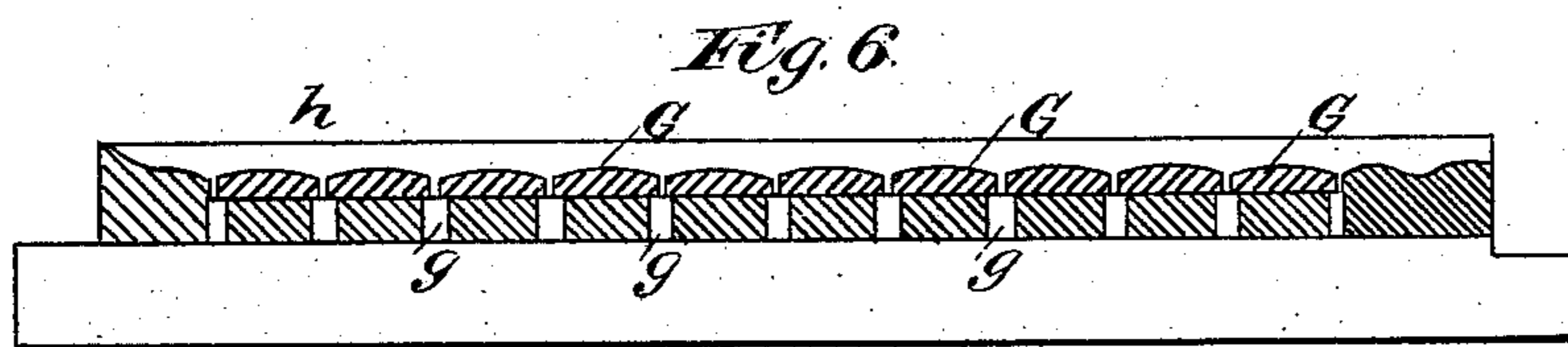
3 Sheets—Sheet 3.

J. H. VAILE.

OIL PRESS.

No. 291,112.

Patented Jan. 1, 1884.



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UNITED STATES PATENT OFFICE.

JOHN H. VAILE, OF DAYTON, OHIO.

OIL-PRESS.

SPECIFICATION forming part of Letters Patent No. 291,112, dated January 1, 1884.

Application filed September 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. VAILE, 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 improvements in presses for extracting oil from seeds, and has for its object both the simplification and economy of the means employed, as well as the obtaining the maximum amount or yield of oil from any given quantity of meal or seed, and also the prevention of the reabsorption of the oil into the cake, after it has been once expressed, by capillary attraction or otherwise.

The novelty consists in the construction and combination of the devices employed, as will be herewith set forth and specifically claimed.

In the accompanying drawings, Figure 1, Sheet 1, is a transverse vertical section through one of my improved boxes and two of the division-plates. Fig. 2, Sheet 1, is a perspective view of the box. Fig. 3, Sheet 1, is a detailed perspective view of a portion of the box-lining. Fig. 4, Sheet 2, is a longitudinal vertical sectional view through the box and division-plate resting thereon. Fig. 5, Sheet 2, is a bottom plan view of the box. Fig. 6, Sheet 3, is a longitudinal vertical section of one of the division-plates. Fig. 7, Sheet 3, is a plan view of one of the division-plates with some of the supplemental ribs removed and broken away to show the perforations. Fig. 8, Sheet 3, is a transverse sectional view of the division-plate represented in Fig. 7. Fig. 9, Sheet 3, is a longitudinal vertical sectional view of one of the division-plates wherein the construction is modified. Fig. 10, Sheet 3, is a plan view of the division-plate represented by Fig. 9. Fig. 11, Sheet 3, is a transverse sectional view of the division-plate shown in Figs. 9 and 10.

The same letters of reference are used to indicate corresponding parts in all the figures.

The construction embodying my present invention is an improvement more particularly of the patent granted Geo. W. Hatfield, February 13, 1883, No. 272,134, and while I have retained the general form and arrange-

ment of telescopic boxes described and claimed in the patent referred to, I have made valuable improvements in the details of construction, looking not only to the better results obtained, but also to the facilities for removing the parts for the purpose of cleaning them, for it is well known that the great difficulty to be encountered in oil-presses is the gumming up of the orifices or interstices through which the oil had to pass. My present box, A, Figs. 1 and 2, is a cast-metal plate, with a smooth, flat central bed or platen, *a*, around which extends a continuous gutter or channel, *b*, with perforations at the corners *c*, through the plate, to enable the expressed oil to pass down from one box to the other, and finally out through proper conducting-pipes into any desired receptacle. The under side of each box A is provided with pendent side walls, *d*. The inner top side of the box is fitted with a wrought-metal plate, B, between the side walls, *d*, which extends the entire length of the box between said walls, as shown in Figs. 1 and 4. To this plate are bolted or riveted the longitudinal supplemental ribs C, which do not extend quite the entire length of the box, as shown in Figs. 3 and 4. These supplemental ribs, which are convex in transverse section on their under sides, may be placed close together, or interstices may be left between them as desired, though the better construction is to place them close together, so that they actually abut, as shown in Figs. 1 and 3. Now, to hold the plate B, with its ribs C, in place within the box, I employ the angular side pieces, D, which are bolted or screwed to the inner sides of the walls *d*, and between the upper bent-in ends of which and the top of the box the projecting side edges of the plate B are clamped, and also the corrugated transverse end pieces, E, Figs. 3, 4, and 5, which are bolted or screwed to the under side of the box, at each end, through ears or lugs *e*.

In addition to forming means for supporting and clamping the plate B, I secure another important advantage by bending in the side plates, D, for some little distance and abutting them against the supplemental ribs, and that is, that at the sides where the open edges of the cloth enfolding the meal come a smooth unbroken surface is presented, which prevents any squeezing out and accumulation of the

meal in the interstices between the ribs and the side plates. These latter end pieces fit over and serve to clamp the projecting ends of the plate B, have their inner edges abutting against the ends of the ribs C, and have their undersides corrugated transversely of the box, as seen in Figs. 3 and 4. The object of this corrugation of the pieces E is to do away with the necessity of end walls or doors and to prevent the squeezing out endwise of the meal-cake, as will be readily understood; and it will be readily seen from the above construction that by removing either of the end pieces, E, the plate B, with its attached ribs C, can be drawn out for the purpose of cleansing the ribs and the interior of the box by removing the gummed oil that may have adhered to them, or for cleansing generally. The division-plates F, which rest upon the top or platen *a* of the boxes, and which telescope into the under side of the box immediately above them, have integral longitudinal ribs, *f*, upon their under side, with perforations *g* opening into the spaces between said ribs. These perforations or apertures may be smaller at the top than at the bottom, if desired, and upon the top of these division-plates are secured transverse supplemental ribs G, lying between the raised rim or molding *h*, which surrounds the upper side of the division-plates, as seen in Figs. 6, 7, and 8, and whose upper surfaces are convex in cross-section, and whose edges do not meet, but form interstices directly over the rows of perforations *g* in the plate, as shown in Figs. 6 and 7. These supplemental ribs may be secured to the plates F by screws or rivets, or in any suitable manner. These division-plates fit snugly between the side walls of the boxes, and can be slipped in or out at pleasure, the boxes being suspended between the guides of the press in the usual or any suitable way. If desired, coils of steam-pipes *i*, with proper jointed connections, may be made to pass longitudinally between the ribs *f* and the division-plates, as shown in Fig. 1, for the purpose of applying heat to cause the more ready extraction and flow of the oil. By this means I obtain the advantage of having my steam-conductors so located as to thoroughly heat the meal as well as the boxes and division-plates without the disadvantage of having the steam come into direct contact with the meal, which would be exceedingly deleterious, as would be readily understood; and, furthermore, in case of leakage in any of the pipes or their connections, they can be readily got-

ten out for the purpose of repairing the same by simply removing the division-plates.

Instead of the construction of the division-plates as above given, that shown in Figs. 9, 10, and 11, Sheet 3, may be employed. In the latter case the supplemental ribs G, instead of being transverse upon the pan, are arranged longitudinally thereon, and the bottom ribs, *f*, instead of running longitudinally, may run transversely.

Having thus fully described my invention, I claim—

1. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of removable supplemental ribs, forming the top walls thereof.

2. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of supplemental ribs, forming the top walls thereof, and supplemental side walls extending up and bent in for some distance, so as to abut against the supplemental ribs and form smooth unbroken surfaces at the sides, as and for the purpose specified.

3. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of removable supplemental ribs, side plates, D, and end plates, E, substantially as described.

4. In an oil-press having telescopic boxes and removable meal-supporting plates, the combination, with said boxes and plates, of transversely-corrugated front portions, whereby the meal is retained and prevented from being squeezed out, as set forth.

5. In an oil-press having a series of telescopic boxes, the box A, having a smooth, flat top, *a*, with a surrounding gutter, *b*, pendent side walls, *d*, supplemental ribs C, secured to a removable plate, B, angular side plates, D, and end plates, E, substantially as described.

6. In an oil press, the perforated division-plates, having on their under sides longitudinal or transverse ribs and on their upper surfaces supplemental transverse or longitudinal ribs, with interstices opening into the perforations in the plates.

7. In an oil-press, the combination and arrangement of the boxes A, division-plates F, and steam-pipes *i*, said steam-pipes occupying spaces between the division-plates and boxes, substantially as described.

JOHN H. VAILE.

Witnesses:

E. W. RECTOR,
O. RICHTER.