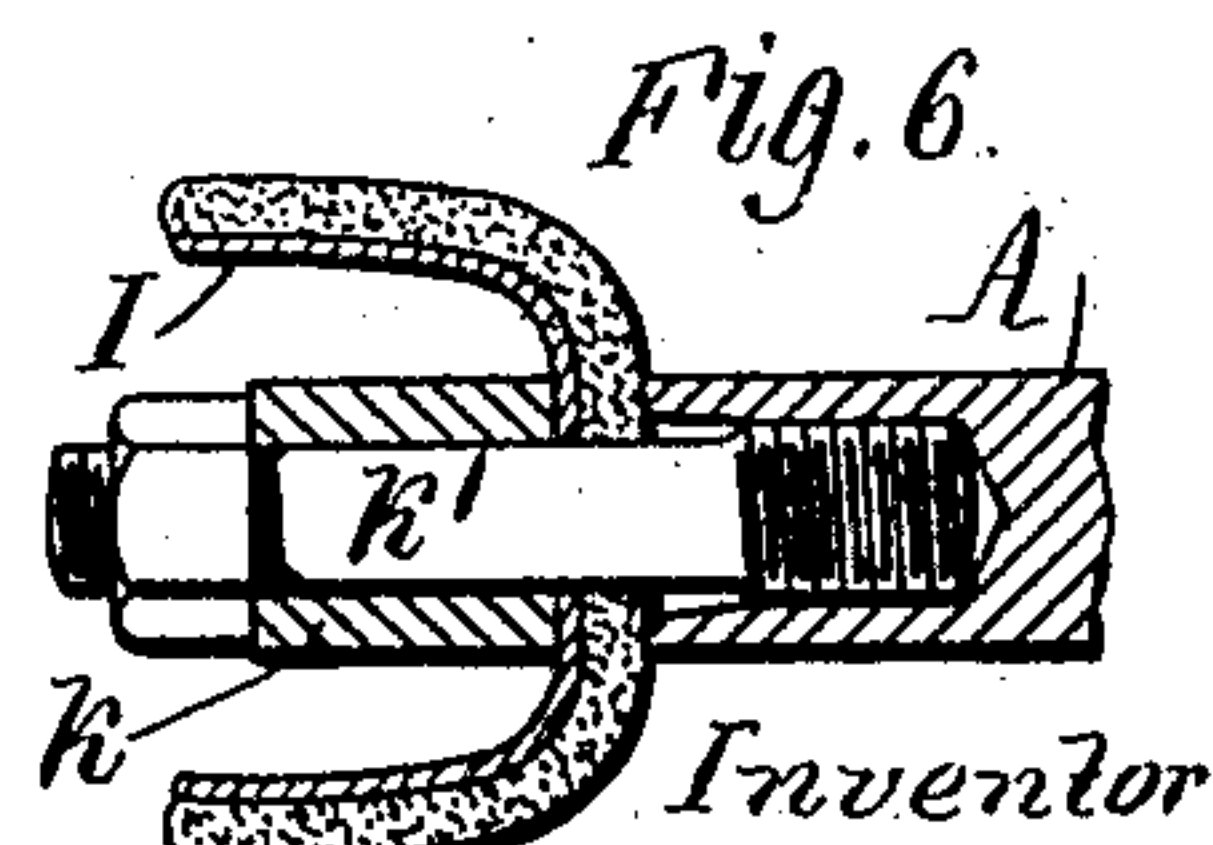
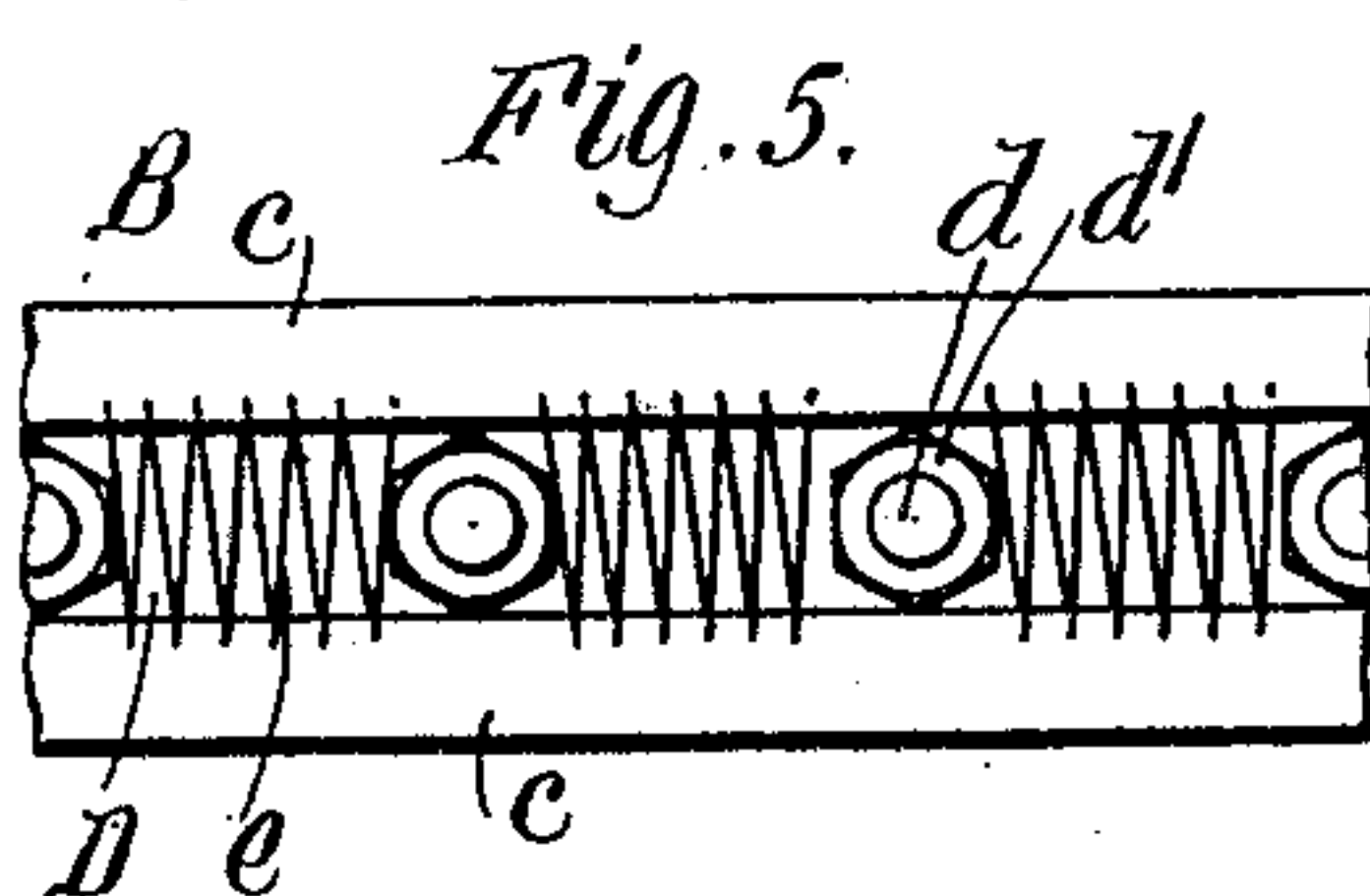
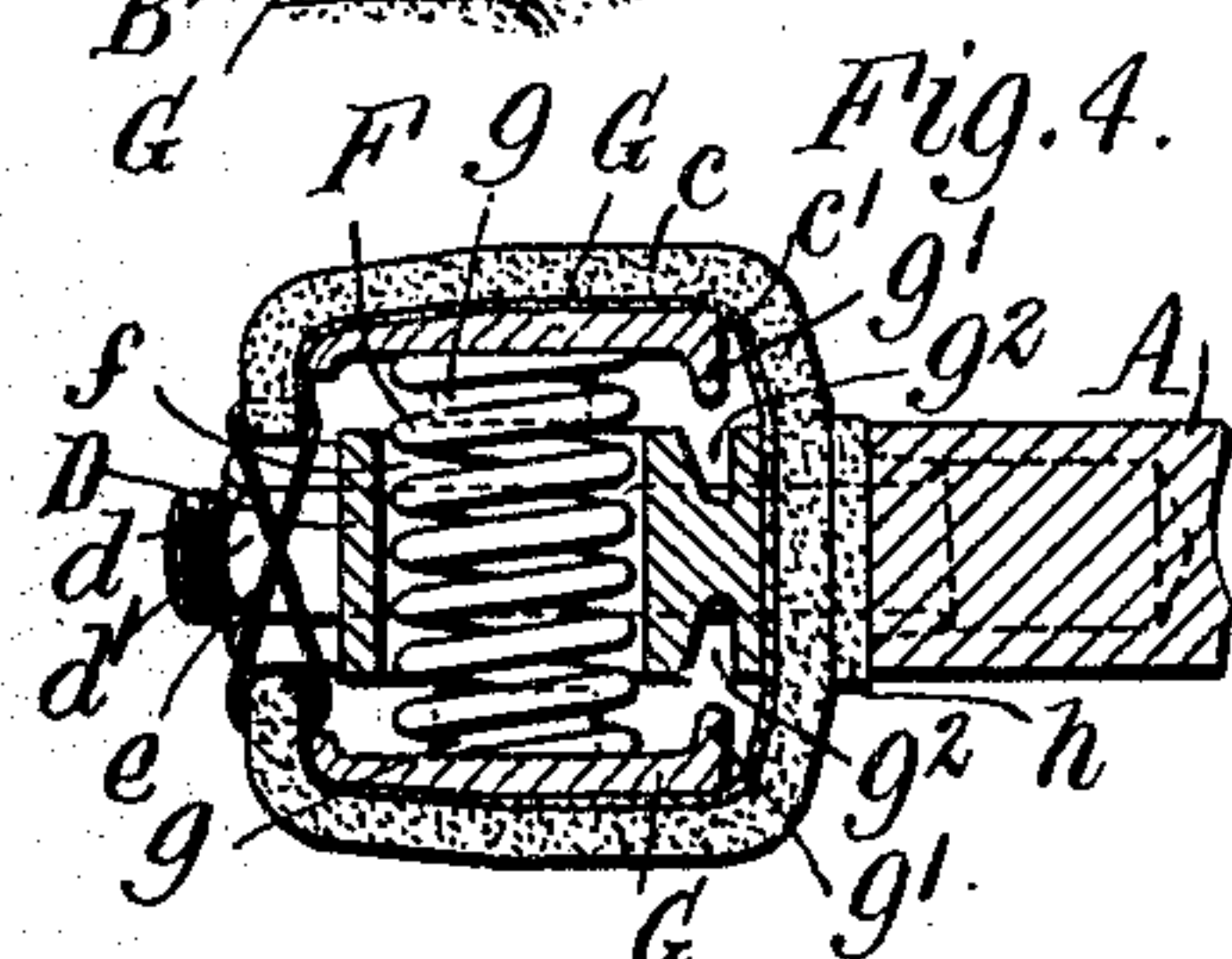
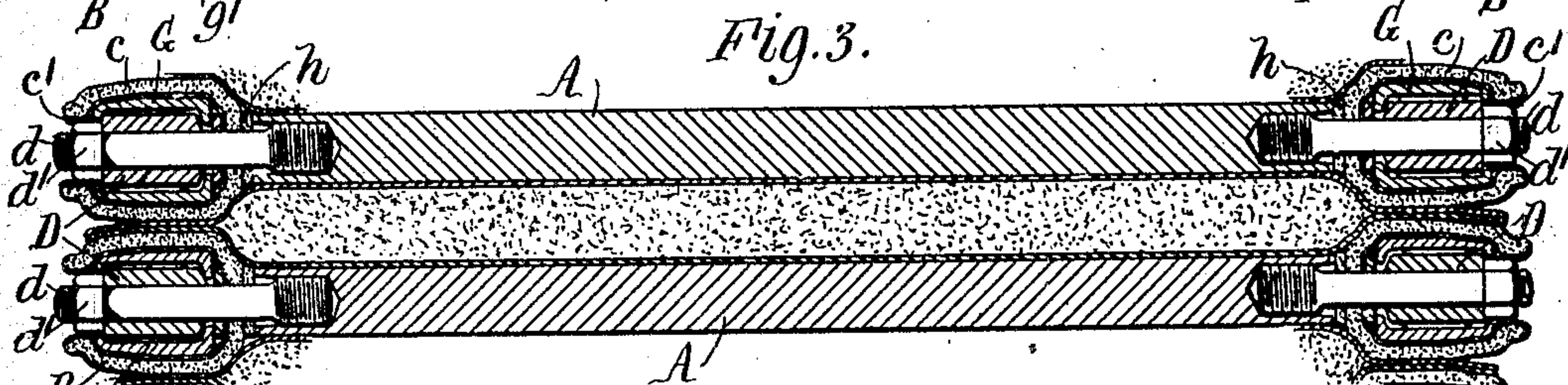
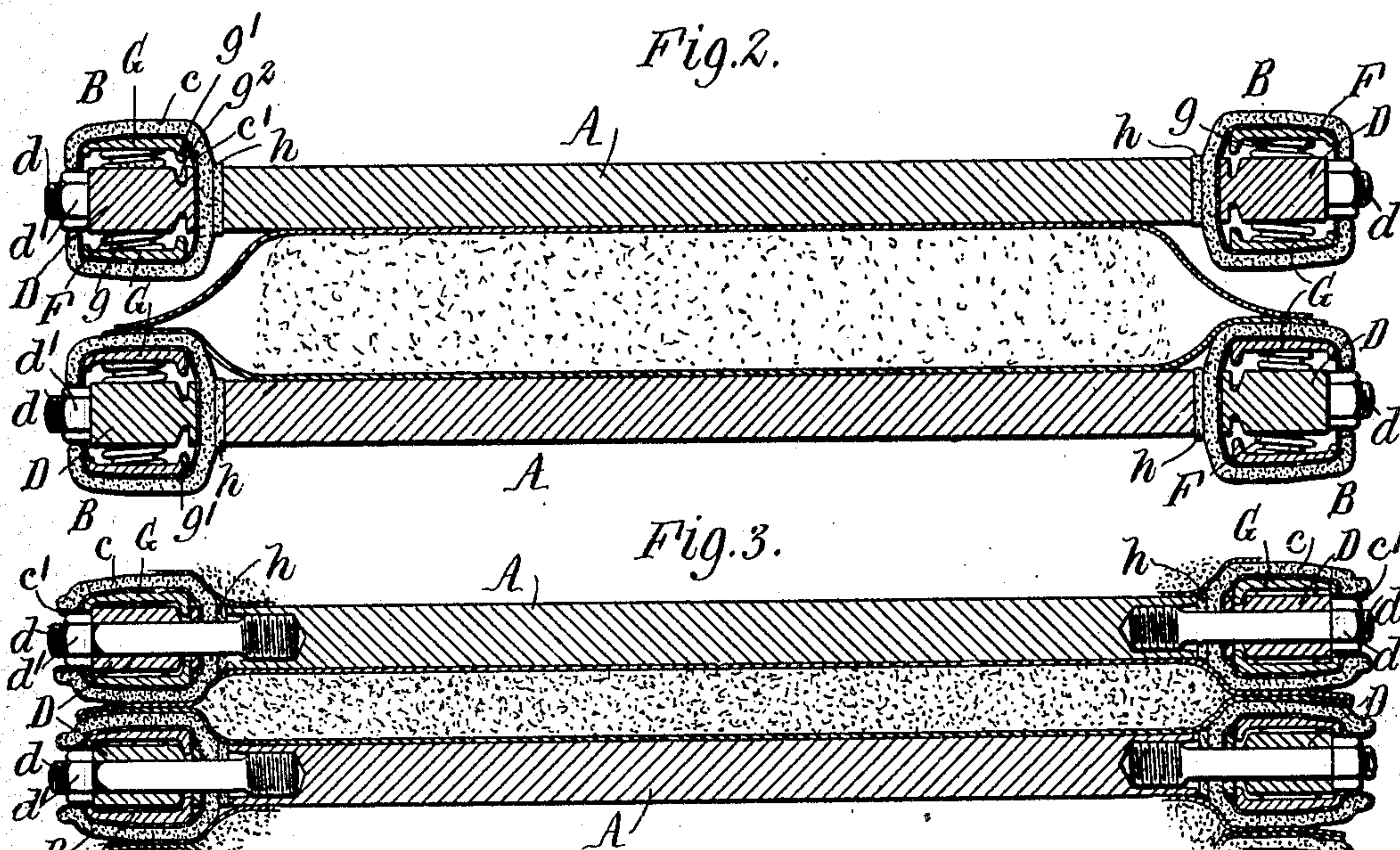
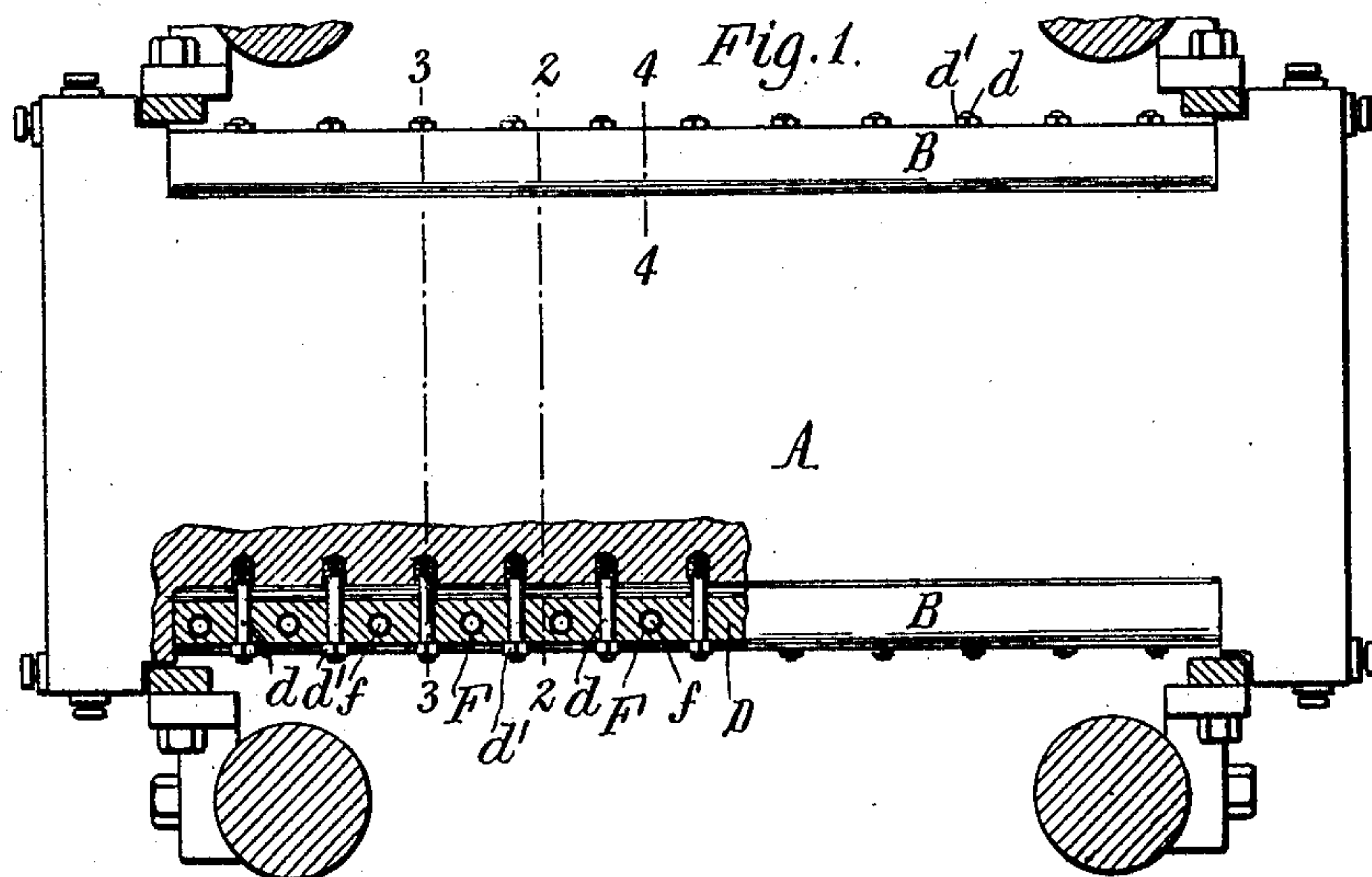


No. 860,290.

PATENTED JULY 16, 1907.

A. W. FRENCH.
PRESS PLATE.

APPLICATION FILED DEC. 31, 1906.



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UNITED STATES PATENT OFFICE.

ALFRED W. FRENCH, OF PIQUA, OHIO.

PRESS-PLATE.

No. 860,290.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed December 31, 1906. Serial No. 350,111.

To all whom it may concern:

Be it known that I, ALFRED W. FRENCH, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have invented a new and useful Improvement in Press-Plates, of which the following is a specification.

This invention relates more particularly to improvements in press plates of the kind disclosed in U. S. Letters Patent No. 784,259, granted to me March 7, 1905, which have yielding margins or portions at or near one or more of the edges of the plates. These plates are used in presses for expressing oils from oil-bearing meals and other substances, and the yielding or elastic margins or portions afford an elastic compression for the edges of the cake, thereby greatly reducing the soft marginal portion of the cake due to incomplete extraction of the oil. The yielding margins or portions of the plates are preferably made of pervious material or constructed to afford drainage for the oil, but they more or less close the spaces between the edges of the press plates and prevent the spreading of the cake in the press and flooding and waste of the meal with the consequent injury to the press cloths. The yielding or elastic margin or portion is usually applied to the opposite long or side edges of the press plates, but it could also be applied to one or both end edges of the plates, where the plates and press are suitably constructed to enable the insertion and removal of the cakes into and from the press.

The object of the invention is to so construct and apply the elastic or yielding margin or portion that it will be durable and retain its elasticity so as to always resume its original form after compression and not become set in its compressed form.

In the accompanying drawings, Figure 1 is a horizontal section, partly in plan, on a reduced scale, of a press and press plate embodying the invention. Fig. 2 is a section in line 2—2, Fig. 1, of two adjacent press plates, showing the same separated and the material between them. Fig. 3 is a similar section in line 3—3, Fig. 1, showing the press plates pressed together. Fig. 4 is a fragmentary section of one press plate, on an enlarged scale, in line 4—4, Fig. 1. Fig. 5 is a fragmentary edge elevation of the press plate. Fig. 6 is a fragmentary section, on an enlarged scale, of a modified construction.

Like letters of reference refer to like parts in the several figures.

A represents the body of the press plate, which is made of metal and may be of any usual shape and construction, and B is the elastic or yielding margin, edge or portion. The plate can be provided with this yielding margin or portion along one or more of its edges as required or found most desirable. The

yielding or elastic margin, portion or edge B is constructed as follows:

A strip of suitable flexible, yielding, compressible or elastic material is securely attached to the edge of the press plate. A satisfactory strip is produced by sewing together an outer ply or thickness of heavy porous or pervious press cloth *c* and an inner ply or lining of cotton duck or other closely woven filtering material *c'*. This strip, which for convenience will be hereinafter called the "wrapper", is preferably secured in place by a metal clamping bar or strip *D* secured to the plate by bolts or screws *d* passing through holes in the clamping bar and provided with nuts *d'*. The bolts *d* preferably have enlarged threaded inner ends screwed into threaded holes in the press plate, so that the bending strains on the bolts will not come at the bottom of the threads which would cause the bolts to break more easily. The wrapper thus secured along its longitudinal middle portion provides flaps at the opposite sides of the press plate which project above and below the surfaces of the plate and extend outwardly from the press plate above and below the clamping bar, the flaps being preferably wide enough to extend beyond the outer edge of the clamping bar and having their outer edges joined by threads or cords *e* to hold them from turning or curling back toward the press plate. The wrapper in effect forms a tube or hollow yielding body at the edge of the press plate which is of greater width than the plate, or projects above and below its top and bottom surfaces. The flaps or opposite portions of the wrapper are yieldingly pressed apart or held away from the clamping bar between them by elastic or resilient means located between them or within the hollow tube or body formed by the wrapper. Elastic or resilient means of different construction can be employed.

In the construction shown in Figs. 1—5, coil springs *F* are located in pockets or holes *f* in the clamping bar with their opposite ends projecting above and below the clamping bar, and bearing bars *G* rest upon the ends of the springs inside of the flaps or opposite sides of the wrapper and support the same, the bars being stiff enough to prevent flexure between the springs so that the resistance of the yielding margin will be uniform at all points. The number of springs employed will depend upon their strength and the resistance required in the yielding margin. The bearing bars are suitably shaped to give the desired form to the wrapper and they are also preferably provided at their inner sides with bosses or projections *g* which enter the ends of the springs to assist in retaining the springs and bars in place. The bearing bars are also preferably provided at their inner edges with inwardly directed flanges *g'* which are adapted to enter grooves *g''* in the

opposite sides of the clamping bar to prevent the bearing bars from shifting horizontally outward under the lateral pressure of the cake during the compression.

Strips *h* of press cloth or other suitable yielding material about as wide as the thickness of the press plate are preferably secured between the wrapper and the press plate. They serve as an elastic packing to fill the crevices between the plate and wrapper and prevent the meal from being pressed therein.

The described construction produces a very strong, durable and efficient elastic or yielding margin or portion. The coil springs are arranged to the best advantage for their power to be applied directly in distending or expanding the yielding wrapper, so that the same will always resume the original form after compression and the action will be positive and immediate. While the wrapper itself may become more or less compact and lose its resilience after long usage, the coil springs retain their elasticity indefinitely and insure the continued resilience of the yielding margin, which is therefore reliable and durable.

In the construction shown in Fig. 6, instead of the coil springs and bearing bars above described, a spring strip *I* bent or curved in cross section is employed to support the yielding or flexible and pervious wrapper. The spring strip can be secured to the edge of the press plate by a clamping bar *k* and bolts *k'* in the same manner as the wrapper in the previous construction, or in any other suitable manner. It serves a purpose similar to the coil springs and bearing bars, to yieldingly resist the compression of the yielding wrapper and expand it to the original shape after compression. In both of the constructions described the spring or elastic resistance means are located between the opposite side flaps or portions of the yielding body or wrapper where they act on the same in direct opposition to the pressure. Spring means of other construction similarly located within or between opposite portions of a wrapper or yielding body to resist the compression thereof, could be employed. The yielding wrapper in both constructions illustrated is in the form of a hollow open-sided body, but a tubular or closed hollow body would act in a similar manner; in fact, the wrapper flaps could be made wide enough to be secured edge to edge together and thus form a tubular body.

The yielding or elastic margin or portion projects far enough beyond the surfaces of the press plate for the margins of adjacent plates in the press to contact with each other or grip the projecting edges of the press cloth between them before the cake or meal is compressed

enough for the oil to run, and the yielding margins thus serve to confine the meal and prevent it from spreading laterally, and the cake being held intact, the oil is more thoroughly expressed from the edge portions thereof. The oil can, however, percolate or ooze through the pervious wrapper.

I claim as my invention:

1. A press plate provided with a yielding portion comprising opposite parts at opposite sides of the press plate, and elastic means between said parts for yieldingly resisting the compression thereof, substantially as set forth.
2. A press plate provided with a yielding portion comprising a wrapper, and elastic means within said wrapper for yieldingly resisting the compression thereof, substantially as set forth.
3. A press plate provided with a yielding portion comprising pervious material, and elastic means between opposite portions of said pervious material for yieldingly resisting the compression thereof, substantially as set forth.
4. A press plate provided with a yielding portion comprising a flexible strip secured to the plate, and elastic means between opposite portions of said strip for yieldingly resisting movement thereof toward each other, substantially as set forth.
5. A press plate provided with a flexible strip secured thereto and projecting from opposite sides thereof, and elastic means between opposite free portions of said strip for yieldingly resisting the movement thereof toward each other, substantially as set forth.
6. A press plate provided with a yielding portion comprising a wrapper, and springs within said wrapper for expanding the same, substantially as set forth.
7. A press plate provided with a yielding portion comprising springs, and means at least partially inclosing said springs, substantially as set forth.
8. A press plate provided with a yielding portion comprising a spring-pressed bar or strip, and a wrapper supported by said bar or strip, substantially as set forth.
9. A press plate provided with a yielding portion comprising coil springs, a bearing bar resting on said springs, and flexible material supported by said bearing bar, substantially as set forth.
10. A press plate provided with a yielding portion comprising coil springs, a bearing bar resting on said springs, flexible material supported by said bearing bar, and means for preventing lateral displacement of said bearing bar, substantially as set forth.
11. A press plate provided with a yielding portion comprising a flexible wrapper strip, a clamping bar securing said wrapper strip to the press plate, springs located in pockets in said clamping bar, and bearing bars resting on said springs and supporting said wrapper strip, substantially as set forth.

Witness my hand, this 22nd day of December, 1906.

ALFRED W. FRENCH.

Witnesses:

JAS. WARD KEYS,
H. B. PRINTZ.