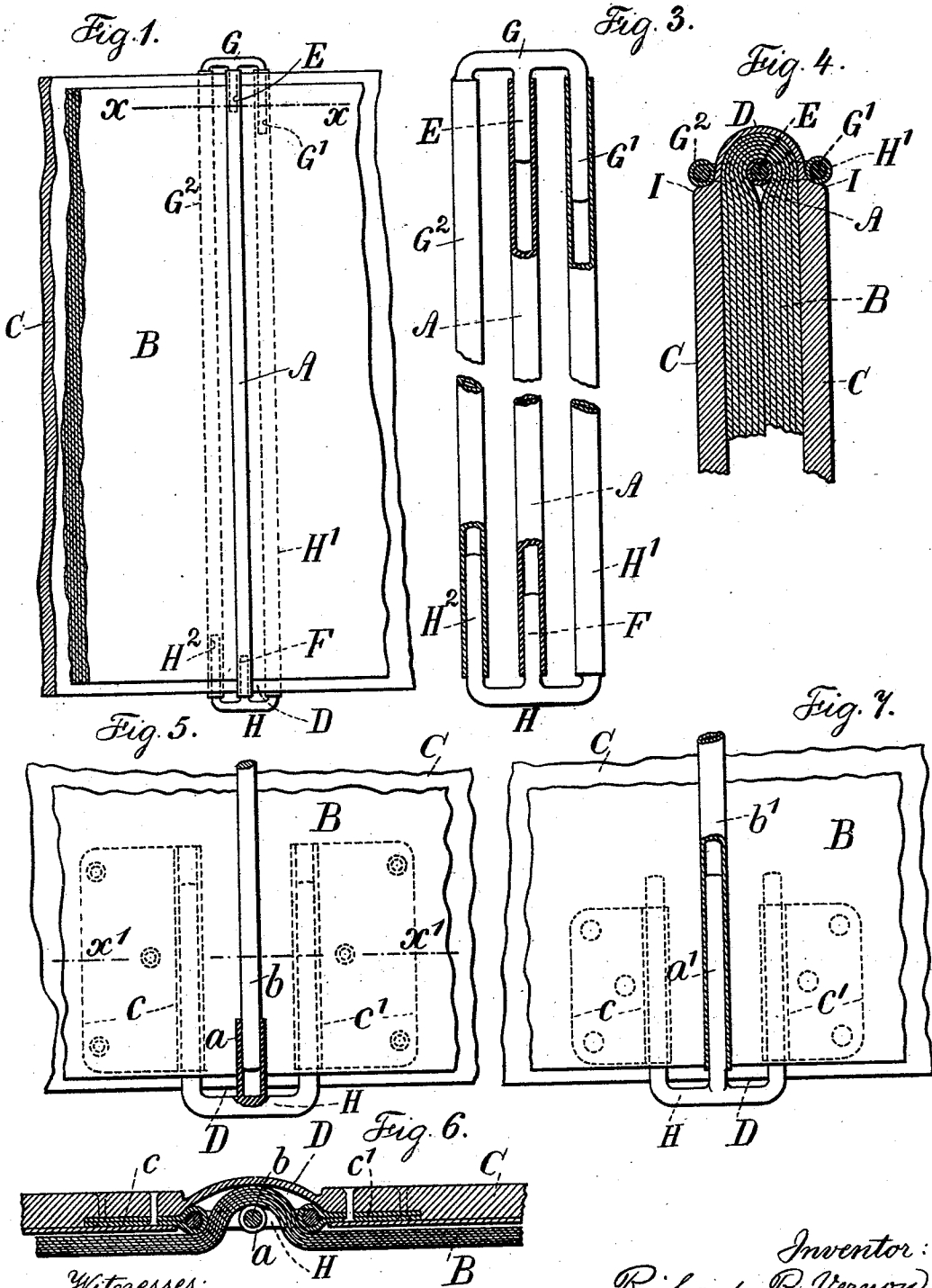


R. R. VERNON.
BINDER.

No. 498,414.

Patented May 30, 1893.



Witnesses:
J. Staley
Chas. H. Smith

Inventor:
Richard R. Vernon
per Lemuel W. Serrell
Atty.

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Fig. 10.

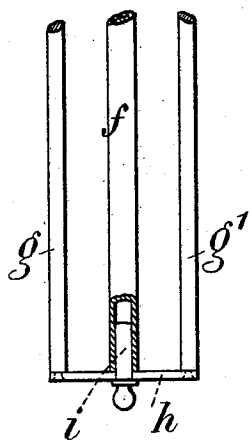


Fig. 11.

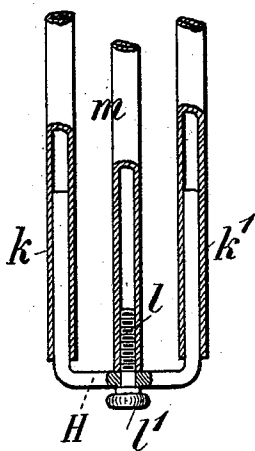


Fig. 12.

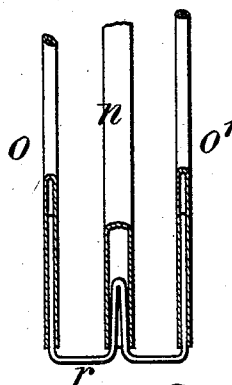


Fig. 8.

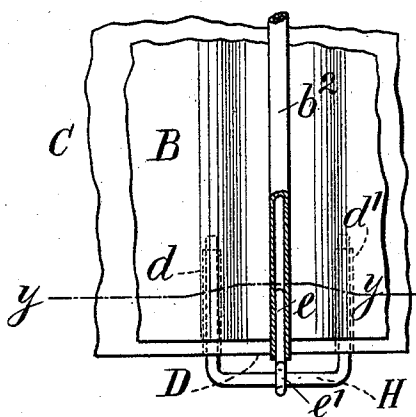
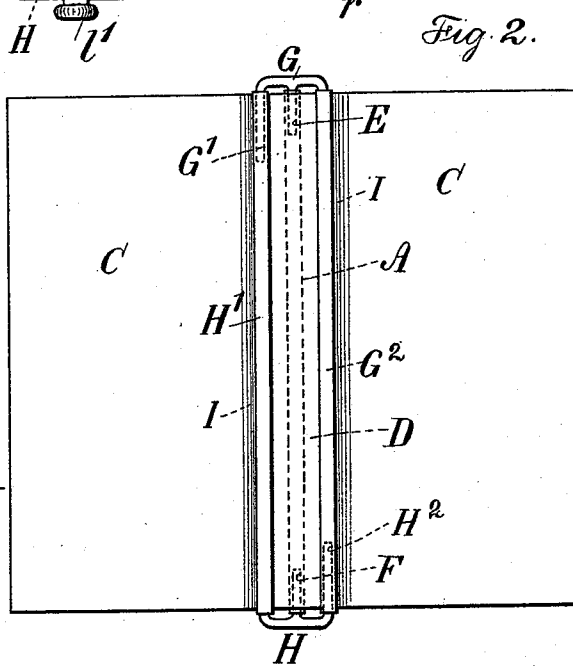
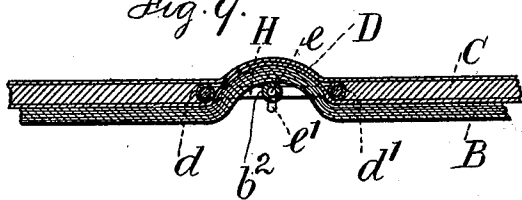


Fig. 9.



Witnesses:
J. Stait
J. Chas. Smith

Inventor:
Richard R. Vernon
per Lemuel W. Lereau

UNITED STATES PATENT OFFICE.

RICHARD R. VERNON, OF WOODBRIDGE, NEW JERSEY.

BINDER.

SPECIFICATION forming part of Letters Patent No. 498,414, dated May 30, 1893.

Application filed November 7, 1892. Serial No. 451,154. (No model.)

To all whom it may concern:

Be it known that I, RICHARD R. VERNON, a citizen of the United States, residing at Woodbridge, in the county of Middlesex and State of New Jersey, have invented an Improvement in Binders, of which the following is a full, clear, and exact description.

My invention relates to temporary binders, and its object is to provide a new and improved binder which is simple and durable in construction and arranged to quickly, securely and substantially bind leaves or papers into a cover.

This invention consists of one or more tubes or rods adapted to be placed within the fold of the leaves or sheets at the back, and a frame with end pieces or bars adapted to hold the said rods or tubes and to pass at each side of the fold of the leaves or sheets and outside of the same and either within or outside of the cover.

In the drawings, Figure 1 is a partial plan view illustrating my improvement. Fig. 2 is an inverted plan of the same. Fig. 3 is an enlarged sectional plan. Fig. 4 is an enlarged cross section on the line x, x , of Fig. 1. Fig. 5 is an enlarged plan at one end illustrating a modification. Fig. 6 is a cross section at the line $x' x'$ of Fig. 5. Fig. 7 illustrates by a partial plan a slight modification of the device shown in Figs. 5 and 6. Fig. 8 is a partial plan, and Fig. 9 a cross section at y, y , illustrating another modification hereinafter described, and Figs. 10, 11 and 12 represent further slight modifications of my improvement.

My improved binder is composed of three or more parallel tubes or rods and devices for connecting together the tubes or rods at their respective ends so that they are adapted to receive the fold of the sheets or leaves between them within the binder.

As shown in Figs. 1, 2, 3 and 4 of the drawings, the improved binder is provided with a tube or rod A adapted to pass over the leaves B within the fold and to be bound into the covers C. The leaves B are placed upon the open covers C and then the tube or rod A is placed in the middle or within the fold of the said leaves or sheets opposite to the back D of the covers. The tube or rod A is prefer-

ably of a length corresponding to the length of the cover and the ends of the said tube or rod are adapted to be engaged by a frame either held on the outside of the back D or inside of the cover. As illustrated in these figures, the frame is made with pins E, F, formed or secured on U-shaped bars G, H, respectively adapted to engage the outside of the back D on opposite sides. The pins E and F project inward from the middle parts of the U-shaped bars G, H, and enter the respective ends of the tube A, and one leg G' of the bar G is adapted to pass into or telescope the hollow leg H' of the other bar H. In like manner the leg H² of the bar H is adapted to pass into or telescope with the hollow leg G² of the bar G. Thus one bar is held adjustable lengthwise on the other and the parts can be readily separated when it is desired to separate the leaves from the binder and to insert others, or to insert additional leaves.

In applying the binder as shown in Figs. 1, 2 and 3, the tube A is passed over the leaves as described, and then the bars G and H, in an extended position, are passed upon the back D, the legs G² and H' resting against shoulders I, formed at the junction of the back D with the portions of the cover, see Fig. 4. The pins E and F are then in alignment with the tube A and when the two bars G and H are now pushed toward each other, the said pins enter the ends of the tube A and pass into the same, the leg G' of the bar G sliding in the leg H' and the leg H² sliding in the leg G². The two bars G and H are pushed sufficiently far toward one another with the pins E and F in engagement with the tube A, until the middle parts of the said bars are close to the upper and lower edges of the back D.

It is understood that in order to conveniently place the bars G and H on the back D to engage the pins E and F with the tube A, the book is preferably closed to facilitate the adjustment of the bars, as described. It will be seen that with the tube A inside of the book and the legs of the bars G and H on the outside of the back D, the entire device is securely held in place on the book, and at the same time the leaves B are securely bound

between the covers, the middle parts of the leaves being pressed into the back D, as is plainly shown.

In the modification shown in Figs. 5 and 6, the U shaped bars are provided with a central sleeve *a* which fits over or telescopes with the central bar *b*, which bar lies within the fold of the leaves or sheets, and upon the inside inner edges of the respective covers I fasten metal hinge pieces *c c'*, and the respective legs of the U-shaped bar are adapted to enter the eyes of these hinge pieces, and thus the leaves or sheets are held or bound within the covers.

The modification shown in Fig. 7 is similar to that shown in Fig. 5, except that a tube *b'* is employed in lieu of the rod *b*, and a stem *a'* in lieu of the short sleeve *a*, the parts otherwise being constructed and operating the same.

In Figs. 8 and 9, tubular sections *d d'* are bound into the inner back edges of the covers adjacent to the back of the book, the same being held in position in any desired manner, and the respective legs of the U-shaped bars pass into or telescope with these tube sections, and I may provide a stem *e* with an eye *e'*, the eye *e'* encircling the U-shaped bar and the stem passing into or telescoping with the tube *b'*, which tube, as heretofore stated, is within the fold of the leaves or sheets, or I may employ any of the other forms of U-shaped bars shown with these tubular sections *d d'*. This modification is very similar to that shown in Figs. 5, 6 and 7 and is the equivalent thereof.

The modification shown in Fig. 10 consists in employing a central tube *f* and two bars *g g'* parallel therewith. The ends of these bars *g g'* are securely riveted to a frame plate *h* and a stem *i* with a knobbed end that can be grasped by the fingers is adapted to be inserted through the frame *h* into the end of the tube *f*.

The modification shown in Fig. 11 consists in employing three parallel tubes and a U-shaped bar whose legs are adapted to enter or telescope the ends of the outer bars *k k'*, and a screw stem *l* with a knurled head *l'* is adapted to pass through the U-shaped bar and to screw into the end of the central bar *m* in holding the parts of the frame together.

The modification shown in Fig. 12 consists in employing a central tube *n* and outer parallel tubes *o o'* of smaller diameter and a U-shaped bar *r* formed from a piece of wire bent up with a double central portion to enter or telescope with the central tube *n* and with single end legs which enter or telescope with the tubes *o o'* and are frictionally held in place.

I have shown in the figures of the drawings three parallel tubes or rods in various groups, and it is apparent that more than three may be employed upon the same lines of structural modification according to the size and thickness of the binder and the number of leaves to be securely held between the covers, because it is possible to hold between one pair

of covers several sets or signatures of leaves or sheets relating perhaps to different subject matter, any one of which can by the construction and devices shown be removed without disturbing the others.

I claim as my invention—

1. A binder having a bar or tube adapted to pass within the back of the signature or leaves, and frames having rigid side portions or legs adapted to pass at each side of the back and devices for connecting said frames to said tube or bar at its respective ends, substantially as specified.

2. A binder composed of a bar or tube to pass into the fold of the signature or sheets and end frames connected therewith and having legs that pass outside the signature and at each side of the fold, substantially as specified.

3. A binder composed of three parallel tubes or rods, the middle one of which passes into the fold of the sheets, and end frames that connect the bars or tubes and are separable therefrom, substantially as specified.

4. A binder composed of three parallel tubes or rods and frames for connecting together the tubes or rods at their respective ends and adapted to receive the fold of the sheets or leaves between them, substantially as specified.

5. A binder composed of three or more parallel tubes or rods the outer members of which engage the outside of the flexible back, and the inner member of which is within the fold of the leaves and secures them in place, and means for connecting together all the tubes or rods at their respective ends, substantially as specified.

6. A binder composed of three or more parallel tubes or rods, the outer members of which engage the outside of the flexible back, and the inner member of which frame is within and secures the leaves within the covers and back, and frames or bars that connect together the outer members at their respective ends and to which frames the respective ends of the inner member are removably connected, substantially as set forth.

7. A binder composed of three or more parallel tubes or rods and forked or double U-shaped frames adapted to engage and connect the tubes or rods at their respective ends, substantially as specified.

8. A binder composed of three or more parallel tubes, and forked or double U-shaped frames, the legs of which are adapted to enter and connect the ends of the respective tubes, substantially as specified.

9. The combination with the covers C, C, the flexible back D and the folded leaves B, of a binder composed of a tube adapted to be placed within the folds at the back of the leaves, and frames with legs to enter the ends of such tube, and outside tubes connected at their respective ends to the legs of said end frames, substantially as specified.

10. The combination with the covers C, C, the flexible back D and the folded leaves B, of a binder composed of a tube adapted to be placed within the folds at the back of the
5 leaves, U-shaped frames with central pins to enter and engage the respective ends of such tube, and outside tubular portions adapted to engage the covers C, C, and into which the legs of the U-shaped frames enter and tele-

scope, substantially in the manner and for the purposes set forth.

Signed by me this 29th day of October, A. D. 1892.

RICHARD R. VERNON.

Witnesses:

GEO. T. PINCKNEY,
HAROLD SERRELL.