

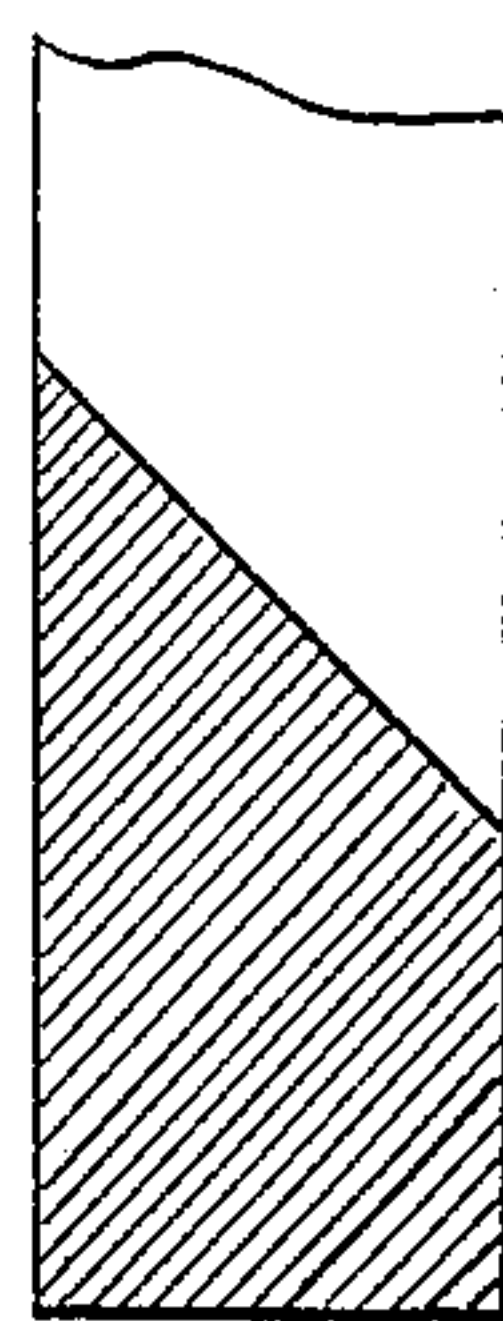
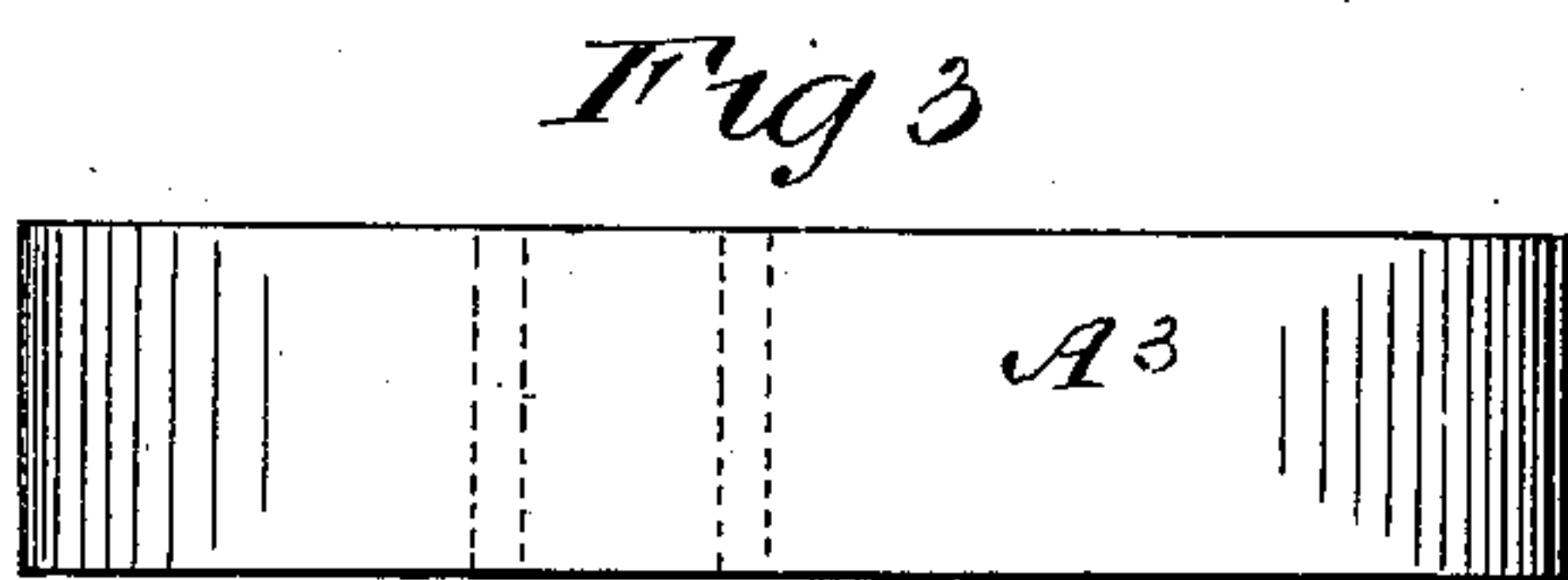
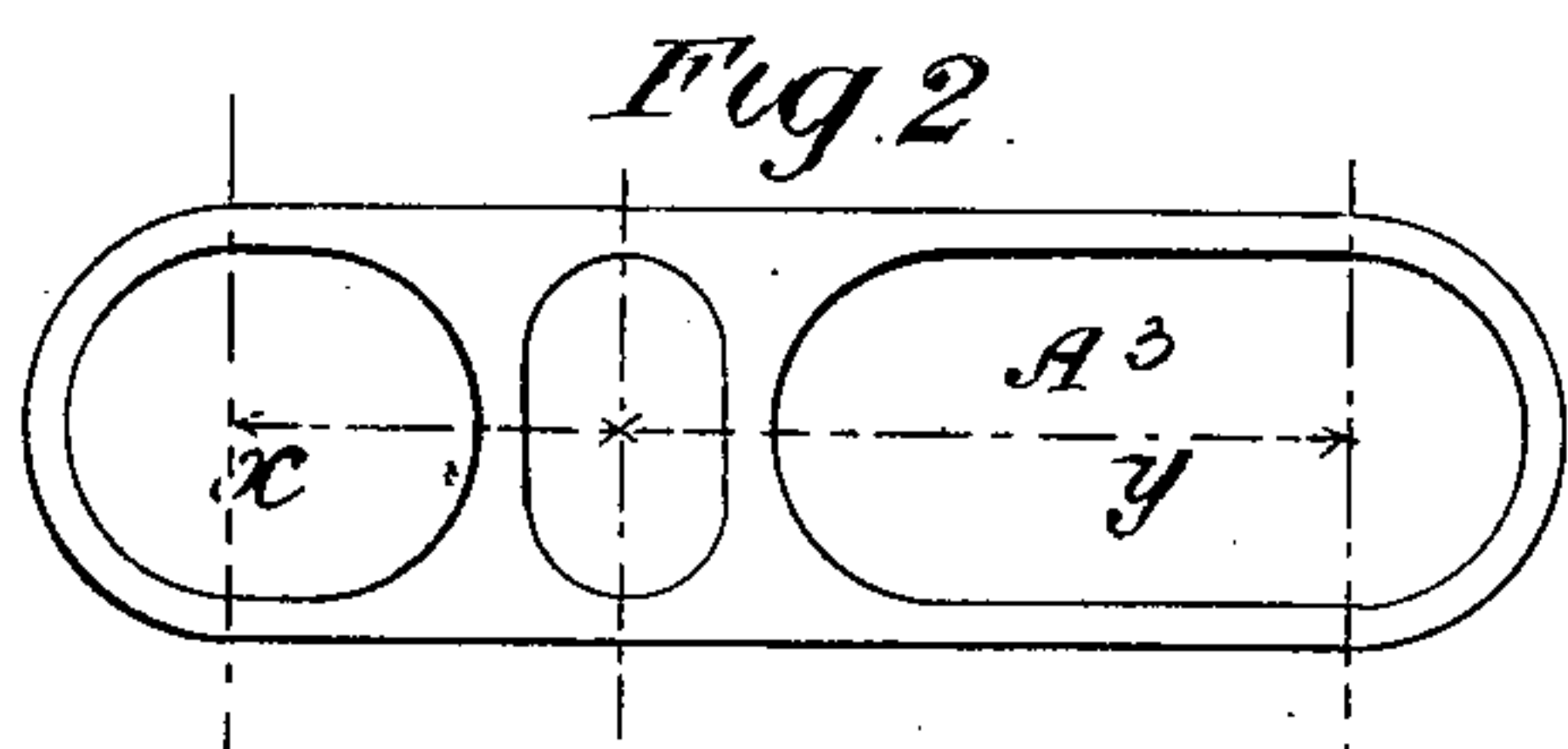
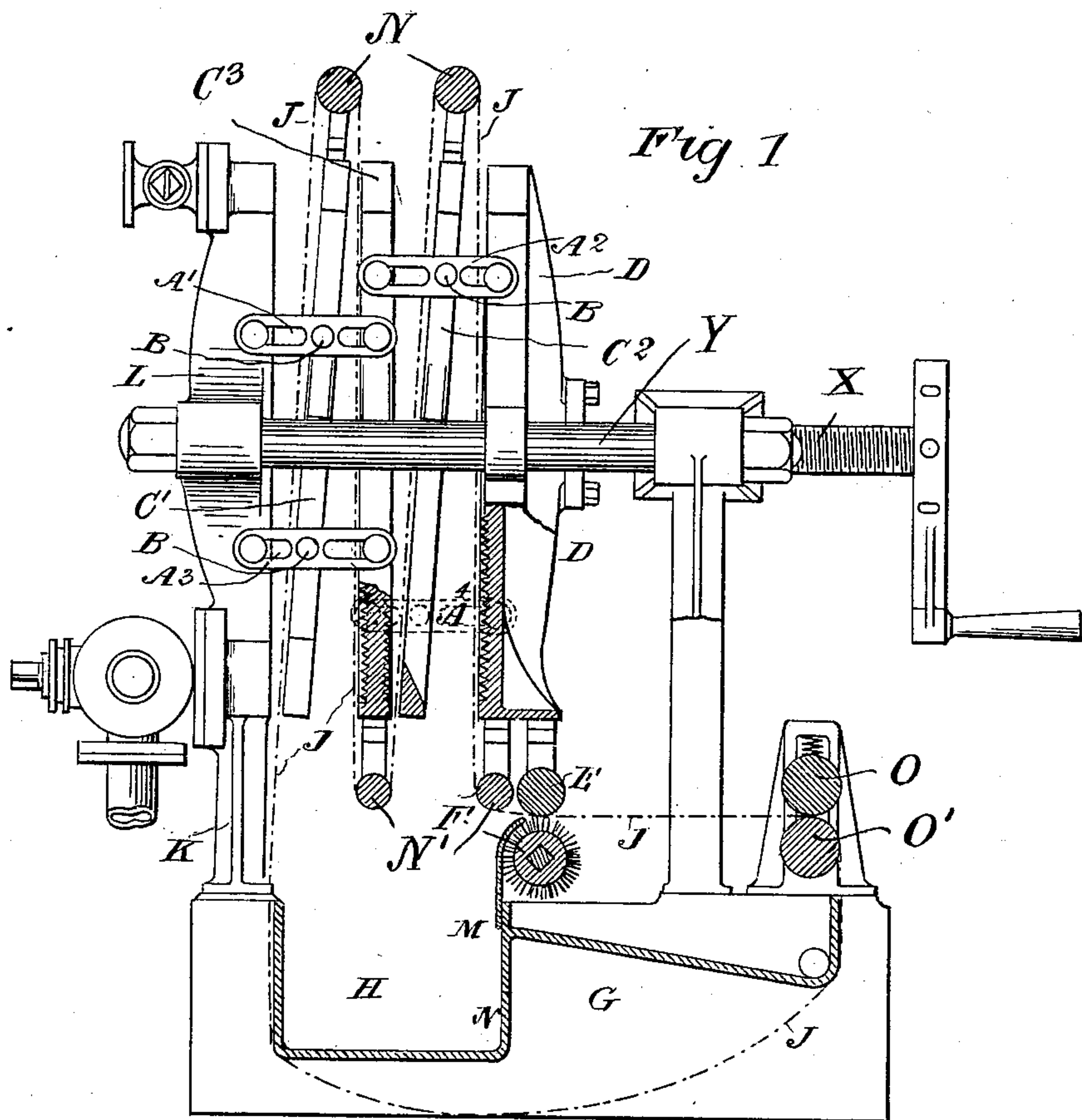
No 699,052.

Patented Apr. 29, 1902.

J. WILSON.  
FILTER PRESS.

(Application filed Nov. 1, 1901.)

No Model.)



Witnesses  
Stephen Givsta  
Geo. W. Engler

Inventor  
John Wilson  
by Dickinson & Fisher  
Attorneys.



# UNITED STATES PATENT OFFICE.

JOHN WILSON, OF GLASGOW, SCOTLAND.

## FILTER-PRESS.

SPECIFICATION forming part of Letters Patent No. 699,052, dated April 29, 1902.

Application filed November 1, 1901. Serial No. 80,819. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILSON, a subject of the British King, residing at Glasgow, in the county of Lanark, Scotland, have invented certain new and useful Improvements in Filter-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention, which relates to filter-presses and similar filtering apparatus wherein frames are adapted for the reception of the cake, has for its object the easier removal of the cake formed within the frames when the plates and frames are drawn out equidistantly by means of links or similar contrivances. Hitherto the plates and frames have been opened out in the vertical plane. Consequently no little difficulty and inconvenience have been occasioned in removing the deposit from the frames, which had a tendency to adhere when the frames stood in the erect position.

In the type of filter illustrated, D represents the movable platen operated upon by the screw X, sliding on the guides Y, and L is the stationary platen. Between these stationary and movable platens are located the frames C' and C<sup>2</sup> and the intermediate platen C<sup>3</sup>.

J represents the filter-cloth passing between the platens and frames, pulleys N N' being provided at the tops and bottoms of the platens and frames for guiding the same.

A roller E is provided, upon the side of which is located the rotating brush F. The filter-cloth J passes between this roller E and brush F as it passes from the press, and the deposit thereon (represented by M) is brushed off into the receptacle H, after which the cloth passes between the pressure-rollers O O' and back into the press again.

According to the present invention I form each of the connecting-links between two plates and between the end plates and the two heads into a single link provided with an elongated hole for the reception of a pin projecting from the edge of the frame which comes between the two plates thus connected. The center of this hole is nearer to the center of the one plate than to that of the other, and the upper pair of links have the elongated

hole aforementioned nearest to the movable head, while the lower pair of links have the hole nearest to the fixed head, or vice versa. By virtue of such arrangement that when drawing back the shifting head of the filter-press the upper part of the frames are drawn in the direction of the movement of the said shifting head, while the lower part of the said frames are moved in an opposite direction, the reverse position of the slots in the lower links render them free to this action. The result of this will cause the tilting of the frames. The formation of the flange or solid part of the bottom of the frames is that of an inclined plane tapering in an opposite direction to the plane at which the frame is tilted. The arrangement is such that the cake deposited in the frames drops of its own weight when the filter-press is opened out.

In the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of a filter-press constructed in accordance with and constituting my invention and fully opened out, certain parts being shown in section in order more clearly to represent the effects of the improvements when in operation. Figs. 2 and 3 are respectively elevation and plan, drawn to an enlarged scale, of one of the side links and correspond to the pair used for connecting the plates and frames at the upper part of the filter; and Fig. 4 is a section of the bottom of the frame, also drawn to an enlarged scale.

Referring to Fig. 1, it will be seen that the frames C' and C<sup>2</sup> are connected to the press-platens by links A' A<sup>2</sup>, respectively, at their upper ends. These links A' A<sup>2</sup> are pivoted at B B to the frames, said links being provided with a pair of elongated slots of different lengths. Pins or the like are passed through these slots into the press-platens, said slots being so disposed that the pins upon the movable platens pass through the shorter slots for a purpose that will presently appear. The links A<sup>3</sup> A<sup>4</sup>, carried by the lower ends of these frames C' C<sup>2</sup>, are mounted in an opposite manner from the links A' A<sup>2</sup>—that is, the long slots of the links A<sup>3</sup> A<sup>4</sup> receive the pins secured to the movable platens of the press. When the movable platen D is drawn out to remove the cakes from the press, the frames C' C<sup>2</sup> will assume an oblique position relative



to the platens of the press, such position being shown in Fig. 1 of the drawings. These links are shown on an enlarged scale in Figs. 3 and 4,  $x$  representing the smaller hole or slot and  $y$  the longer hole or slot.

5 The bed-plate G is formed with a receptacle H for the reception of the cake. In some cases this may be dispensed with, and the legs K of the fixed head L may be lengthened  
10 and the tray for the bushings of the cloth J terminated at the line M N.

I claim—

1. In a filter-press, the combination with the stationary and the movable platens or follow-  
15 ers of the press; of cake-forming frames interposed between said press-platens or followers, inclined portions forming the bottoms of said frame, links supporting said frames, and means connected to said links adapted to give

an angular or slanting position to said frames, 20 when the platens are separated.

2. In a filter-press, the combination with the stationary and movable platens or followers; of cake-forming frames having inclined ends, interposed between said platens, links hav- 25 ing holes of unequal lengths, pins carried upon the upper and lower ends of said platens and frames, said pins passing through the holes in said links, said links being so arranged that a slanting or oblique position is 30 given to said frames when said platens are opened.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN WILSON.

Witnesses:

J. H. PEARSON,

FRED. H. MCCOSH.