

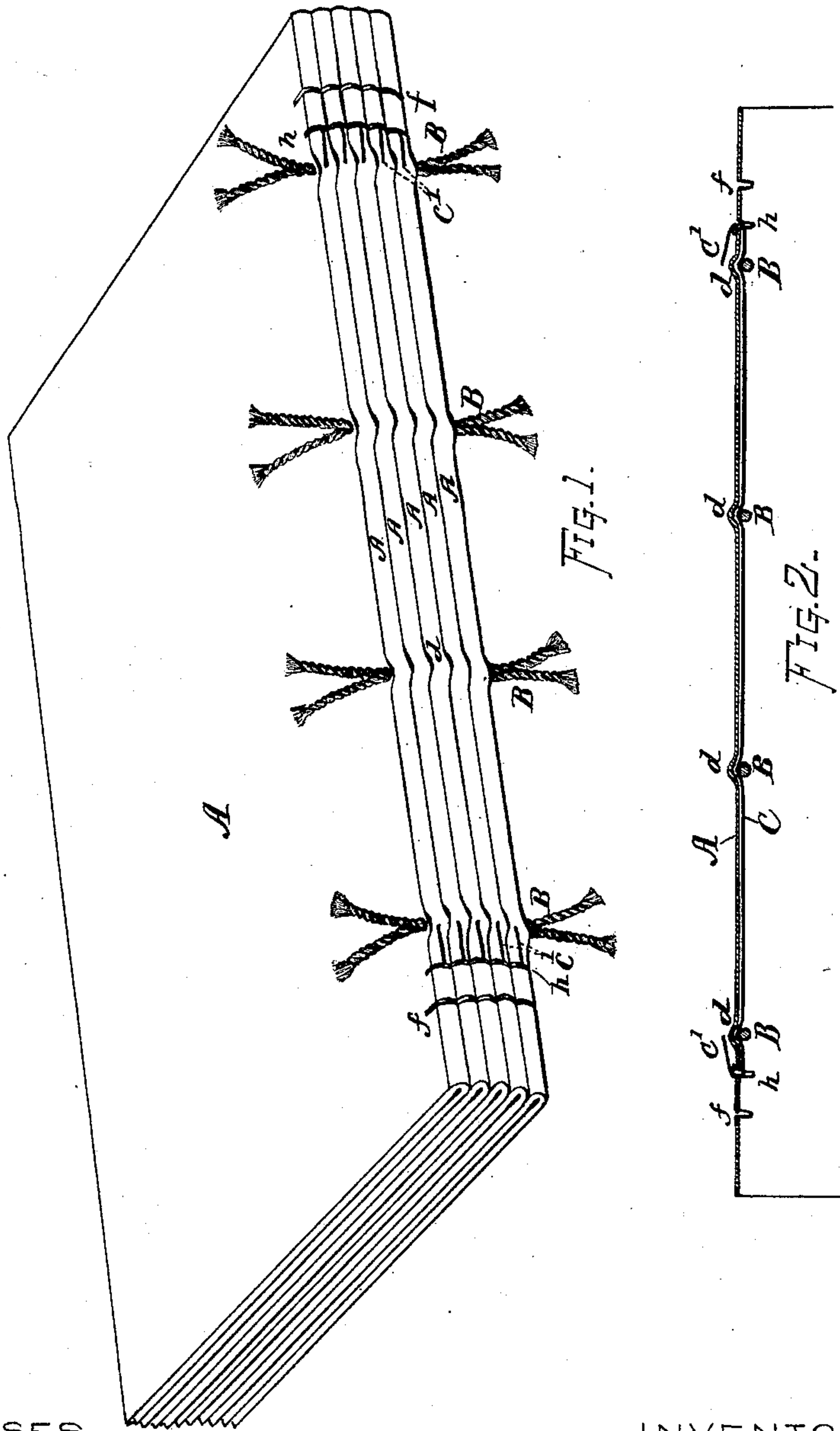
(No Model.)

L. W. FIFIELD & A. I. JACOBS.

BOOK BINDING.

No. 361,152.

Patented Apr. 12, 1887.



WITNESSES

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UNITED STATES PATENT OFFICE.

LEVI W. FIFIELD AND ARTHUR I. JACOBS, OF WORCESTER, MASS., ASSIGNORS
TO THE SMYTHE MANUFACTURING COMPANY, OF HARTFORD, CONN.

BOOK-BINDING.

SPECIFICATION forming part of Letters Patent No. 361,152, dated April 12, 1887.

Application filed August 23, 1886. Serial No. 211,581. (No model.)

To all whom it may concern:

Be it known that we, LEVI W. FIFIELD and ARTHUR I. JACOBS, both citizens of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Book-Binding, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of our present invention is to produce a binding for books that shall be neat, strong, and efficient, which will not interfere with the trimming of the edges, and which can be accomplished with facility and in a practical manner by automatic mechanism.

To this end our invention consists in the method of arranging and securing the binding-wires in the manner shown and hereinafter described.

Figure 1 is a perspective view of a book, showing our improved method of binding. Fig. 2 is a longitudinal section through the back of one of the signatures.

In referring to parts, A denotes the signatures, B the bands, and C the binding-wire.

In our method of binding, the signatures A are not notched or sawed across the back for the reception of the bands, but the binding-wire C, which is of very fine wire—say about No. 36 wire gage, more or less—is laid straight and close into the back fold of the signature, and the bands B are carried through the signature, below said wire, from side to side of the fold, by means of needles, which force the wire against the back of the signature, forming small bends or outward curves, as at *d*, both in the wire and paper, as shown. The ends of the binding-wires are cut off at the position *f*, near the ends of the signatures, and conveniently distant from the outer bands, B, by means of a suitable cutter forced through the ends of the signatures; and at a position about one-quarter inch (more or less) inward from the cut-off point *f* openings or slits *h* are made in the back of the signature, and the ends *C'* of the wire C are respectively drawn up through said slits, turned backward toward the band B, and bent down upon the back of the signa-

ture in the manner illustrated, so that when the cover is attached the ends of the wires will be confined between the cover and signatures, so as to be finished in a neat and secure manner. The ends *C'* of the binding-wire are drawn through to the back, and bent down at sufficient distance from the end of the signatures to permit of the leaves of the books being trimmed off without liability of hitting or cutting off the binding-wires.

By drawing through and bending down the ends of the binding-wires in the manner set forth, we are enabled to use a finer strand of wire than could otherwise be used, while at the same time a better, stronger, and more durable binding is produced, the book is less encumbered by quantity of material pressed into the back, and there is no metal or sewing at the ends, which are trimmed off. Another advantage is that the bandways do not have to be notched or sawed out before laying the bands, and the binding-wire loop at *d* has a firm bed and hold in the paper.

We have in a separate application for patent described one style of machine whereby this method of binding can be practically accomplished automatically.

We are aware that wires driven through the backs of the signatures in the manner of staples and clinched down onto the paper have been heretofore employed for binding books, and that wires have also been laid into the folds of the signatures; but such methods are essentially different from that herein shown and described, and we do not wish to be understood as in any way including such former methods as within the scope of our present claims.

What we claim as of our invention, and desire to secure by Letters Patent, is—

1. The improvement in the binding of books, which consists in cutting off the binding-wire at a position short of the end of the signature, drawing the end of said wire out through an opening, at a position between the point of severance and the band, and then bending the ends of said wire down upon the back of the signatures, to be inclosed between the signatures and outside cover, substantially as set forth.

2. The book herein described, wherein a fine

wire is arranged along the fold of the signature, the bands B, extended under said wire, and the respective ends of said wire drawn through and bent down upon the back of the signature, at positions intermediate between the end bands and the extremities of the signatures, substantially as set forth.

3. The combination, in a book-binding, of the signatures unnotched at the bandways, the wire extending along the back fold and having its ends drawn through and bent down be-

tween the signature and cover, and the bands passed under said wire and pressing up a loop or a curve of the wire into the signature-back, substantially as shown and described.

Witness our hands this 18th day of August, A. D. 1886.

LEVI W. FIFIELD.
ARTHUR I. JACOBS.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENNIS.