

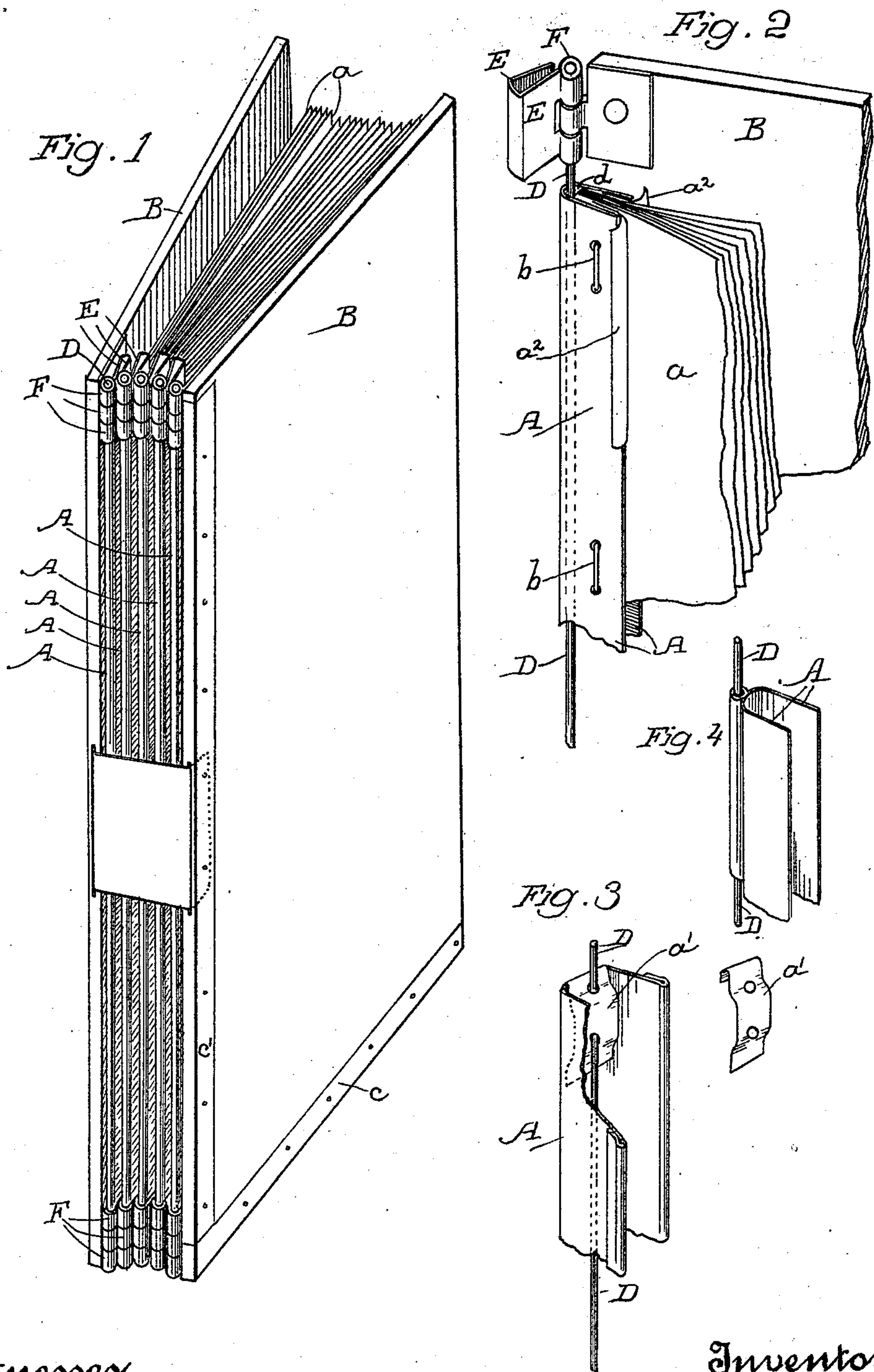
(No Model.)

2 Sheets—Sheet 1.

A. J. RUDOLPH.
BINDER FOR BOOKS OR PAMPHLETS.

No. 528,693.

Patented Nov. 6, 1894.



Witnesses,
J. H. Sturges
J. A. Bayless

Inventor,
Alexander J. Rudolph
By Dancy & Co. attys

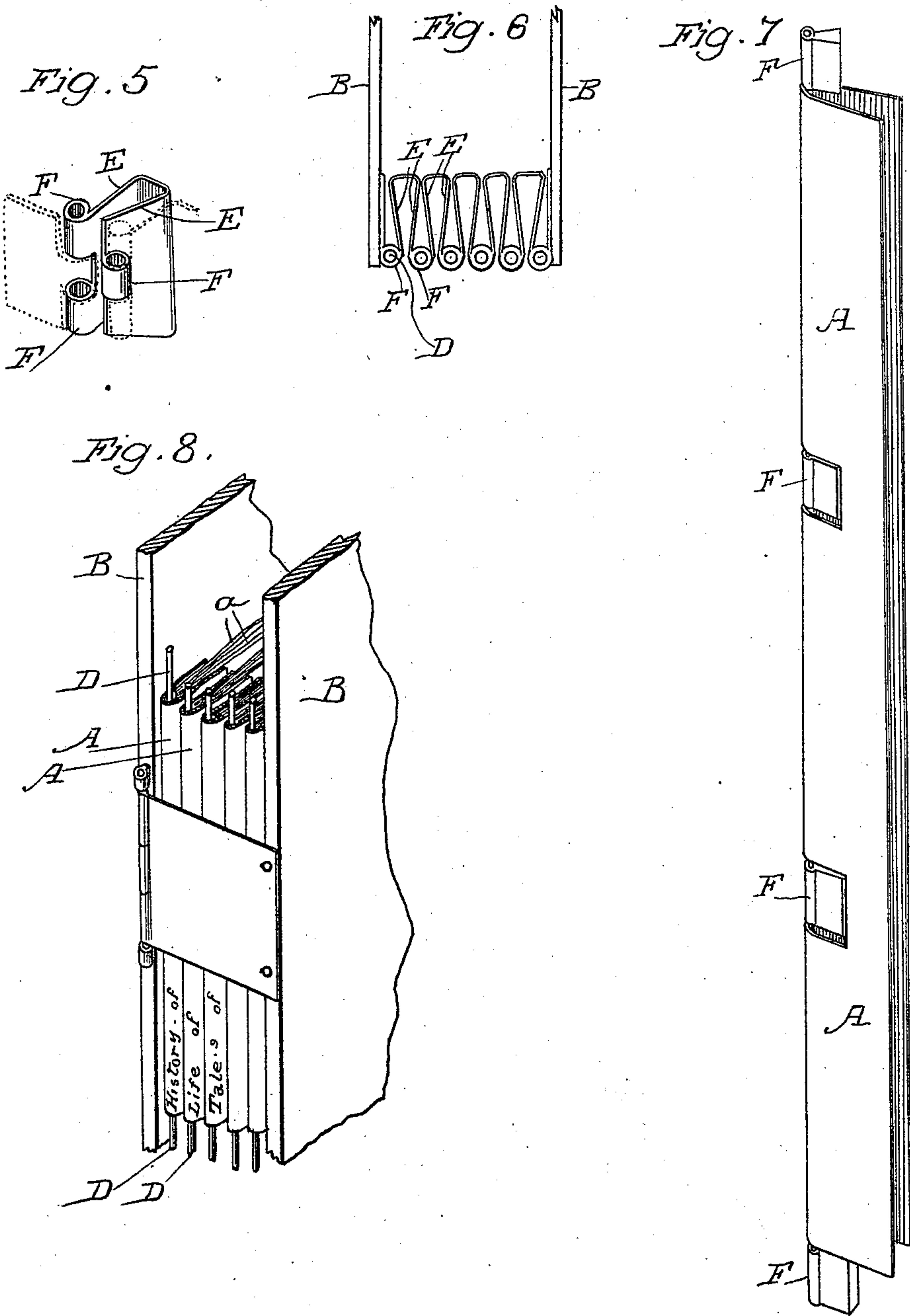
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UNITED STATES PATENT OFFICE.

ALEXANDER J. RUDOLPH, OF SAN FRANCISCO, CALIFORNIA.

BINDER FOR BOOKS OR PAMPHLETS.

SPECIFICATION forming part of Letters Patent No. 528,693, dated November 6, 1894.

Application filed April 5, 1894. Serial No. 506,466. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER J. RUDOLPH, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Binders for Books and Pamphlets; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in book binding and the book produced thereby.

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my binder complete. Fig. 2 is a portion of the same, showing its construction. Fig. 3 shows a manner for holding the rod in the center of the channel. Fig. 4 shows another method. Fig. 5 is a view of one of the hinges. Fig. 6 is a top view of a series of hinges and covers. Fig. 7 shows a channel for newspapers, maps, &c. Fig. 8 shows another manner for securing the label.

The object of my invention is to provide a means for binding abstracts, pamphlets, periodicals, and other books in circulating libraries, and it is designed to produce a more compact, stronger book, so bound that when spread out for use, the several sections will lie substantially flat without any gap at the back. A book thus bound is capable of indefinite extension, contraction, or subdivision into parts, and is economical in construction, both in material and labor, and is more durable than any other binding.

In carrying out my invention I fasten one or more signatures or sections *a* into a channel A formed of some flexible material, such as pressed board, transparent celluloid or other flexible substance, or it may be made of thin sheet metal, such as aluminum, and the section of the book is fastened thereon by means of eyelets or rivets, but preferably by galvanized or nickel-plated steel wire staples *b*. The channel is secured to the rear edge of the book section at a sufficient distance from it to leave a space or channel *d* for the reception of the wire rod D which is passed through it, and through the hinge sections hereinafter

described for the purpose of securing them together.

Fig. 3 shows a means for holding the hinge rod centrally in the channel A by means of bent strips *a'* wide enough to fit the bottom of the channel, having holes made longitudinally and centrally to receive the rod.

If it is desirable to match the back of the channels holding the sections with the color of the material used on the covering boards B, this can be done by simply cutting strips of any suitable flexible material and bending them around the channel piece, so that they are secured thereto by the fastening wires, or if preferred, a transparent material, such as celluloid, may be employed either to form, or cover the channel pieces, so that the necessary title for the contents of the particular pamphlet or section may be fixed beneath this transparent backing, and a glance at the back of the completed volume will show exactly where the part desired is located, without the use of other index, or the title may be marked in a luminous or phosphorescent paint. If these protecting strips are made of metal, they may be lined with some flexible material *a''* which will protect the pamphlet or section from injury, this protecting flexible material being turned over the edges of the channel pieces, so as to cover them and protect the book sections from them when secured together.

By means of the protecting flexible lining strips bent over the edges of the channel pieces or by bending the edges of these channel pieces, (Figs. 3 and 4) the first leaf of the book or section will be protected when opened and will be turned over in an arched form, instead of being bent short, which is apt to cause it to break.

In some cases where the sections of the book are very thick, it is preferable to close the channel between the back edge of the book and the point where the wire D is to pass through, so as to separate the two as shown in Fig. 4 or the channel may be fitted with the strips *a'* as previously described.

The wire which forms the hinge pin projects sufficiently beyond the ends of the book section to engage with the hinges at the top and bottom of the book. These hinges con

sist preferably of sheet metal plates E, bent as shown, and having the eyes F F upon the outer edges, while the bight is made wider than the width of the part where the eyes are formed. These eyes standing upon opposite sides of the plates, serve to connect the hinge sections together so that the rod passing through the back of one of the book sections extends into the eye or eyes F upon one side of this hinge plate, and the rod of the next adjacent section extends into the eye upon the opposite side. It will be understood that these hinge rods may have heads upon one end abutting against the outer ends of the hinge plates, or they may be countersunk into them so as to lie flush, and the opposite ends bent or upset slightly, or otherwise secured to prevent the hinge rods from drawing out.

By making the hinge plate of U form and of greater width at the inner edge than the outer, the sides abutting against each other when the book is closed, may be pressed, after the sections are in place, so as to lie with such relation to each other as to retain the back square and approximately at right angles with the covers when the book is closed (Fig. 6), and will prevent the book from spreading out and flattening down as usually occurs where books are bound in the usual manner, and it also prevents such movements of the leaves of the book upon each other as would tend to wear them out by friction with constant use. It will be understood that these hinges will be made with two lugs or eyes upon one side, and one upon the other, to correspond with the similar alternate arrangement of the adjacent hinge plates.

If the books are very heavy, it may be necessary to lengthen the plates and increase the number of eyes or lugs to gain strength. These hinge plates may be made of sufficiently stiff metal, and the thickness or diameter across the curved U form of the inner part is approximately as great as the thickness of any book section which would be likely to be employed.

When the sizes or sections to be bound in one volume are all put together and the covers fastened to them, the book may be placed in a press and the arches of the inner edges of the U-shaped plates will be curved by this pressure so that the hinges will be formed of the exact size necessary and will then form the proper support for the contents of the book, as previously described.

The covers for the book are fitted with hinge sections coinciding with, and fitting the hinge sections of the book sections, so that they are easily attached, and they may be removed and other book sections introduced as may be desired. As the rear edges of all these sections are exposed, it will be manifest that the name of each section or the subject matter thereof may be imprinted upon the back of the section, thus forming an index sufficient for the purposes of examination with-

out removing the book from the shelf. If newspapers, maps, folio volumes or anything of considerable length are to be bound, it is preferable to make the channel sections A with slots at intervals adapted to receive other hinges which are inserted into these slots, Fig. 7, and the hinge pins passing through the back of the channel sections and through these hinges as well as the outside ones, provide sufficient supports for the whole length of the section.

In order to protect the book covers from wear caused by dragging the edges across the shelves upon which the books stand in moving and returning them, I fasten upon the lower edges or bottom part of the covers a protecting clamp c formed of thin sheet metal such as aluminum, which may either be put on outside of the material of the cover, or may be first attached to the board, and then covered over to the lower edge with this covering material. The vertical rear edges of the cover may also be strengthened and protected by similar clamping plates c'. These may be secured by riveting, by indentation or perforation, or by wire staples or other clamps or rivets as desired.

Various ways may be adopted for fixing a label or title of the completed book upon the back. This may be done either by means of flexible labels of any suitable material, the edges fitting in pockets formed in the covers and retained in position thereby, the labels being changed to suit the size of the book if the latter is increased. (See Fig. 1.) Another way of fixing the label is to attach two or more eyes or lugs upon the rear edge of the cover, and the label may be provided with hinges as shown in Fig. 8 and attached to the lugs by a hinge pin so as to open and close upon the back and when closed its free edge would be secured upon the other cover by buttons or other suitable attachments. By this construction I simplify the matter of binding, as no professional book-binder is needed to assemble the parts into a complete work, and the binding is especially durable and strong, with capacity for unlimited extension in the size of the book.

In binding maps, pictures, engravings or any similar articles which are usually made on heavy thick paper which is apt to break if introduced bodily into the channels A, I secure to the edges of the single sheets, flexible channels of paper, cloth, leather or other suitable material, and these channels are introduced into the rigid channels A previously described, and project far enough to allow the leaves to be turned freely outside of the rigid channels. This prevents their being broken or bent.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for binding the signatures or sections of books consisting of independent channels adapted to receive the rear edge of

each of the sections, means for securing them thereto, said channels having spaces formed between the bight or bend of the material and the rear edge of the book section for the introduction of hinge rods which pass through these spaces, and hinge sections exterior to the ends of the book into which the hinge rods enter and by which the said hinge sections are connected together by lugs upon opposite sides of the hinge plates as described.

2. A binding for book sections or signatures, consisting of channels formed of material to form a back and sides between which the book section is secured, and flexible protecting strips fitting within the channels and bending outwardly over the edges of the rigid channel sections.

3. A binding for books consisting of channel sections adapted to receive the rear edges of the book sections which are secured therein, having the flexible lining channels, with edges turned over the edges of the rigid channels, and a means for attaching the name, label or index upon the rear of the binding so that it will be exposed when the book is complete and closed.

4. A binding for books consisting of the channel pieces secured to the rear edges of the book sections having spaces for the passage of the wire, hinge rods which extend through them, hinge sections consisting of U-shaped plates converging toward the outer edges, and having perforated lugs upon opposite sides of the outer edges to receive the ends of the hinge rods of the adjacent sections, whereby the inwardly projecting hinge plates lie upon each other when the book is closed, and serve to retain the back in a straight form and prevent looseness or movement thereon.

5. A binding for books consisting of the channel pieces secured to the rear edges of

the book sections with passages for the reception of the hinge rods, U-shaped hinge plates having lugs upon the opposite sides of the outer edges, adapted to receive the ends of the hinge rods, said hinge plates lying upon each other when the book is closed and being capable of compression so as to correspond with the varying thicknesses of the book sections which they unite, whereby the back of the book is retained straight when closed and prevented from looseness of movement.

6. Devices for binding loose editions or sections together consisting of rigid channel plates adapted to receive and hold the edges of the parts to be bound, hinge pins passing through them and the hinge sections which are united together beyond the ends of the parts, and flexible channel pieces secured to the parts to be bound retained in place within the rigid channel pieces and extending beyond the edges thereof whereby the bound parts are held exterior to the rigid channel plates and allowed free movement without bending.

7. Devices for binding loose sections together to form a book, consisting of rigid channel plates adapted to receive and hold the edges of the parts to be bound, hinge pins passing through the channels and the hinge sections which are united together beyond the ends of the parts to be bound, and supplemental bent plates fitted into the bottom of the channel sections with holes to receive the hinge rods and retain them in a central position within the channels.

In witness whereof I have hereunto set my hand.

ALEXANDER J. RUDOLPH.

Witnesses:

S. H. NOURSE,
H. F. ASCHECK.