

(Model.)

C. CHAMBERS, Jr.
Book Sewing.

No. 240,886.

Patented May 3, 1881.

Fig 1.

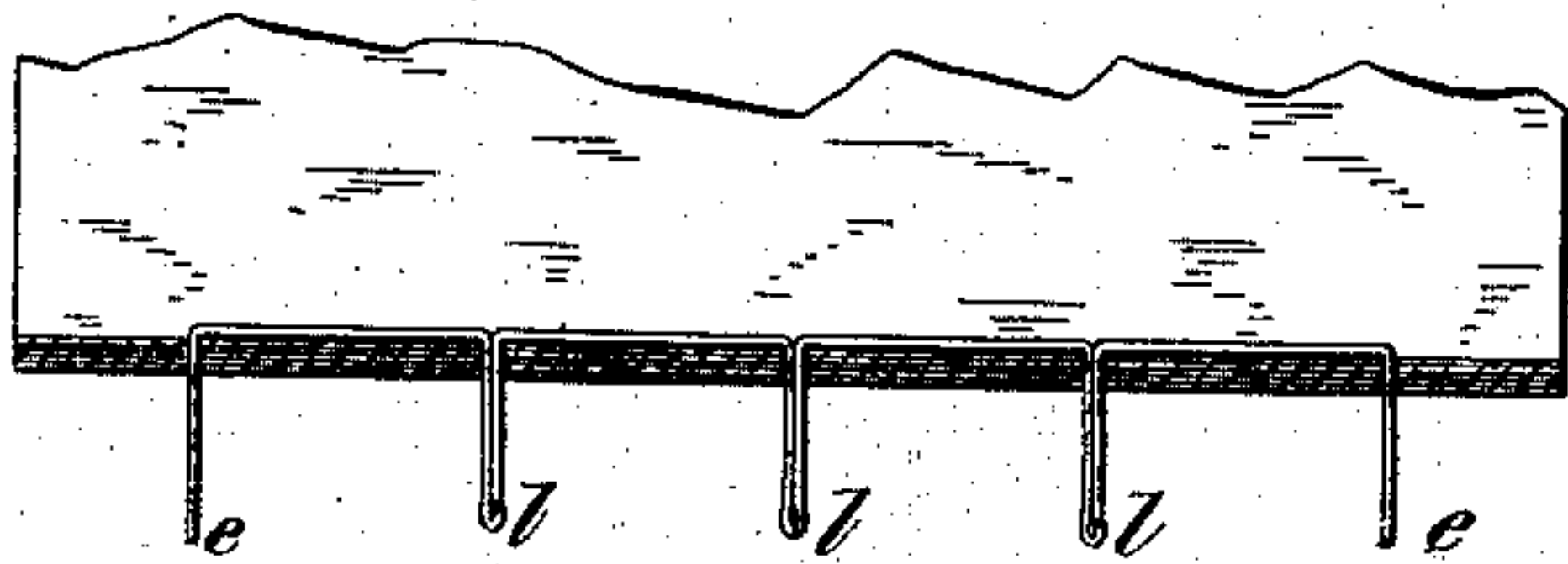


Fig 2.

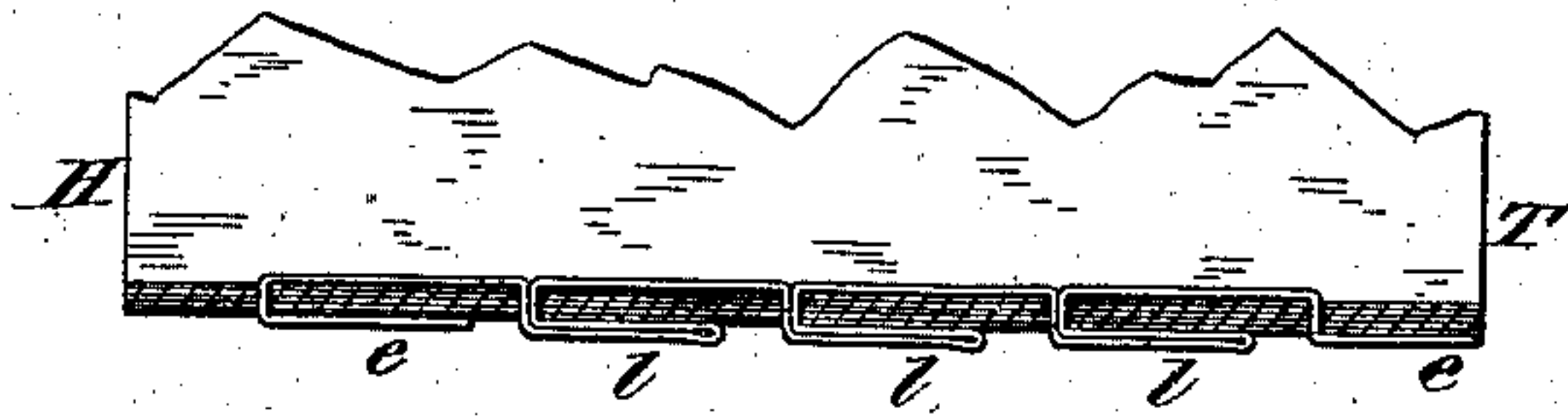


Fig 3.

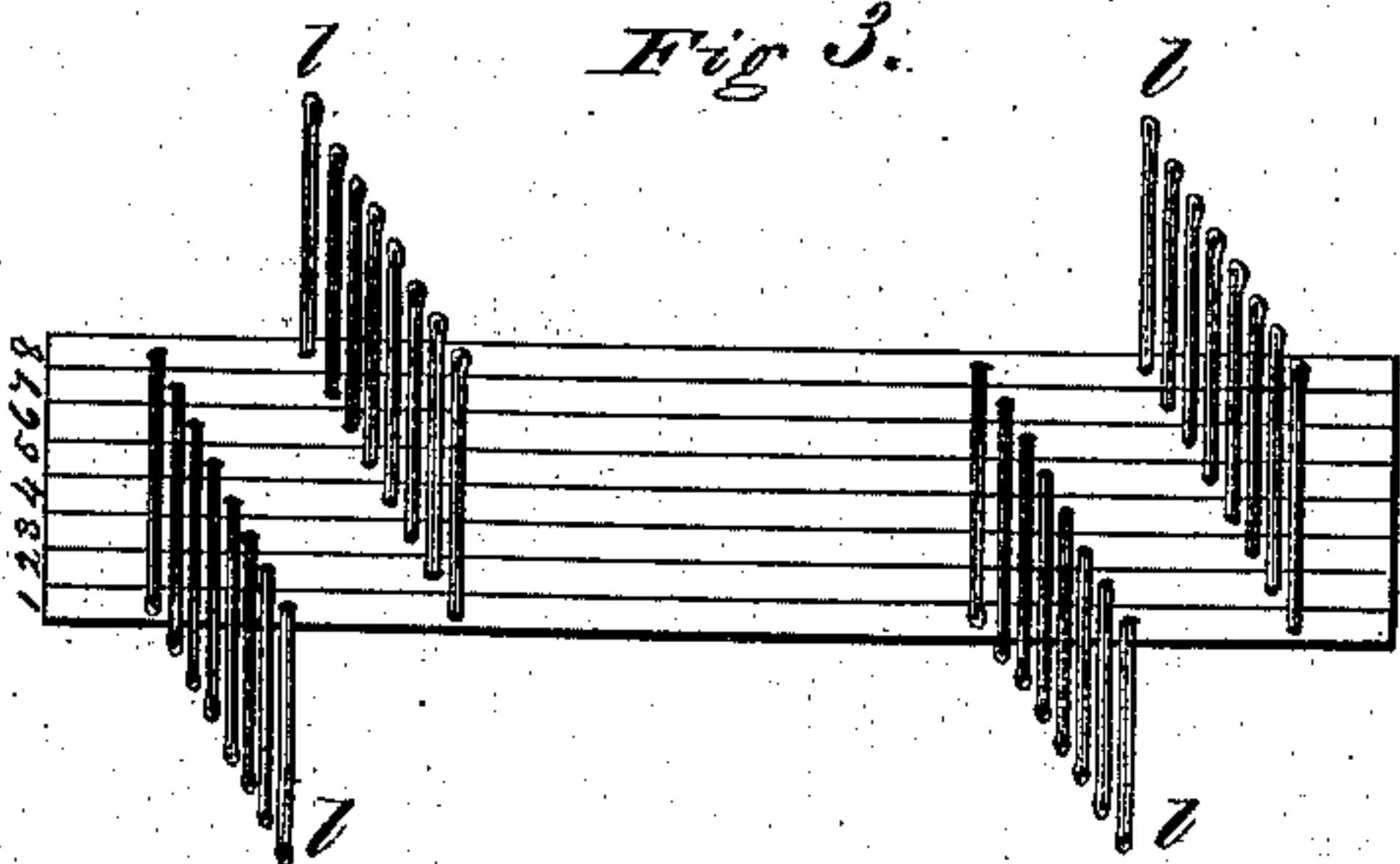


Fig 4.

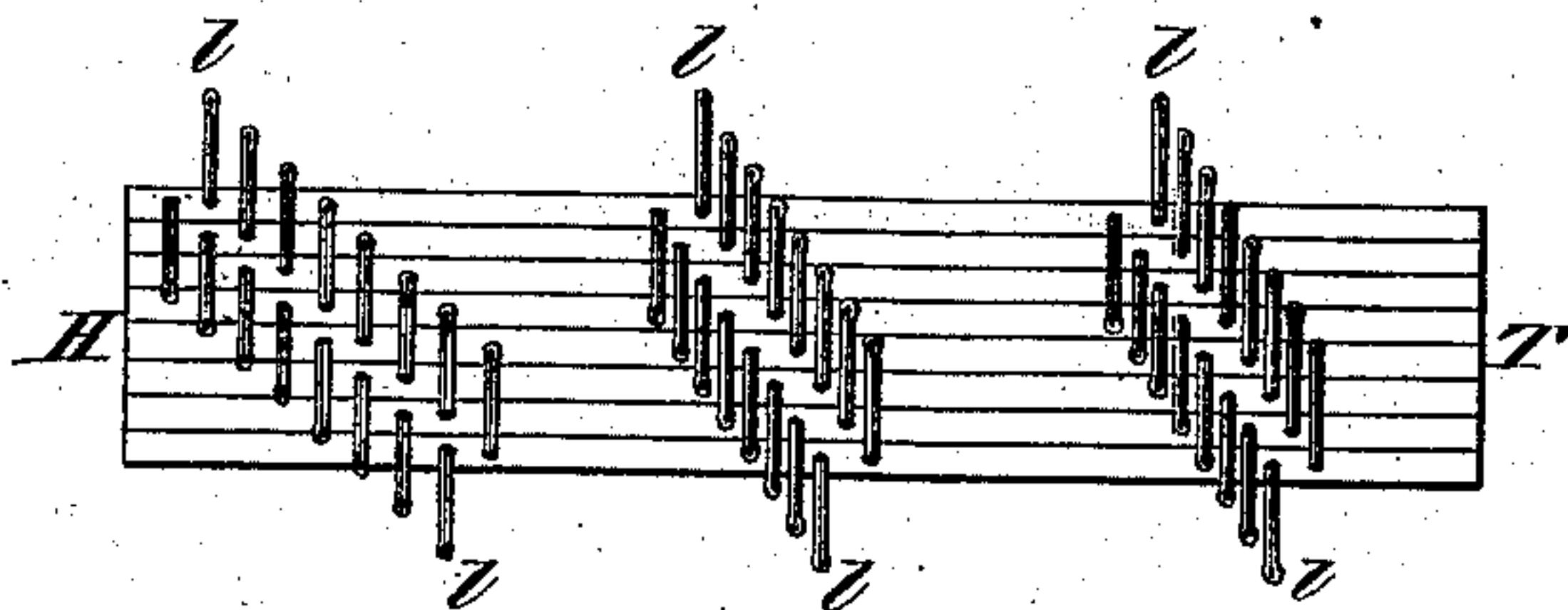


Fig 5.

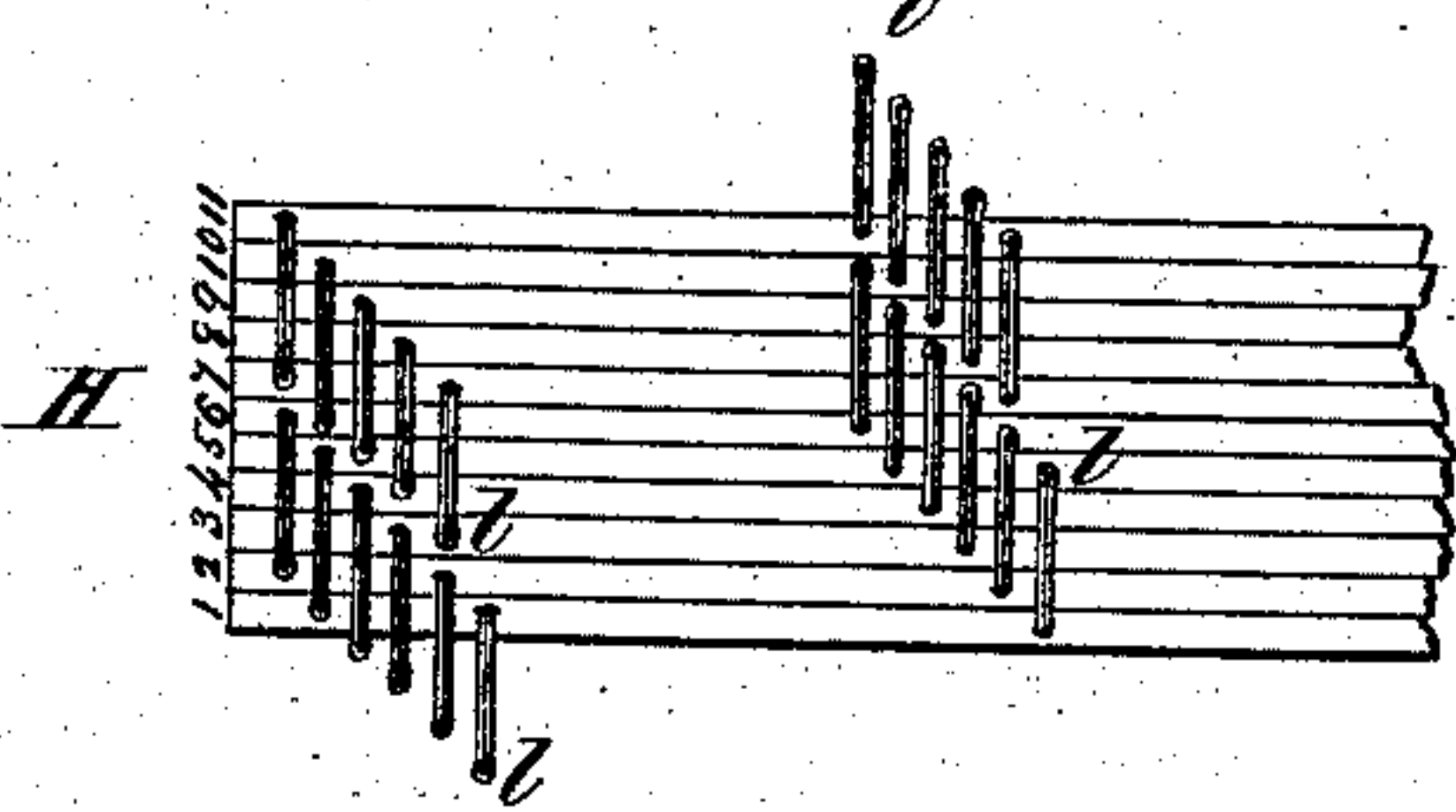
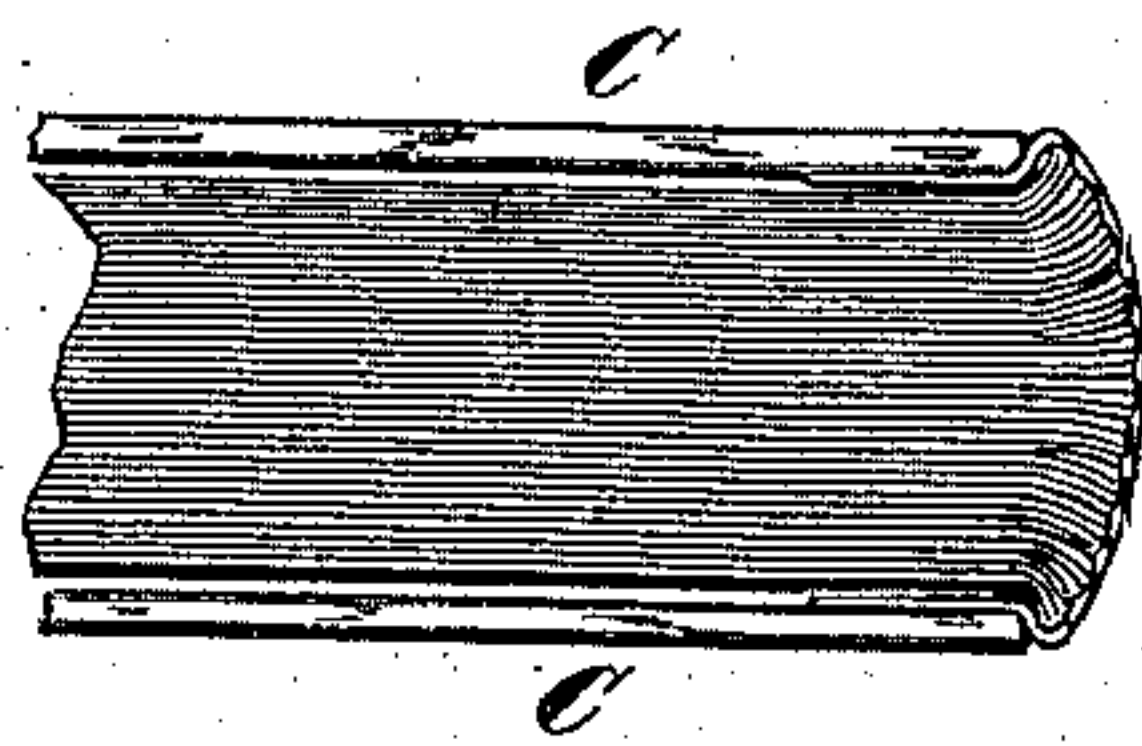


Fig 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

CYRUS CHAMBERS, JR., OF PHILADELPHIA, PENNSYLVANIA.

BOOK-SEWING.

SPECIFICATION forming part of Letters Patent No. 240,886, dated May 3, 1881.

Application filed March 26, 1881. (Model.)

To all whom it may concern:

Be it known that I, CYRUS CHAMBERS, Jr., of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in the Manner of Sewing Books; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a longitudinal central section of a signature of a book, showing the position of the thread before gluing. Fig. 2 is a similar section of a signature, showing the ends and loops glued. Figs. 3, 4, and 5 are face views of the backs of unfinished books, each book consisting of a number of signatures, showing various arrangements of perforations and loops. Fig. 6 is an end view of a book sewed by my method and having the back rounded and covers attached.

The same letter indicates the same part wherever it occurs.

This invention relates to the binding of what are called "flexible" books; and it consists in a new method of sewing books and pamphlets, whether consisting of one or many signatures, by making a number of perforations in the back of each signature and passing the binding-thread out of such holes in a series of loops, to be glued or pasted down on the outside to bind the book or signature, all as hereinafter more particularly set forth.

The method is fully illustrated in the drawings.

Fig. 1 shows a signature having five perforations, the ends *ee* of the binding-thread passing out at the holes nearest the head and tail of the signature, and the remaining portion of the thread lying along inside the fold of the signature, the slack being pushed out of the three middle holes in loops *lll*, as clearly represented. When the book consists of a single signature, these loops *l* and ends *e* are all brushed one way—say toward the tail *T* of the signature—when the glue is applied for attaching the cover, when they will all lie close to the back, as clearly shown in Fig. 2. When

the book consists of many signatures, each signature is to be prepared for binding in like manner as regards the perforations and loops, as many perforations and loops being employed as the size of the book and the character of the binding may require or render expedient. When the signatures are gathered and collated, the loops and ends of the threads will hang out at the back of the book. Glue is now applied in the usual manner; but before it sets the loops and ends are brushed or combed, (preferably the latter,) one row up toward the front side of the book and another toward the opposite side, as shown in Figs. 3, 4, and 5, thus laying the loops across the back of the book and uniting each signature to all the others by threads running both ways, and forming a double hinge to each. The hinges thus formed are outside of the paper, and the whole forms what is known to book-binders as a "flexible sewed book."

When the book consists of a number of signatures, it does not answer to have the perforations in the several signatures all made at the same distance from the head or tail, so as when "gathered" to form a row straight across the back of the book, for in that case the loops, when combed to either side, would lie upon one another and form a welt on the back of the book. To prevent this I make the perforations in each succeeding signature about one thirty-second of an inch farther from the head or tail than the preceding one, so that when the book is gathered the loops are presented in diagonal or oblique rows, as shown in Figs. 3, 4, and 5, whereby only one thickness of thread is glued at any one place to the back of the book. For the purpose of bringing the two reversed rows of loops or the right and left joints near together, while avoiding the use of an excessive number of stitches, I arrange the rows of loops in pairs, as shown in Fig. 4, so that two loops may be near the head of each signature, two near the tail, and as many intervening as the size and requisite strength of the book may demand, thus forming a right and left hand hinge near the ends and at the center of the book, as required.

Should the book be very thick, so that the obliqueness of the rows of perforations might run the loops too far from the head or tail, or too near either, the rows may be arranged in

a double parallel series, as shown in Fig. 5. This is desirable when the thickness of the book equals or exceeds the length of the loops.

The ends of the threads and the loops that project beyond the edges of the back serve as "tags" to secure the boards of the covers, as shown in Fig. 6. In cloth-bound books these tags come inside the boards, and in leather-bound they are placed outside. These projecting ends and loops may be cut off when the book is composed of several sections and covered with paper, or when it is desirable to prevent the threads from showing on the inside of a cloth cover. The threads may be stiffened and supported to any required extent by the usual means.

What I claim, and desire to secure, is—

1. The method herein described of sewing books preparatory to binding, the same consisting in passing the thread from the inside to the outside of each signature through any number of holes in the crease of its fold, in a series of loops, which are afterward glued to the back to bind the book, substantially in the manner specified.

2. Book-signatures prepared for binding by having oblique rows of holes across the back, as described, in order that the thread loops projected from such holes may be separately glued to the back without interfering with each other or forming welts, all as set forth.

3. Book-signatures having holes in double oblique lines near the heads and tails of the signatures, substantially in the manner shown in Figs. 4 and 5, and for the purpose stated.

4. The flexible book-hinge having the alternate rows of thread ends or loops projecting from the signatures combed and fastened in opposite directions across the back of the book, so as to unite each signature with every other by an attachment outside of the edges of the signatures, as and for the purpose described.

In testimony that I claim the foregoing as my own invention, I hereto affix my signature in presence of two witnesses.

CYRUS CHAMBERS, JR.

Witnesses:

J. H. CHAMBERS,

S. BERNARD CHAMBERS.