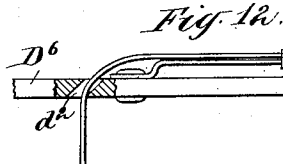
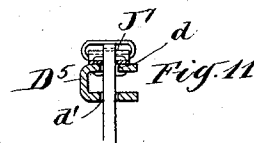
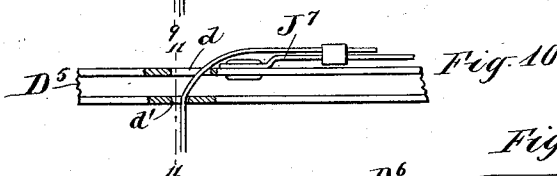
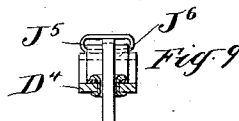
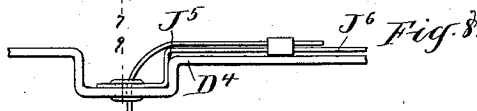
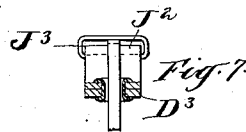
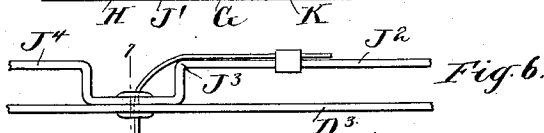
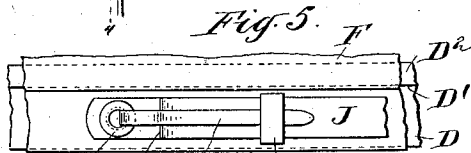
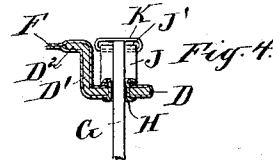
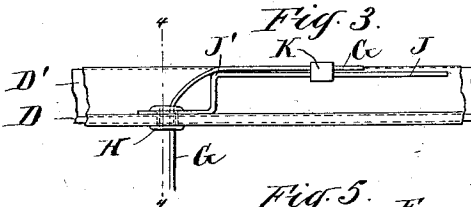
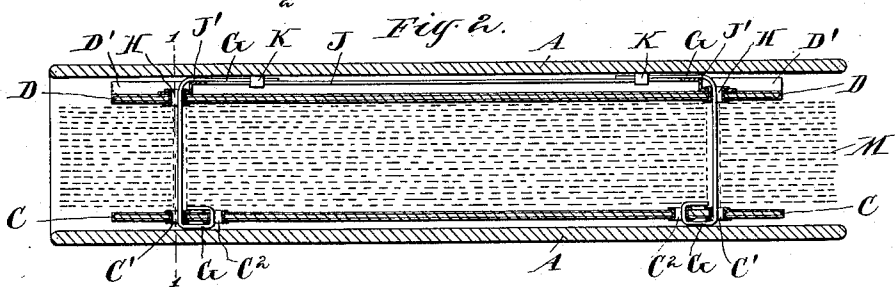
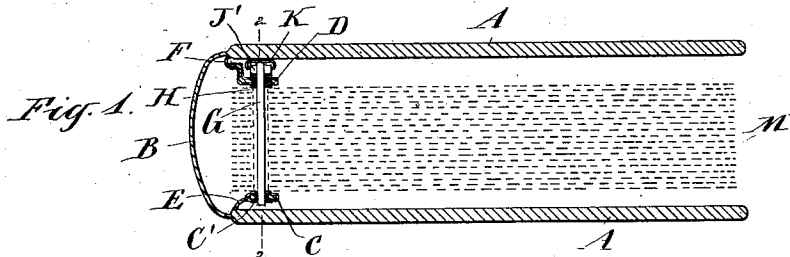


L. E. SHIPMAN.
 TEMPORARY BINDER.
 APPLICATION FILED MAY 15, 1912.

1,054,945.

Patented Mar. 4, 1913.



Witnesses:
 J. E. Kremer,
 R. T. Eddowes,

Inventor:
 Luster E. Shipman,
 by his attorney,
 Charles R. Seale.

UNITED STATES PATENT OFFICE.

LESTER E. SHIPMAN, OF NEW YORK, N. Y.

TEMPORARY BINDER.

1,054,945.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed May 15, 1912. Serial No. 697,400.

To all whom it may concern:

Be it known that I, LESTER E. SHIPMAN, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county and State of New York, have invented a certain new and useful Improvement in Temporary Binders, of which the following is a specification.

The invention relates to that type of binder in which the leaves are placed between an upper and lower bar and engaged by a tongue of pliable metal extending through the leaves and top bar and held by bending the tongue sharply upon the latter and securing the free end of the tongue. On the removal or insertion of leaves the tongue is straightened and again bent and secured; the successive straightening and rebending operations eventually weakens the tongue, causing it to break and thus render the binder useless while otherwise still in good condition.

The object of this invention is to provide simple and efficient means whereby the sharp bend in the tongue is avoided and the danger of fracture greatly lessened or entirely eliminated.

The invention consists in certain details of construction and arrangement by which the above object is attained, to be hereinafter described and pointed out in the claims.

The accompanying drawings form a part of this specification and show several forms of the invention.

Figure 1 is a transverse sectional view of a binder equipped with an approved form of fastening means. The line of section is that indicated by the line 1—1 in the succeeding figure. Fig. 2 is a corresponding longitudinal section taken on the line 2—2 in Fig. 1. The remaining figures are on a larger scale and show portions of the fastening means and the provisions for avoiding sharp bends in the tongue. Fig. 3 is an edge view of a portion of the top bar, tongue, and its securing means. Fig. 4 is a transverse section on the line 4—4 in Fig. 3. Fig. 5 is a plan or top view corresponding to Fig. 3. The succeeding figures show modified forms of the invention. Fig. 6 is an edge view corresponding to Fig. 3 but showing a modification of the structure shown therein. Fig. 7 is a section on the line 7—7 in Fig. 6. Fig. 8 is an edge view showing another form. Fig. 9 is a corre-

sponding transverse section, taken on the line 9—9 in Fig. 8. Fig. 10 is an edge view of still another form. Fig. 11 is a section on the line 11 in Fig. 10. Fig. 12 is an edge view partly in vertical section, showing a further modification.

Similar letters of reference indicate corresponding parts in all the figures.

A A are the covers of the binder, joined by the flexible back B and equipped with a bottom bar C and top bar D, covered with fabric which is continued as hinges or flexible connections E and F to the covers. In the lower bar C near each end is a pair of eyelets C¹ C² each pair receiving a tongue G of pliable metal, as soft brass, threaded downwardly through the eyelet C², along the under face of the bar C and upwardly through the eyelet C¹, thus securing it to the bottom bar, and thence upwardly through the leaves or other material indicated at M, and through the eyelet H in the top bar D where it is bent down and its free end secured.

So far as described the structure is a well-known form of binder in which the objectionable feature is the liability of the tongue to break by reason of frequent bending and re-bending sharply at the upper bar. In the improved form of the device the tongue is not permitted to make a sharp bend.

In the preferred form of the invention shown in Figs. 1 to 5 inclusive, the top bar D is of L-section having a vertical portion D¹ and an upper flange D² on which the cover A rests. Upon the main portion D of this bar is a guide bar J extending longitudinally thereof at about the height of the flange D² and bent downward at a right angle at J¹ at each end near the eyelets H and fastened by the latter to the main portion D of the top bar. On the guide bar is a slidable loop K adapted to be forced upon and inclose the free end of the tongue and thus secure it to the guide bar. The tongue extending through the eyelet H is bent slightly toward the shoulder or angle J¹ of the guide bar, the inner surface of the wall of the eyelet serving as a bending point, and again slightly bent over such shoulder as a second bending point, with its free end lying upon the upper face of the guide bar and confined by the loop K. Thus the right angled change in direction of the tongue is effected without straining the metal seriously at any point and the

tongue may be bent, straightened, and re-bent as required in service without danger of breaking. Obviously this result may be attained by a variety of means, as conditions of service and cost of manufacture may dictate.

In Figs. 6 and 7 the top bar D^3 is a plane strip, and the guide bar J^2 with a shoulder J^3 is secured thereto in a manner similar to Fig. 3, but the guide bar is heavier than in the preceding figures and is extended at J^4 to perform the function of the flange D^2 in supporting the upper cover A.

In Figs. 8 and 9 the shoulder J^5 is formed in the guide bar J^6 but is reinforced by a corresponding bend in the top bar D^4 .

Figs. 10 and 11 show a top bar D^5 of U-section, and the gradual bend in the tongue is produced by the holes d and d^1 in the two flanges or members constituting this form of bar, the upper hole d being elongated to permit the tongue to be straightened for withdrawal, the interior edges of the holes providing the two bending points. In this form the guide bar J^7 is secured to the upper member. A somewhat similar structure is shown in Fig. 12 in which an opening d^2 passes angularly through a thick top bar D^6 .

Other modifications may be made in the forms and proportions and arrangement of parts without departing from the principle of the invention.

I claim:—

1. In a binder of the character set forth, a bottom bar, a top bar, a tongue attached to said bottom bar and arranged to be extended through said top bar and to be bent downwardly longitudinally of the latter, and means carried by said top bar and forming two separate bending points, over which said tongue is bent to prevent the formation of sharp angles therein in the bending operation.

2. In a binder of the character set forth, a bottom bar, a top bar, a tongue attached to said bottom bar and arranged to be extended through said top bar and to be bent

downwardly longitudinally of the latter, means carried by said top bar providing two separate bending points over which said tongue is bent to prevent the formation of sharp angles therein in the bending operation, and means for securing the free end of said tongue and holding it in the bent condition.

3. In a binder of the character set forth, a bottom bar, a top bar having an opening therein, a tongue attached to said bottom bar and arranged to be extended through said opening and bent downwardly longitudinally of said top bar, the wall of said opening arranged to serve as a bending point for said tongue, a guide bar mounted on said top bar, a shoulder on said guide bar adjacent to said opening and arranged to serve as a second bending point for said tongue, and a slidable loop on said guide bar adapted to engage and hold the bent-down free end of said tongue.

4. In a binder of the character set forth, a bottom bar, a top bar having an opening therein and a vertical portion and an upper flange, a tongue attached to said bottom bar and arranged to be extended through said opening and bent downwardly longitudinally of said top bar, the wall of said opening arranged to serve as a bending point for said tongue, a guide bar mounted upon said top bar and extending longitudinally thereof at approximately the same height as said upper flange, a shoulder on said guide bar adjacent to said opening and arranged to serve relatively to said opening as a second bending point for said tongue, and a slidable loop on said guide bar adapted to engage and hold the bent-down free end of said tongue.

In testimony that I claim the invention above set forth I affix my signature, in presence of two witnesses.

LESTER E. SHIPMAN.

Witnesses:

CHARLES R. SEARLE,
CORA M. FREDERICKS.