

(No Model.)

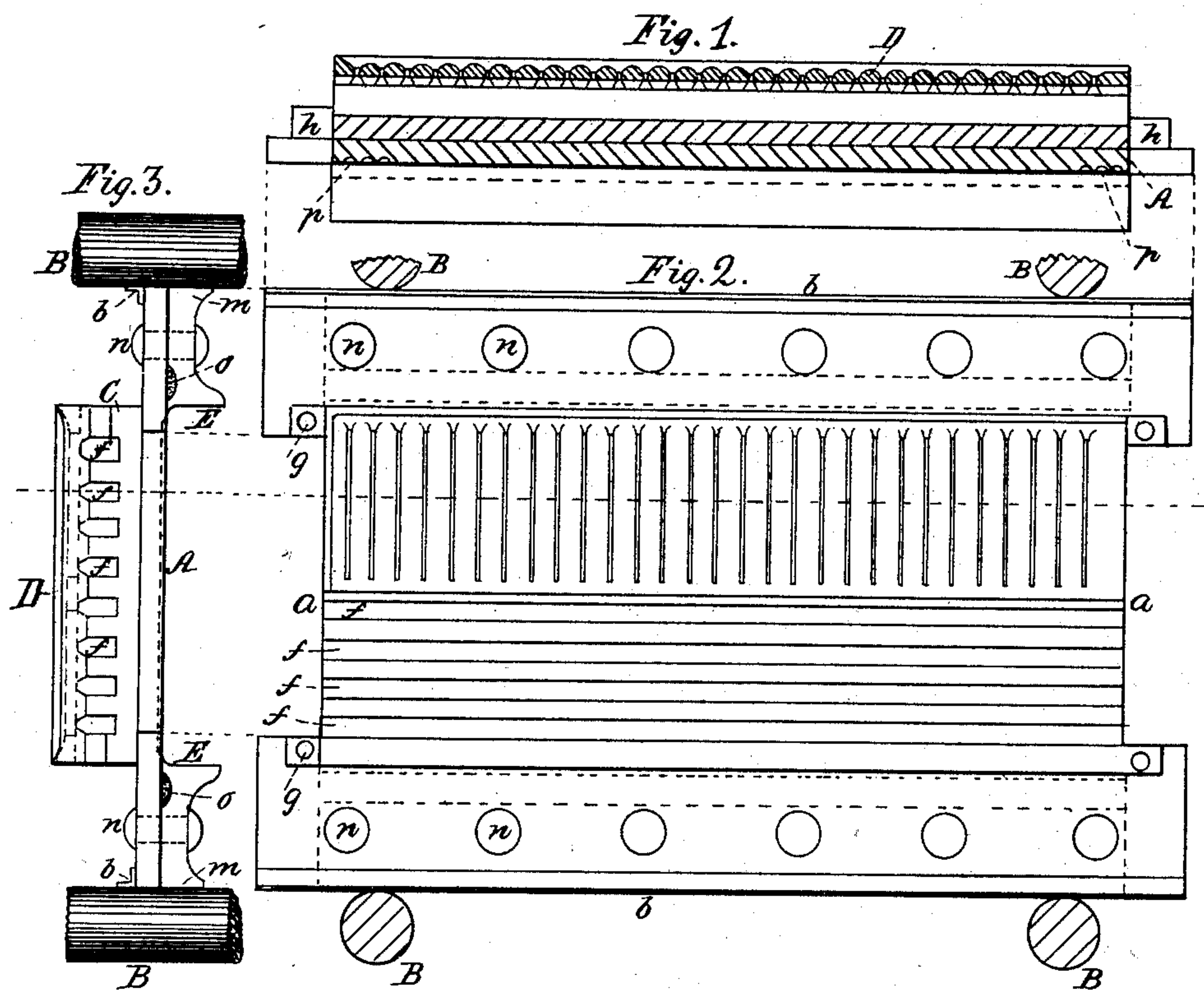
2 Sheets—Sheet 1.

J. H. VAILE.

OIL PRESS.

No. 363,701.

Patented May 24, 1887.



WITNESSES:  
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(No Model.)

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Fig. 6.



Fig. 5.

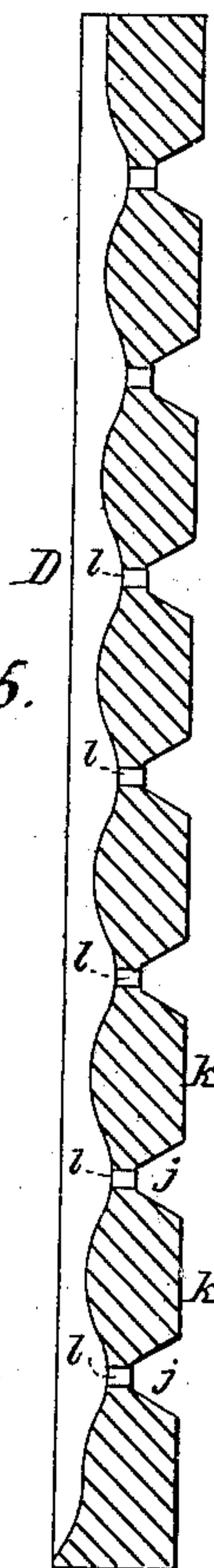
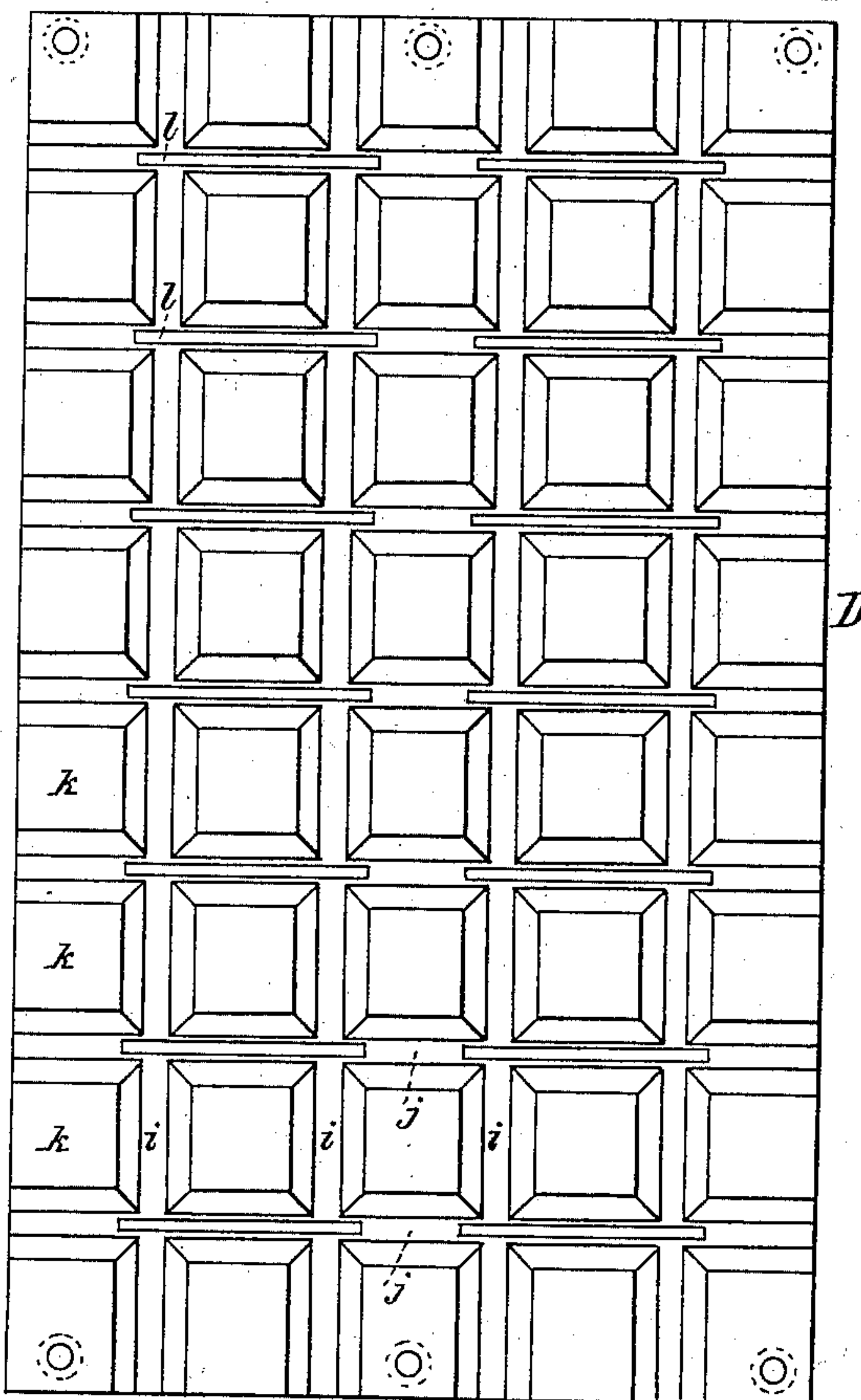


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN H. VAILE, OF DAYTON, OHIO.

## OIL-PRESS.

SPECIFICATION forming part of Letters Patent No. 363,701, dated May 24, 1887.

Application filed May 20, 1886. Serial No. 202,800. (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 an improvement in presses for extracting oil from seeds or meal in that class of presses having so-called "boxes," or merely division-plates, and has for its object the improved construction of the boxes or plates, whereby strength is obtained, and a larger yield of oil secured from a given amount of meal or seed.

The novelty of my invention will be herein set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1, Sheet 1, is a sectional side elevation of the box. Fig. 2, Sheet 1, is a plan view of the same, with the mat cut in half longitudinally to show the gutters or grating below. Fig. 3, Sheet 1, is an end elevation of the box. Fig. 4, Sheet 2, is a bottom plan view of the mat. Fig. 5, Sheet 2, is a sectional side elevation of the same. Fig. 6, Sheet 2, is an end elevation of the same.

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

Where so-called "boxes" are used, each box of the series is constructed as follows: A flat metal plate, A, fitted between the uprights B of the press, serves as the division-plate. It is somewhat longer than the grating and mat, which are secured upon it, but is cut out at its ends, so that the inner edge of each cut-out portion is coincident with the ends of the grating and mat, as shown in Fig. 2, where *a a* represent the cut-out portions.

Upon the top side edges of the plate A are secured angle-irons *b*, for a purpose to be hereinafter explained. The platen C, as seen in Fig. 3, may be a plate, with gutters *f* extending from end to end thereof.

Where a guttered platen, as shown in Fig. 3, is employed, it is provided with perforated end lugs, *h*, which correspond with the exten-

sions of the outside bars, *c*, of the grating, as shown in Fig. 1, by which it is bolted in a similar manner to the division-plate A, as will be readily understood.

The mat D (shown more particularly in Figs. 4, 5, and 6, Sheet 2) rests upon, is secured to, and its edges are flush with the platen. It is constructed as follows: Its top surface is preferably recessed, so as to leave a retaining edge or wall on each side, and even on the ends, if desired, and is corrugated transversely. Its under surface has longitudinal gutters *i*, preferably wider at the bottom than at the top, extending from end to end, and preferably made to register with the spaces between the bars of the grated platen or the gutters in the solid platen, and transverse gutters *j*, preferably wider at the bottom than at the top, extending from side to side, and preferably the same distance apart as the gutters *i*, at right angles to which they run, thus forming rows of rectangular blocks *k*, with beveled sides, the bottoms of which rest upon and come in direct contact with the top of the platen where a platen is used at all, for it is evident that a mat of this character can rest directly upon the division-plate when the rectangular blocks are made sufficiently deep to take the place of the platen.

In the depressions of the corrugations slots *l* are cut through the mat, and open into the gutters *j*. These slots may extend almost the entire length of the corrugations; but I prefer, in order to strengthen the mat, to have two slots in each depression, as seen in Figs. 4 and 6.

It is also evident that the advantages of this feature of my invention could be obtained by a mat in which the cross-channels on its under side were not wider at the bottom than at the top, and, furthermore, that said mat might be substantially plain or flat on its upper face.

In constructing boxes of this general character—by which I mean boxes built up of separate pieces or parts bolted or riveted together—the greatest difficulty has been found in obtaining sufficient strength to overcome the weight and pressure on top of the division-plates, which has a tendency to cause the division-plates to buckle or bend down at their middle, and the wedging off of the side walls,



E, from the division-plate by the crowding of the meal and oil into the joints between them. To overcome the first of these difficulties, I construct my side walls, E, each of a single  
 5 piece, with the ends *m*, which bear against the uprights B, extended and flush with the sides of the division-plates, so as to form with the division-plate a continuous and elongated bearing, which, when the side walls are bolted or  
 10 riveted, by rivets *n*, to the division-plate, aid said plate in resisting the weight and pressure upon its middle, as will be readily understood.

The under sides of the side walls, E, may be cut or rolled out, as shown, or in any other  
 15 suitable manner, to obtain sufficient lightness consistent with strength. To overcome the second of these difficulties, I form a gutter or channel, *o*, Fig. 3, running the length of each side wall on its top and near its inner edge,  
 20 in which, and by the bottom of the division-plate, a previously-placed suitable packing material is firmly compressed, so as to entirely fill up the gutters *o*, and thereby prevent any squeezing in of the meal or oil beyond said  
 25 packing.

It is evident that the gutters *o*, instead of being in the side walls, might be upon the under side of the division-plate; or the same result would be accomplished by forming coincident gutters in both the under side of the  
 30 division-plate and upper side of the side wall.

One or more grooves or gutters, *p*, are planed out of the under side of the division-plate at or near each end and transversely of the same,  
 35 to more securely hold the cloth and prevent the squeezing out of the meal at the ends of the box.

It may be found desirable in some cases, where a dry meal is used, to entirely dispense  
 40 with the side walls, above described, and to substitute therefor the usual retaining-edges to give the proper shape to the cake and prevent the squeezing out of the meal.

The advantages to be derived from this construction are:

First. By the cross-channeling of the under side of the mat in connection with the gutters of the platen, where a platen is used, the expressed oil can find an instant and most ready  
 50 exit, and by widening these channels at their bottom all danger of re-absorption by capillary attraction is obviated.

Second, and as different from all presses with which I am acquainted, the gutters entirely surrounding the division-plates are entirely done away with, and the expressed oil flows freely directly from the ends of each division-plate down into a trough or conduit at the  
 55 bottom of the series. Again, by means of the cut-out portions *a*, any meal that might possibly become loosened and detached during the insertion or removal of the cake would fall to the floor or an enlarged bottom division-plate of the series, instead of being deposited on the  
 60 next plate below.

Third. The angle-irons *b* serve to convert that

portion of the division-plate between themselves and the platen into troughs to carry off to the ends of the plates any oil that might escape between the sides of the mats and  
 70 platens.

Fourth. By the use of the side walls with the enlarged outer bearings, *m*, the tendency to sag or bend down in the division-plates is obviated.

Fifth. By means of the packing interposed between the side-wall pieces and division-plates the crowding in of the meal and oil between these parts is entirely prevented.

Having thus fully described my invention, 80 I claim—

1. An oil-press mat having its under side channeled both longitudinally and transversely, whereby a series of supporting-blocks are formed, and having slots through the body  
 85 of said mat, opening into said channels, said slots being less in width than the bottom of the channels, in combination with a platen provided with gutters, and upon which said mat rests, substantially as described.

2. An oil-press mat having its upper surface corrugated and its under side channeled both longitudinally and transversely, said channels being wider at the bottom than at the top, and having slots extending through the  
 95 depressions of the corrugations and opening into the transverse channels, in combination with a platen provided with gutters, and upon which said mat rests, substantially as described.

3. The combination, with an oil-press mat and division-plate, of a platen having longitudinal gutters and extended perforated ends by which it is bolted to said division-plate, substantially as described.

4. The combination, with the division-plate of an oil-press box, of side walls secured thereto and having their outer bearing-surfaces extended and coincident with the bearing-surface of the division-plate, whereby the division-plate is re-enforced against sagging or bending, substantially as described.

5. The combination, with the division-plate of an oil-press box, of side walls secured to the under side thereof, and with suitable packing material interposed between them, whereby  
 115 the wedging in of the meal or oil at the joint is prevented, substantially as described.

6. The combination, with the division-plate of an oil-press box, of side walls secured to the under side thereof, and with suitable packing material interposed in a recess between them, whereby the wedging in of the meal or oil at the joint is prevented, substantially as described.

7. The combination, with a division-plate of an oil-press box, of side wall pieces secured thereto, and having longitudinal gutters on their upper sides, with packing material secured in said gutters, whereby the wedging in of the meal or oil at the joint is prevented, 130 substantially as described.

8. The combination, with the division-plate



of an oil-press box, of side walls secured thereto, and having their outer bearing-surfaces extended and coincident with the bearing-surface of the division-plate, and having suitable packing material interposed between the under side of the division-plate and upper side of the side walls, substantially as and for the purpose described.

9. A division-plate for oil-presses having its ends cut out, in combination with a platen and a mat resting thereon, the ends of said platen and mat being coincident with the inner edges of said cut-out portions, substantially as and for the purpose described.

10. A series of division-plates for oil-presses,

each plate having its ends cut out, in combination with a platen and mat resting thereon, the ends of said platen and mat being coincident with the inner edges of said cut-out portions, substantially as described.

11. In a series of division-plates for oil-presses, each plate having its ends cut out and provided with longitudinal drains extending from end to end thereof, whereby the expressed oil is caused to overflow at the ends of said boxes, substantially as described.

JOHN H. VAILE.

Witnesses:

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