

No. 881,829.

PATENTED MAR. 10, 1908.

W. J. SCHULTZ & H. GERDING.

LOOSE LEAF BOOK.

APPLICATION FILED SEPT. 11, 1905.

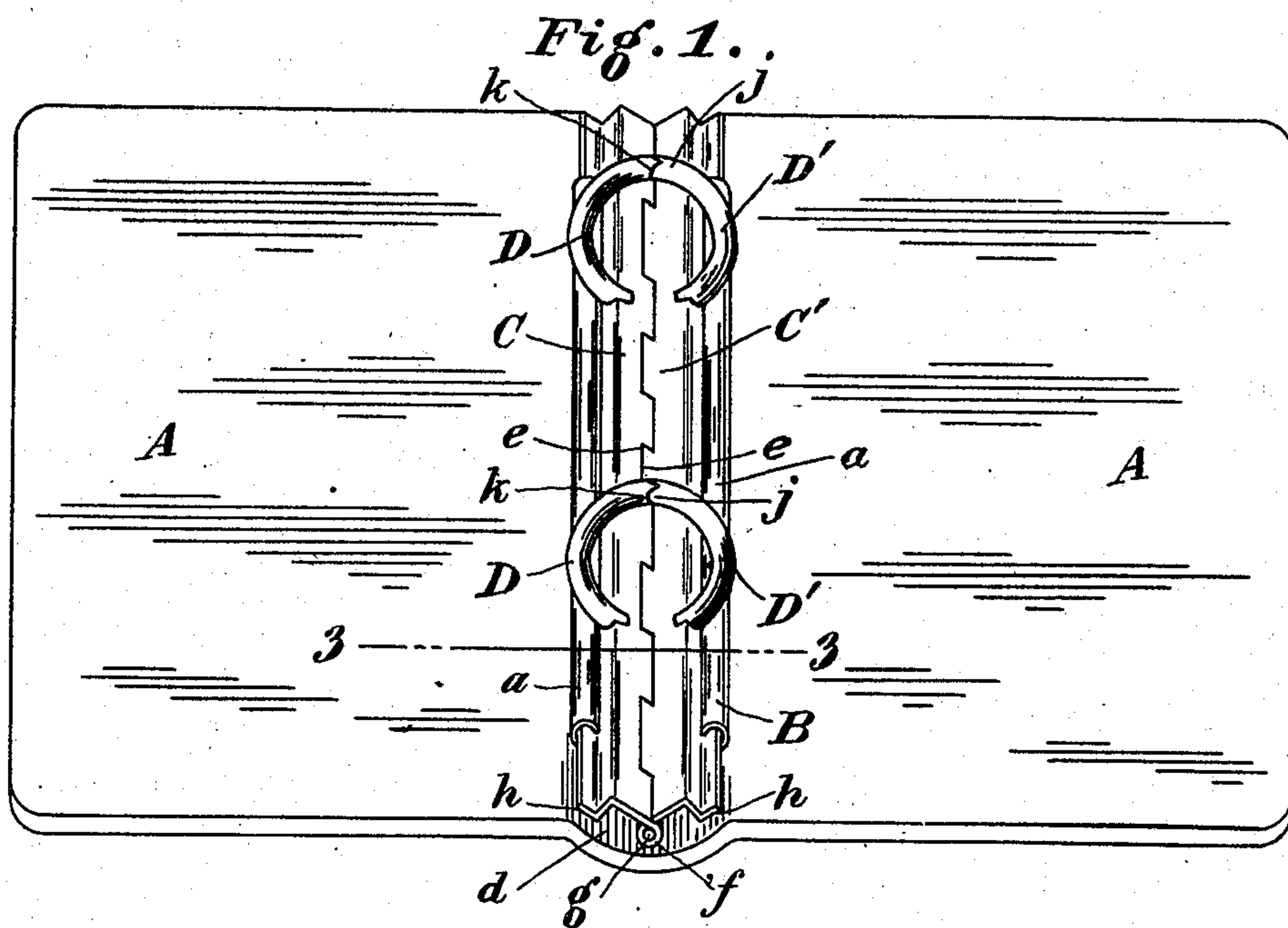


Fig. 2.

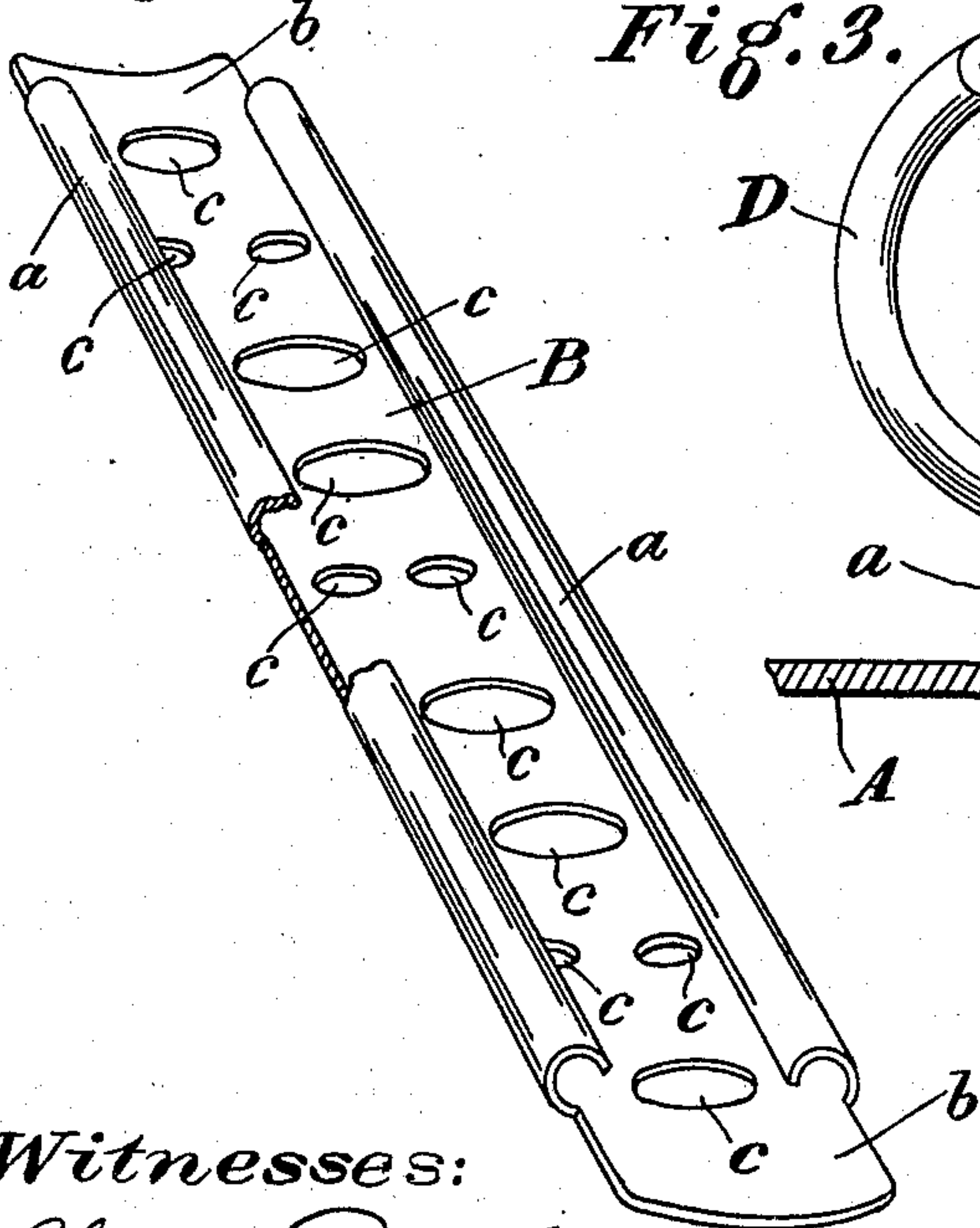
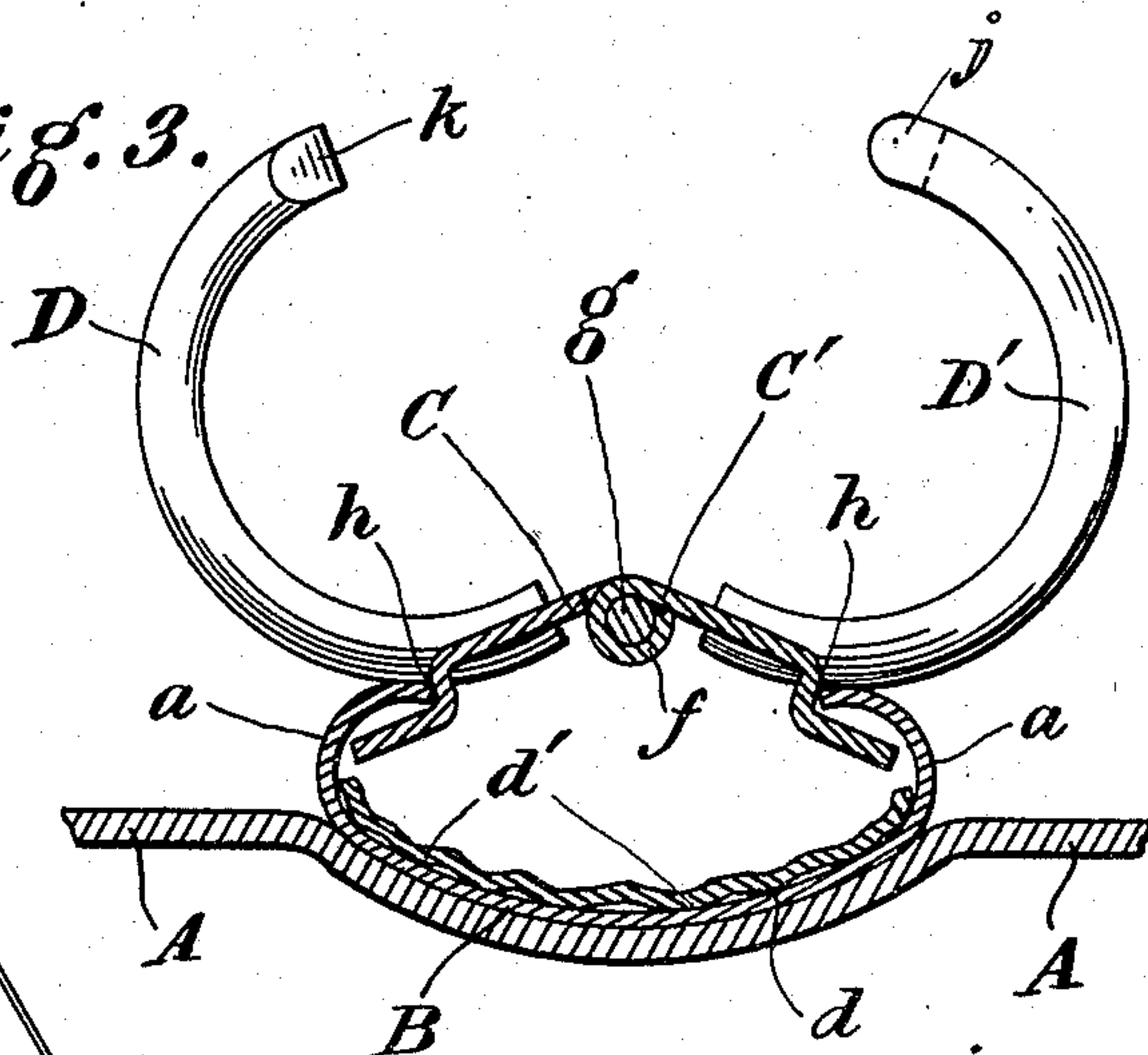


Fig. 3.



Witnesses:

Clarence Pordus
Stella Rutz

Inventors

William J. Schultz
Herbert Gerding
By James N. Ramsey
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM J. SCHULTZ AND HERBERT GERDING, OF CINCINNATI, OHIO, ASSIGNORS, BY MESNE ASSIGNMENTS, TO HENRY BENTLEY, TRUSTEE, OF CINCINNATI, OHIO.

LOOSE-LEAF BOOK.

No. 881,829.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed September 11, 1905. Serial No. 278,058.

To all whom it may concern:

Be it known that we, WILLIAM J. SCHULTZ and HERBERT GERDING, citizens of the United States, and residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Loose-Leaf Books, of which the following is a description.

Our invention relates to an improvement in loose leaf books, and which are known as ring-books, and consists in providing a suitable cover with a metallic plate possessing the requisite resiliency, whose edges are curled upon itself to receive the shoulders of a pair of hinged plates, each of said plates being provided with segments of rings, and independently mounted so that they may be pulled apart or opened to permit of the insertion or withdrawal of the leaves, which have been previously perforated at points registering with the hooks or rings.

The object of our invention is to provide a device of the description set forth, which will be simple in construction and may be readily bound into book form, and at the same time possess the requisite strength; the construction being such as to permit of the rings or hooks being opened to a considerable extent and thus overcome the objection made to some of the devices now on the market.

In the drawings:—Figure 1 is a perspective view of our improved book without the leaves, showing the leaf-retaining means in a closed condition: Fig. 2 is a perspective view of the retaining plate with a portion of one of the curled or bent sides broken away to more clearly show its construction: Fig. 3 is a cross-sectional view taken adjacent the ring-segments, and with portions of the cover removed, the ring-segments being shown opened out to their fullest extent.

Like letters of reference indicate identical parts in the respective figures.

A are covers which may be made integral, of suitable material, with the portion to form the back having less stiffness, so as to permit the covers to be folded upon themselves into book form, thus having the covers to also form the back and hinged portion of the book, as clearly seen in Figs. 1 and 3.

B is a metallic plate which is of a length corresponding with the size of the book it is intended to make, and has its sides rolled or curled upon itself as seen at *a*. The plate B is preferably made with the extended ends *b*

which extend beyond the curled or bent edges for a purpose to be hereinafter set forth. This plate B is also preferably provided with openings *c* at suitable intervals, so that a strip of binding *d* may take lengthwise across the plate B and be glued thereon, the openings *c* permitting the glue on the strip *d* to set or adhere to the back or cover A as at the points *d'* (see Fig. 3), thus firmly securing plate B in place. In addition to the strip *d*, the edges of the binding or cover may be lapped over the points or ends *b* of the plate B, thereby giving a neater finish to the book, and at the same time reinforcing strip *d*, and insuring against any displacement of the plate B.

C, C', are metallic plates whose adjacent edges are cut out at intervals as seen at *e*, so as to permit portions of the one plate to take into the cut-out portion of the other, as clearly shown: and these portions are curled or bent upon themselves as seen at *f* (see Figs. 1 and 3) to permit of the insertion of a pin *g* to form a hinge. These plates C, C' are bent downwardly and outwardly so as to form the shoulders *h*, permitting the outwardly extending part to take beneath the curled or bent edges *a* of the plate B, and the shoulders to butt against the edge of the curled edge, as clearly seen in Figs. 1 and 3. The distance across the plates from shoulder to shoulder is preferably slightly greater, when the plates are in the same horizontal plane, than the distance between the curled or bent edges *a* of the plate B, against which the shoulders take, so that when the plates C, C' are inserted in place, plate B will be slightly spread or sprung out of its normal condition, thus holding the hinged plates C, C' under a tension, by reason of the resiliency of plate B which is made concaved as shown.

Each of the plates C, C' is provided with a segment of a ring D, D', of which there may be any number. These segments are firmly secured to the plates C, C' in any suitable manner, as by soldering or otherwise; and the one segment D' is preferably provided with a notch as at *j* to receive the point *k* of the segment D, forming a tight connection between the segments which insures against accidental displacement of the segments.

When it is desired to use the device, the user grasps the opposite segments of the rings and pulls them apart against the action

of the retaining plate B, so as to bring the outer edges of the hook or ring-plates C, C', slightly past the "dead center", and below the horizontal plane of the hinge, when the resiliency or action of the plate B will be to draw the outer edges of the plate C, C' down and toward each other, as seen in Fig. 3. In order that the action of plate B may not be exerted too far and bring the shoulders together underneath the hinged plates, and thus practically release the hinged or ring plates C, C', we secure the rings or segments D, D', on the plates in such a manner that they will engage the curled edges of plate B when the rings or segments are opened, as can be seen in Figs. 1 and 3. The leaves, which have been previously perforated at points registering with the rings, are then inserted over one side or set of segments of the rings, when the segments of the rings may be again brought together by either forcing the free ends of the segments toward each other, or by pressing on the plates C, C' at the hinged portion, which will bring the outward or shouldered ends of the plates C, C' upward and past the "dead center" or slightly above the horizontal plane of the hinge, as shown in Fig. 1.

It will be seen that leaves may be readily inserted or withdrawn from time to time as occasion requires, and in case it is desired to remove the leaves with the hook or ring-plates, by reason of breakage, or for any other reason, the same may be done by simply drawing the hook or ring plates C, C' out at either end of the retaining plate B, which can more easily be done when the plates and rings are closed as shown in Fig. 1.

It will be seen from the foregoing description and drawings, that our device is constructed with few parts, is simple in construction, and can readily be assembled and put into book form, thus overcoming serious objections that have been encountered with some of the devices now in use.

What we claim as our invention and wish to secure by Letters Patent is:—

1. A loose leaf book comprising a cover, a spring-plate adapted to be secured to said cover, the side edges of said plate curled upward or bent toward itself, a pair of plates hinged together, said plates each provided with an angular shoulder adapted to take against the curled or bent edge of the spring-plate, ring-segments secured to each of said hinged plates, and adapted to engage the curled edges of the spring-plate, and thereby limit the action of said plate on the hinged plates when the ring-segments are separated.

2. A loose leaf book comprising a cover, a spring-plate secured to said cover, and having its edges curled or bent toward itself, a pair of plates hinged together at their one edge, the other edge of said plates being bent

downward and outward to form shoulders, said shoulders taking against the curled edges of the spring-plate, each of said hinged plates being provided with segments of a ring, the segments on the one adapted to register with the segments on the other and form rings, said segments adapted to butt against the curled edges of the spring-plate when they are opened outwardly.

3. A loose leaf book comprising a cover, a spring-plate secured to said cover, said spring-plate having its sides bent or curled toward itself, and its ends extending beyond the bent or curled portion thereof, a pair of hinged plates provided with shoulders against which the curled or bent up sides of the spring-plate are adapted to press, said hinged plates being provided with segments of rings, the segments on the one plate registering with the segments on the other, and so secured on the hinged plates as to take against the curled edges of the spring-plate, and limit thereby the motion of the hinged plates.

4. A loose leaf book comprising a cover, a spring-plate secured on said cover, said plate having its side edges curled toward itself, a pair of plates provided with angular shoulders against which the curled edges of the spring-plate take, the adjacent edges of said plates being curled upon themselves and cut away in places to receive portions of each other, a pin taking through the curled portions of said plates and forming a hinge, segments of rings secured to each of said hinged plates and registering with each other, and so secured as to take against the curled edges of the spring-plate when the segments are separated to limit the action of the hinged plates.

5. A loose leaf book comprising a cover, a spring-plate secured on said cover and having its sides curled upward and toward itself, the ends of said plate extending beyond the curled sides thereof, a pair of plates whose adjacent edges have cut away portions to permit them to interlock, the outward sides of said plates being bent downward and outward to form shoulders which are adapted to take against the curled up edges of the spring-plate and be held under tension, segments of rings adapted to register with each other secured on the interlocked plates so as to take against the curled edges of the spring plate and limit its action on the interlocked plates.

6. A loose leaf book comprising a cover, a spring-plate adapted to receive a binding strip to secure it to said cover, the sides of said plate being curled upward and toward itself, a pair of plates whose adjacent edges have cut away portions to permit them to interlock, said edges being curled or bent upon themselves to receive a pin and form a hinge, the hinged plates being bent downwardly and outwardly to form angular shoulders adapted to take against the curled edges

of the spring-plate, the distance between the shoulders of the hinged plates being slightly greater than the distance between the edges of the spring-plate, so that the position of the hinged plates will be maintained by the action of the spring-plate, segments of rings secured on said hinged plates at points to bring them against the curled edges of the spring-plate when the segments are separated and thereby limit the motion of the hinged plates.

7. A loose leaf book comprising a cover, a spring-plate secured on said cover and adapted to receive a binding strip, the sides of said plate being curled upward and toward itself, a pair of plates having notches on their adjacent sides to permit them to interlock, said edges being curled upon themselves to receive a pin to form a hinge, the hinged plates being provided with angular shoulders adapted to press against the curled up edges of the spring-plate whereby the position of the hinged plates is maintained, said hinged plates being provided with segments of rings at such points as to have them bear upon the curled edges of the spring-plate when the segments are opened outward, thereby limiting the motion of the hinged plates.

8. In a temporary binder, a set of mating prongs, a spring member loosely carrying

said prongs and having points of contact about which the prongs rock when being opened and closed, the prongs having an auxiliary point of contact with the spring member by which the opening movement is terminated.

9. In a device of the type described, in combination, a transversely bowed spring plate, an arch comprising two members, each pivotally attached intermediate of its end to the edges of the plate, the inner ends of the two members intermeshing and each member having an additional point of contact with the plate, whereby the opening movement is limited.

10. In a device of the type described, in combination, a transversely bowed spring plate, an arch comprising two members, each pivotally attached intermediate its ends to an edge of the plate, the inner ends of the two members intermeshing and one of said members having an additional point of contact with the plate, whereby the opening movement is limited.

WILLIAM J. SCHULTZ.
HERBERT GERDING.

Witnesses:

GEORGE HEIDMAN,
JOSEPH R. ROHRER.