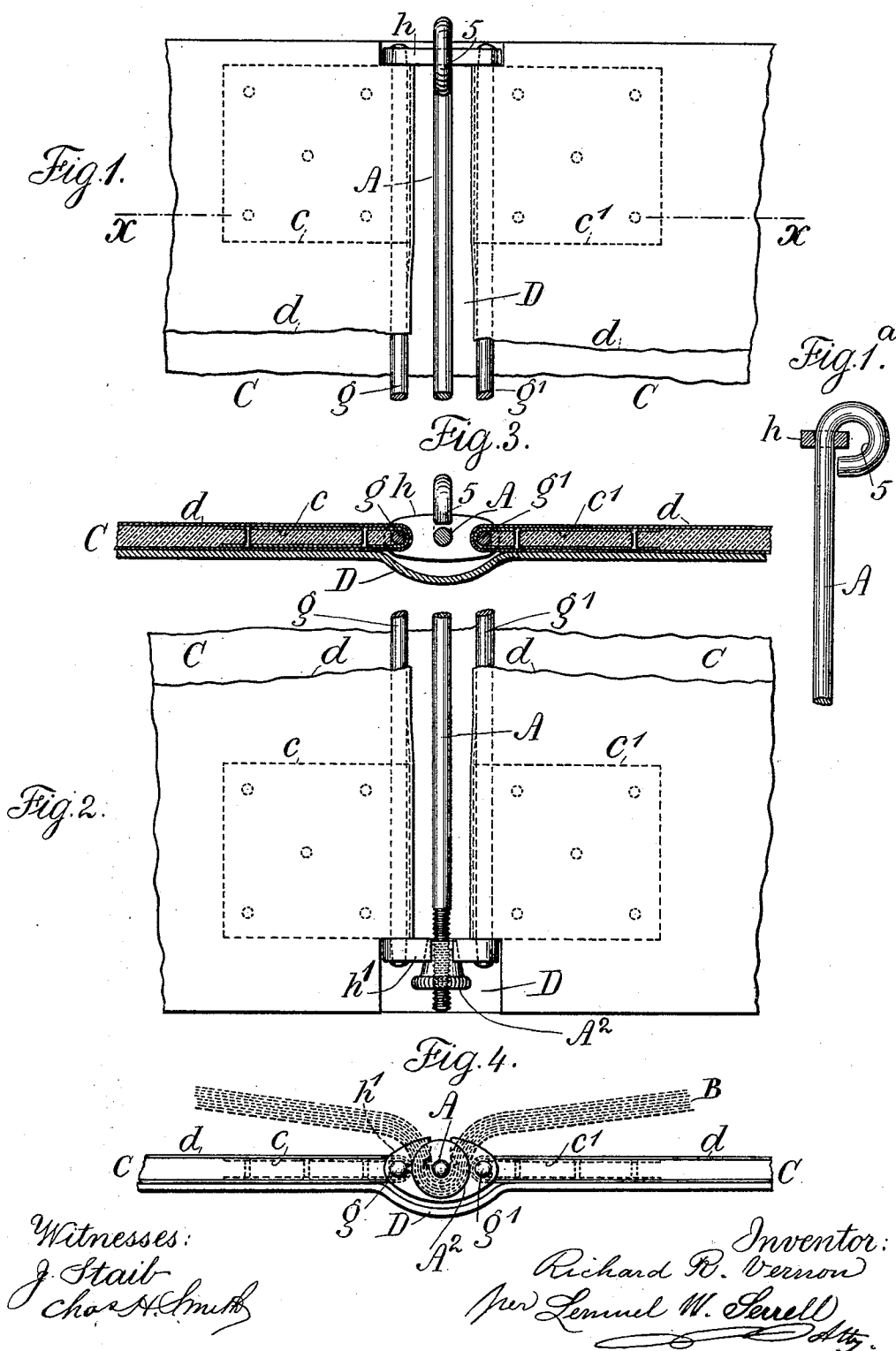


R. R. VERNON.
BINDER.

No. 499,899.

Patented June 20, 1893.



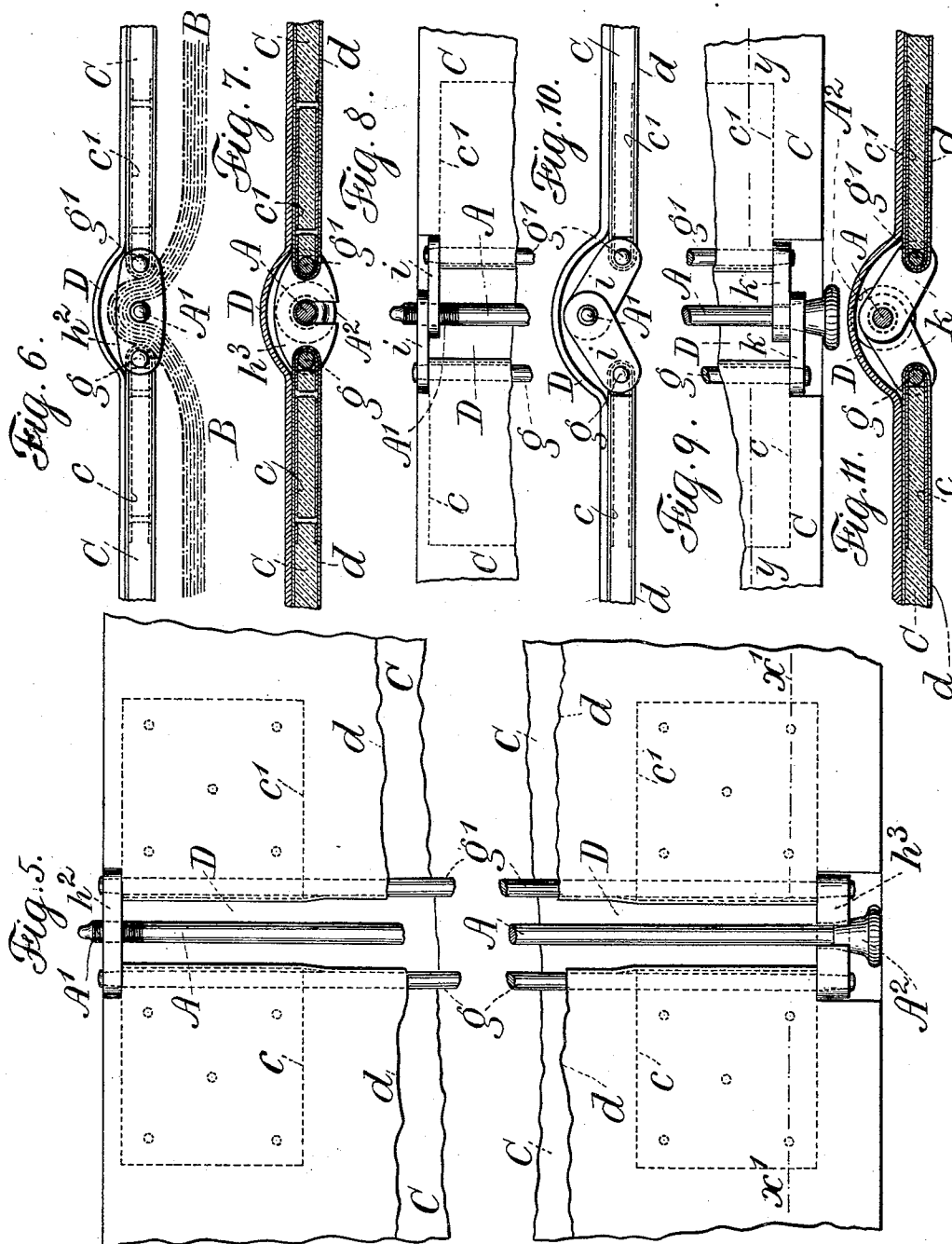
(No Model.)

2 Sheets—Sheet 2.

R. R. VERNON.
BINDER.

No. 499,899.

Patented June 20, 1893.



Witnesses:
J. Staib
Chas. Smith

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

UNITED STATES PATENT OFFICE.

RICHARD R. VERNON, OF WOODBRIDGE, NEW JERSEY.

BINDER.

SPECIFICATION forming part of Letters Patent No. 499,899, dated June 20, 1893.

Application filed March 6, 1893. Serial No. 464,697. (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 a new and useful Improvement in Binders, of which the following is a specification.

My present invention is designed as an improvement upon the device set forth in my application for patent filed November 7, 1892, Serial No. 451,154, and allowed December 19, 1892, the object of my invention being to provide a quick and efficient way of removing the sheets from the frames or securing them therein.

My present invention relates to temporary binders and I employ therein 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 link end pieces 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 to be connected to or engage the cover. The rod or tube adapted to be placed within the fold of the leaves or sheets I make readily and quickly movable and for that purpose adapt one end to be connected to one link end piece and provide a tapering knurled head on the other end, and one link end piece of the frame is adapted to receive and engage one end of the rod, and the other link end piece of the frame is made with an opening or notch to receive the rod at its other end, and it is recessed to receive the tapering head as the same is rotated and screwed to place, so that the said rod may be securely held in the respective link end pieces or easily movable in relation thereto. These link end pieces may each be single or double like the parts of a flat hinge so as to accommodate various thicknesses of collected leaves or sheets, and the tubes or rods of the frame I prefer to connect upon the inner edges of the cover by bands of metal and strips of cloth secured directly to the cover, or said tubes or rods may pass outside of and confine the flexible back of the covers as set forth in my aforesaid application.

In the drawings, Figures 1 and 2 represent fragmental plan views of the top and bottom portions of the book. Fig. 1^a is a side elevation at one end of the center rod and section

of the link end piece. Fig. 3 is a cross section at xx of Fig. 1 at one end of the binder. Fig. 4 is an edge view at one end of the binder shown in Fig. 2. Fig. 5 is a fragmental plan view of the top and bottom portions of the book illustrating a slight modification. Fig. 6 is an edge view at one end of the binder shown in Fig. 5. Fig. 7 is a cross section at $x'x'$ near the other end of the binder, shown in Fig. 5. Figs. 8 and 9 are fragmental plan views at the respective ends of the binder illustrating a modification. Fig. 10 is an edge view of Fig. 8, and Fig. 11 is a cross section at yy of Fig. 9.

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

The tube or rod A is adapted to pass over the leaves B within the fold and to be connected with the end links. The leaves B are placed upon the open covers C and the tube or rod A is placed in the middle within the fold of said leaves or sheets and centrally opposite the back D of the covers.

The tube or rod A is to be of a length greater than the width of the leaves or sheets and of approximately the length of the cover. The frame with end pieces is composed of the tubes or rods $g g'$ and link end pieces $h h'$. This frame is adapted to hold the rod or tube A and to pass at each side of the fold of the leaves or sheets and outside the same in securing the leaves or sheets in place, and when a permanent cover is used the rods $g g'$ are connected to the same.

I have shown metal straps forming hinge pieces $c c'$ for securing the rods or tubes $g g'$ to the cover. These straps $c c'$ pass around the rods or tubes $g g'$ and preferably receive the cover between them and are secured thereto by rivets, and the cloth d or other material employed as a surface to the said cover also extends over the tubes or rods $g g'$ and strap hinge pieces $c c'$. The link end pieces $h h'$ receive and are pivotally fastened to the respective ends of the rods $g g'$, the ends of the rods being riveted to the links but free to turn therein.

The link end piece h , Fig. 1, has a central hole and the link end piece h' is centrally

notched and recessed or countersunk in the outer face, and the rod A at one end passes through the hole in the end piece h and is turned over to form an eye 5, and at the other end is screw threaded and provided with a tapering knurled head A^2 , the longitudinal movement of which on the rod A in one direction brings the tapering end of the knurled head within the countersink in the end piece h' to clamp the rod in place. The movement of the knurled head in the other direction frees the end of the rod so that it can be swung out of the notched end piece h' and lifted on the eye 5 acting as a hinge joint.

The link end piece h^2 , Fig. 5, has a central screw threaded hole and the link end piece h^3 is also centrally notched and recessed or countersunk in the outer face and the rod A is screw threaded at one end A' with a pointed extremity, and at the other end is provided with tapering knurled head A^2 .

In inserting the rod A to place to secure the leaves or sheets within the frame the pointed and screw threaded extremity is inserted into the threaded hole in the link end piece h^2 and the rod at the other end is inserted in the notch in the link end piece h^3 . As the rod is rotated it is screwed to place and the tapering head A^2 comes within the recessed portion and the rod is clamped and prevented from coming out of the link end piece h^2 until unscrewed. When desired, one link end piece may have two holes and the other two recessed notches to receive two rods and two groups of superposed sheets. The sheets or leaves B can thus be readily bound in the frame and covers C or removed therefrom and new ones inserted.

The modification shown in Figs. 8, 9, 10 and 11 provides for various thicknesses of superposed sheets or leaves B by the pairs of link end pieces $i k$ which form flat hinges at the respective ends of the rods or tubes $g g'$ to which they are riveted. The link end pieces i are provided with threaded holes for the threaded end of the rod A and the link end pieces k are adapted to receive the rod A and may be provided with notches like the link end piece h' and h^3 , said notches coinciding when the links are horizontally in line, and the outer link k is preferably recessed to receive the tapering head A^2 . A rod like that shown in Figs. 1 and 2 may be used with the

link end pieces to equal advantage. With this modification the greater the number of leaves or sheets the more nearly in line will be the links in the pairs of links forming the end pieces.

I claim as my invention—

1. The combination in a binder, of the tubes or rods and link end pieces forming a frame adapted to receive the sheets or leaves, and a movable rod or tube adapted to pass within the fold of the leaves or sheets and to pass through and be secured to the said link end-pieces, substantially as set forth.

2. The combination in a binder with the covers and back, of rods permanently connected to the back edges of the covers, link end-pieces connecting the respective ends of said rods across the top and bottom of the back, and a movable rod passing through and secured to such link end-pieces and adapted to receive the folds of the removable sheets, substantially as specified.

3. The combination in a binder, with the covers and flexible back, of rods or tubes permanently connected to the back edges of the covers, link end pieces connecting the respective ends of said rods across the top and bottom of the back, and a movable tube or rod having an eye 5 at one end and threaded and adapted to pass within the folds of the sheets or leaves and through said link end-pieces, there being a hole in one link and a countersunk notch in the other link to receive and engage said rod at its respective ends, substantially as set forth.

4. The combination in a binder with the covers and flexible back, of the rods $g g'$, the link end-pieces connecting the ends of such rods together, the straps or hinge pieces $c c'$ passing around and securing the said rods to the covers, and the movable rod A adapted to pass within the fold of the removable leaves or sheets and to pass through and be secured to the said link end-pieces, substantially as set forth.

Signed by me this 2d day of March, A. D. 1893.

RICHARD R. VERNON.

Witnesses:

GEO. T. PINCKNEY,
HAROLD SERRELL.