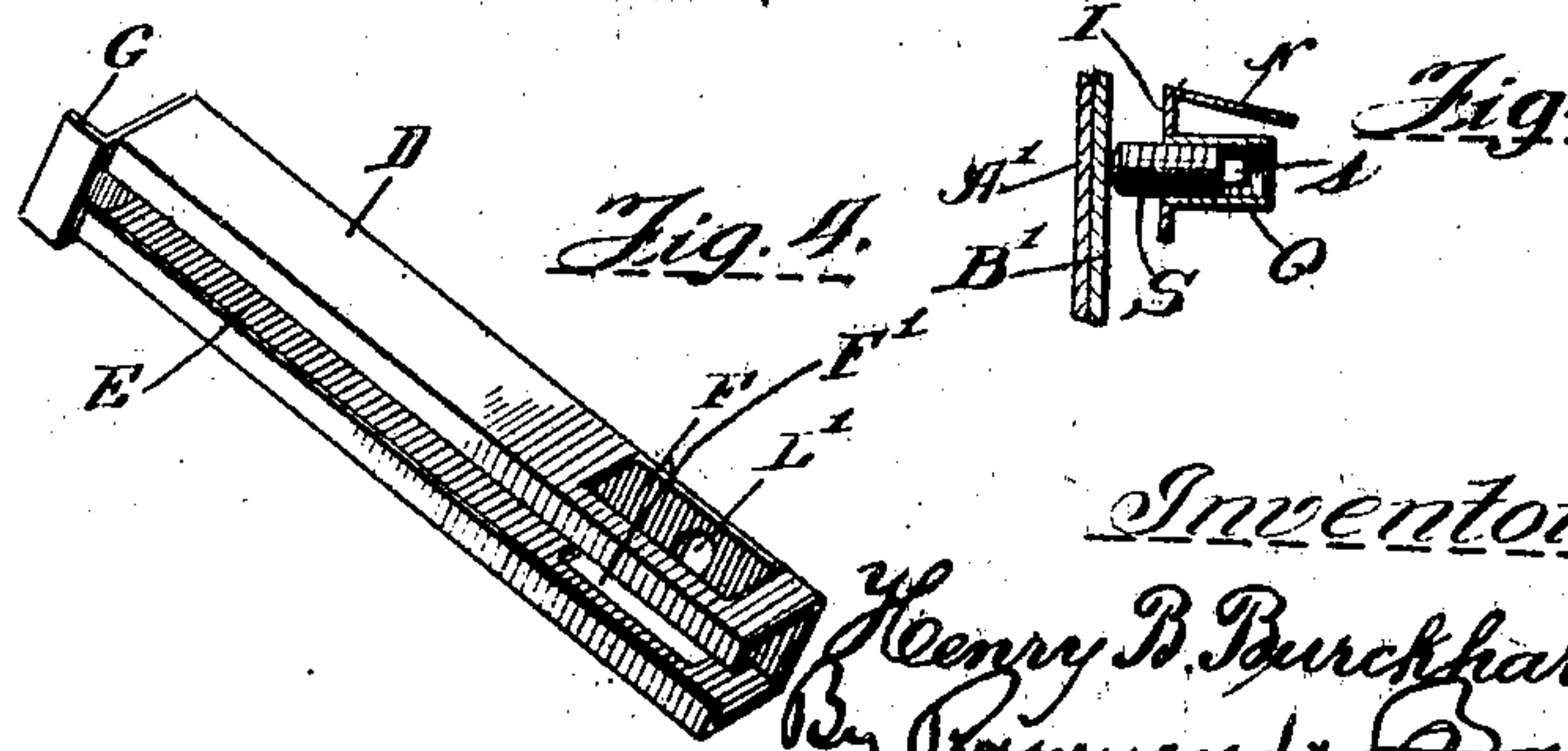
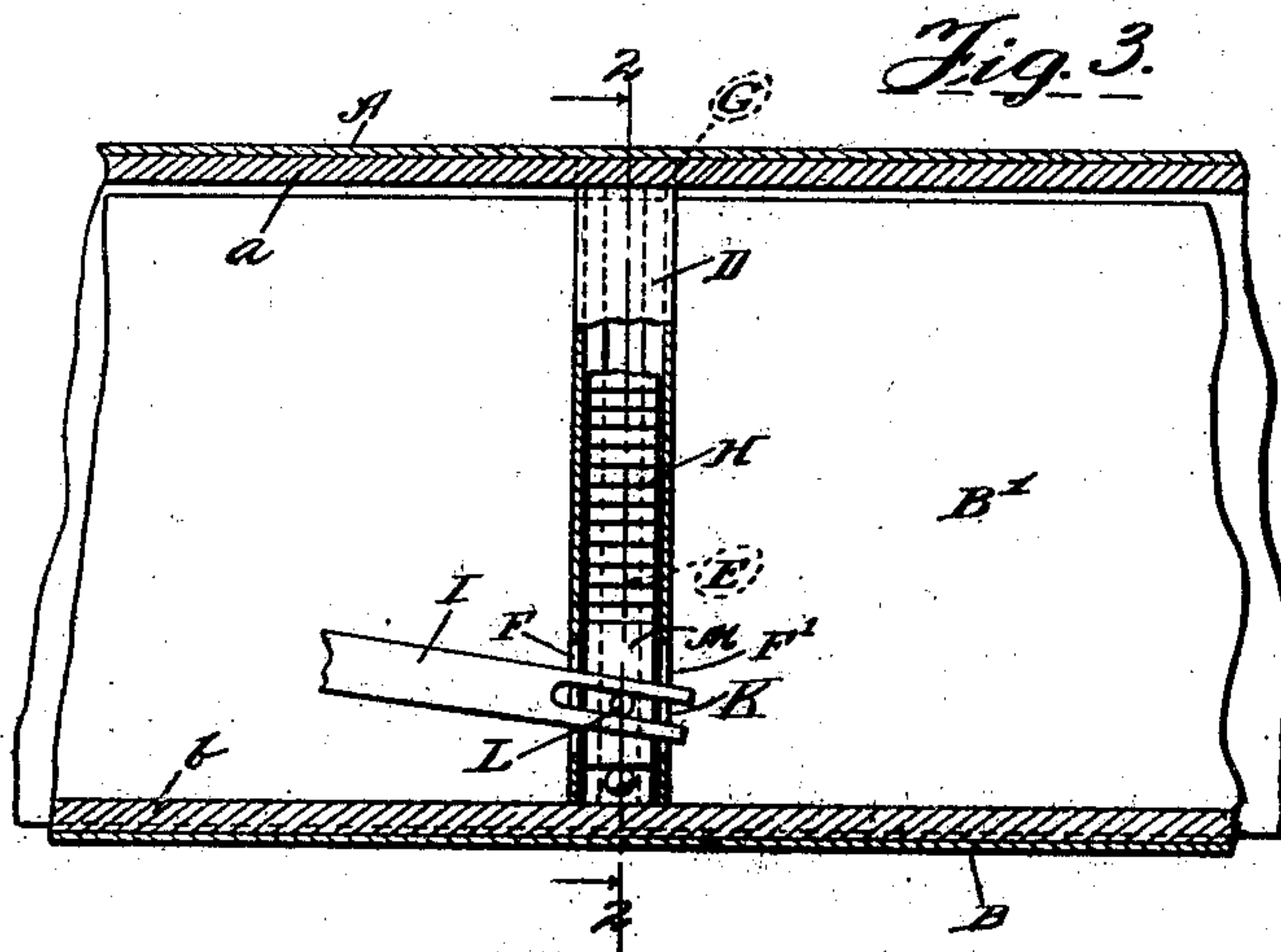
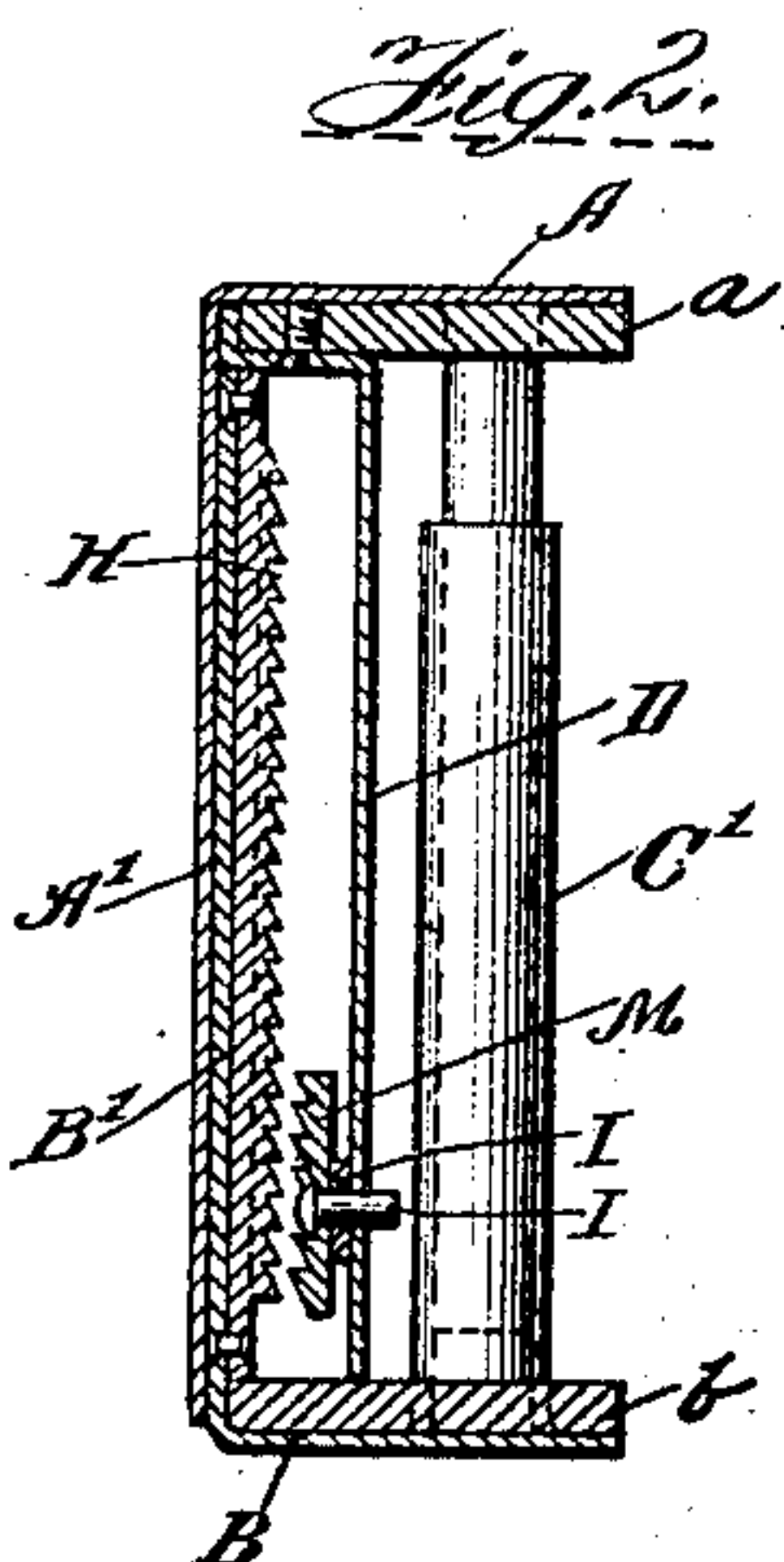
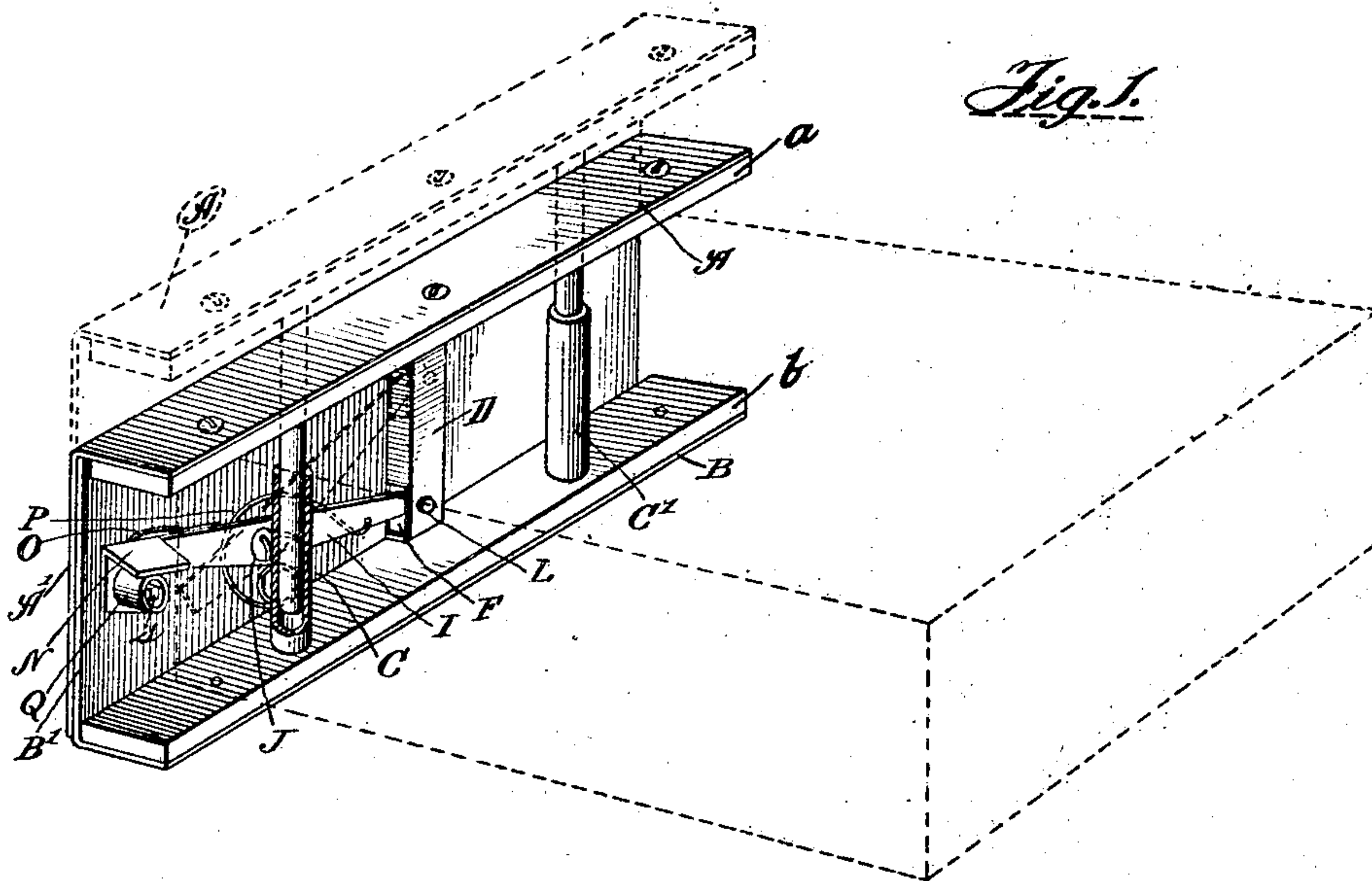


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No. 818,664.

PATENTED APR. 24, 1906.

H. B. BURCKHART.
LOOSE LEAF BINDER.
APPLICATION FILED APR. 24, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY B. BURKHART, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

No. 818,684.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed April 24, 1905. Serial No. 257,153.

To all whom it may concern:

Be it known that I, HENRY B. BURKHART, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in Loose-Leaf Binders, of which the following is a specification.

My invention relates to improvements in that class of loose-leaf binders in which the sheets are held between a pair of adjustable clamping members.

The object of my invention is to provide a binder that can be readily opened and closed by the exercise of a minimum of force on the part of the operator.

A further object is to provide a binder that can be readily locked and unlocked without the use of complicated mechanism.

These and such other objects as may hereinafter appear are attained by my device, one embodiment of which is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the binder, showing the sheets in dotted lines. Fig. 2 is a sectional view on the line 2-2 of Fig. 3 looking in the direction indicated by the arrows. Fig. 3 is a front elevation of a portion of the binder with the top of the carrier-box removed. Fig. 4 is a perspective view of the carrier-box, and Fig. 5 is a sectional view of the locking mechanism.

Like letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the upper and B the lower clamping plates or members, which are preferably provided with right-angled extensions A' B', which overlap and form the back of the binder. Reinforcement-strips c b are secured to the lower and upper side of the clamping members, the clamping members being provided with telescoping tubular posts C C'. Secured to the upper clamping member A is a carrier-box D. This box, as shown in Fig. 4, is slotted along its inner side at E and has openings F F' in its opposite sides. This box is secured at its top G to the upper clamping member and closely abuts the back B'. Secured to this back B' and sliding within the slot E in the carrier-box is a rack H.

I is a lever secured to the back in any suitable manner, as on a pivot J, secured to the back B'. This lever has at one end a slotted bearing K, extending through the openings

F F' in the carrier-box and engaging a pivot L, extending through an opening L' in the box. A ratchet-engaging bar M is slidably mounted within the box by means of the pivot L, engaging the slotted bearing K. The lever I terminates at its outer end in a thumb-rest N, preferably at an acute angle to the lever. It will be noted that at the end of the lever I the pivot L rests loosely within the slotted bearing K and as the upper member moves upwardly the pivot plays freely within the bearing K and the end of the lever moves within the opening F F'.

O is a plate-spring attached to the lever and bearing against the back B' of the binder.

P is a spring engaging the lever I, which is under greatest tension when the binder is closed.

Q is a locking mechanism seated on the end of the lever, comprising a hollow threaded cylinder or nut, within which is a screw-threaded bolt S, preferably provided with a square head s.

Referring now to the operation of my device, when the clamping members are in closed position, as shown in Fig. 1, the plate-spring O presses the teeth of the ratchet-bar M into engagement with the teeth of the rack H. When it is desired to raise the upper clamping member for the purpose of adding or removing sheets held therein, a pressure on the downwardly and laterally projecting thumb-rest or flange N on the outer arm of the lever I presses the lever against the plate-spring O and releases the ratchet-bar from engagement. Continuous pressure raises the upper member until it reaches the position shown in dotted lines in Fig. 1. The spring P is under greatest tension when the members are in closed position. Hence, it assists the operator in raising the upper member. When the pressure on the thumb-rest is removed, the spring O throws the ratchet M into engagement with the rack and prevents the further raising of the member. The required sheets can then be removed or added, and a slight pressure on the upper clamping member causes it to slip down until the sheets are again tightly clamped. The ratchet M prevents the upward movement of the upper clamping member and the consequent loosening of the sheets.

When it is desired to prevent the opening of the clamping members, a key similar to an ordinary clock-key is inserted in the top of

the cylinder or nut K, fitting the square head of the bolt S, and the bolt is then screwed against the back plate B', as shown in Fig. 5. Other forms of head may of course be used or other means adopted for screwing down the bolt S.

It is the intention that the contents of the binder should at no time extend beyond the thumb-rest, thus leaving the thumb-rest and the locking mechanism where they may be easily reached. This location of the thumb-rest adjacent to the ends of the back facilitates its operation. So, also, the use of the lever makes it possible to operate the bulkiest of books with very little effort.

When my device is to be used in connection with large or heavy books, I may, if desired, use two of my devices opening from the top and bottom of the back.

While I have illustrated a specific embodiment of my invention, it is evident that other forms are possible and that the relative positions of the various parts may be varied without departing from the spirit of my invention.

I claim—

1. In a loose-leaf binder, the combination with two complementary vertically-movable sections, of means for locking and unlocking said sections, said means comprising ratchet connections mounted upon said sections, a lever operatively mounted upon one of said sections and having an operative slidable engagement with said ratchet connections, and a spring located between said lever and the back of one of said vertically-movable sections so as to normally hold said ratchet connections in engagement with each other.

2. In a loose-leaf binder, the combination with two complementary vertically-movable sections, of means for locking and unlocking said sections, said means comprising complementary ratchet connections mounted upon said sections respectively, a lever pivotally mounted upon one of said sections and slidably connected with the ratchet connection upon the other of said sections, and a spring located between the outer arm of said lever and the back of the section upon which said lever is pivotally mounted.

3. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a carrier-box secured to one of said sections, a lever adapted to engage said carrier-box, a ratchet within said box slidably mounted upon said lever, and a ratchet secured to the other section and arranged to engage said first-named ratchet.

4. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, means for controlling the movement

of said sections, said means comprising a slotted carrier-box secured to one of said sections, a lever adapted to engage said carrier-box, an engaging ratchet within said box slidably mounted upon said lever, and a rack secured to the other section and adapted to operate within the slot in said box to engage said ratchet.

5. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, coengaging ratchet connections secured to the sections, and a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer end of said lever terminating in a downwardly and laterally projecting flange.

6. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, ratchet connections secured to the sections, a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer arm of said lever terminating in a downwardly and laterally projecting flange, and a spring carried by said lever.

7. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, ratchet connections secured to the sections, a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer arm of said lever terminating in a downwardly and laterally projecting flange, and a spring carried by said lever and under greatest tension when said sections are in closed position.

8. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, ratchet connections secured to the sections, a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer arm of said lever terminating in a downwardly and laterally projecting flange, and a spring seated on the inner side of said lever and adapted to hold the above-mentioned ratchet connections in engagement.

9. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means.

10. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever

for locking said controlling means comprising a threaded cylinder and a screw-bolt adapted to engage therewith.

11. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means, comprising a threaded cylinder and a screw-bolt having an angular head adapted to engage therewith.

12. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means, comprising a threaded cylinder and a screw-bolt having an angular head and adapted to be brought into contact with the back of one of said sections.

13. In a binder, the combination with two complementary sections movable vertically, of a slotted carrier-box attached to the upper member and carrying an engaging ratchet adapted to engage a rack secured to the lower member; a lever pivotally secured to the lower member, one arm of said lever entering said carrier-box and engaging said engaging ratchet, the other arm of said lever being provided with a downwardly and laterally projecting flange, a spring arranged to engage said lever so as to be under greatest tension when the binder is closed, a plate-spring interposed between said lever and the back of said bottom section, and a locking mechanism mounted upon said lever.

14. The combination with two clamping members, of coengaging guiding means upon said members, a ratchet carried by one of said members, a lever arranged to rock vertically and laterally upon the other of said

members, a pawl operatively connected with one arm of said lever, and a spring engaging said lever so as to normally hold said pawl in engagement with said ratchet.

15. The combination with two clamping members, of coengaging guiding means upon said members, complementary ratchets carried by said members, and a lever having one arm in operative engagement with one of said ratchets, said lever being pivotally mounted upon the clamping member carrying the other of said ratchets, constructed and arranged so that the depression of the other arm of said lever will move the lever-arm in engagement with said ratchet laterally so as to disengage said ratchets from each other and vertically so as to move said clamping members out of clamping position, and a spring engaging said lever so as to normally hold said ratchets in engagement with each other.

16. A loose-leaf binder comprising two vertically-movable complementary sections, means for locking and unlocking said sections, said means comprising complementary coengaging ratchet connections mounted upon said sections respectively, and a lever operatively mounted upon one of said sections and having its inner arm in operative engagement with the ratchet connection upon the other of said sections, a spring arranged to normally hold said ratchet connections in engagement with each other, and a laterally and downwardly projecting flange upon the outer end of said lever, all constructed and arranged so that a downward pressure upon said flange will throw said ratchet connections out of engagement and will carry said complementary sections apart from each other.

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