

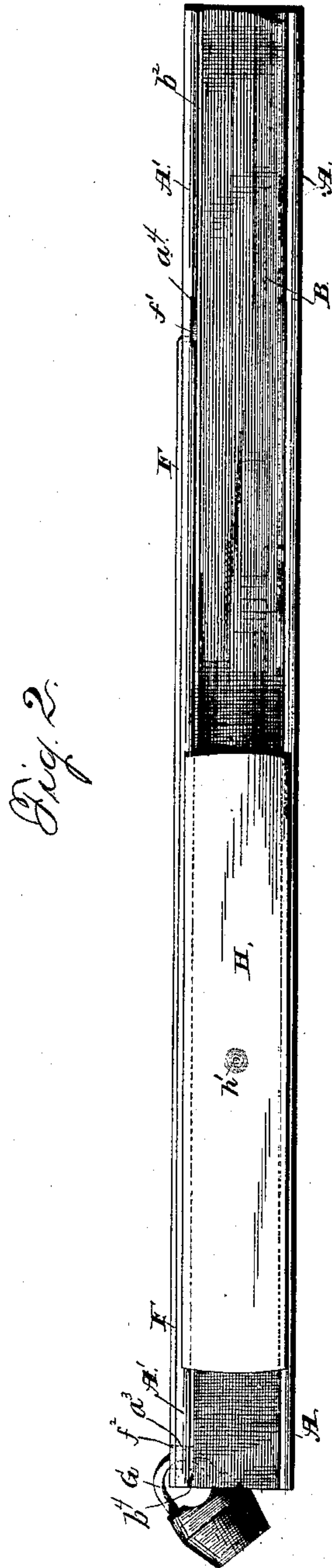
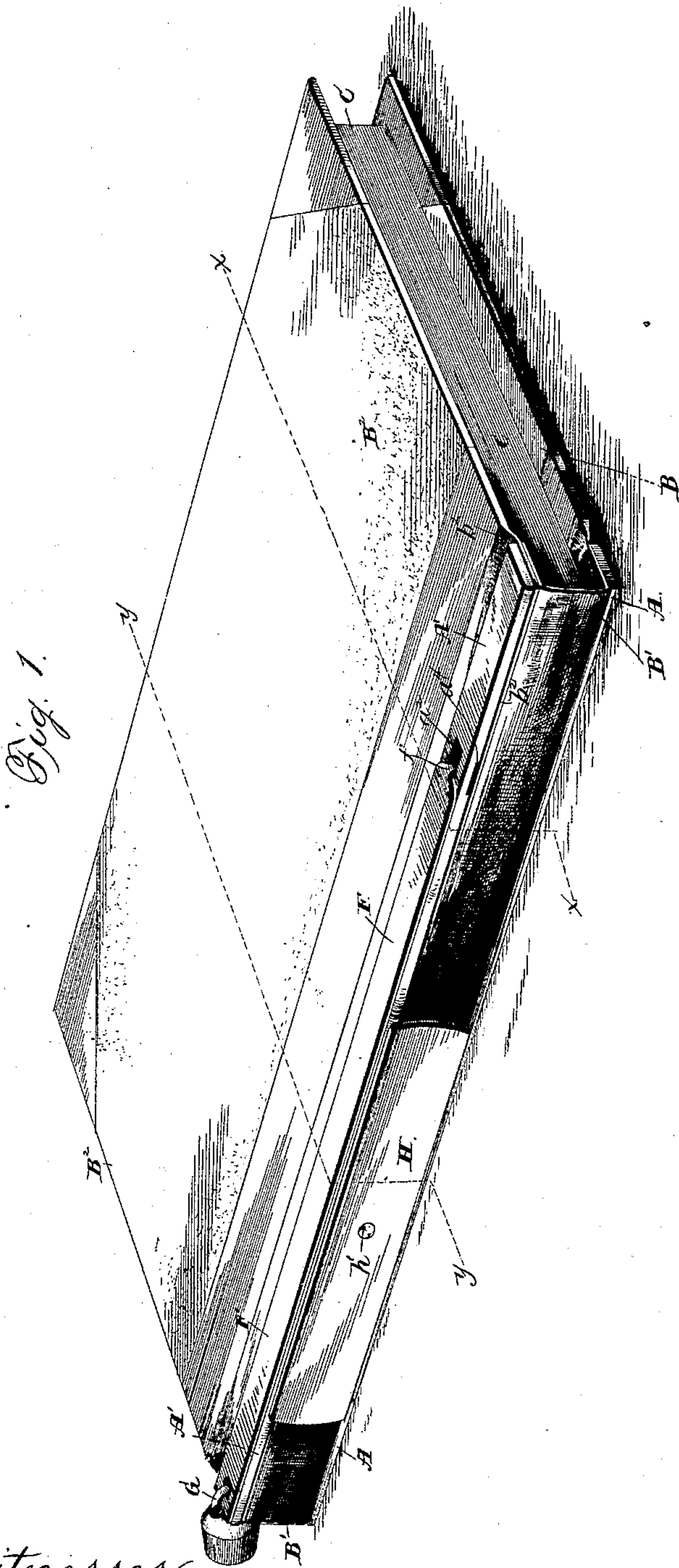
(No Model.)

3 Sheets—Sheet 1.

G. W. HENRY.
BINDER.

No. 431,350.

Patented July 1, 1890.



Witnesses
Chas. Williamson
Henry C. Hazard

Inventor
Guilford W. Henry
by Pindle and Russell
his Attorneys

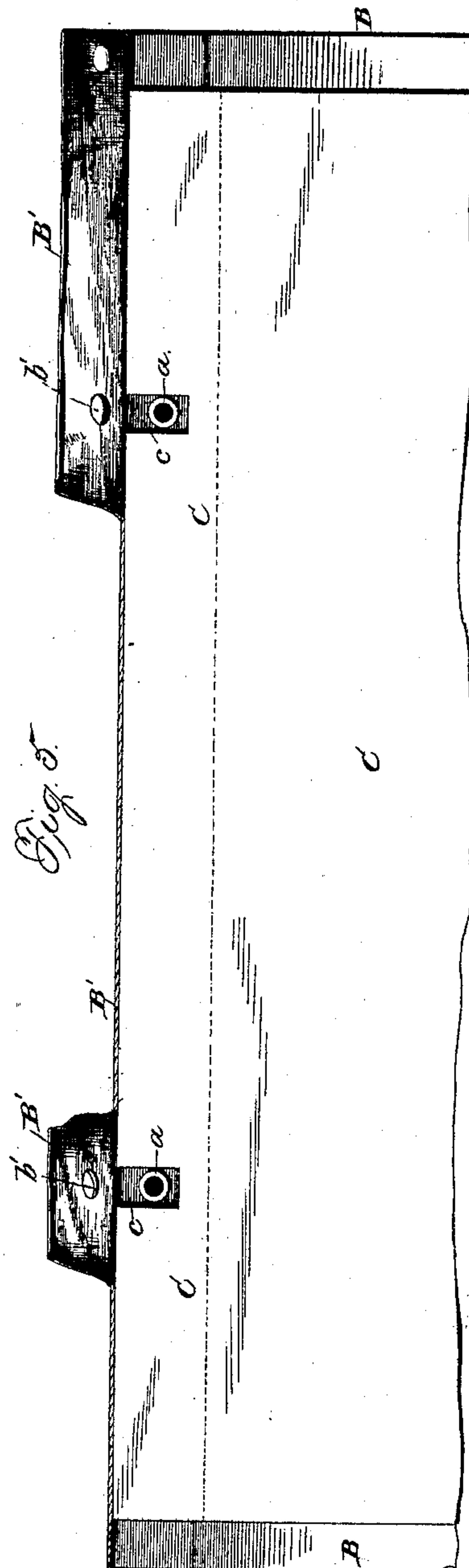
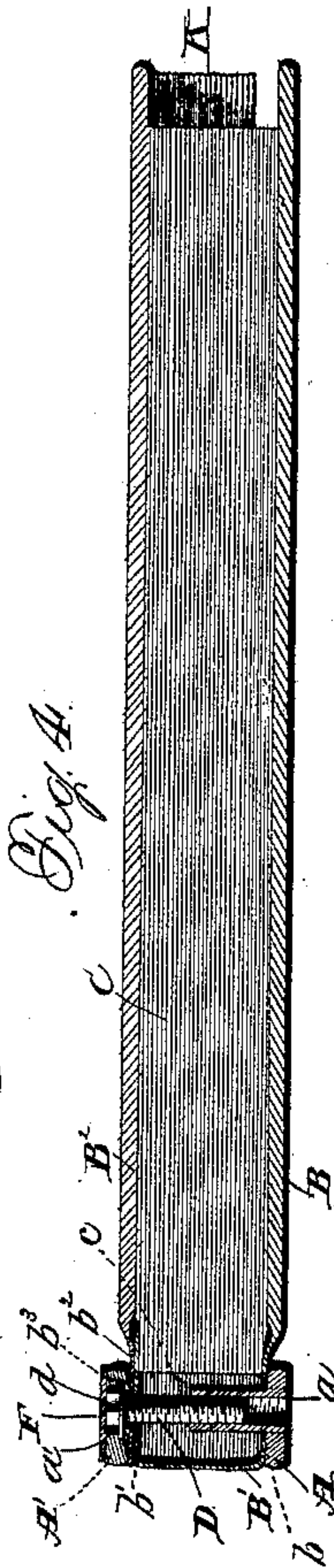
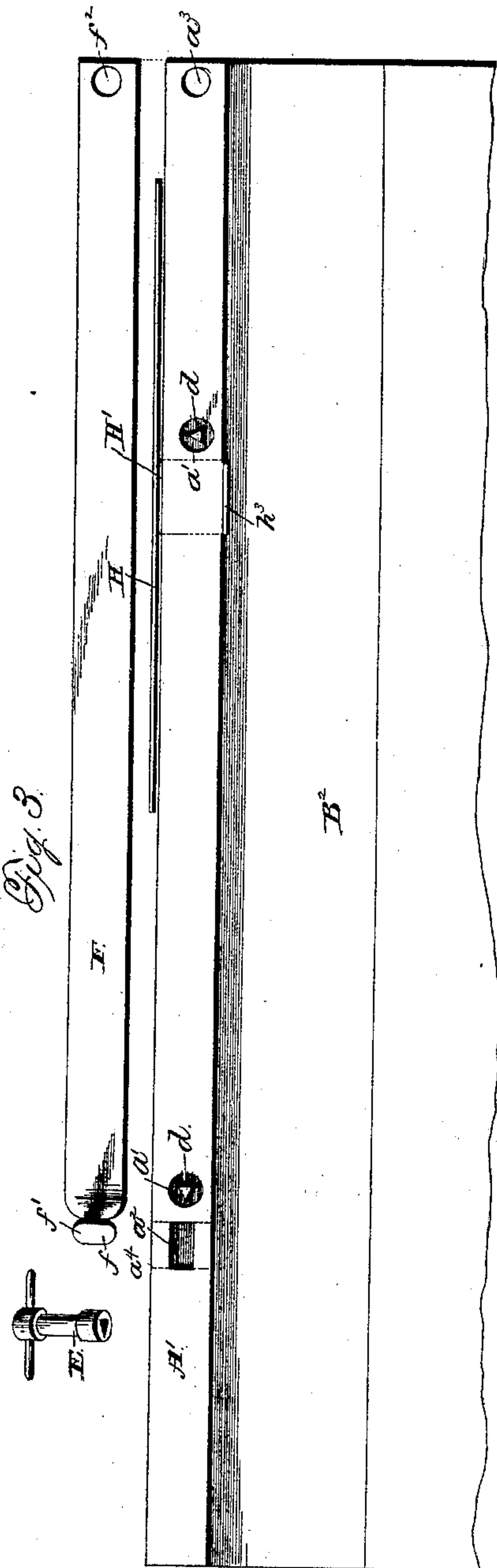
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3 Sheets—Sheet 2.

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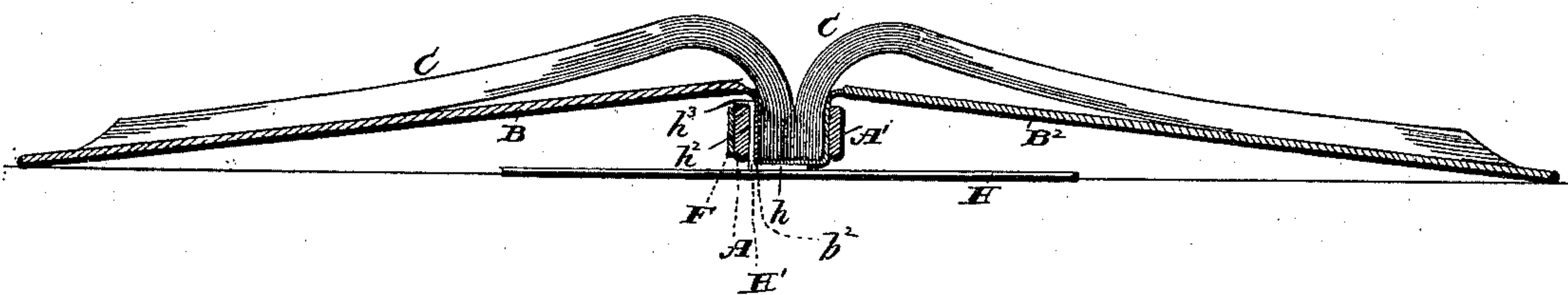
3 Sheets—Sheet 3.

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Fig 6.



Witnesses
Chas J Williamson
Henry C. Hazard

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by ~~Wm E. Russell~~
his Attorney

UNITED STATES PATENT OFFICE.

GUILFORD W. HENRY, OF ST. LOUIS, MISSOURI.

BINDER.

SPECIFICATION forming part of Letters Patent No. 431,350, dated July 1, 1890.

Application filed March 9, 1889. Serial No. 302,634. (No model.)

To all whom it may concern:

Be it known that I, GUILFORD W. HENRY, of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Binders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a view in perspective of my improved binder; Fig. 2, a view in elevation of the back of the binder; Fig. 3, a plan view of the binder as closed and with the screw-covering strip unlocked and removed; Fig. 4, a view of a section of the binder on line *x x* of Fig. 1; Fig. 5, a plan view of the binder, showing the screws, clamping-strip, and cover removed; and Fig. 6, a view of a section of the binder open and with the steadying device on the back in operation, the section being made on line *y y* of Fig. 1.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide certain improvements in binders for use in binding together the leaves of ledgers and other books; and to this end my invention consists in the binder, and in the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

My invention relates particularly to that class of binders adapted to allow of the insertion or change of the leaves from time to time, and made adjustable to accommodate itself to variations in the number or amount of the leaves to be bound together.

The fastening or clamping devices of such binders as heretofore made, to allow of change in the thickness of the collection of leaves or pages, have usually been of such form that when the binder was only partially filled there would be protruding portions of the fastening devices. Such protruding portions have been found very objectionable as marring any surface upon which the binder might be placed, being in the way if it be desired to put the binder in a safe or with other books, and being liable to be broken or bent.

Binders for the same purpose as mine have heretofore been made with two or more screws projecting up through an outside clamping-bar, and with a nut on each screw adapted to be screwed down against the clamping-bar to

hold it in position to clamp and hold the leaves of the book. The screws in such binders pass up through punched holes or openings in the leaves. When such a binder is not filled to its utmost capacity, the ends of the screws must of course project up through and above movable clamping-plate. With the protruding screws and nuts thereon on the outer side of the movable clamping-plate the binder is free to be tampered with by the removal or insertion of leaves by unauthorized persons.

With all these objections in view I have invented the hereinafter described and shown binder in which the insertion or removal of leaves by an unauthorized person is thoroughly guarded against, which has no protruding screws or other parts of the clamping devices, even when the binder is only partially full, and into which additional leaves or pages can be inserted as desired without the removal of the back or disturbance of other leaves already in the binder.

In the drawings, A designates a bar or plate, preferably, of metal, but of other material, if desired. This bar or plate forms the bottom or stationary part of the clamp for holding the leaves in the binder. Attached to and projecting up from the inner side of such bar or plate are the hollow studs *a a*, screw-threaded within, as shown. Only two of these studs are shown, but more can be used, if desired. They can be attached in any suitable way to the bar A; but I prefer to fix them in holes in the bar with their lower or outer ends flush with the outer side of the bar, as such construction and arrangement gives a greater extent of threaded surface within the studs than it is possible to have where they are merely attached to the top or inner side of the bar. The rear or under cover B is provided with a flexible flap B', having holes *b b* to engage the studs *a a*. This flap is extended beyond the holes *b b*, so as to form a back to cover the edges of the leaves C C in the binder, and its upper edge, which is intended to be turned in over the body of leaves, is provided with two holes *b' b'*, to be brought over or in line with the holes *b b*, already described.

In the inner edge of each of the leaves or pages inserted in the binder are two open-

ended slots or notches cc , adapted to embrace the studs aa or the screws DD (to be hereinafter described) screwed into the studs.

The front cover B^2 is provided along its inner edge with a flexible flap b^2 of leather or other material. In this flap are the two holes $b^3 b^3$, adapted when the cover is in place to come in line with the studs aa and the notches in the leaves or pages in the binder. Resting upon this flap b^2 is the clamping bar or plate A' , preferably of metal, like bar A , and having the two holes $a' a'$, adapted to be brought into line with the holes $b^3 b^3$, leaf-notches cc , and studs aa . These holes or openings $a' a'$ are countersunk, so as to receive the heads of screws DD , as shown in the drawings. The lower or inner ends of these screws, as indicated hereinbefore, enter and engage the threaded openings in the studs aa . The screw-heads engage the bottoms of the countersinks in the bar A' , and are provided with angular portions $d d$ on their upper sides to be engaged by a suitable key E . When the screws are down in position with their heads engaging the countersunk bottoms, the tops of the key-receiving portions $d d$ should be flush with or below the top of the bar. If desired, the screw-heads can be provided with sockets or slots, to be engaged by other forms of keys or screw-turning devices.

With the parts of my binder, as already described, in position, with the bars A and A' in place, the studs aa on bar A projecting up through the holes $b b$ in the flap B' on cover B , and the screws DD passing in or down through the holes $a' a'$ in bar A' and holes $b^3 b^3$ in the flap b^2 on cover B^2 , and engaging the threaded openings of hollow studs aa , any leaves or pages placed with their notches cc embracing the studs aa or screws DD will, if the screws be tightened up or screwed in, be clamped most firmly in place between the cover-flaps by the two bars A and A' . Whatever the thickness of the collection of leaves may be, there will be no portion of the clamping-screws projecting beyond the plate A . With fewer leaves in the binder the screws will simply enter farther into the studs. If more leaves are to be inserted, the screws are loosened and the additional leaves are simply slipped into place between the other leaves without disturbing the latter, and the screws are tightened up again.

Where there is to be much increase in the contents of the binder, the screws can be removed and replaced with longer ones.

I prefer to provide the leaves or pages with open slots or notches, as shown, instead of mere holes to engage the screws, as with the latter arrangement, either the back or some of the leaves already in the binder, or both the back and such leaves, would have to be removed when new leaves were to be inserted, while with the open slots or notches in the edges of the leaves no such removal is necessary.

To prevent any unauthorized person from tampering with the book, changing the leaves, or inserting new ones, I provide a cover or guard covering the heads of screws DD and adapted to be locked in place by any desired form of lock. As shown, this guard consists of a plate F , having a tongue f at one end held in a slot a^2 in the bar A' . At its other end the plate is provided with an opening f^2 , adapted to be brought into line with the opening a^3 in plate or bar A' and the opening b^4 in the flap b^2 on the cover B^2 . The hasp or bow of the padlock G passes through and engages these openings, so as to lock the guard-plate securely in place. While I have shown and prefer a padlock for this purpose, I do not intend to limit myself to such form of lock. Any other desired kind of lock or locking device can be used without departure from my invention. The tongue f on guard-plate F , engaging the slot a^2 in bar A' , as described above, has a cross-piece f' on its inner end extending in a direction at right angles to the tongue and the guard-plate. This cross-piece, when the guard-plate is lying along upon the bar A' , so as to cover the heads of screws DD , stands across and extends beyond the sides of the slot a^2 , so as to prevent disengagement of the tongue f from the slot to allow movement of the tongue end of the plate with reference to the bar. With this construction, as long as the outer or upper end of the guard-plate is locked to bar A' , such plate will be secured closely against said bar; but when the guard-plate is unlocked and swung to stand at a right angle to the bar the cross-piece and tongue on the plate can be easily disengaged from the slot a^2 , allowing entire removal of the plate. To accommodate the cross-piece f' when it is in position across the slot a^2 , the bar A has a shallow undercut a^4 .

To steady the binder or book when it is open and to hold it in such position when resting on a desk, table, or other surface that it will lie flat without tendency of the leaves to turn one way or the other, I provide on the back of the binder the pivoted plate H , adapted to be turned to stand at right angles to the binder-back, as shown in Fig. 6. This plate can be pivoted to an arm attached to either of the clamping-plates AA' ; but I prefer to pivot it, as shown, to the angle-piece H' , which is clamped or held in place by the clamping-plate A' when the latter is screwed down into its normal clamping position. Piece H' consists of a plate having a flat portion h , to which the plate H is connected by means of pivot h' , a portion h^2 bent at right angles to the part h , so as to lie between the clamping-plate A' and the flap b^2 on cover B^2 , and the outer portion h^3 bent outward, so as to engage the inner edge of the plate A' , as shown in the drawings. With this construction, when the plate A' is held in clamping position by the screws DD the piece H' , carrying the pivoted plate H , will be most firmly

clamped and held in position, with the plate H adapted to be swung in a plane parallel to the binder-back or the outer edges of plates A A', so as to stand at right angles to the binder-back, as shown in Fig. 6, or lie parallel with and close to such back, as shown in Figs. 1 and 2.

The operation of my binder and method of using the same will be understood from the drawings and the description already given, so that they need be but briefly set forth.

Where the binder is used to hold the leaves or pages of a ledger provided with the usual index-tabs K K, as shown in the drawings, if it be desired to insert one or more additional pages for any letter or letters the guard-plate F is unlocked and swung over, so as to expose the heads of screws D D. Such screws are then turned by key E to let plate A' rise and relieve the pages in the binder from clamping-pressure. If desired, the screws can be entirely unscrewed from the threaded studs or sockets *a*, so that the plate A' can be entirely removed; but this is not necessary where it is desired merely to insert some leaves. With the pages or leaves in the binder unclamped, as described, the desired additional leaves with open slots or notches cut in their inner edges can be slid into place with said slots or notches engaging the studs *a* or screws D D. These screws are then turned down to force the clamping-bar A' toward bar A and cause the old and new leaves to be clamped firmly in place. The guard-plate F is then swung into place to cover the screw-heads, and is locked in such position. When the book or binder is open and in use, the plate H, swung on its pivot to stand at right angles with the binder-back, rests upon the table, desk, or other supporting-surface, as indicated in Fig. 6, and keeps the binder-back from turning to one side or the other. The binder is thus kept open flat and evenly, and the pages are not liable to be turned by accident.

With the clamping-screws divided into two parts, as shown and described—that is, consisting of one part entering another—even when there are but few leaves in the binder there need be no portion of the screws projecting beyond the outer side of either clamping-plate.

With fewer or more leaves in the binder the screws enter farther or not so far into the hollow threaded studs *a a*. If desired, the arrangement of the screws and threaded studs can of course be inverted without departure from my invention. The male screw can be attached rigidly to plate A, and a female screw, provided with a suitable turning-head, can be connected with the clamping-plate A in substantially the same manner as the screw D, hereinbefore described.

The essential idea of my devices for connecting and adjusting the two clamping-bars with reference to each other is to have each of such devices divided between the two bars and their parts made adjustable one upon the

other, so as to take up or allow for any variation in thickness of the collection of leaves or binder contents without involving the greater or less projection of any parts of the devices beyond the outer side of either of the clamping-faces.

I do not claim herein or intend to cover by my claims, broadly, two clamping bars or plates with dowel-pins adapted simply to guide the bars or plates in their movements with relation to each other.

Having thus described my invention, what I claim is—

1. In a binder, in combination with the two clamping-bars, adjustable connections joining the two bars, each consisting of two pieces projecting inward from the two bars and adjustably connected with each other, so as to be movable the one upon the other, substantially as and for the purpose specified.

2. In a binder, in combination with the clamping devices for holding the pages or leaves between them, screw-connections between such devices, each consisting of a male and female screw projecting inward in opposite directions from the opposite clamping devices, substantially as and for the purpose shown.

3. In a binder, in combination with the two clamping bars or plates, female screws projecting inward from one of the bars, and male screws projecting inward from the other bar and engaging the female screws, substantially as and for the purpose set forth.

4. In a binder, in combination with the clamping-bars, a hollow internally-threaded stud projecting inward from one bar, and a screw connected with the other bar and engaging the threaded stud, substantially as and for the purpose described.

5. In a binder, in combination with the two clamping bars or plates, a hollow internally-threaded stud projecting inward from one of the bars, and an inwardly-projecting screw connected with the other bar and having its head situated in a countersink in such bar, substantially as and for the purpose specified.

6. In a binder, in combination with the two clamping-bars, two or more hollow internally-threaded studs projecting inwardly from one of the bars, and two or more rotary inwardly-projecting screws carried by the other bar and having their heads engaging countersinks in such bar, substantially as and for the purpose shown.

7. In a binder, in combination with the clamping-bar provided with the rigid hollow internally-threaded studs projecting inward from the bar, the clamping-bar provided with countersunk openings, the screws extending inwardly through such openings and having their heads situated within the countersinks, provided with means by which they can be turned, substantially as and for the purpose set forth.

8. In combination with the screw-adjusting devices for the clamps of a binder, a guard-

plate to cover the heads of the screws, and means for locking such guard-plate, substantially as and for the purpose described.

9. In a binder, in combination with the clamping-bars and the screw devices for connecting such bars, a guard-plate to cover the heads of the rotary screws, and means for fastening such plate in position to cover the screw-heads, substantially as and for the purpose specified.

10. In a binder, in combination with the clamping-bar and the clamp-adjusting screws carried thereby, the guard-plate for covering the screw-heads, connected at one end with the bar so as to be capable of being swung with reference thereto, and a lock for locking the other end of the plate to the bar, substantially as and for the purpose shown.

11. In a binder, in combination with the clamping-bar provided with a slot and the adjusting-screws carried thereby, the guard-plate having a tongue to enter the slot in the bar, and a cross-piece on such tongue adapted to stand across the slot when the guard-plate is in position to cover the screw-heads, and a lock to lock the end of the plate opposite to the tongue to the bar, substantially as and for the purpose set forth.

12. In combination with the clamping-bar of a binder and the rotary screws carried thereby, the guard-plate for covering the screw-heads having a tongue entering a slot in the clamping-bar and a cross-piece on such tongue, and the padlock having its hasp or bow engaging holes in the bar and guard-plate, so as to lock the two together, substantially as and for the purpose described.

13. In a binder, in combination with the two clamping-bars and the screw devices connecting the same, the pages within the binder having notches to embrace the screw devices, and means for covering such devices so as to prevent their being tampered with, substantially as and for the purpose set forth.

14. In combination with a book, a pivoted plate at the back thereof adapted to be swung

so as to project beyond the opposite sides of said back, substantially as and for the purpose specified.

15. In combination with a book or binder, the plate pivoted at the back or binding-edge of the book, so that it is capable of being swung in a plane parallel to said back, substantially as and for the purpose shown.

16. In a binder, in combination with the clamping devices, a piece held in place by such devices, and a plate pivoted to such piece, so that it is capable of being swung in a plane parallel to the back or binding-edge of the binder, substantially as and for the purpose set forth.

17. In a binder, in combination with the clamping-bars and connecting devices between the same, the leaves, the covers provided with the flaps, the plate having a portion bent to extend under and be engaged by one of the clamping-bars, and another portion parallel to the back or binding-edge of the binder, and the plate pivoted to such latter portion, substantially as and for the purpose described.

18. In a binder, in combination with the two clamping-bars, the hollow-threaded lugs on one of the bars and the screws engaging the other bar, the leaves or pages notched in their binding-edges, the cover having the flexible flap adapted to cover the binding-edges of the pages, and extend over the top of the collection of pages, such flaps being provided with holes through which the studs on one bar and screws on the other bar pass, and the cover having the flexible flap provided with holes engaging the screws, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of September, A. D. 1888.

GUILFORD W. HENRY.

Witnesses:

WM. D. HENRY,
W. D. HARRISON.