

No. 721,623.

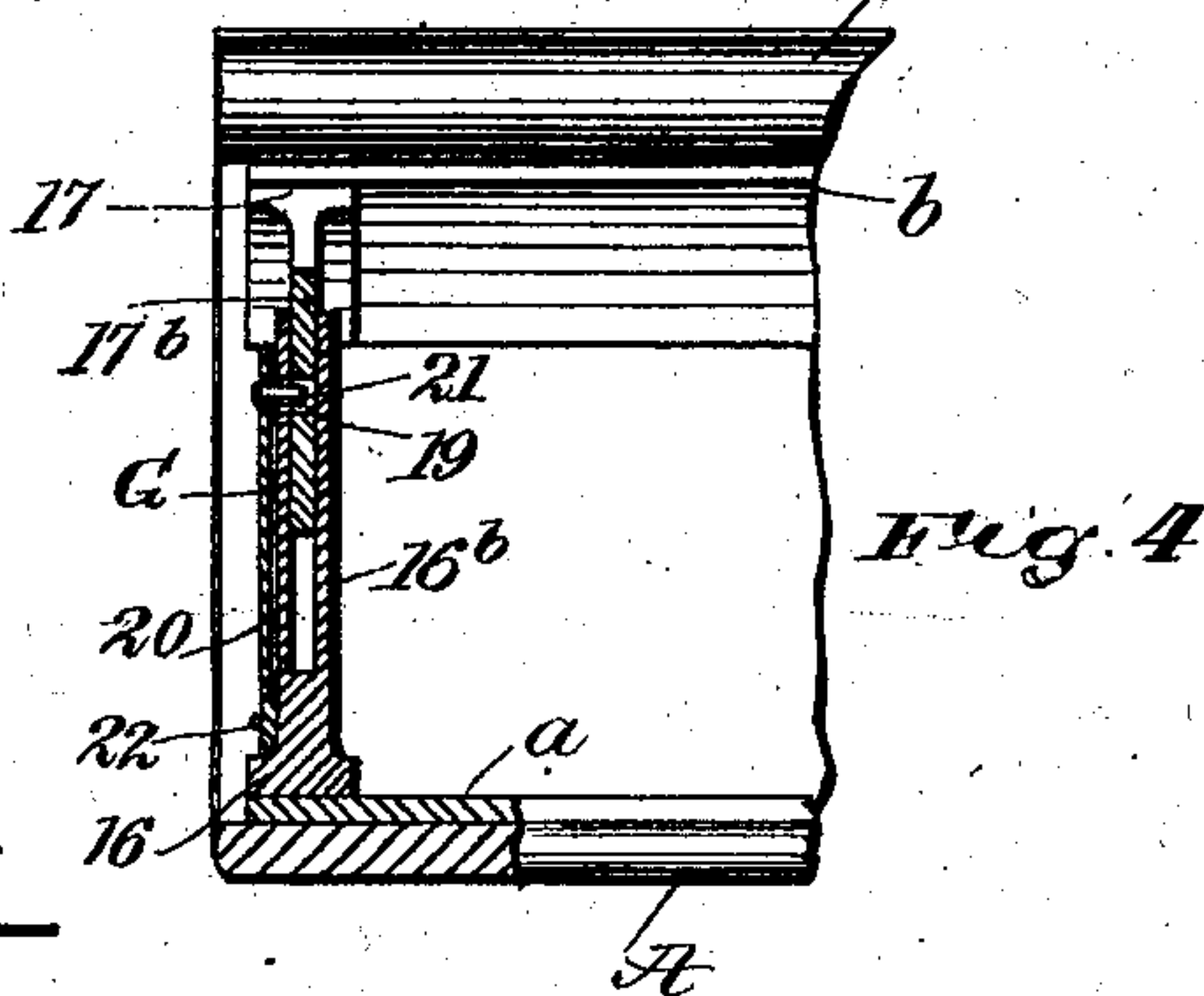
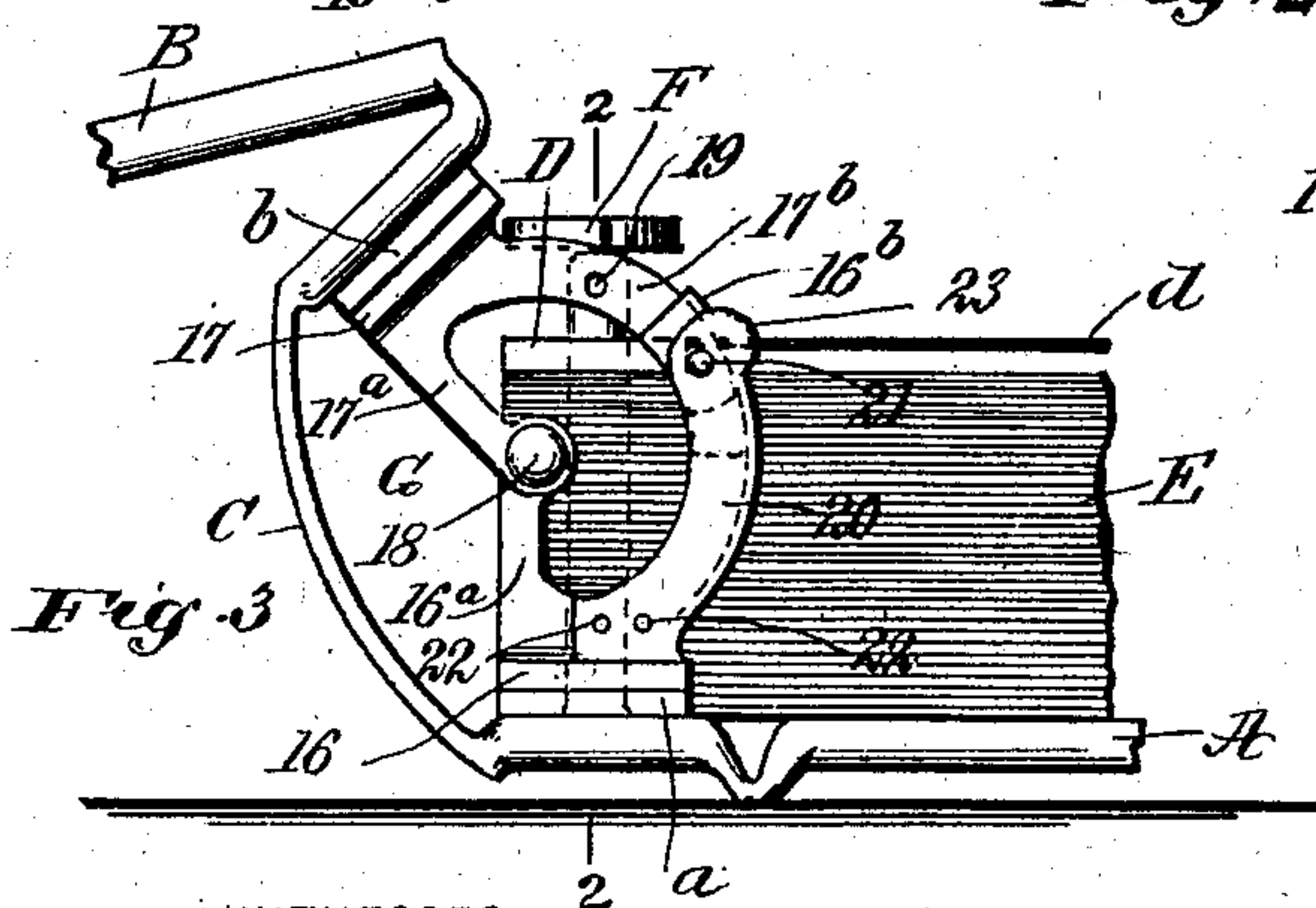
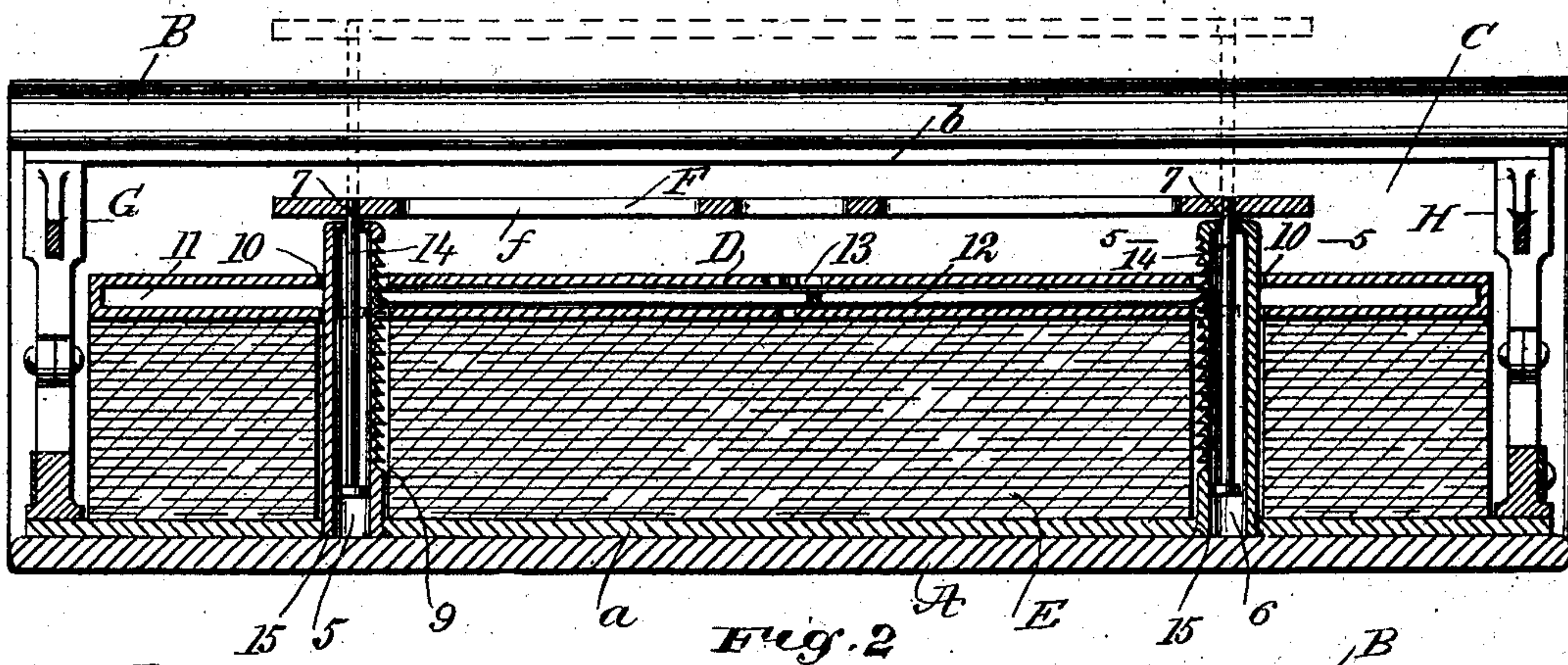
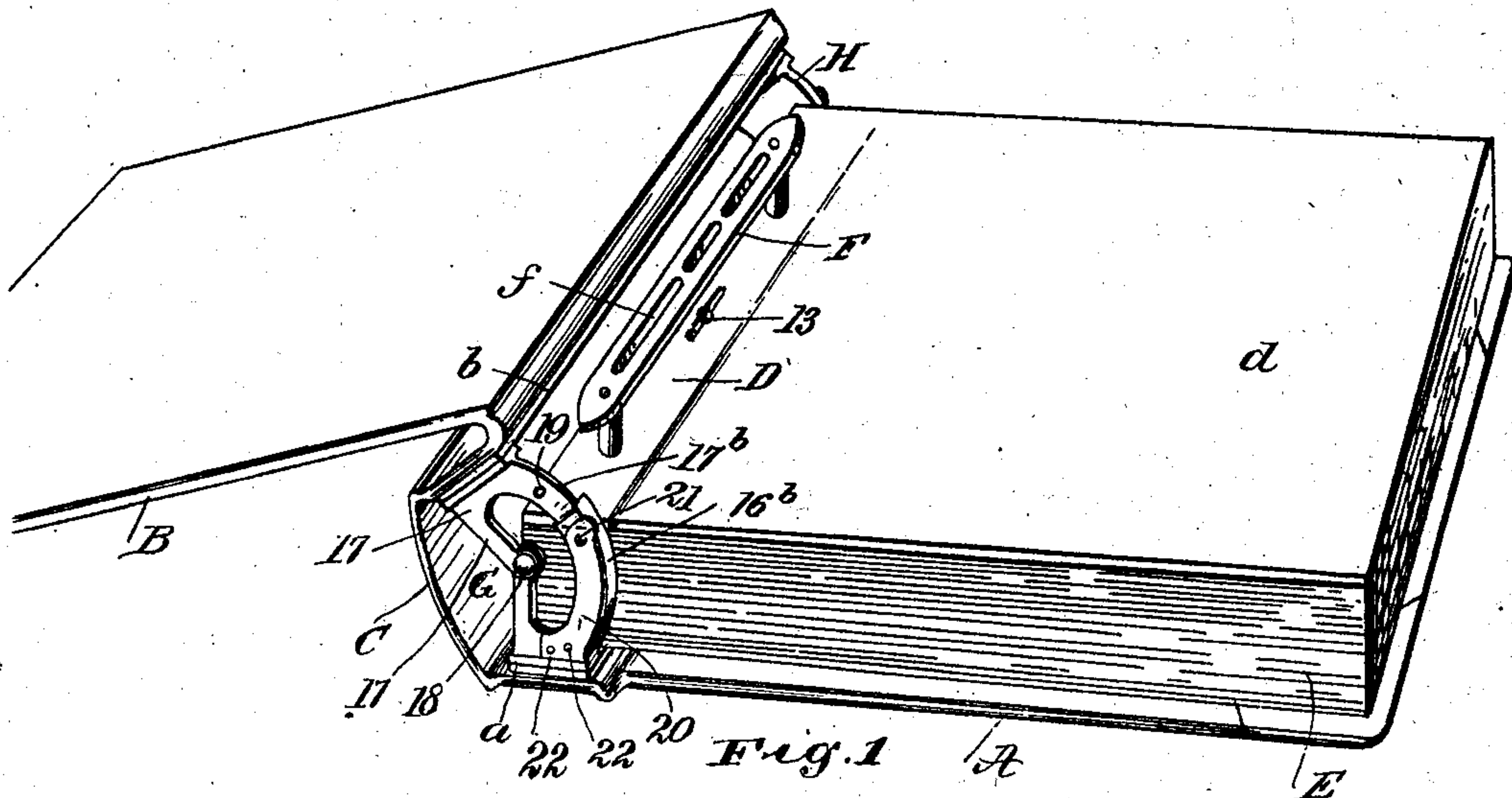
PATENTED FEB. 24, 1903.

F. B. TOWNE.  
LOOSE LEAF LEDGER.

APPLICATION FILED SEPT. 18, 1902.

NO MODEL.

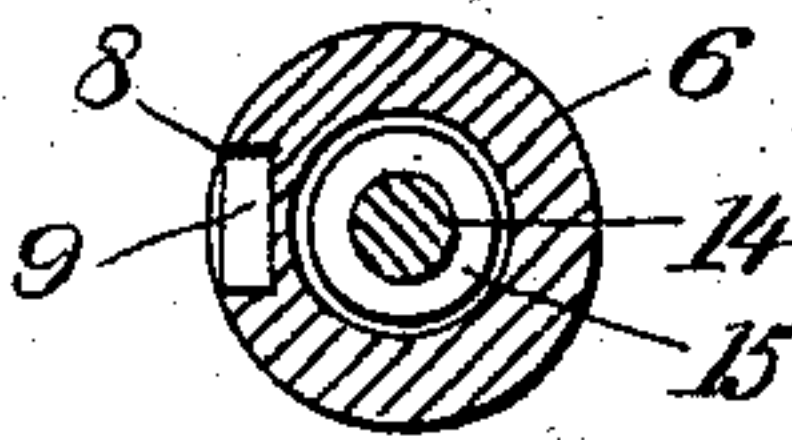
2 SHEETS—SHEET 1.



**WITNESSES:**

John A. Bengtson

A. J. Berchard



*Fig. 5*

*INVENTOR*

*Frank B. Towne*

BY *Mum*

ATTORNEYS.

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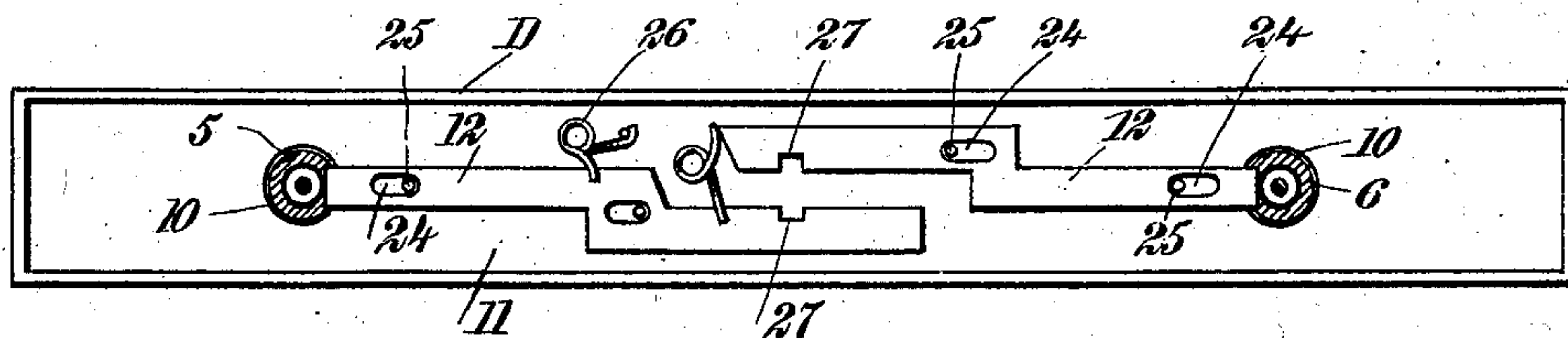


Fig. 6

WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANK BECKWITH TOWNE, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO  
NATIONAL BLANK BOOK COMPANY, OF NEW YORK, N. Y.

## LOOSE-LEAF LEDGER.

SPECIFICATION forming part of Letters Patent No. 721,623, dated February 24, 1903.

Application filed September 18, 1902. Serial No. 123,857. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK BECKWITH TOWNE, a citizen of the United States, and a resident of Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Loose-Leaf Ledgers, of which the following is a full, clear, and exact description.

The present invention in loose-leaf ledgers or account-books is designed more particularly as an improvement on the construction disclosed in United States Letters Patent No. 681,046, issued to Harry Elinoff on August 20, 1901, the title to which patent and to the present improvement resides in the same party.

In the structure disclosed by the patent to which reference has been made it is common to use ratchet-faced posts, over which the leaves are slipped, after which a locking-slat is fitted on the posts to rest on the top leaf, said slat having locking devices to engage the posts. The ratchet-teeth are formed on the exposed faces of the posts, so as to make the leaves engage therewith, thus exposing the leaves to the danger of being torn in applying or removing them. The prior structure is also provided at the ends of the back with extensible curved braces, which do not, however, permit the back of the book or ledger when opened to lie flat on a table or desk; but this back takes a curved shape, so that it is liable to turn and become displaced on the desk.

The object that I have in view is to provide an improved article or device which overcomes these objections and produces a structure which possesses the important qualifications of simplicity and rigidity in construction. The ledger or book is doubly locked, owing to the provision of means for confining the leaves, whether few or many, securely in place and to the employment of locking devices which hold the covers and back rigidly together, while permitting the covers to open freely and the back to lie flat on a desk or table.

One of the improvements which I have made consists in the provision of a stay bar or plate connecting the posts and effectively

holding them against spreading under the mass of leaves contained in the ledger or other book.

Another improvement which I have made consists in the provision of locking devices for the extensible braces that are provided between the covers and at the back of the cover, said locked braces holding the covers rigidly in relation to each other and said locking devices being releasable in order that the covers may be opened in order to obtain access to the locking-slat and to the leaves on the posts.

Another improvement which I have made consists in the posts having ratchet-teeth countersunk in the faces thereof, said posts presenting practically smooth surfaces, which avoid catching or lodging of the leaves, and thus enabling a quantity of said leaves to be inserted or withdrawn easily and without danger of tearing the same.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a loose-leaf ledger or account-book constructed in accordance with my invention. Fig. 2 is a vertical transverse section on an enlarged scale and taken in the plane indicated by the dotted line 2 2 of Fig. 3. Fig. 3 is a side elevation of a portion of the book, showing the extensible brace adjusted to its inoperative position and adapted to permit the insertion or removal of a number of leaves. Fig. 4 is a longitudinal section through one of the extensible braces and its locking device, and Fig. 5 is a detail cross-section on the line 5 5 of Fig. 2. Fig. 6 is a detail plan view of the locking mechanism which is carried by the locking-slat, the bolts of said locking mechanism being shown in operative relation to the ratchet-faced posts, the latter being in transverse section.

A B designate the covers of the book, and C is the back thereof, said back being united to the covers in any approved permanent manner. On the inside of the back C are secured the metallic plates or strips *a b*, and to the strip *a*, which is secured near the cover



A, are firmly fastened the posts 5 6. These posts may be attached to the metallic strip or plate *a* in any suitable way, and these posts are preferably hollow or tubular, as shown by Figs. 2 and 5, the outer end of each post having a contracted opening 7. The posts stand at right angles to the cover A, and each post is cylindrical in form. Instead of providing the posts with ratchet-teeth in the ordinary way I provide a longitudinal groove 8 in one side or face of said post, and in this groove is formed a series of ratchet-teeth 9, the same lying within the recessed or grooved part 8 of the post, so as to be countersunk therein. The posts 5 6 are fastened to the metallic plate *a*, so as to have the countersunk ratchets 9 in opposing relation, as shown in Fig. 2.

D designates a locking-slat which is preferably equipped with a waste or loose leaf *d*. This locking-slat is equal in length to the width of the loose leaves or pages E of the ledger or account-book, and said slat D is provided with openings 10, through which are adapted to pass the posts 5 6. The slat D is chambered, as at 11, to accommodate the locking-rods 12, which are disposed longitudinally in the chambered slat and are adapted for engagement with the teeth 9 of the ratchets in the posts 5 6. These locking-rods form elements of a suitable locking mechanism, which is shown more particularly by Fig. 6 of the drawings, and said rods are retracted by the operation of a suitable key, (not shown,) adapted to be inserted in the keyhole-slot 13, which is provided in the middle of the locking-slat. The style of locking mechanism shown by Fig. 6 contemplates the employment of oppositely-movable bolts 12, which are slotted, as at 24, to receive the guide-pins 25, the latter being secured to the slat, and these bolts are forced in opposite directions by the employment of suitable springs 26. The inner ends of the bolts are disposed in overlapping order, and they are provided with the notches 27 or their equivalents, which notches are adapted to receive the operating parts of a suitable key. The key is passed through the slot 13 of the slat to engage with the bolts, and by turning the key in one direction the bolts or rods are simultaneously retracted. The loose leaves E are perforated or slotted, so as to fit on the posts 5 6, and upon the mass of leaves is adapted to rest the locking-slat D, which may be fastened on the posts 5 6 by the locking device, thus making provision for clamping any desired number of leaves between the cover A and the locking-slat D. It is evident that a small number of leaves may be fitted on the posts and that the locking-slat can be lowered on the posts, so as to engage with the leaves, said slat being disposed for its locking device to have engagement with the ratchets on the posts at any point of adjustment of the slat.

One of the important features of my invention consists in the provision of a stay bar or plate F, the same being arranged over the locking-slat D and operatively engaging with the tubular posts 5 6, whereby said plate or bar serves to brace the posts and prevent them from spreading under the pressure or weight of the leaves confined in the back. This stay-plate consists, preferably, of a flat strip of metal, which is skeletonized by the formation of slots *f* therein. The stay-plate is connected operatively with the posts by means of the stems 14, which are fastened to said plate F near the end portions thereof and are adapted to pass loosely through the contracted openings 7 in the upper ends of the posts. These stems are fitted loosely in the tubular posts, and said stems are provided at their lower ends with the knobs or feet 15, which are movable freely with the stems in the posts and are adapted to impinge the upper ends of the posts, so as to prevent withdrawal of the stems from the posts. The stay-plate and the stems may be raised to the position indicated by dotted lines in Fig. 2, thus allowing the locking-slat D to be withdrawn from the posts and fitted on the stems, whereby the leaves E are released and access may be easily obtained to the posts for the purpose of lifting a number of leaves away from the posts and onto the stems, after which the slotted or perforated leaves may easily be withdrawn from the stems, which are smaller in diameter than the posts. With the stay-plate and the locking-slat in the raised positions the operator is able to easily replace a number of leaves in the ledger, and in carrying out this end the slotted leaves are first slipped over the stems 14 and then placed on the posts 5 6, after which the locking-slat is pressed into position on the posts and into engagement with the leaves, and finally the stems 14 are lowered into the posts, so as to bring the stay-plate into the position to rest upon the upper end of the posts, as clearly shown by Fig. 2.

The back and covers are reinforced by the hinged braces G H, and these braces are disposed at opposite ends of the back, so as to lie on opposite sides of the leaves and the locking-slat. The braces are similar in construction, and a description of one brace will answer for the other. Each brace consists of two members 16 17, each of which is cast in a single piece. The member 16 is provided with a flat face, which is applied against the plate *a* and secured firmly thereto, and said member is constructed with a straight arm 16<sup>a</sup> and a curved hollow arm 16<sup>b</sup>. The other member 17 of each brace has a flat plate, which is secured firmly to the strip or bar *b* on the back, and this brace member 17 is provided with a straight arm 17<sup>a</sup> and with a curved arm 17<sup>b</sup>. The straight arms 16<sup>a</sup> 17<sup>a</sup> of the two brace members are disposed in overlapping relation and connected pivotally together, as



at 18, and the curved arms 16<sup>b</sup> and 17<sup>b</sup> of the two brace members are curved or are struck from the pivotal center 18 of the brace. The hollow arm 16<sup>b</sup> of one brace member is arranged to slidably receive the solid arm 17<sup>b</sup> on the other brace member, thus providing an extensible or telescopic connection between the hinged members of the brace. The solid arm 17<sup>b</sup> is provided with apertures 19, and on the hollow arm 16<sup>b</sup> of the brace is fastened a flat locking-spring 20, said spring being provided near one end with a locking-stud 21, which is arranged to pass through an opening in the curved arm 16<sup>b</sup>, so that said stud may enter either of the apertures 19 in the slidable arm 17<sup>b</sup> of the brace. The spring 20 is disposed in compact lateral relation to the curved brace-arm 16<sup>b</sup>, on which it is secured by rivets 22 or other suitable fastenings, as shown by Figs. 3 and 4, and the free end of this spring is enlarged to form a thumb-piece 23, thus enabling the spring to be easily pressed away from the brace sufficiently to withdraw the stud 21 from engagement with the perforated arm 17<sup>b</sup>. In the normal position of the braces the arms 16<sup>a</sup> 17<sup>a</sup> thereof lie in alinement with each other, so as to form a straight bar which extends across the brace and is parallel with the flat back C of the ledger or other account-book, and in this position of the braces the arms 17<sup>b</sup> are moved into the hollow arms 16<sup>b</sup>, the studs 21 of the springs 20 fitting in certain apertures of the bars 17<sup>b</sup> in order to hold the parts of the braces firmly and in locked positions. The strip or plate *b* rests snugly against the stay-bar F, and all the parts of the book are held firmly and solidly together, the leaves and covers being doubly locked. One locking device is afforded by the slat which engages with the leaves and is secured to the posts, while the other locking device is formed by the hinged braces having the members thereof locked firmly together by the studs 21 and springs 20.

When the book is in its normal position, the cover B and a number of the leaves may be opened, and the back C is kept in a straight position, so as to lie flat upon the desk or table. If it is desired to obtain access to the leaves and the posts for the purpose of inserting new leaves or for taking out certain of the leaves E, the operator first throws open the cover B and then manipulates the springs 20 so as to withdraw the studs 21 from engagement with the perforations in the curved arms 17<sup>b</sup> of the braces. The cover B and the members 17 of the brace may now be moved to the position shown by Fig. 3. Pressure is applied to the cover B or to the brace members 17 to make said members turn on the pivots 18 and to partly withdraw the curved arms 17<sup>b</sup> of said braces from the hollow arms 16<sup>b</sup> of the other brace members 16. The back and the cover B are turned out of the way of the stay-plate F, as shown by Figs. 1 and 3, and this stay-plate F may now be raised to

the dotted-line position shown in Fig. 2. The operator now inserts the key into the slot 13 of the locking-slat, and the locking members are retracted to release them from the ratchets of the posts, after which the slat is raised on the stems 14 and the leaves E are released.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a ledger or account-book, a series of leaf-holding posts each provided with a row of countersunk ratchet-teeth which lie within the external surface of the post, combined with a locking-slat slidable freely over said posts without hindrance from the ratchet-teeth thereof, and locking devices carried by the slat and adapted to engage positively with the countersunk teeth of the posts.

2. In a ledger or account-book, a series of leaf-holding posts each provided with a longitudinal channel and with a series of ratchet-teeth lying in said channel and within the external surface of the post, combined with a locking-slat slidable freely over said posts without hindrance from the ratchet-teeth therein, and locking devices carried by the slat and adapted to engage positively with the ratchet-teeth of the posts.

3. In a ledger or account-book, the combination with suitable covers, and leaf-holding posts attached to one cover, of a stay disconnected from the other cover and connected to said posts to prevent them from spreading laterally, and a separate locking-slat disposed at one side of the stay and fitted slidably to the posts and adapted to be locked thereto at different points of adjustment, said locking-slat being movable relatively to the stay and one of the covers.

4. In a ledger or account-book, the combination with suitable covers, and leaf-holding posts attached to one cover, of a stay-bar disconnected from the other cover and having slidable engagement with said posts to confine them against lateral spreading, and a locking-slat fitted slidably to said posts for interlocking engagement therewith and movable relatively to the stay-bar.

5. In a ledger or account-book, the combination with suitable covers, and leaf-holding posts attached to one of said covers, of a stay-bar disconnected from the other cover and having projecting stems which are slidably fitted to the posts, and a locking-slat disposed between one cover and said stay-bar and fitted slidably to the posts for interlocking engagement therewith, said slat being adjustable relatively to the stay-bar and arranged to fit on the stems thereof when the device is opened.

6. In a ledger or account-book, the combination with suitable covers, of two-part braces each having members which are secured to the respective covers, said members of each brace having meeting arms pivoted together; one member of each brace having a curved hollow arm and the other brace hav-



ing a curved arm fitted slidably in said hollow arm; and a locking-spring carried by the hollow brace-arm and engaging with the other arm to lock the two members of the brace in  
5 fixed relation.

7. In a ledger or account-book, the combination with the covers and a back, of a brace consisting of two members which are fastened to opposite portions of the back, said mem-  
10 bers having straight arms which are pivoted directly together, one member of the brace having a curved hollow arm and the other brace member provided with a curved per-

forated arm which is fitted slidably in said hollow arm, and a spring fastened to the hollow arm and provided with a locking projection arranged to engage with the perforated hollow arm. 15

In testimony whereof I have signed my name to this specification in the presence of  
20 two subscribing witnesses.

FRANK BECKWITH TOWNE.

Witnesses:

GEO. H. TRABOLD,  
H. J. FERRY.