

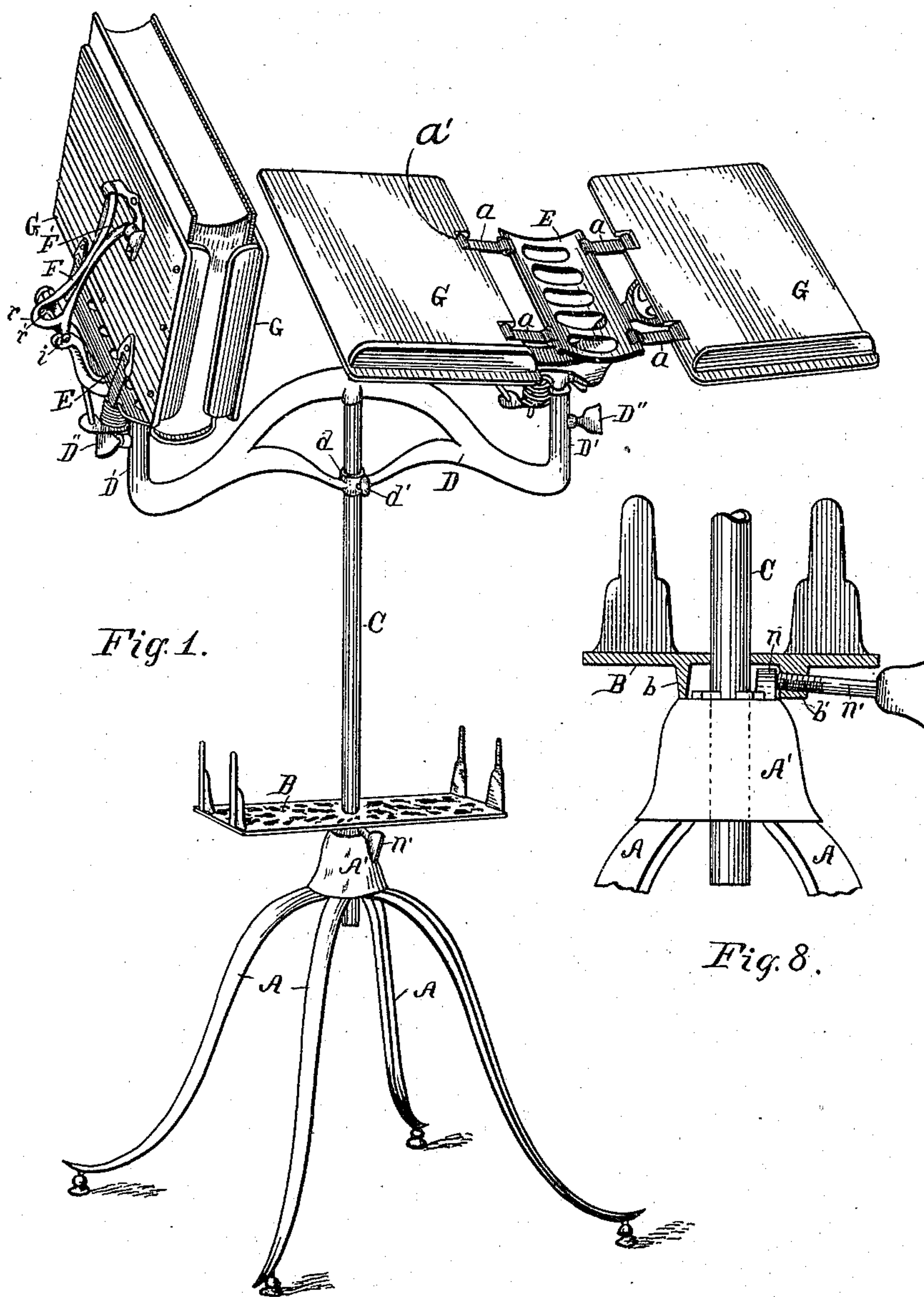
(No Model.)

3 Sheets—Sheet 1.

M. E. BLOOD.
BOOK HOLDER.

No. 573,072.

Patented Dec. 15, 1896.



Witnesses:
Walter S. Wood
M. Greer Longyear

Inventor.
Maurice E. Blood

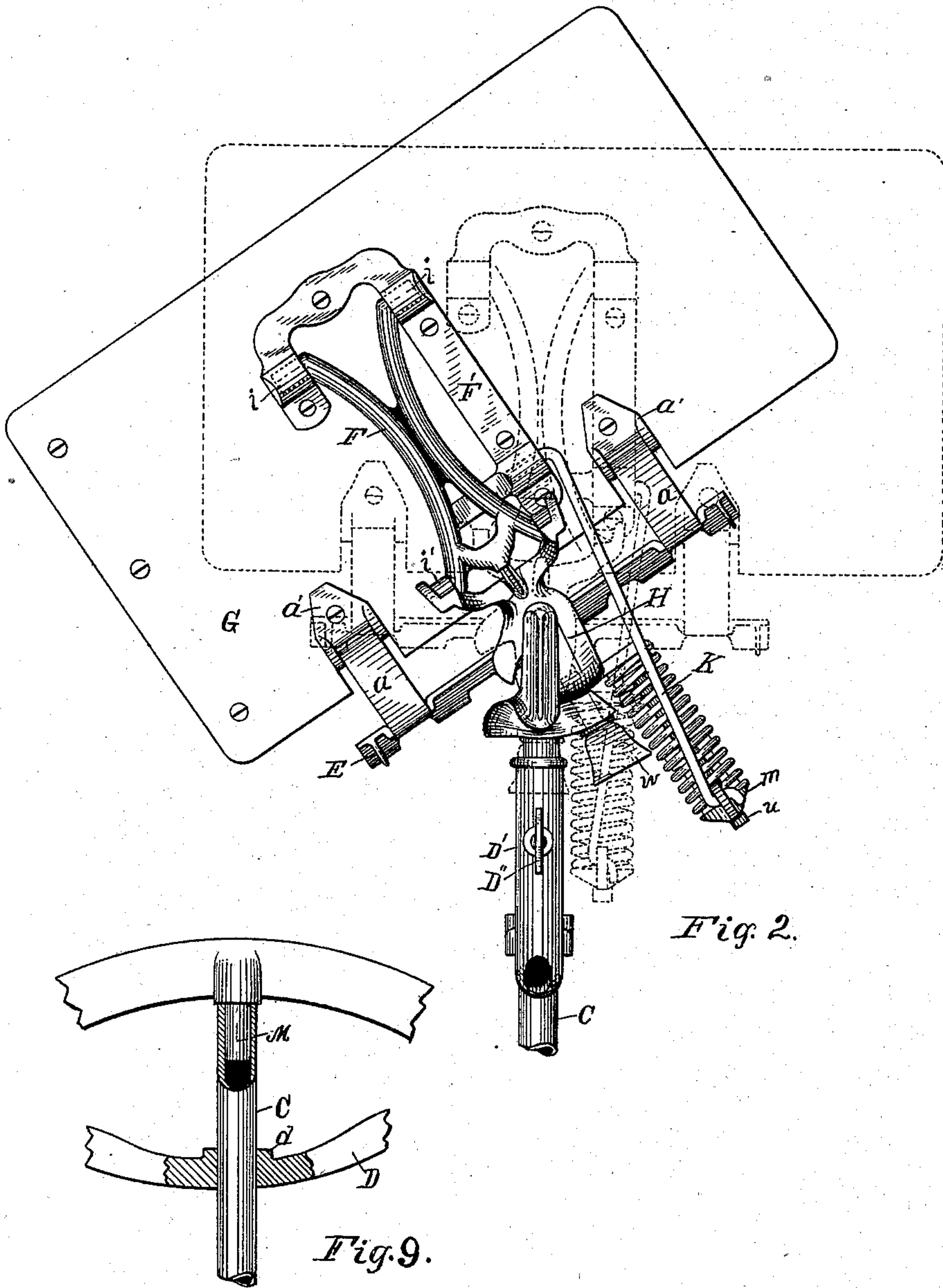
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3 Sheets—Sheet 2.

M. E. BLOOD.
BOOK HOLDER.

No. 573,072.

Patented Dec. 15, 1896.



Witnesses:
Walter S. Ford
M. June Longyear

Inventor.
Maurice E. Blood

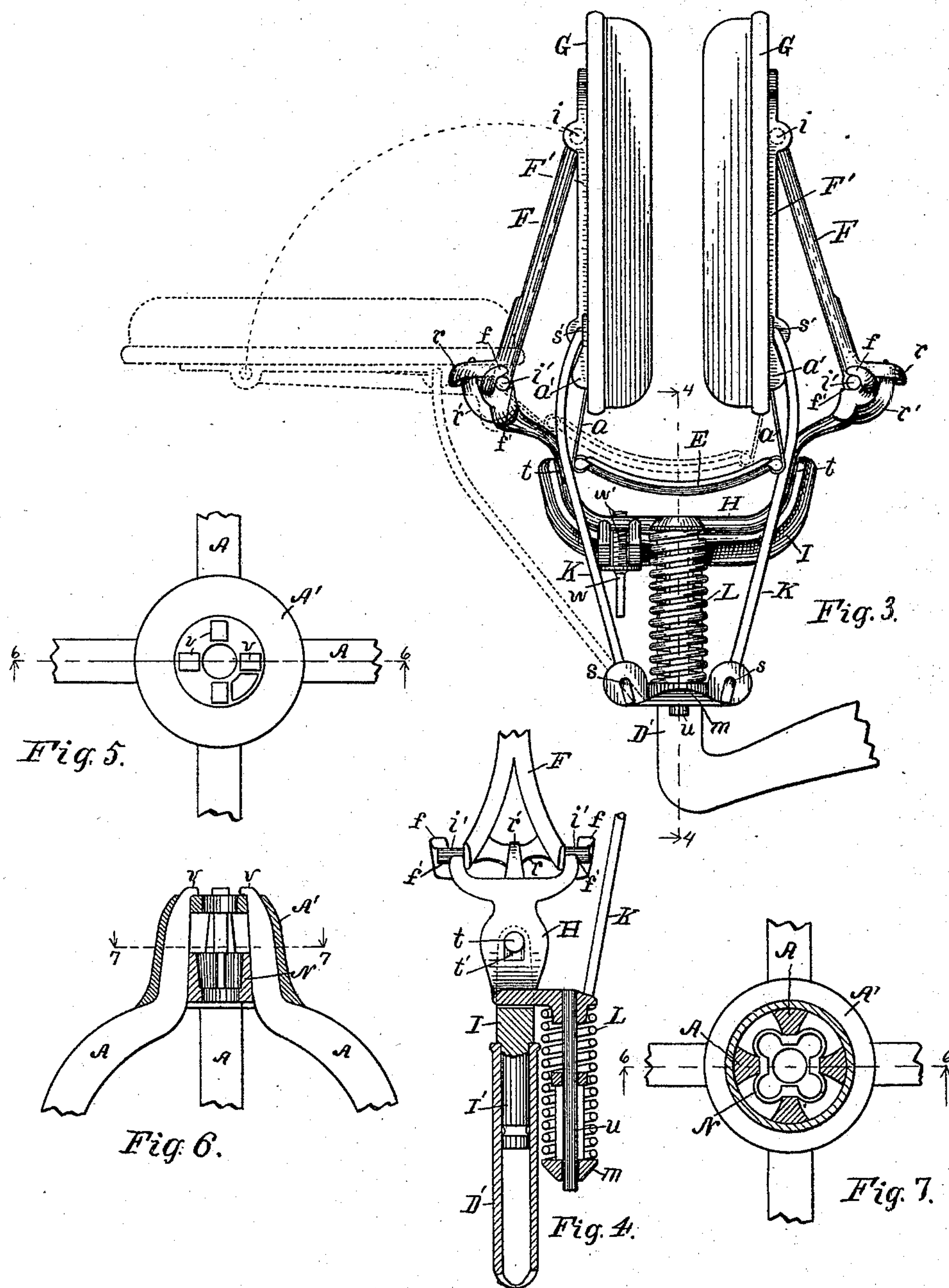
(No Model.)

3 Sheets—Sheet 3.

M. E. BLOOD.
BOOK HOLDER.

No. 573,072.

Patented Dec. 15, 1896.



Witnesses:
Walter S. Blood
M. J. Jones for 9 years.

Inventor.
Maurice E. Blood

UNITED STATES PATENT OFFICE.

MAURICE E. BLOOD, OF KALAMAZOO, MICHIGAN.

BOOK-HOLDER.

SPECIFICATION forming part of Letters Patent No. 573,072, dated December 15, 1896.

Application filed March 7, 1894. Serial No. 502,772. (No model.)

To all whom it may concern:

Be it known that I, MAURICE E. BLOOD, residing at Kalamazoo, in the county of Kalamazoo, State of Michigan, have invented a new and useful Improvement in Book-Holders, of which the following is a specification.

The objects of this invention are to provide a device that will be self-adjusting to books of varying thickness and will press the leaves of the book together when closed to preserve the form of the book and prevent dust and dirt from getting in between the leaves and to make a holder that will hold either one or two books at once and in such a manner that they will come in the most desirable positions for use. I attain these objects by the device illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing the holder as used for two books, one of the heads holding a closed book and the other head open and without a book. Fig. 2 is an enlarged detail, being a side view of one of the heads in a position to hold a book closed. The dotted lines show the head tilted backward and nearly level. Fig. 3 is an end elevation of Fig. 2, the dotted lines showing one of the wings that hold the book in the position it occupies when the book is open. Fig. 4 is an enlarged detail, being a sectional elevation on line 4 4 of Fig. 3, showing the parts where the wings hinge to open and close, the pivot-point on which the book is tilted, a section of the spring and its bearing, and the pivotal bearing for the whole head. Fig. 5 is an enlarged detail, being a top view of the base or the bell and a section of the upper ends of the legs where they go into the bell. Fig. 6 is an enlarged detail, being a sectional elevation of Figs. 5 and 7 on lines 6 6. Fig. 7 is an enlarged detail, being a sectional view of Fig. 6 on line 7 7. Fig. 8 is an enlarged detail, being a side elevation of the bell and shelf or bracket and thumb-screw for holding the standard at the proper height; and Fig. 9 is an enlarged detail showing the center section of the casting for holding the heads and manner of attaching this casting to the tubular standard.

Similar letters refer to similar parts throughout the several views.

The legs A have a bell-shape form when all

together, and their upper ends are curved and shaped to conform to the interior surface of the bell A' and pass upward through suitable holes in the upper face of the bell and have hooks *v* on their upper ends to hook over the top of the bell, the legs being first inserted in the bell when hanging down nearly perpendicular with the bell. After the legs are all put in in this fashion the wedge N is placed in center of the bell between them and driven into the bell, forcing the legs out against the bell until all are tight, the hooks *v* on the upper ends of the legs preventing the legs from withdrawing from the bell and the irregular or corrugated form of the wedge N allowing the wedge to contract on the opposing legs that are closest together until the wedge meets and wedges securely the other two opposing legs.

The wedge N is made of corrugated elastic metal, as will be seen on an examination of Fig. 7, and the metal can be made to this form by either being cast or forged, casting or drop-forging both being very economical and efficient methods of forming the wedge.

B is a shelf or bracket for holding books, and also assists in holding the standard C in place. This shelf or bracket has a hole at its center to receive the standard C and has an annular flange *b* on its underside larger than the hole and adapted to rest on and cover the top of the bell and upper ends of the legs where they come through the bell. This annular flange *b* is made thicker on one side at *b'* and has a hole in the thickened part threaded to receive the thumb-screw *n'*. This thickened part and thumb-screw are made to come opposite and outside of the ear *n*, which is cast on one side of the upper face of the bell A. The upper face of the bell A has a hole through it to receive the standard C, and the lower part of the wedge N also has a hole in it for the same purpose. Therefore the standard C passes successively through holes in the shelf B, bell A', and wedge N, and it will be seen that by screwing the thumb-screw *n'* up against the ear *n* the bell will be forced away from the thumb-screw against the standard C and the shelf B will be drawn toward the thumb-screw and pulling the standard C on the opposite side against the bell, while the wedge N will steady the standard and

hold it in a vertical position, the whole operating together to bind or clamp the standard and secure it from moving up or down, and in this manner the standard can be set at
 5 varying heights by simply placing it where desired and screwing up the thumb-screw, and there will not be the same liability to mar or dent the surface of the standard C that there would be were the thumb-screw to
 10 come in direct contact with the standard.

D is a casting pivotally mounted on the upper end of the standard C, as shown in detail in Fig. 9. The pin M, which is cast on the casting, is made to enter the hole in the
 15 upper end of the standard C, (which standard is preferably made tubular,) and the weight of the casting D rests on the enlarged part above the pin M. The lower part of the casting has a boss or enlarged part *d*, and
 20 this boss has a vertical hole through its center through which the standard C passes, thereby making two bearings for the casting on the standard to support the casting in a proper manner. The casting D has two op-
 25 posing arms extending out horizontally from the standard C and turning up vertically at their extreme ends, forming the sockets D', in which the heads of the book-holders are pivoted and supported. These heads have a
 30 Y-shaped casting I, which is provided at its lower part with the pin I', made to correspond in shape and size to the pin M on the casting D, so that it can go either in the socket D' or the hole in the upper end of the standard
 35 C. It is used in the latter place instead of the casting D when it is desired to set the device up as a single instead of a double holder.

II is a yoke, preferably a casting made in its central part to conform nearly in shape to
 40 the forked part of the casting I and having a bearing on the pin *t* at the upper ends of the Y-shaped casting I, on which it can oscillate or rock to tilt the book at different angles, and these two castings I and II are held sta-
 45 tionary relative to each other by means of the thumb-screw *w*, which works in a transverse slot *w'* in the casting I and screws into the casting II to bind the two together. The
 50 pins *t* are made to project horizontally and inwardly toward each other from the upper ends of the casting I and to fit in the inner end of the vertical slots *t'* in the yoke or cast-
 55 ing II. In this manner when the thumb-screw *w* is out the yoke II can be withdrawn from the casting I, but when the thumb-screw is in and screwed up tight the yoke II will be held securely to the casting I. The
 60 yoke II extends upwardly and outwardly from the pins *t* and have a hinge connection at their outer ends with the arms F F. This
 hinge connection might be made with suitable ears on both the ends of the yoke and the ends of the arms F and a rivet or bolt through the ears; but in this case, to make
 65 the hinge in a cheaper manner and more easily detachable, the arms F are provided with solid pins or projections *i' i'* on each

side which work in the lower part of the slot or opening between the hook *f* and face *f'* on the ends of the yoke II, and these pins *i'* are
 70 held and kept at the bottom or inner end of said slot or opening by means of the stop *r*, which is formed on the arm F to extend around the guide *r'* found on the yoke II op-
 75 posite the opening between the hook *f* and face *f'*. The outer face of this guide *r'* is made to describe a part of a circle, the center of which would be the pins *i' i'*, whereby it will be seen that the pins or bearings *i' i'*
 80 will be held in their proper place at the bottom of their respective bearings or slots in the yoke II when the stop *r* is over the guide *r'*; but when the stop *r* has passed upward beyond the end of the guide *r'* the pins or
 85 bearings *i'* will be free to be withdrawn from their bearings in the yoke II. When the wings G are opened out horizontally, as shown by dotted lines in Fig. 3, they will be pre-
 90 vented from further downward movement at the proper time by means of the stop *r* coming in contact with the side of the yoke II.

The outer or free ends of the arms F F are provided with pins *i i*, which are similar to the pins *i' i'*, and these pins *i i* go into a half
 95 box or recess formed on the under side of the cleat F'. The cleat F' is screwed or otherwise fastened to the back side of the wing-board G, and thus a jointed or hinged connection is formed between the arm F and the
 100 wing-board G, and this connection being made near the upper side or edge of the wing-board G will allow the lower side or edge of the said wing-board free to swing independ-
 105 ently of the arm F.

The wing-board G can be made of a suit-
 105 able size to embrace or cover the covers of the books it is to hold and need not be different in this respect from others made for this purpose before. The lower edges of the wing-
 110 boards G G are connected by means of the support or rest E, which is connected on each edge to one of the wings by means of the links *a*. These links *a* can be made out of sheet
 115 metal turned over at each end, and each end thus turned over hooked into the eye *a'* on the wing G and the edge of the support or rest E. The links *a* and support E should be of
 120 the proper length and proportions to cause them to be drawn taut and nearly on a continuous level with the wing-boards when the wing-boards are opened out flatwise. By
 125 forming all these hinge connections in this manner the wing-boards will be free to move to or from each other vertically and parallel with each other to a sufficient extent to adapt
 130 themselves to books of nearly any thickness usually used in these holders. When the wing-boards and book are closed, the book will rest at the bottom on the support E, and the tendency will be for the weight of the
 135 book to draw the wing-boards closer together against the sides of the book, as this downward strain or tension on the wing-boards comes inside of the pivot or hinged points at

the outer ends of the yoke H, and to hold the wing-boards G G still more rigid and cause them to press against the sides of the book with still greater force the rods K K are bent at their upper ends to hook into bearings near the lower ends of the cleats F' F' and their lower ends hook into the ears s s of the yoke m on opposite sides of the post u. The yoke m has a vertical hole through it and slides up and down on the post u. The post u extends downward from the yoke H and has a coil-spring coiled around it between the yoke H and the yoke m. This coil-spring bears against the yoke H at one end and pushes the yoke m downwardly at the other end, thus causing the rods K K and wing-boards G G to be pulled downwardly and the wing-boards G G to be drawn toward each other when in a vertical position, as before explained.

When the wing-boards are opened out toward a horizontal or flat position, and after the rods K K shall have passed outwardly, so that the line of their draft on the wing-boards shall be outside of the pivotal or hinged bearings at the ends of the yoke H, the coil-spring L will then act to draw the wing-boards away from each other and cause them to remain open when they are extended horizontally. This will also be the case whether the book is opened out flat or closed vertically and resting on the support E, as the support E, when pressed downward in this position, draws on the links a in a line so nearly direct with the pivotal or hinged bearings at the ends of the yoke H that there will not be sufficient leverage at that point to enable the weight of the book to overcome the tension of the spring L, drawing the wing-boards down in an opposite direction.

When the device is used as a double holder, the heads may be turned, as shown in Fig. 1, both facing one way, so that a person can remain in one position and read in both books without revolving the casting D, or the heads can be turned on their pivots, the pins I', so that they will face opposite each other, and then the casting D can be revolved to bring either book to the person reading. The heads can be held from revolving on the pins I' by means of the thumb-screws D'', which screw into the sockets D' and against the pins I', and the casting D may be prevented from revolving by means of the thumb-screw d' in the same manner screwing against the standard C.

As the yoke H pivots on the pins t to oscillate or rock back and forth the head can be tilted by rocking the yoke H to set the book at different inclines or on a level, and the metal which forms the sides of the slot w' being curved on its upper and lower faces to describe a circle, the center of which would be the pins t, allows the thumb-screw w to play in the slot w'. Then when the head is

tilted to the proper position it can be held there by tightening up the thumb-screw w.

I desire to say that my improved book-holder is capable of considerable modification without departing from my invention. As I called attention above the weight of the book itself assists in my improved book-holder to hold the book closed or open automatically in whichever position the book is placed, and this is so effective that the spring L with its connections K K to the wing-boards might be dispensed with entirely and produce a very effective book-holder, but the spring and its connection to the wing-boards puts tension upon the whole device and makes it act much stronger than it otherwise would, and holds all of the pivotal connections taut at all times. The spring and its connections to the remaining device makes a great improvement upon it, but the device would be entirely operative without said spring and its connections. It is needless to say that the upper part of my improved book-holder could be used on almost any variety of stand having a standard, though my improved stand and standard have great advantages in construction over any other that I have ever seen.

I am aware that book-holders have been made before to have the wing-boards connected together with straps which support the book when closed in a vertical position, and that the wing-boards are made to move to and from each other to be self-adjusting to a certain extent to the book, but so far as I know these devices have proven to be failures, as they would not control the movement of the wing-boards to cause them to hold a book in a firm or desirable manner.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a book-holder, the legs, A, A; the bell, A', to engage the upper ends of said legs on its interior surface; a corrugated, elastic metal wedge, N, driven between the legs inside the bell to hold the same securely by the elastic force of the wedge for wedging the legs apart against the bell, substantially as shown.

2. In a book-holder, the combination of the bell, A'; legs, A, A, the upper ends of which are engaged by the said bell A', on its inside; corrugated elastic metal wedge, N, between said legs to clamp them against the interior of the bell; standard, C, centrally located through said bell; a flange or cap, B, over the bell and around the standard; and a thumb-screw for forcing the flange or cap in one direction against the standard while the bell is forced in the opposite direction to clamp the standard securely in place, as specified.

3. In a book-holder, the combination of the bell, A'; legs, A, A, the upper ends of which are engaged by the bell, A'; a wedge, N, between said legs to clamp them against the in-

terior of the bell; standard, C; a shelf or bracket, B, and thumb-screw, N', for moving the bracket and bell in the opposite direction to clamp the standard, coacting together as specified.

4. In a book-holder, the Y-shaped casting, I; the yoke, H, hung at each side to the outer and upper ends of the casting, I, the yoke, H, having pivoted at its outer ends the arms, F, F, and the arms, F, F, having the wing-boards, G, G, pivoted from their free ends and the wings, G, G, connected together from their lower edges by the support, E; and links, a, a, all adapted to operate together substantially as specified.

5. In a book-holder, a yoke, H, mounted on the upper ends of a forked or Y-shaped casting and adapted to oscillate transversely through the forked part of the Y-shaped casting; a transverse slot in the forked part and thumb-screw in the yoke working in the slot to hold the yoke in the proper position relative to the Y-shaped casting, in combination with arms pivoted at each end of the yoke and wing-boards pivoted at each free end of the arms; links depending from the wing-boards; and a support for the book hinged at either side to the free ends of the links, all operating together substantially as and for the purpose specified.

6. In a book-holder, a yoke having a hollowed-out portion in the center, its extreme ends extending upward and outward and having arms pivoted on its extreme ends, the free ends of said arms having wing-boards pivoted to them; links depending from the wing-boards, the free ends of said links on one wing-board being connected to the free ends of the links on the opposite wing-board by means of a support, E, all adapted to operate together to hold the book substantially as shown.

7. In a book-holder, a yoke or frame having arms, F, F, pivoted at its outer ends; wing-boards, G, G, pivoted to the arms, F, F, a series of metallic links with a support, E, connecting the wing-boards together; and means, such as the spring L, having suitable connections with the wing-boards for pulling the wing-boards toward each other when the wing-boards are standing vertically or pulling them in opposite directions when they are extended toward a horizontal position, substantially as and for the purpose specified.

8. In a book-holder, the wing-boards, G, G, hinged to arms, F, F, the arms, F, F, hinged to a yoke, H; a spring operating on rods or links, K, K, connected to the wing-boards in such a manner as to pull the wing-boards toward each other when they are nearly closed or to pull them apart when they are extended out from each other, the whole operating together in such a manner that the wing-boards will be self-adjusting to books of varying thickness and exert a constant pressure on either a thick or thin book when the book is closed, substantially as and for the purpose specified.

9. In a book-holder, the combination of the yoke, H; arms, F, F, pivoted to the upper end of the said yoke to each side; wing-boards, G, G, pivotally connected to the upper end of said arms, F; a support, E, below and between said wing-boards; links, a, a, connecting the support, E, thereto; and rods, K, K, pivotally connected to the lower portion of said wing-boards; a spring, L, below said yoke, H, to put tension upon the rods, K, K, all coacting together substantially as specified.

10. In a book-holder, the combination of the yoke, H; arms, F, F, pivoted to the outer ends thereof; wing-boards, G, G, suitably supported and pivotally connected to the upper ends of the arms, F, F; rods, K, K, connected to said wing-boards; a post, u, projecting downwardly from between said wing-boards; spring, L, on said post, u; a yoke, m, over the spring, L, connected to the rods, K, K, all coacting as specified.

11. In a book-holder, the combination of the yoke, H, with guides, r', at each end thereof, with hooks, f, f, to each side thereof; arms, F, F, with pins, i', i', therein to rest in the hook, f, f, with the stop, r, between the same for passing over and against the guide, r', to prevent the pivot-pins i', i', from becoming displaced, as specified.

12. In a book-holder, the combination of the casting, I, with the opposite ends thereof projecting upwardly and bearing inwardly-pointing pins integral therewith; a yoke, H, having openings to each side, with slots below leading to said openings to receive the inwardly-projecting pins which are passed up to the said openings through the slots to form a bearing for the yoke to operate upon to permit of adjusting the yoke so that it will hold the book at any convenient angle, as desired.

13. In a book-holder, the combination of two wing-boards one for each side of the book; a support connected by link connections to the lower edges of said wing-boards; a yoke, H, below the lower edge of said wing-boards expanding well out to either side; arms, F, F, pivoted to said wing-boards near their upper or outer edge and pivoted to each side of said yoke; a spring, L, below said yoke connecting by suitable rods pivotally to the lower part of each wing-board at the outside, connected so that the action of the spring when the book is closed shall be within the pivotal connection of the lower ends of said arms and when the book is open shall be outside of the pivotal connection of said arms with the yoke to hold the book adjustably closed or lock it open, for the purpose specified.

14. In a book-holder, the combination of two wing-boards one for each side of the book; a support connected by link connections to the lower edges of said wing-boards; a yoke, H, below the lower edge of said wing-boards expanding well out to either side; suitable means of tilting said yoke to adjust the angle of the book; arms, F, F, pivoted to said wing-boards near their upper or outer edge and

pivoted to each side of said yoke; a spring, L, below said yoke connecting, by suitable rods, pivotally to the lower part of each wing-board at the outside, connected so that the
5 action of the spring, when the book is closed, shall be within the pivotal connection of the lower ends of said arms, and when the book is open, shall be outside of the pivotal connection of said arms with the yoke to hold
10 the book adjustably closed or lock it open, for the purpose specified.

15 15. In a book-holder, the combination of wing-boards for each side of the book connected by flexible connections to form a support below for the back of the book; a suitable yoke below the wing-boards extending to each side of the book; arms pivotally connected to the outer ends of said yoke and also pivotally connected near the upper or outer
20 edges of said wing-boards so that the weight of the book will tend to press the wing-boards against the sides thereof when the book is closed and the weight of the book will be thrown well out beyond the pivotal connection of said arms and yoke when the book is
25 open, so that the book will remain automatically either in the open or closed position as desired, for the purpose specified.

30 16. In a book-holder, the combination of the wing-boards for each side of the book connected by flexible connections to form a support below for the back of the book; a yoke, H, below the lower edge of said wing-boards expanded well out; arms, F, pivoted to said

wing-boards near the upper or outer edge and 35
pivoted to each side of said yoke; a spring, L, below said yoke connecting, by suitable rods, pivotally to the lower part of said wing-boards at the outside, connected so that the
40 action of the spring, when the book is closed, shall be within the pivotal connection of the lower ends of said arms and, when the book is open, shall be outside of the pivotal connection of said arms with the yoke to hold the
45 book adjustably closed or lock it open, for the purpose specified.

17. In a book-holder, the combination of the wing-boards for each side of the book connected by flexible connections to form a support below for the back of the book; a suitable yoke below the holder extending to each
50 side of the book; suitable means of tilting said yoke to place the book at a convenient angle; arms pivoted to the outer ends of said yoke and upper or outer edges of said wing-
55 boards so that the weight of the book will tend to press the wing-boards against the sides thereof, when the book is closed, and the weight of the book will be thrown well outside the pivotal connection of said arms and
60 yoke when the book is open, so that the book will remain automatically either in the open or closed position, as desired.

MAURICE E. BLOOD.

Witnesses:

ORPHA WASHBURN,
CLARENCE C. BLOOD.