

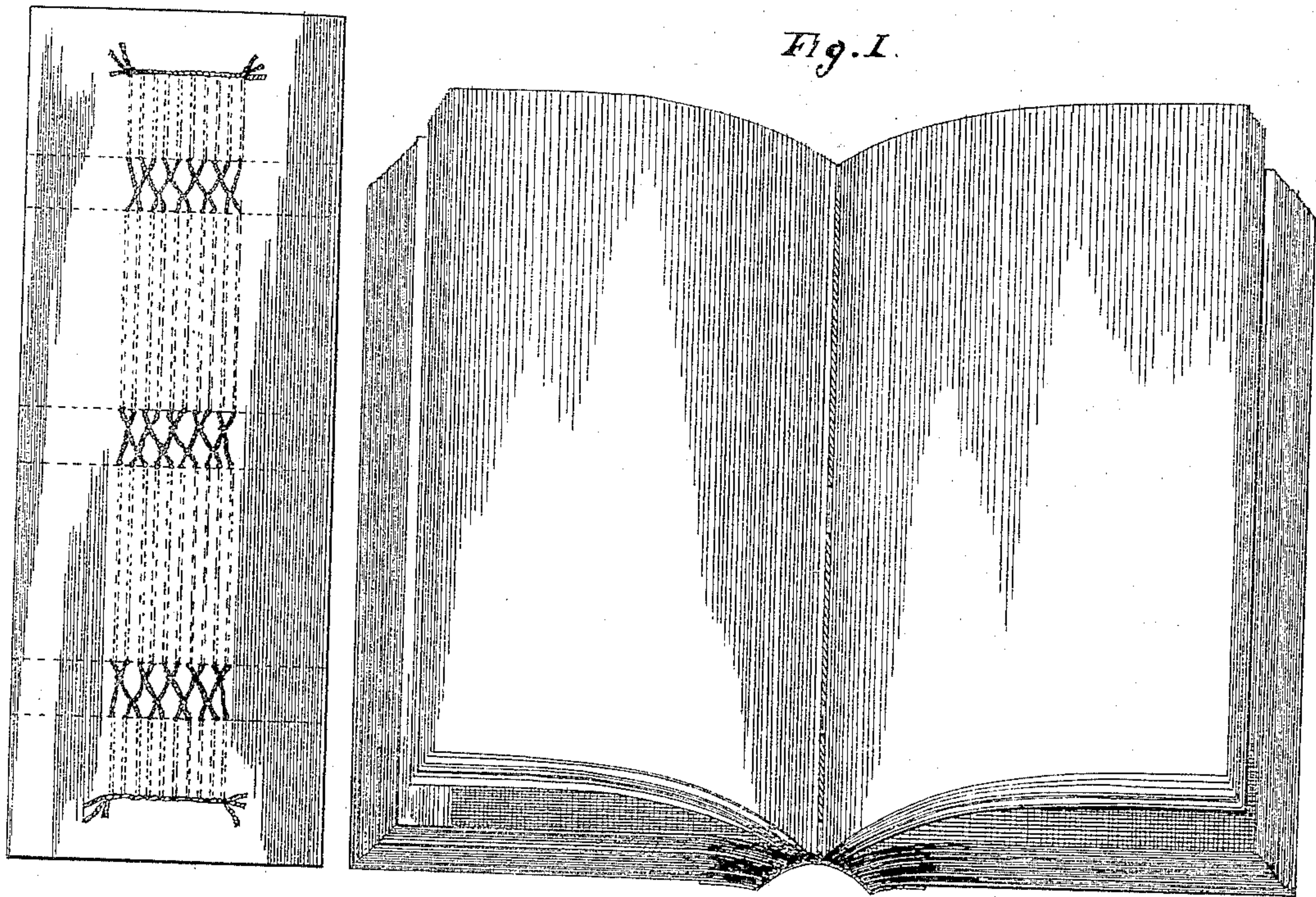
(No Model.)

R. E. FREY.  
BOOK.

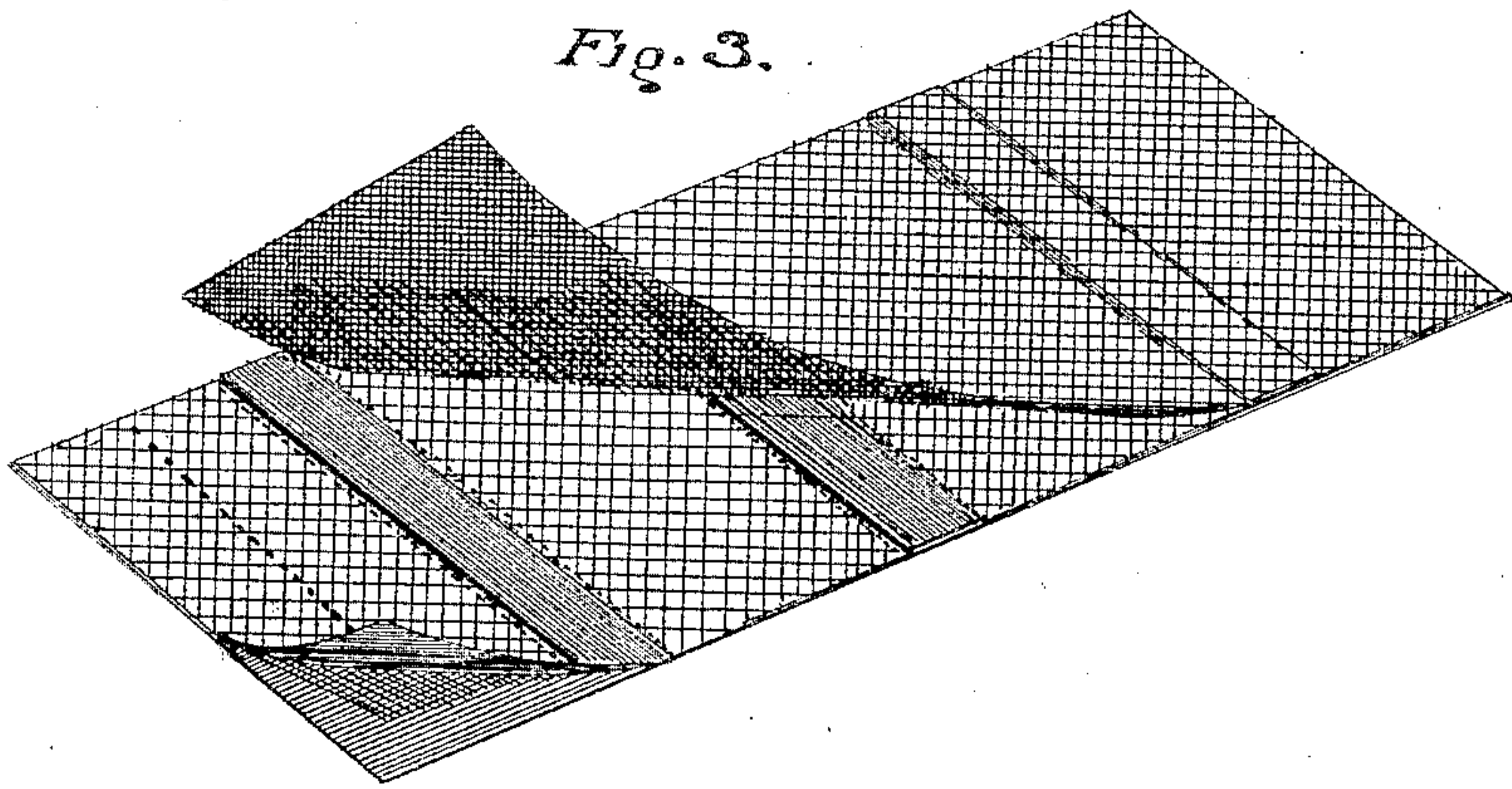
No. 436,496.  
*Fig 2*

Patented Sept. 16, 1890.

*Fig. 1.*



*Fig. 3.*



Attest;

*John H. Tiffney*  
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his Attorney



# UNITED STATES PATENT OFFICE.

RUDOLPH E. FREY, OF ST. LOUIS, MISSOURI.

## BOOK.

SPECIFICATION forming part of Letters Patent No. 436,496, dated September 16, 1890.

Application filed July 5, 1890. Serial No. 357,891. (No model.)

*To all whom it may concern:*

Be it known that I, RUDOLPH E. FREY, of the city of St. Louis, in the State of Missouri, have invented a new and useful Improvement in Binding Books, of which the following is a specification.

The object of my invention is to effect a secure but flexible connection of the leaves of books, especially blank-books and account-books, without the use of any guard or stub-piece such as is commonly employed for this purpose, and to dispense with the necessity of using glue in the back of the book. These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 represents a completed book made according to my invention. Fig. 2 shows the manner of interlocking the binding-threads, and Fig. 3 is a view of the back of the book or sewing-band.

Heretofore in the binding of books the folded signature or sections which compose the book have been secured together by sewing them onto a continuous cord resting in saw-cuts in the back of the signatures or sections and then applying glue to the backs and cords. After being thus sewed and glued, and before the glue was cold, a number of strips of cloth or paper were attached to the back of the book. The sewing-thread of the book was passed in and out of each folded section over a binding-cord, resting in a recess in the back of the signatures; or, if the book were too heavy for such cord, these binding-threads were passed over a strip of parchment, and the strips of cloth mentioned were attached to the back of the sections, between these binding-cords or parchment strips. This method of binding books is subject to the objection that it makes the back of the book rigid and inflexible, so that the leaves of the book will not open and lie flat at any particular place, as it is very desirable, especially in account-books, that they should do. Besides this, applying the glue directly to the exposed threads in the back of the book has a tendency to rot the threads, and these in time break and the sections of the book become loose. In addition to this, when books are sewed with a continuous thread running

through all the sections, the breaking of the thread at any place loosens all the sections in the book. These disadvantages I overcome in my invention, and a book made according to my method will lie open and flat at any place; and the separate sections are so sewed that even if the threads in any one section shall be cut no other section in the book will be thereby affected or become loose, nor will any one section of the book become sufficiently loosened to fall out unless the threads are cut in all the places where they enter the fold of such section. I saw the backs of the folded sections or signatures in the ordinary manner, in order to form recesses and holes for the passage of the binding-threads, as in the ordinary manner. Then I sew these sections directly to a sewing-band, which forms the back of the book. This sewing-band I prefer to make as follows: I first take a strip of Manila paper or other suitable material of sufficient length and width to form the entire back for the book. This paper may be mounted on muslin. A series of transverse perforations of two rows each are made, according to the length of the sewing-band. These perforations are intended as a guide in sewing the book and also to render the sewing easier by providing holes through which the needle may be inserted. These series of perforations form recesses, in each of which I lay a narrow strip of parchment. After the parchment strips are placed on the muslin or other material which forms the outer layer or face of the sewing-band, I paste to this sewing-band a strip of drilling, so that the parchment strips are secured between the paper and drilling. The several signatures of the book are then in turn separately sewed to this sewing-band. The sewing-thread is first inserted in the sewing-band at a point above the first parchment strip, and it is there secured round a binding-cord, as in the ordinary manner of binding books. It is then inserted within the folded section and carried to the outside of the sewing-band at a point just above the parchment strip, over this parchment strip, back inside the folded section, then out and over the next lower parchment strip in the sewing-band, and so on to the bottom, where it is passed



over another binding-cord inserted in the ordinary method. The thread passing through the second section is chained or locked with the thread passing through the first section  
 5 by a knot tied at each one of the parchment strips inserted in the sewing-band, and they are in like manner tied at the binding-cords inserted above and below these parchment strips. The thread passing through the sec-  
 10 ond section of the book is in like manner locked or chained to that passing through the third section of the book, and thus the binding-threads passing through each section are locked with the binding-thread passing  
 15 through its adjacent sections at several places in the back of the book. No one section, therefore, can come out of the book unless the binding-thread is cut at all the places where it enters the folded section, and even  
 20 if thus cut no more than that one section will be affected.

What I claim, and desire to secure by Letters Patent, is—

1. A book in which the folded leaves comprising each signature or section are secured  
 25 directly to a sewing band or back formed of a continuous piece of material, having inlaid

therein transversely suitable binding-strips of parchment or other materials.

2. A book in which the folded sections are  
 30 connected together through the medium of a sewing band or back, formed of a single piece of material, such folded sections being united directly to the sewing-band by means of binding-threads passing through each group and  
 35 the back, the sewing-threads of each section being tied to the threads of the adjacent section on the outside of the sewing-band.

3. A book the folded sections of which are secured directly to a sewing band or back  
 40 formed of one piece of material, having inlaid therein transversely binding-strips of parchment or other material, by means of threads passing through such folded sections and back round the binding-strips, the binding-threads of each section being tied or in-  
 45 terlocked with the threads of the adjacent sections at each one of the binding-strips or other suitable place.

RUDOLPH E. FREY.

Witnesses:

JOHN K. TIFFANY,  
 FRANK E. RICHEY.