No. 816,734.

PATENTED APR. 3, 1906.

S. C. NOTT.

LOOSE LEAF BINDER.

APPLICATION FILED AUG. 1, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

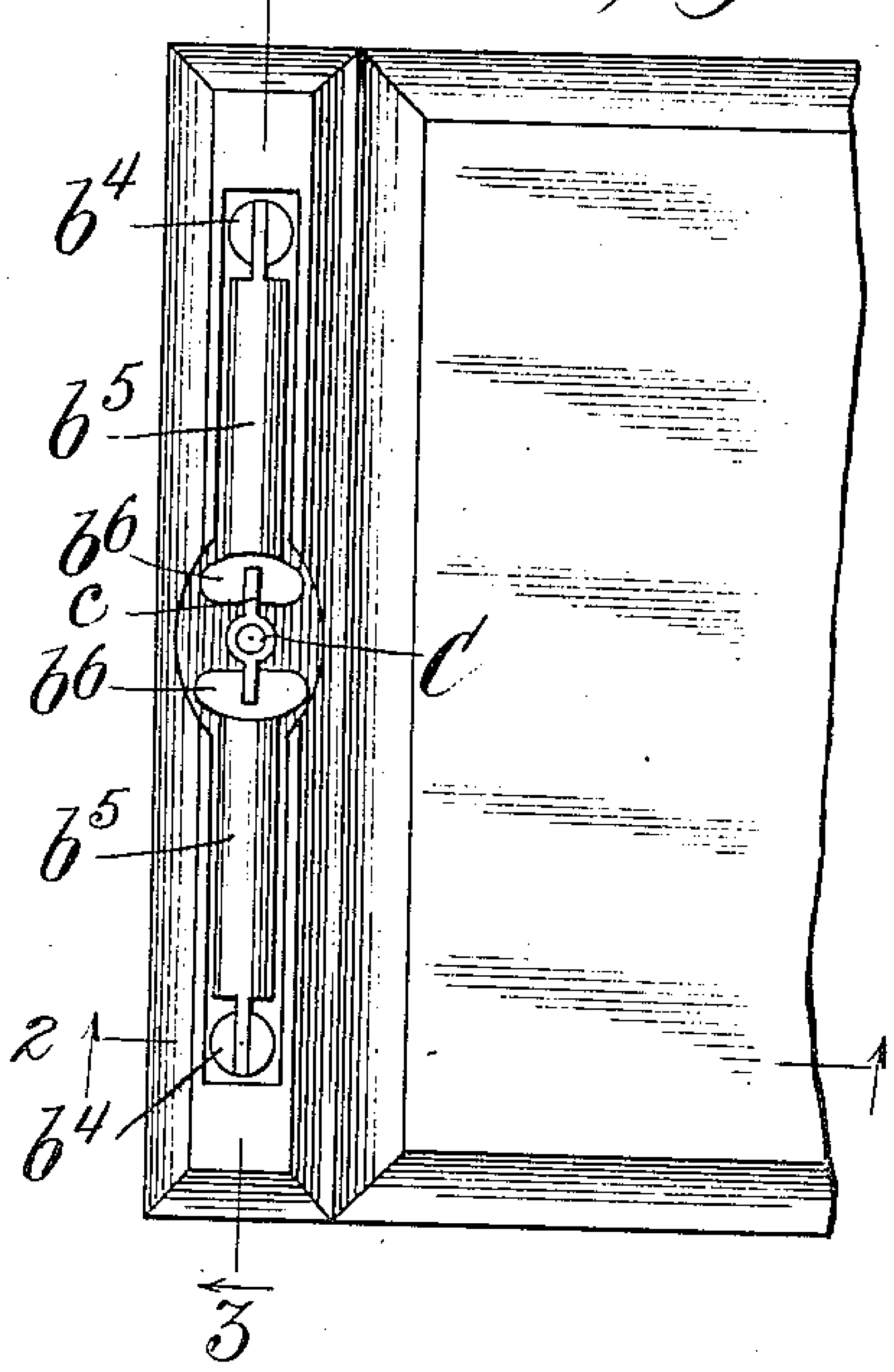


Fig. 2.

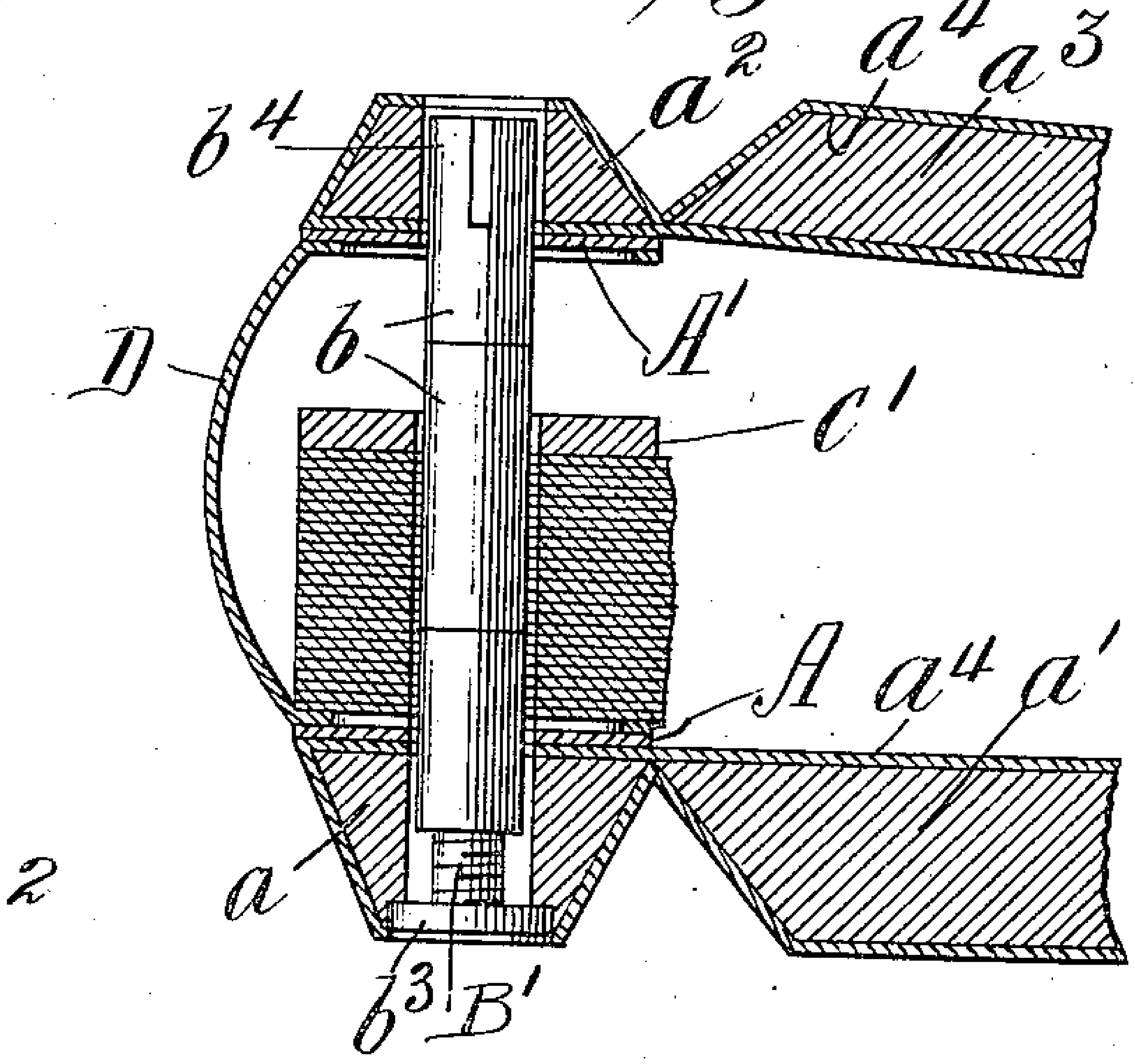


Fig. 3

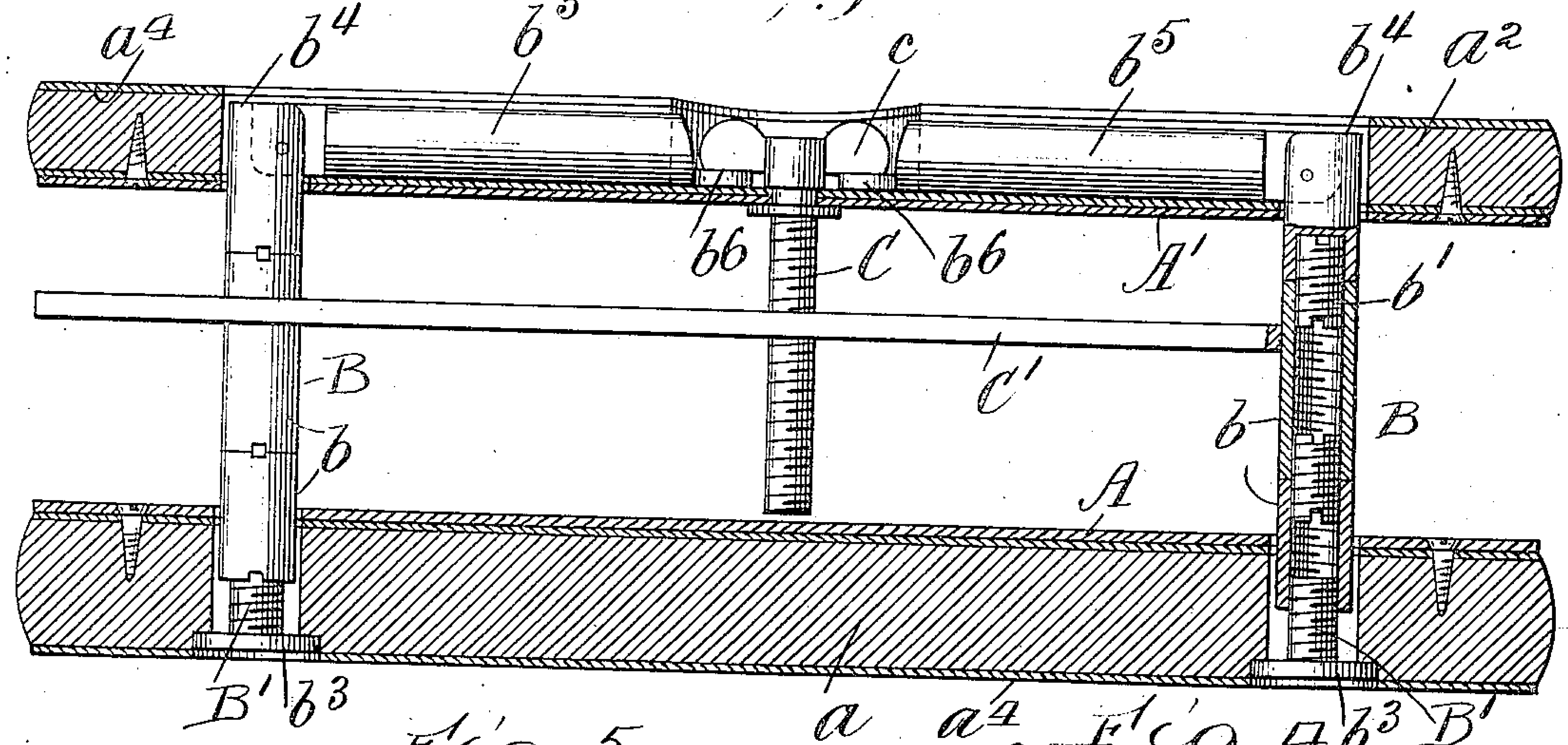


Fig. 5.

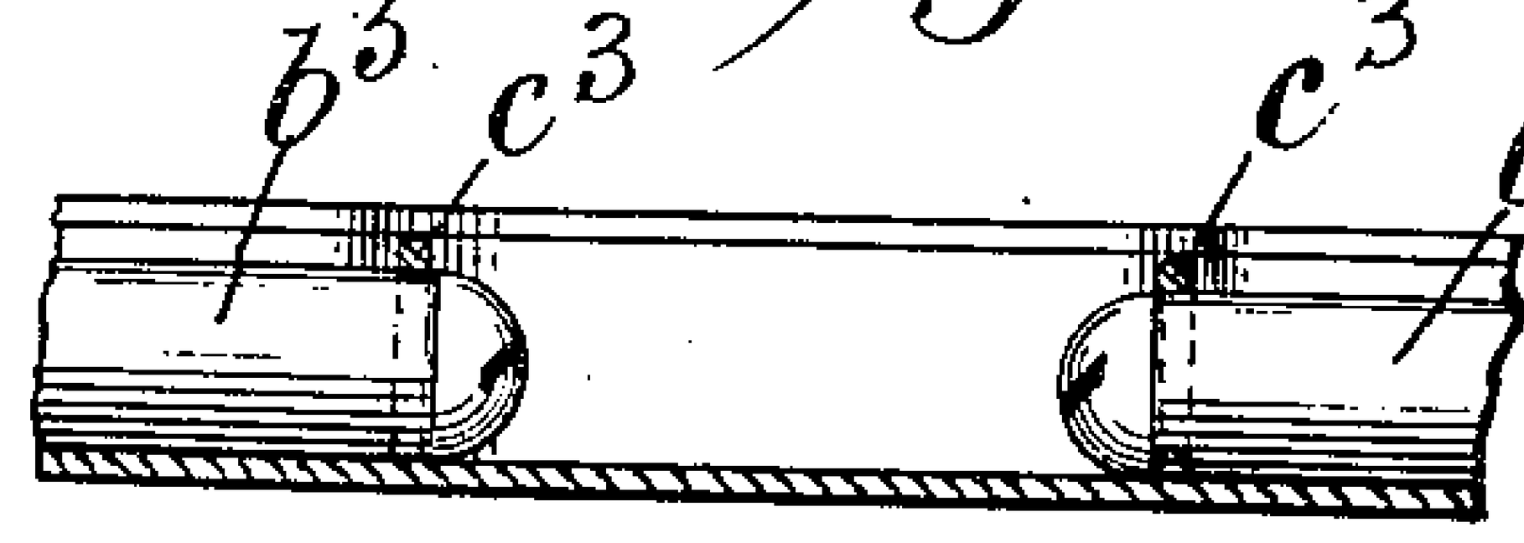
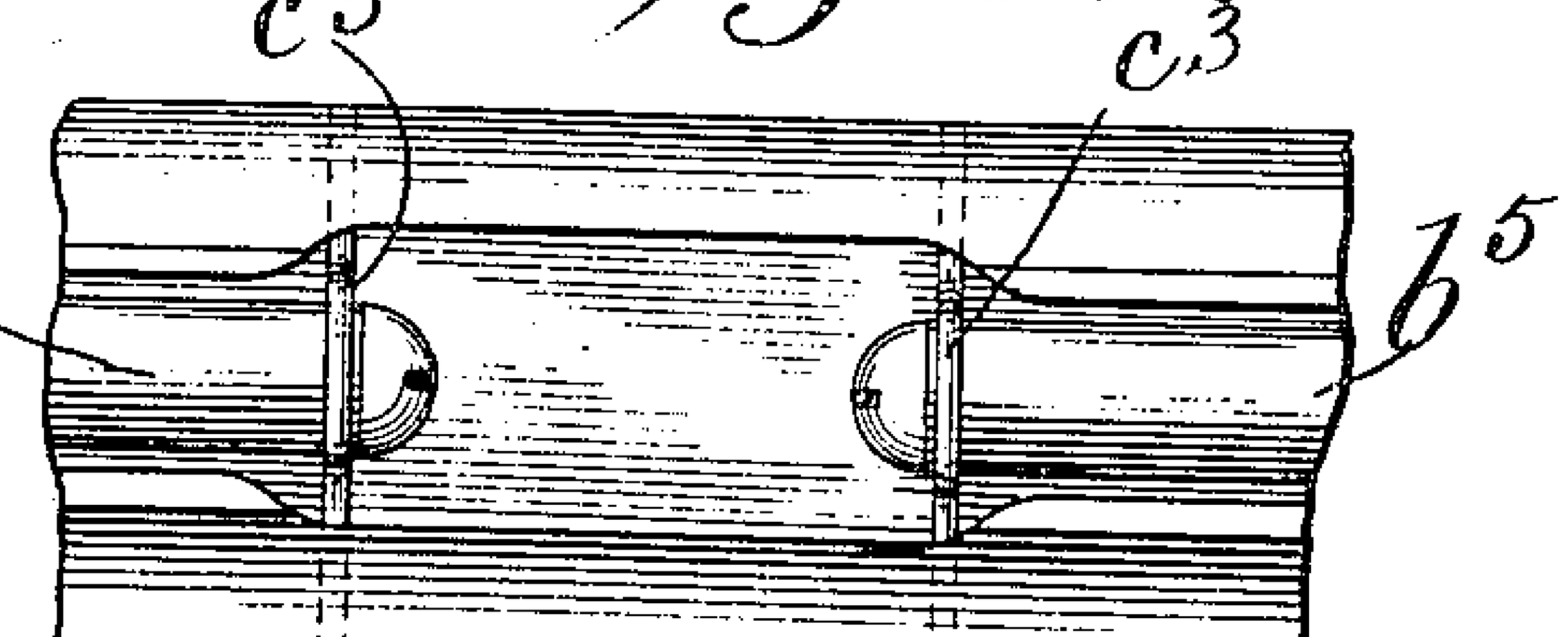


Fig. 4.



Witnesses:
Ray White
Harry R. Scholte

Inventor
Sydney C. Nott
By Charles O. Shervey Atty

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LOOSE LEAF BINDER.

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2 SHEETS—SHEET 2.

Fig. 7

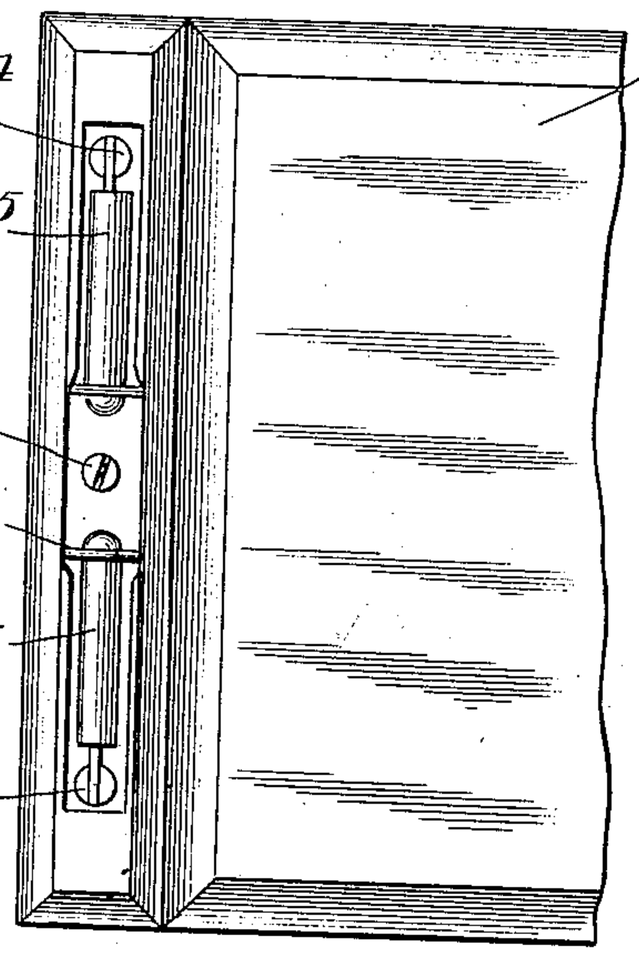


Fig. 8.

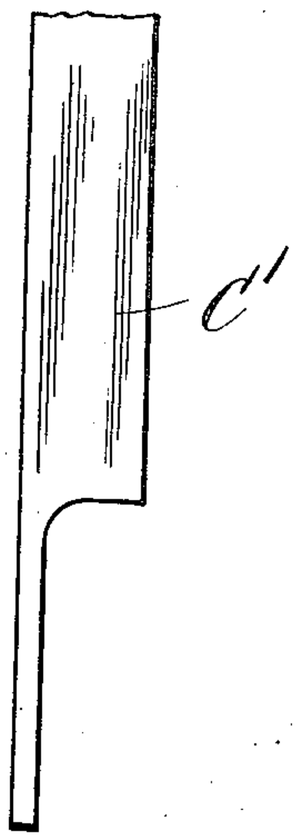


Fig. 9

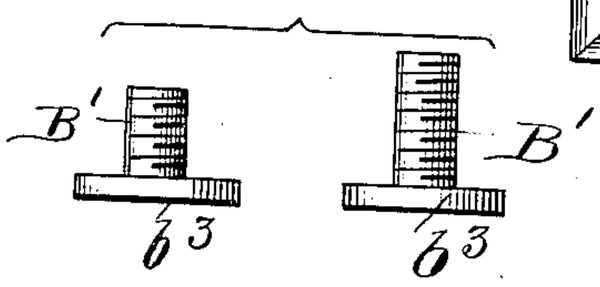
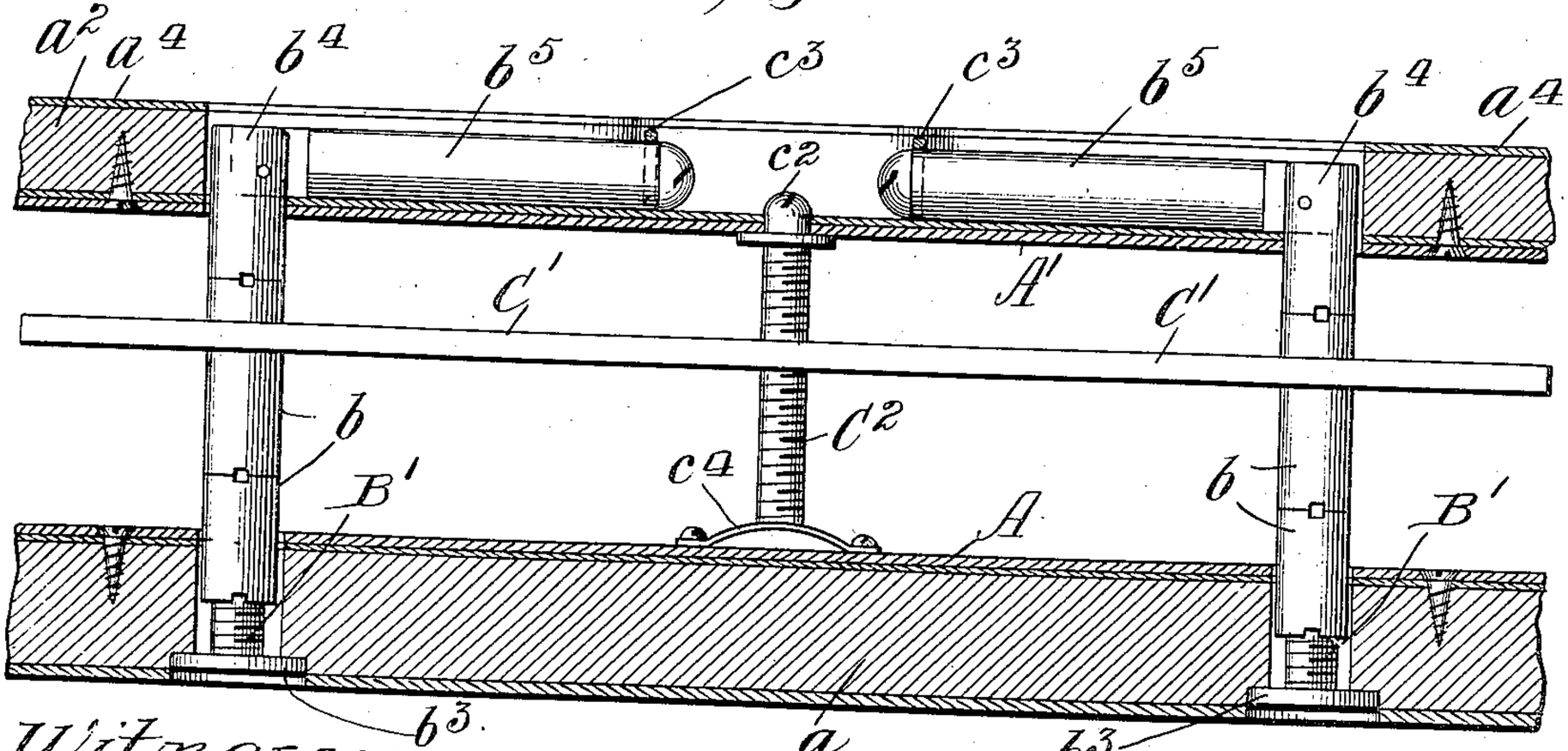


Fig. 6.



Witnesses:

Harry R. Livlite

Ray White.

Inventor:

Sydney C. Nott

By Chadwell & Kelly Atty.

UNITED STATES PATENT OFFICE.

SYDNEY C. NOTT, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

No. 816,734. Specification of Letters Patent. Patented April 3, 1906.

Application filed August 1, 1904. Serial No. 218,958.

To all whom it may concern:

Be it known that I, SYDNEY C. NOTT, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Loose-Leaf Binders, and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to loose-leaf binders of that class in which impaling-posts of uniform diameter, together with a binding-plate and a clamping-plate, afford the means for securing the leaves or sheets in place.

Heretofore many different devices have been used for rigidly binding or clamping the sheets in place and to permit the same to be readily released when desired, and many expedients have been resorted to to enable the capacity of the binder to be varied to suit the growth of the series of accounts. Many of these devices, however, have been defective either because of the complicated and expensive construction or for the reason that such skill is required of the operator to enable the device to be adjusted to varying quantities of leaves that the use has been limited.

The object of this invention is to provide a binder adapted to firmly hold one leaf or sheet or any desired number of leaves or sheets, as preferred, and adapted to instantaneously release the clamping-plate from the sheets to permit the insertion or the removal of sheets.

A further object of the invention is to provide impaling or binding posts adapted to be varied in length at will to suit the varying requirements of a device of the kind and to afford means in connection with said impaling-posts for accurately adjusting the binder to the contents thereof.

It is also an object of the invention to provide an exceedingly strong, simple, and durable construction capable of being operated by one without prior experience with devices of the kind.

The invention consists in the matters hereinafter contained, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a fragmentary top plan view of a binder embodying my invention. Fig. 2 is an enlarged section taken on line 2 2 of Fig. 1. Fig. 3 is an enlarged section taken on line 3 3 of Fig. 1. Fig. 4 is a fragmentary top plan view illustrating means for securing the binding-levers. Fig. 5 is a vertical section of the same. Fig. 6 is an enlarged section similar to Fig. 3, illustrating a modification of the clamping means. Fig. 7 is a reduced fragmentary top plan view of the same. Fig. 8 is a fragmentary top plan view of the clamping-plate. Fig. 9 is a side elevation of the adjusting-bolts.

As shown in said drawings, the binder comprises a binding-plate A, of metal or any other suitable material, which, as shown, is rigidly secured by screws or in any suitable manner upon the hinge-strip a, which may be of wood, papier-mâché, or any preferred material and about which is secured the binding a^4, of leather or the like, which affords the hinge with the bottom cover-board a'. A clamping-plate A′ is oppositely faced upon the binding-plate adapted to coact therewith and is rigidly secured upon a hinge-strip a^2, which articulates with the top cover-board a^3 by means of the leather binding, (indicated by a^4.)

Connecting the binding-plate and the clamping-plate are the binding-posts (indicated as a whole by B) and which in the present instance are shown as constructed of tubular sections b of any desired length adapted to be secured end to end to permit of varying the length of the posts to suit the quantity of leaves to be contained in the binder. Said tubular sections b are threaded internally for their entire length and, as shown, are notched at each end to adapt the same to be engaged by a screw-driver or other suitable tool. The abutting ends of the sections are secured together by means of bolts b', which are threaded for their entire length and are likewise provided with end slots for engagement by a suitable tool for turning the same in place. Said posts B are also adjustably secured as to length through the binding-plate by means of a bolt B′, which extends through a suitable aperture in the hinge-strip and binding-plate and has threaded engagement in the end of the first tubular binding-post section b, as shown in Figs. 2 and 3, and its flattened head b^3 bears against said hinge-strip, so that rotation of said bolts B′ in one direction acts to draw the binding-post inwardly toward the binding-plate, while rotation in the opposite direction acts to extend the post. Said bolts B′ are interchangeable as to length, dependent upon

whether one or more sleeve-sections are used in the post B. If only one section is used, the bolt B′ will be of a length to extend approximately to the binding-plate A, thereby giving a maximum amount of outward adjustment, while permitting sufficient inward adjustment to clamp but one sheet in the binder. If more than one sleeve-section is used, the bolt B′ will be of less length, thereby giving the desired adjustment. Means are also provided at the upper end of each binding-post adapted to firmly engage the clamping-plate in binding relation. For this purpose the upper end of the binding-post section b^4 is shaped to afford one member of a hinge and extends through both the clamping-plate and the upper hinge-strip. Articulating with said upper section b^4 of each binding-post is a lever b^5, which is cylindric and of the same diameter as the binding-post and when turned upwardly into alinement therewith forms a continuation of said post, upon which the clamping-plate and upper hinge-strip may be slid upwardly.

As shown, the hinge-strip a^2 is provided longitudinally with a groove or recess adapted to receive said levers b^5 when turned inwardly, as shown in Figs. 1 and 3, and means are provided for rigidly engaging said levers b^5 within said recess, so that when the clamping-plate is forced downwardly thereby the compression may be maintained. For this purpose, as shown in Figs. 1, 2, and 3, a screw-shaft C extends through the clamping-plate and is provided with a follower C′ thereon adapted to compress the sheets in the binder and is provided on its outer end with a winged nut *c*, which in one position is adapted to be turned over the flattened extremities b^6 of said lever ends, thus holding the same down. If said follower is not used, wire staples c^3 may be used. Said staples are bent to a form to provide laterally-extending ends, which engage between the clamping-plate and the hinge-strip, and when turned upwardly, as shown in Figs. 4 and 5, engage over the ends of the levers b^5, acting to retain the binder in close relation.

In the construction illustrated in Figs. 6, 7, and 8 the follower is shown as removable when the binder is open, thereby greatly facilitating the insertion of sheets. For this purpose the screw-shaft C^2 is provided with a rounded head c^2, which projects through the clamping-plate a sufficient distance to permit engagement with a screw-driver or the like. A resilient seat c^4 for said shaft is rigidly engaged upon the binding-plate A, and when the clamping-plate A′ is released and raised upwardly said shaft may be tipped forwardly, carrying the follower therewith, which, as shown in Fig. 8, is notched at its ends to engage only the front sides of the binding-posts.

The operation is as follows: In adjusting the binder either single-post sections of the desired length and having hinged relation with the levers b^5 at their upper ends are engaged through the clamping and binding plates upon the bolt B′, whereby the end of the sleeve is drawn inwardly through the binding-plate and hinged strip to afford any desired degree of adjustment, or additional post-sections may be used. If desired, when using the single-post sections a single sheet can be firmly bound between the binding-plate and clamping-plate. The capacity of the binder can be varied by adjustment of bolts B′, which vary the distance between the clamping-plate and binding-plate, or by the insertion of a longer sleeve-section or of one or more additional sleeve-sections, if preferred, the abutting ends of which are connected to the bolts *b′*, as before described. Having adjusted the binding-posts to a length to enable the binder to contain the required number of leaves and the sheets having been inserted, the levers b^5, which are pivoted eccentrically with the upper post-sections, are turned downwardly into the recess in the hinge-strip therefor and secured therein, thus bringing great pressure upon the sheets.

If preferred, a closed back may be provided by securing a strip of metal, stiff leather, or other suitable material D in the back of the binder, covering the rear margins of the leaves and turning the margin of said back inwardly, as shown in Fig. 2, and slotting the same to receive the binding-posts.

In the construction shown in Figs. 6, 7, and 8 when the levers b^5 are brought into register with the binding-posts B the clamping-plate A may be retracted, thereby releasing the screw-shaft and permitting the follower to be removed, thereby affording a maximum amount of space between the binding-plate and clamping-plate when inserting additional sheets.

While I have described one construction embodying my invention, it is obvious that the invention may be differently embodied, and I do not desire to be limited in this application more than is necessitated by the prior art and as stated in the claims, as many details of construction may be varied without departing from the principle of my invention.

I claim as my invention—

1. In a binder, the combination with a clamping-plate and a binding-plate of binding-posts connecting the same, means operated at the binding-plate acting to adjust the posts as to length above the binding-plate and a lever on the end of each post acting to force the clamping-plate inwardly.

2. In a binder, the combination with a binding-plate and a clamping-plate of binding-posts extending through the binding-plate and adjustable as to length therein, a bolt engaged through the binding-plate and

having threaded engagement in the end of each post, a lever on the upper end of each binding-post above the clamping-plate and adapted when forced inwardly to bring inward pressure upon the clamping-plate.

3. In a binder, the combination with a binding-plate and a clamping-plate of registering apertures therethrough, binding-posts extending through the clamping-plate and into the binding-plate, a bolt engaging each post through the binding-plate and acting to adjust the post with respect thereto and a lever on the upper end of the binding-post acting to force the clamping-plate inwardly and means for engaging the ends of said levers in binding position.

4. In a device of the class described, a binding-post comprising one or more sections adapted to be engaged with a binding-plate and to extend through a clamping-plate and a lever hinged to the upper end of said binding-post acting to turn downwardly and force the clamping-plate inwardly.

5. A binding-post for the purpose specified comprising a plurality of sleeve-sections of uniform diameter, threaded internally from end to end and having notches in the ends for engagement with a tool and bolts complementally threaded for their entire length and affording the connection between the abutting ends of said sleeves.

6. A binder of the class described comprising a binding-plate and a clamping-plate, binding-posts holding the same in operative relation comprising a plurality of sleeves of uniform diameter and internally threaded at each end, a threaded bolt affording the connection between the abutting ends of adjacent sleeves and a lever at the outer end of each post acting to force the clamping-plate inwardly.

7. In a binder, a tubular sectional binding-post of uniform diameter adapted to extend into the binding-plate, a headed bolt swiveled in the binding-plate and engaging in said post and a lever pivoted at the upper end of said post and adapted when in alinement therewith, to form an extension thereof.

8. A binder of the class described comprising a binding-plate and a clamping-plate, binding-posts holding the same in operative relation comprising a plurality of sleeves of uniform diameter and internally threaded at each end, a threaded bolt affording the connection between the abutting ends of said sleeves, a lever at the outer end of each post acting to force the clamping-plate inwardly, a follower intermediate the clamping and binding plates and means for adjusting said follower with respect thereto.

9. In a binder the combination with the clamping and binding plates of extensible posts connecting the same comprising internally-threaded sleeves and bolts forming the connection between said sleeves, a lever on the outer ends of said posts acting to force the clamping-plate inwardly, means for holding said levers in clamping relation and an adjustable follower carried on said plates.

10. In a device of the class described the combination with a binding-plate of posts adjustably secured thereon each comprising a plurality of internally-threaded sleeves and bolts adapted to engage said sleeves together, a clamping-plate movably engaged on said posts, a lever at the upper end of each post adapted to be turned inwardly and compress said clamping-plate, a follower intermediate said plates and an operating-shaft therefor adapted when the clamping-plate is released to be removed with the follower.

11. A binding-post for the purpose specified comprising a plurality of tubular sections having internally-threaded ends and complementally-threaded bolts acting to secure the abutting ends of said sections together and a hinged section thereon adapted when in one position to form a continuation thereof.

12. A binder comprising in combination, top and bottom plates, posts adapted to hold said plates in operative relation, a lever on each post acting to limit the outward movement of one of said plates, a follower slidably engaged on the front faces of said posts and an adjusting-shaft therefor adapted to permit said follower to be removed from the front of the binder.

13. A binder comprising in combination top and bottom plates, posts adapted to hold said plates in operative relation, a lever on the upper end of each post adapted to force the top plate inwardly and interchangeable bolts carried in the bottom plate adapted to move said posts vertically.

14. In a loose-leaf binder, the combination with the top and bottom plates of posts slidably engaged therethrough, each comprising internally-threaded sections and bolts threaded complementally therewith adapted to engage abutting ends of said sections, a lever hinged at the upper end of each post and interchangeable bolts swiveled in the bottom plate adapted to raise and lower said posts.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

SYDNEY C. NOTT.

Witnesses:
W. W. WITHENBURY,
H. S. RUDD.