

(No Model.)

3 Sheets—Sheet 1.

C. T. ROSENTHAL.
EXPANSIBLE BINDING FOR BOOKS.

No. 583,335.

Patented May 25, 1897.

Fig. 1.

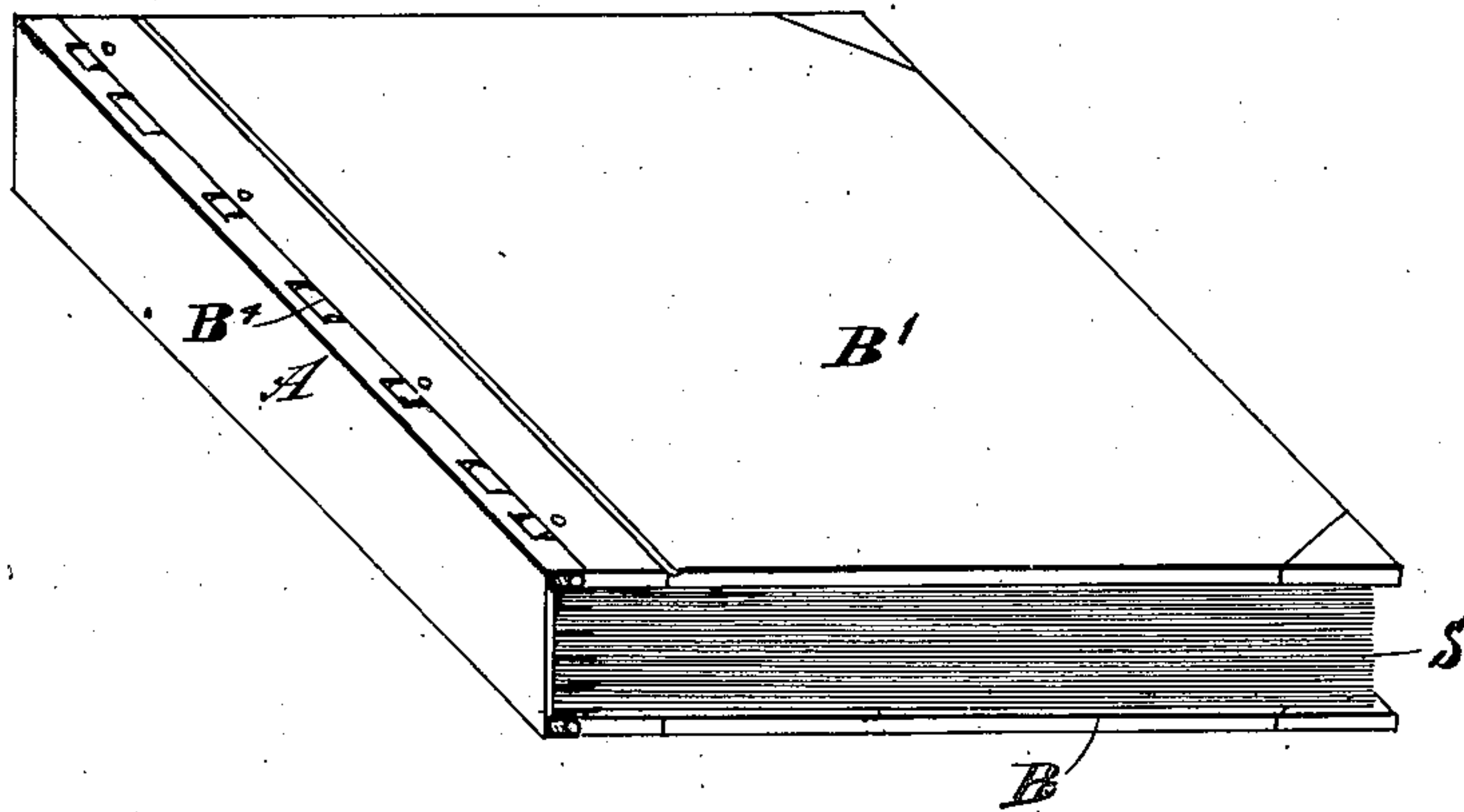


Fig. 2.

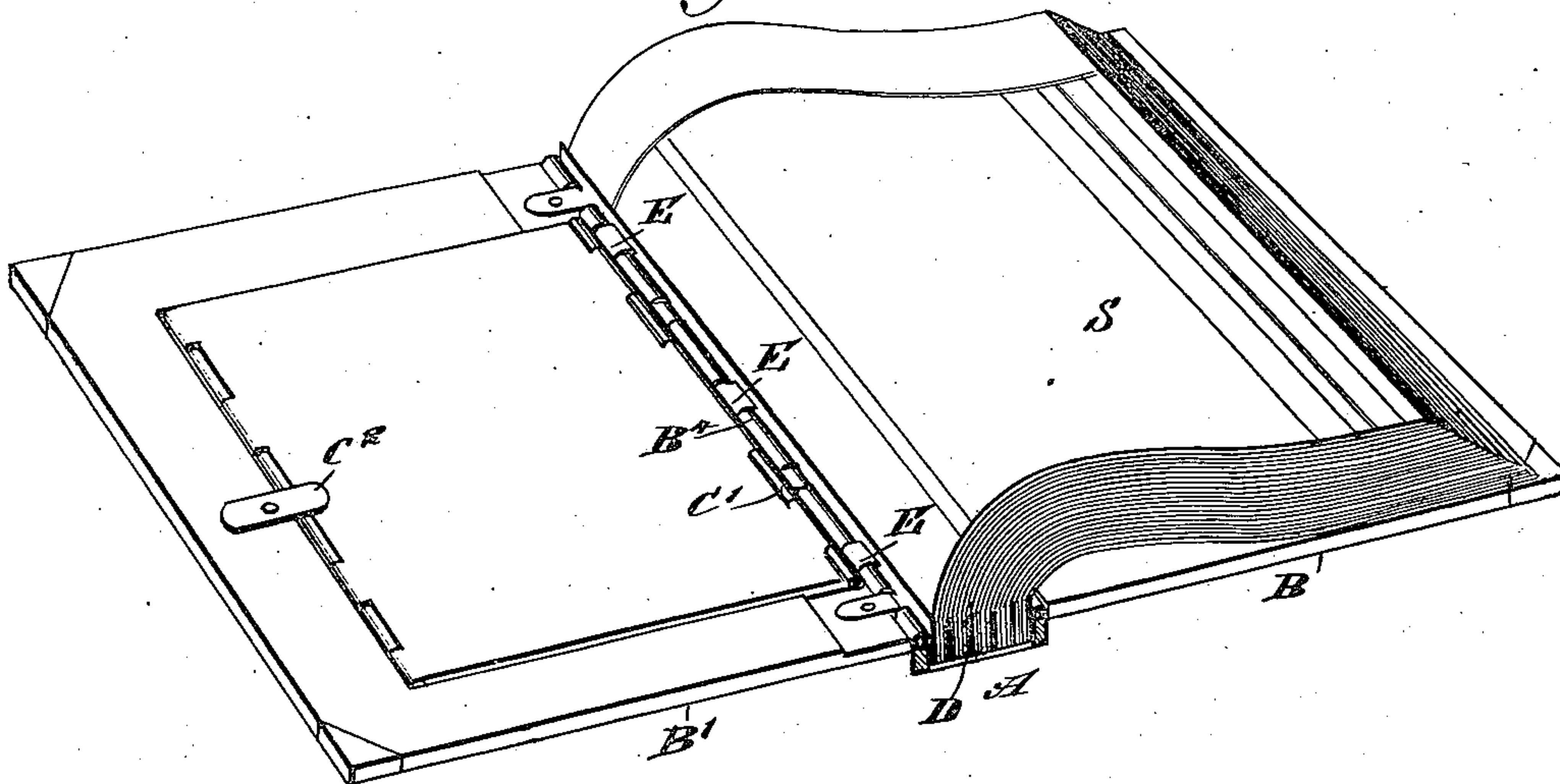
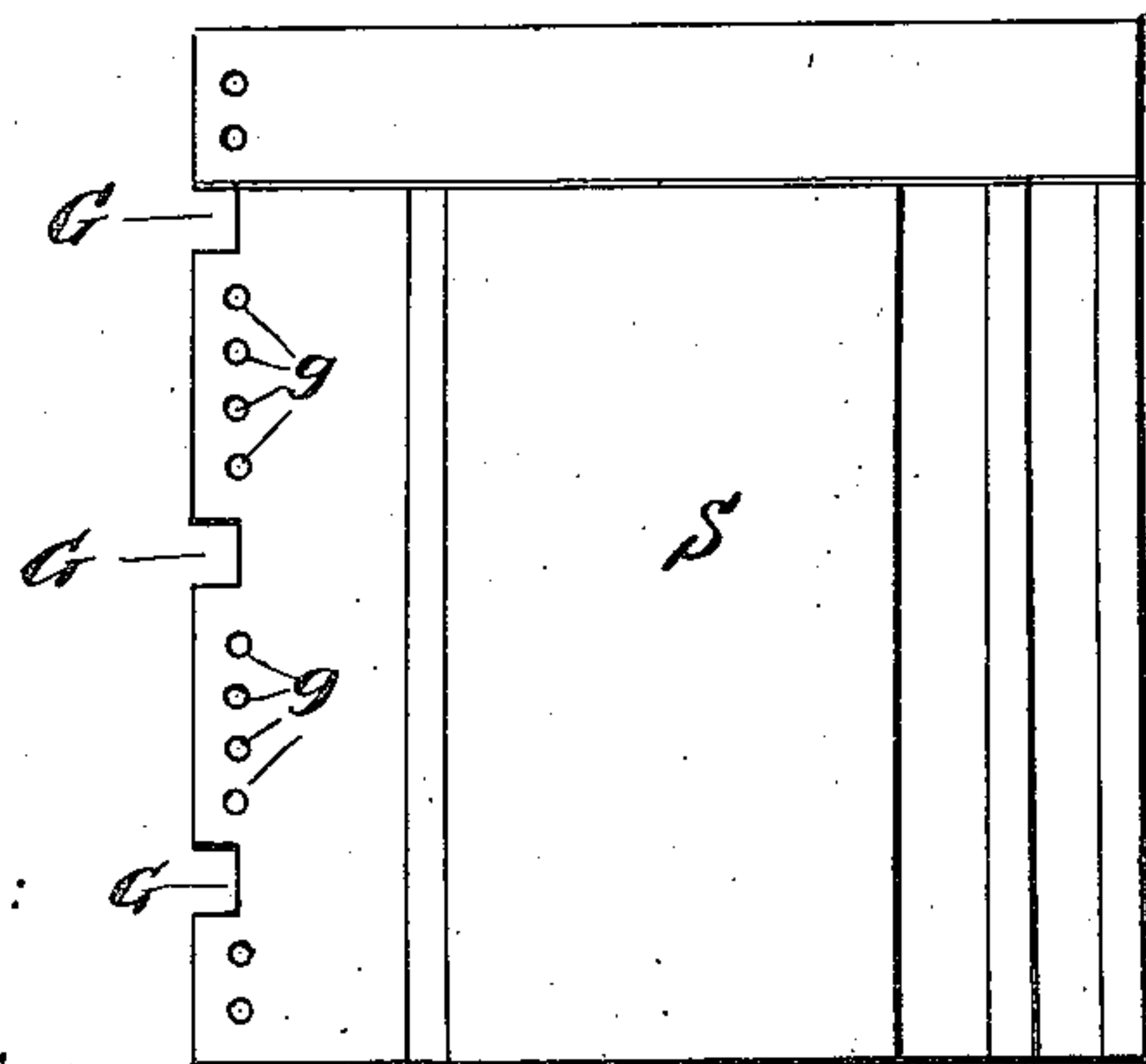


Fig. 3.



WITNESSES:
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H. L. Reynolds.

INVENTOR
C. T. Rosenthal.
BY *Mumford*
ATTORNEYS.

(No Model.)

3 Sheets—Sheet 2.

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No. 583,335.

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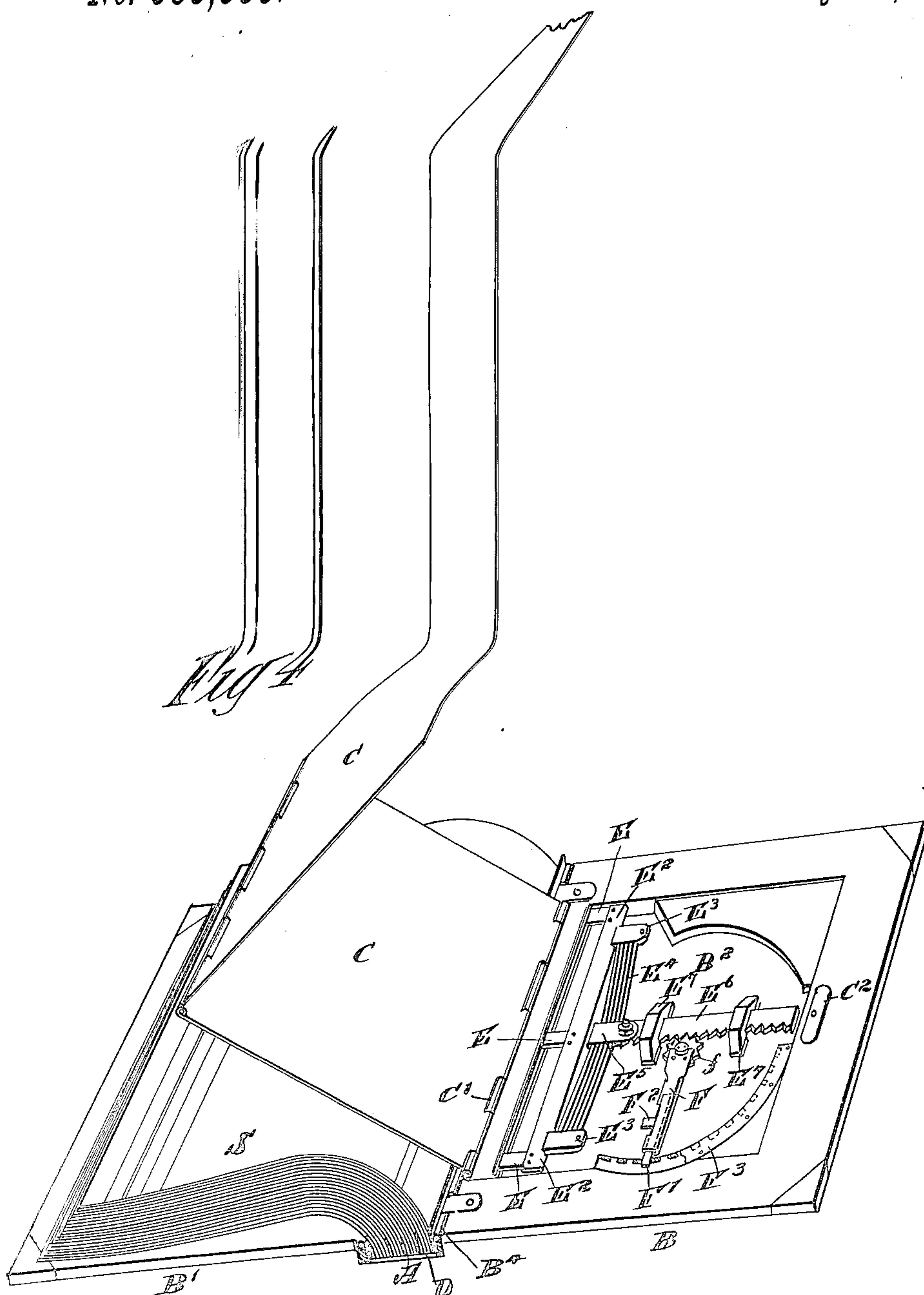
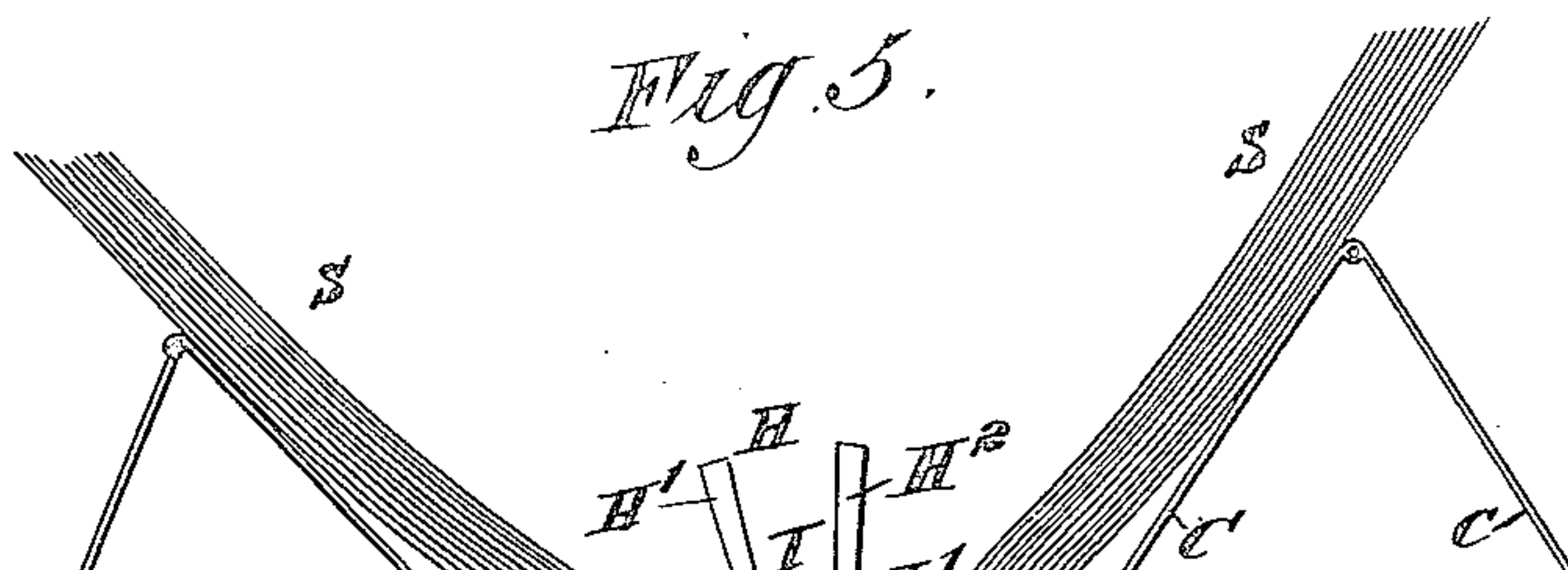


Fig. 5.



UNITED STATES PATENT OFFICE.

CHARLES T. ROSENTHAL, OF BATESVILLE, ARKANSAS.

EXPANSIBLE BINDING FOR BOOKS.

SPECIFICATION forming part of Letters Patent No. 583,335, dated May 25, 1897.

Application filed October 12, 1896. Serial No. 608,592. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. ROSENTHAL, of Batesville, in the county of Independence and State of Arkansas, have invented a new and Improved Expansible Binding for Books, of which the following is a full, clear, and exact description.

My invention relates to improvements in expansible bindings adapted to be used in connection with account-books or with periodicals or any other such books which require to be bound together.

It consists of certain devices by which the number of leaves or the contents of the book may be increased or diminished at will.

The particular construction of the device will be seen from the specification following.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the book closed. Fig. 2 is a perspective view of the book, the same being open, with the leaves all thrown in one direction. Fig. 3 is a plan view of one of the leaves extracted. Fig. 4 is a perspective of the book opened and with the plates covering the tightening mechanism raised so as to exhibit the same. Fig. 5 is an end elevation showing the position when the binding is to be opened for the insertion or removal of one or more sheets. Fig. 6 is a perspective view of one-half of the spreader used for this purpose. Fig. 7 is an end sectional elevation showing the back of the book and a portion of the locking mechanism. Fig. 8 is a similar view taken at another point. Fig. 9 is a plan view showing the back portion of the book and one of the binding-strips, and Figs. 10 and 11 are perspective views of outer and inner bars used for holding the sheets in place.

The object of my invention is to provide a binding which may be used more particularly with account-books and by means of which one or more sheets may be extracted or inserted wherever desired. The illustrations herewith show such a book. The mechanism described, however, may be readily used for binding periodicals. This will be readily seen and will not be particularly described, the

description being confined to its use in connection with blank books.

The back of the book A is formed of two thin metal plates A' and A². Each of these plates at a is bent at right angles to the back portion and is adapted to press against the back edge of the sheets forming the book. One of these plates A² has each end bent over, as shown at A³ in Fig. 9. This forms a recess which receives the other plate A', thus forming a guide in which the plate A' can slide and thereby increase or diminish the thickness of the book.

The covers B and B' are pivoted to the plates A' and A² by the pin B⁴, which passes through eyes formed in the back plates and in clamps attached to the cover of the book. The pin B⁴ upon one side has binding-strips E attached thereto, which strips are formed of some flexible material, as leather, and extend across the back of the book and, by means hereinafter described, hold the sheets in place. The means for tightening the book are attached to the opposite ends of the strips.

The bars shown in Figs. 9, 10, and 11 consist of thin strips of metal having a series of round holes D³ punched therein at regular intervals. A portion of these holes have a series of pins D² fixed therein and projecting from the side of the bar. As shown in Figs. 7 and 8, several of these bars are used. They are to be placed at such a distance apart that the pins of one bar will enter the holes in the other bar when the leaves of the book are compressed, and for this purpose the pins in one bar are placed opposite the holes in the adjacent bar. The central bars are provided with pins extending in both directions, while the outer bars are provided with pins extending only toward the center. These bars also have slots D' extending through them, which slots are all similarly placed on each bar, and the binding-strips E pass through these slots and serve to hold them all together.

The sheets of paper S, one of which is shown in Fig. 3, have their backs notched with rectangular notches G, adapted to pass over the binding-strips E. They also have perforations g, which correspond in location with the perforations in the bars D. As a consequence when the sheets are placed over the

5 combination of a series of thin bars having perforations therein at intervals, pins fixed in a portion of these perforations and projecting from the side of the bars, the pins of one bar registering with the holes of the adjacent bar or bars, and a binding or tension strip passing through holes in all the bars, with a series of leaves having notches in their back edges adapted to pass over the binding-strips, and also having perforations registering with the perforations of the above-named thin bars, substantially as described.

15 4. A back for an expansible book consisting of a plate bent at one edge to embrace one side of the book, and having guides at the ends formed by bending the metal back upon itself, and a second plate sliding in said guides and bent on one edge to embrace the other side of the book, substantially as described.

20 5. In an expansible book, a back consisting of a plate bent at one edge to embrace the side of the book, and having guides upon the back portion, a second plate sliding on said guides and bent on one edge to embrace the other side of the book, in combination with strips extending across the shallow trough formed by the two back plates, and means for tightening and relaxing the same, bars movably fixed on said strips and provided with pins and perforations adapted to mutually engage each other, and leaves having perforations adapted to receive the pins on said bars, substantially as described.

35 6. A book provided with an expansible back, binding-strips extending across the same, bars strung thereon and provided with projecting pins and perforations reciprocally registering with each other, and leaves notched and perforated to engage the binding strips and pins, in combination with a spreader consisting of two plates sharpened at one edge, and provided with notches on this edge registering with said binding pins and strips, and provided with projecting fulcrums upon one side, substantially as described.

50 7. An expansible binding for books, comprising a back made in two parts sliding one upon the other, means attached thereto adapted to secure or release the leaves by such movement, binding-strips attached to one of the sliding back members, a bar attached to the other ends of said binding-strips, a notched bar attached thereto at right angles, guides upon the book-cover for the same, a lever pivoted to the book-cover and having a notched segment engaging the notched bar, and means for locking said lever in any position, substantially as described.

60 8. An expansible binding for books, comprising a back made in two parts sliding one upon the other, means attached thereto adapted

ed to secure or release the leaves by such movement, binding-strips attached to one of the sliding back members, a bar attached to the other ends of said binding-strips, a notched bar attached thereto at right angles, guides upon the book-cover for the same, a lever pivoted to the book-cover and having a notched segment engaging the notched bar, and means for locking said lever in any position, said operating mechanism occupying a recess on the inner surface of one cover, and a plate hinged thereto and covering said recess, substantially as described.

75 9. An expansible binding for books, comprising a back made in two parts sliding one upon the other, means attached thereto adapted to secure or release the leaves by such movement, binding-strips attached to one of the sliding back members, a bar attached to the other ends of said binding-strips, a spring attached at its ends to said bar, a notched bar attached to the spring at right angles, guides upon the book-cover for the same, a lever pivoted to the book-cover and having a notched segment engaging the notched bar, and means for locking said lever in any position, substantially as described.

10. In an expansible binding, a series of thin bars or springs having perforations therein and side projecting pins, the pins of one bar registering with holes in the other bars, binding-bands passing through holes in all the bars and attached at one end to one edge of the book-back, a common attachment at the other ends of the bands, a tightening device attached to the other side of the book, and a spring connection between said tightening device and the binding-bands, substantially as described.

11. An expansible binding for books consisting of strips having side projecting spurs and perforations located so that the spurs of one strip will register with holes in the other, and having common registering holes for receiving binding-strips, and strips passing through said holes and adapted to clamp the whole together, substantially as described.

12. An expansible binding for books consisting of an expansible back, strips extending lengthwise the back but disconnected therefrom, consisting of thin bars having side projecting spurs and perforations located so that the spurs of one strip register with holes in the other strips, binding-bands attached to opposite sides of the expansible back and passing through said strips, and means by which said bands may be tightened or loosened, substantially as described.

CHARLES T. ROSENTHAL.

Witnesses:

C. J. CRANE,

W. R. KEEBLE.

(No Model)

P. RUDOLPH.
OBJECT GLASS.

No. 583,336.

Patented May 25, 1897.

Fig. 1.

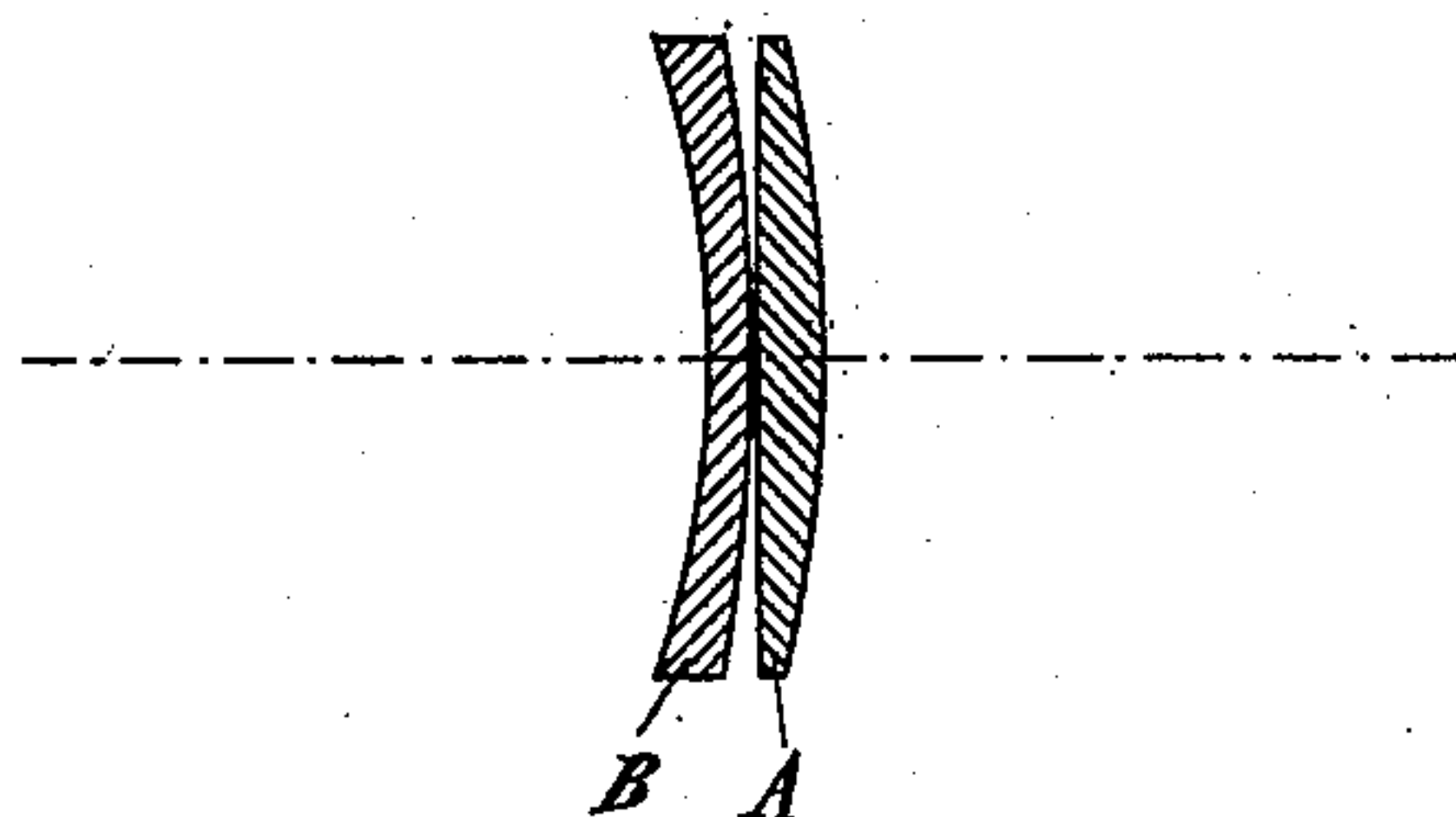


Fig. 2.

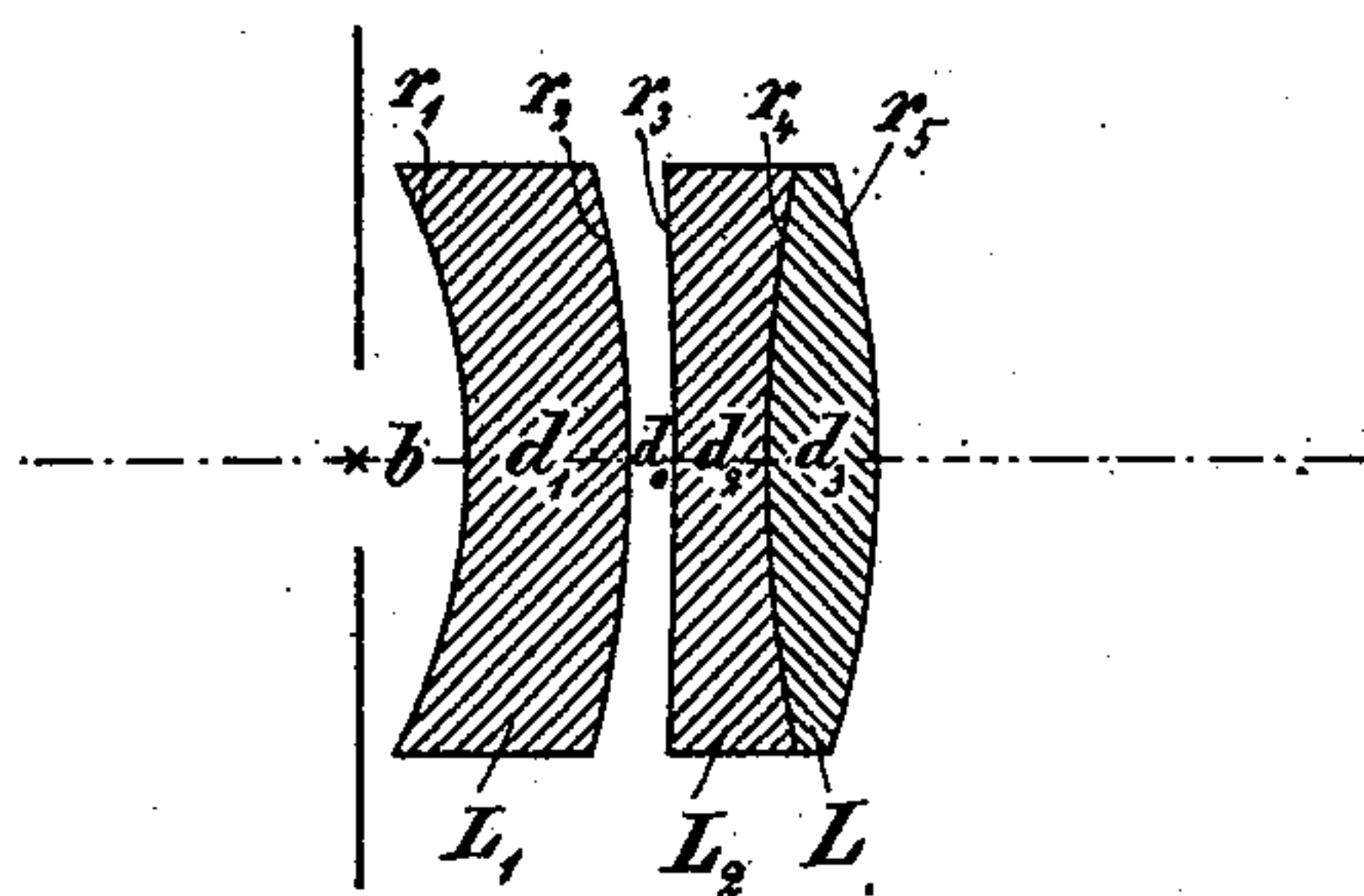
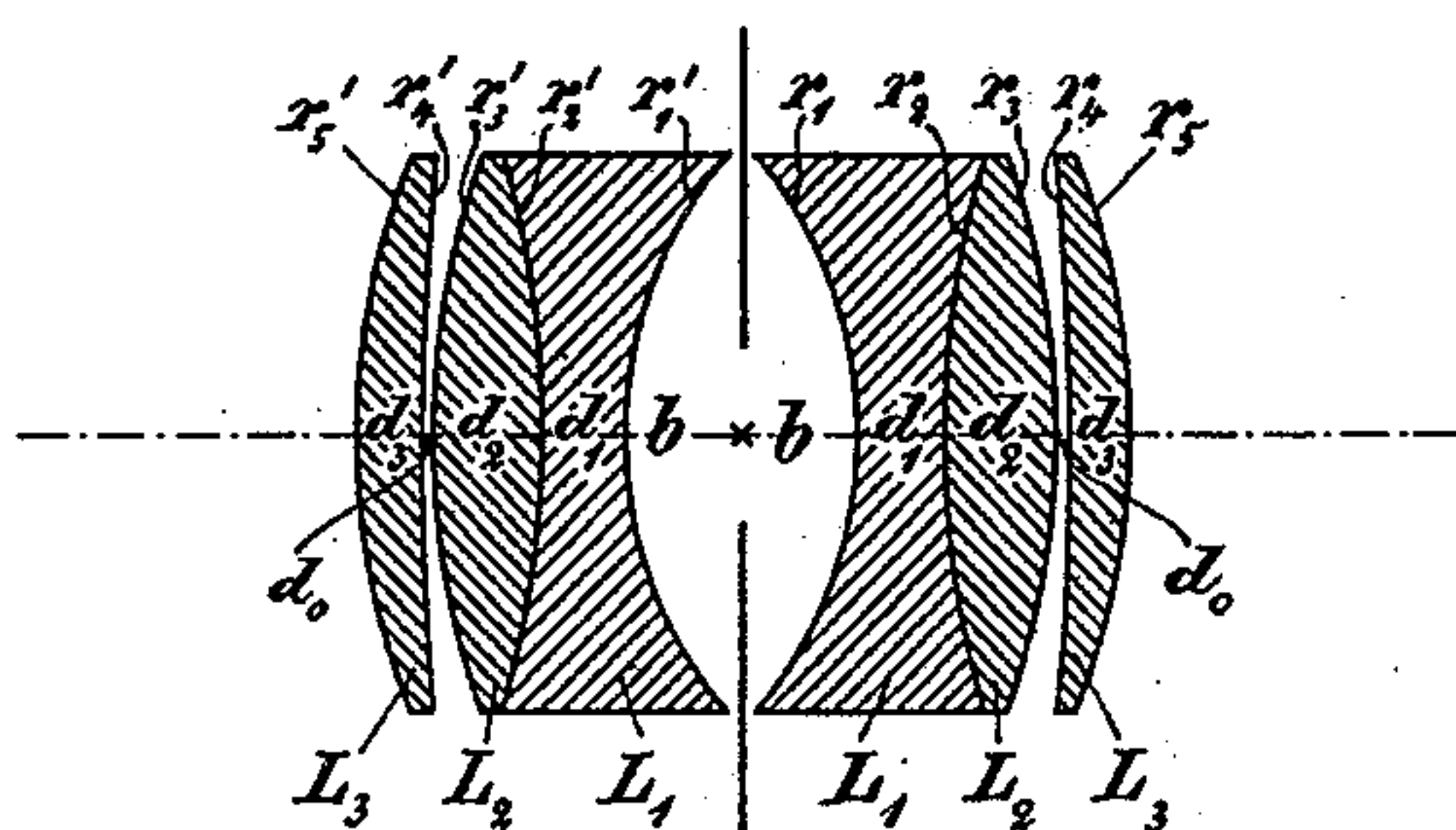


Fig. 3.



Flint

Crown

Witnesses:
E. A. Drake
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Inventor:
Paul Rudolph
by Marshall Bailey
his atty