

No. 677,256.

Patented June 25, 1901.

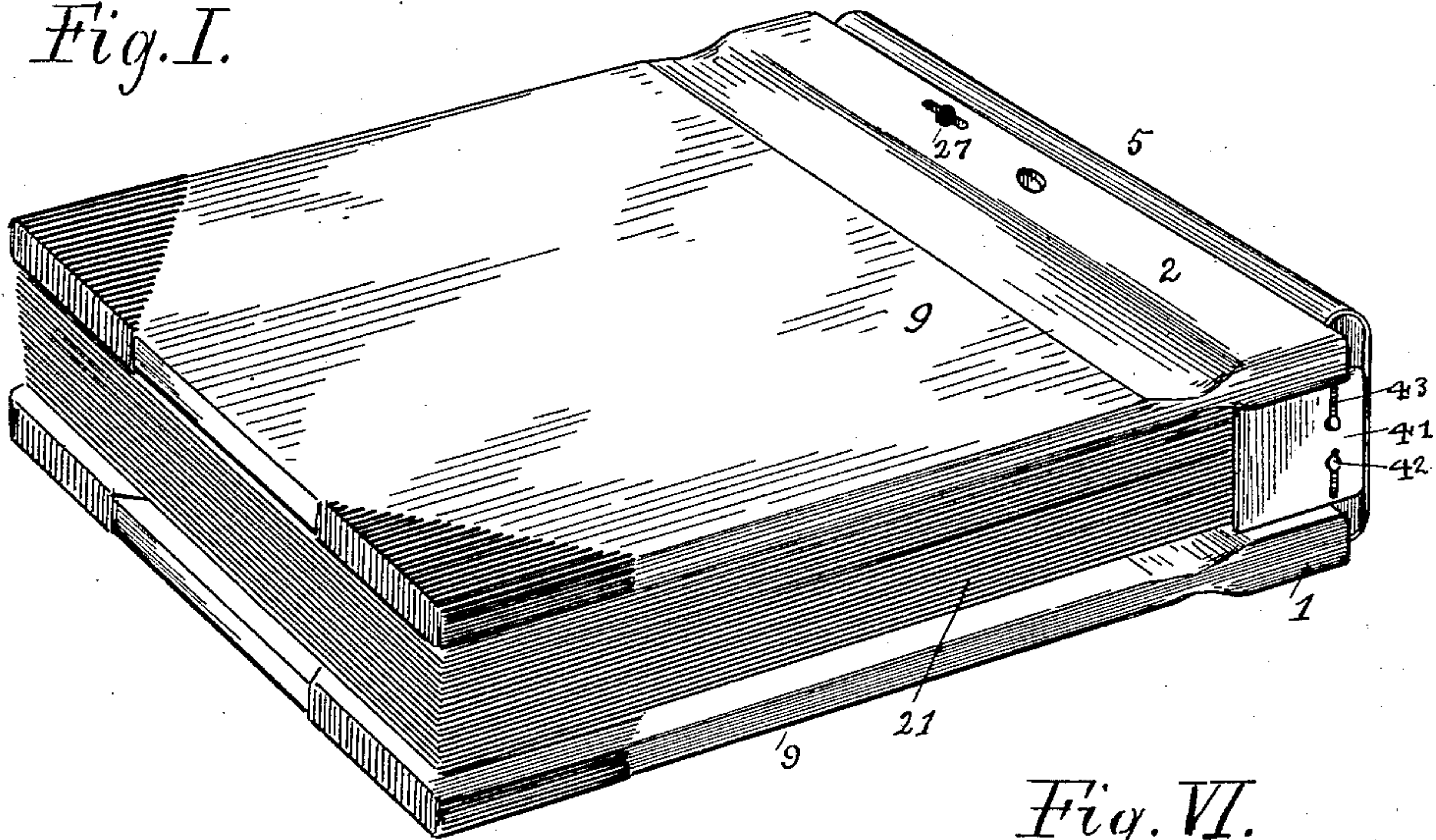
E. L. McCLURE.  
LOOSE LEAF LEDGER.

(Application filed May 4, 1899.)

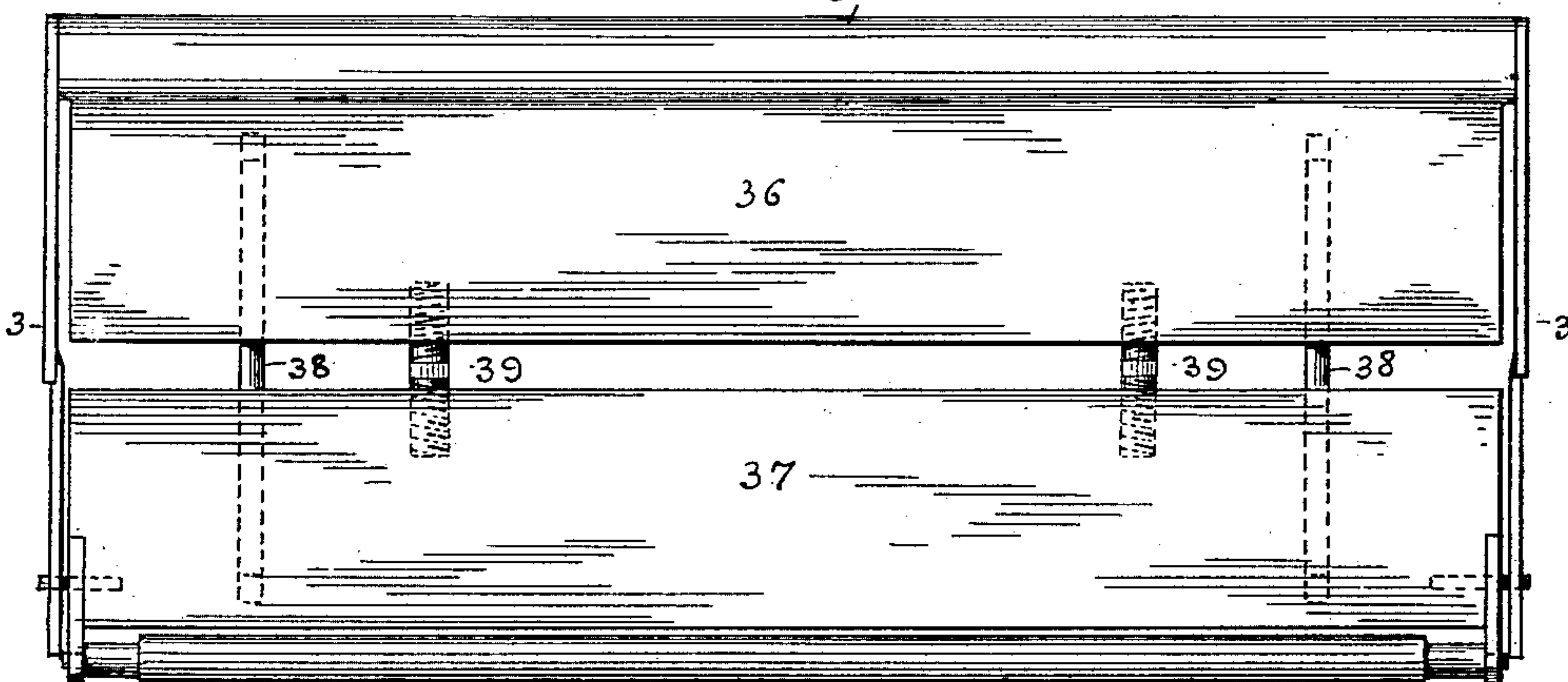
(No Model.)

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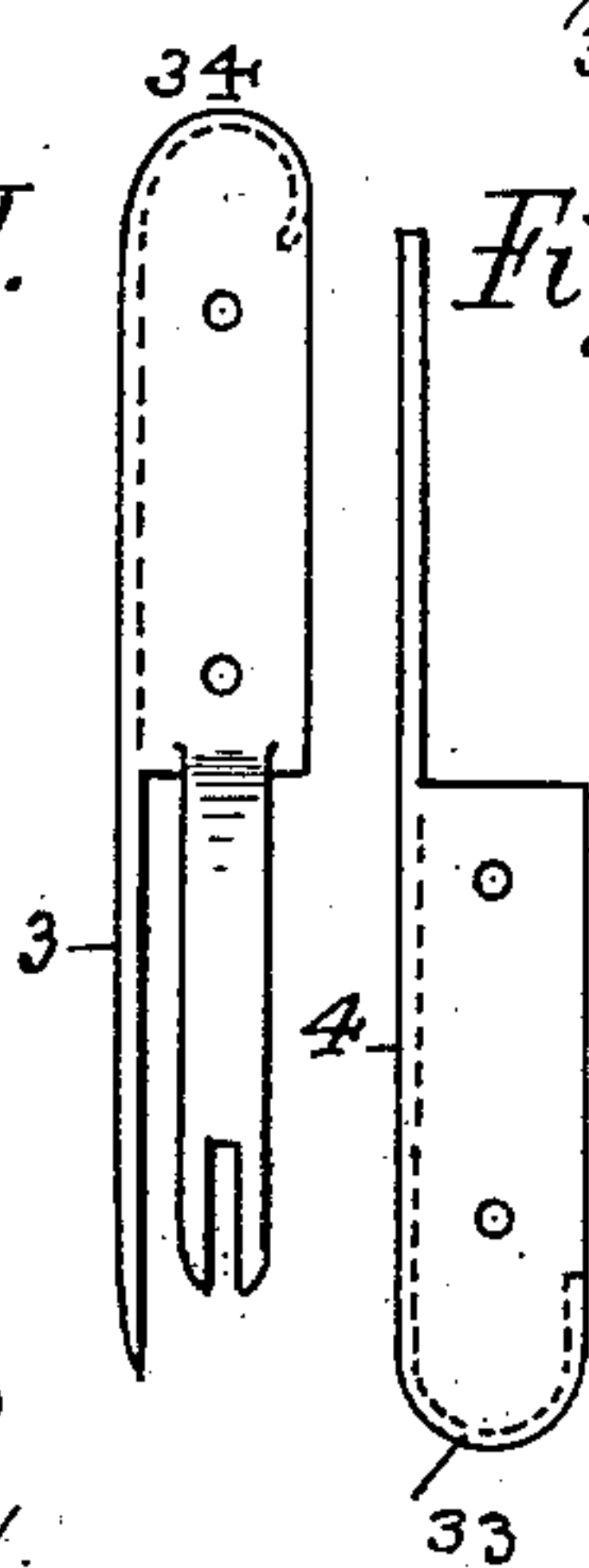
*Fig. I.*



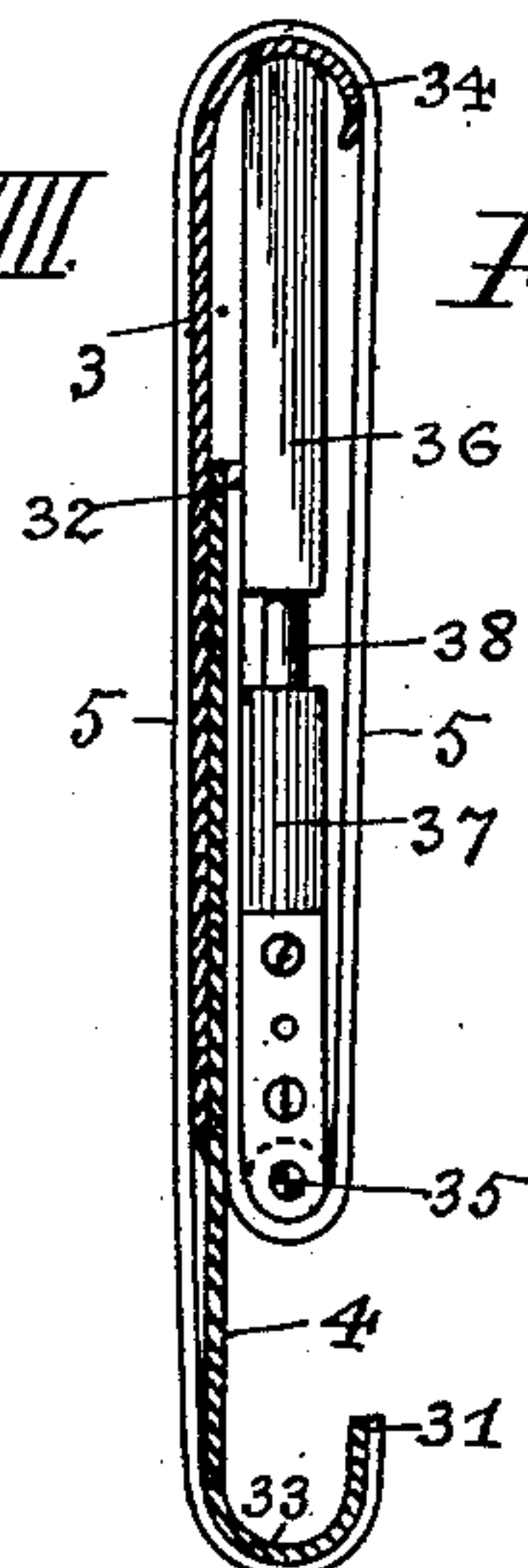
*Fig. VI.*



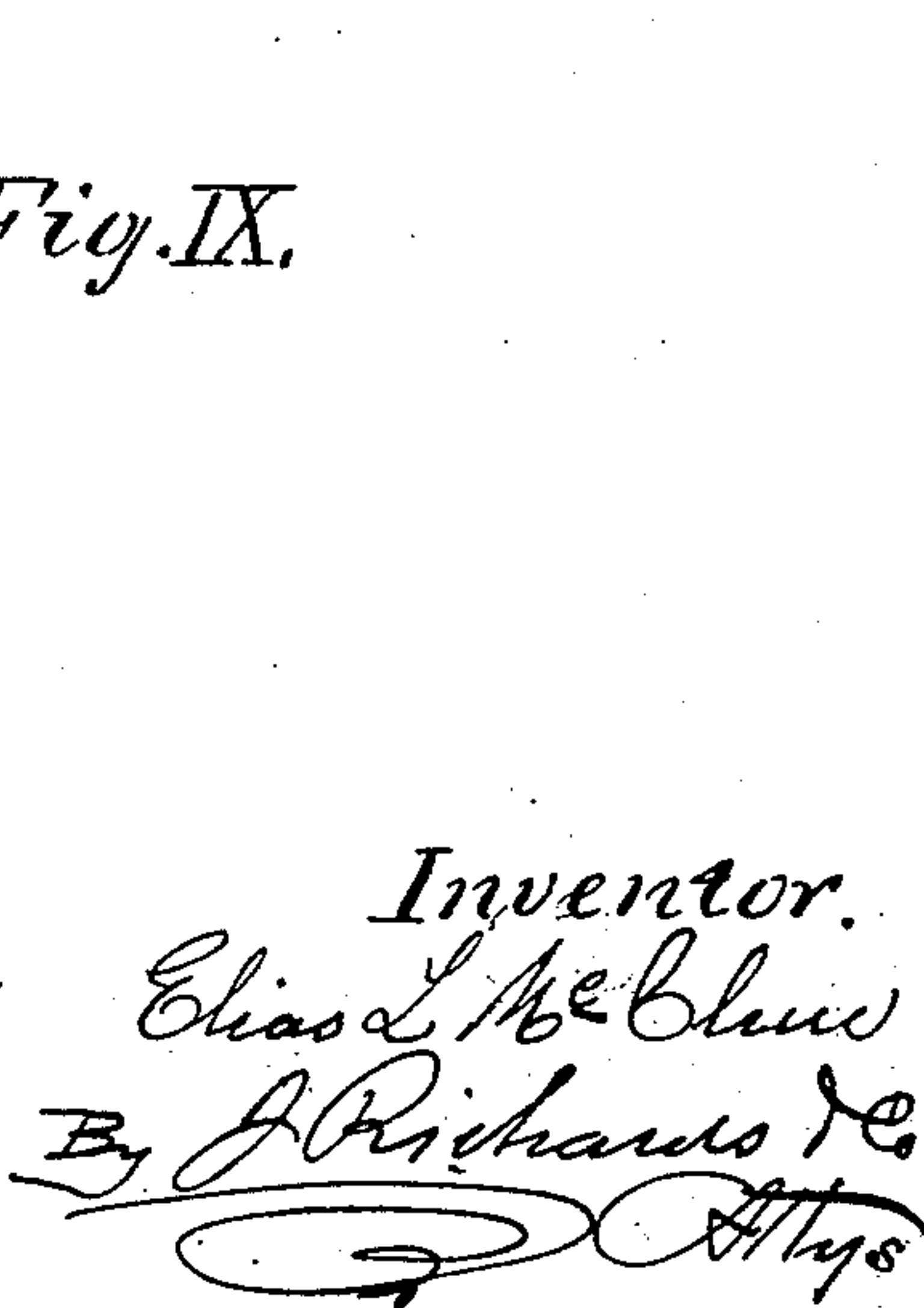
*Fig. VII.*



*Fig. VIII.*



*Fig. IX.*



Witnesses.

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No. 677,256.

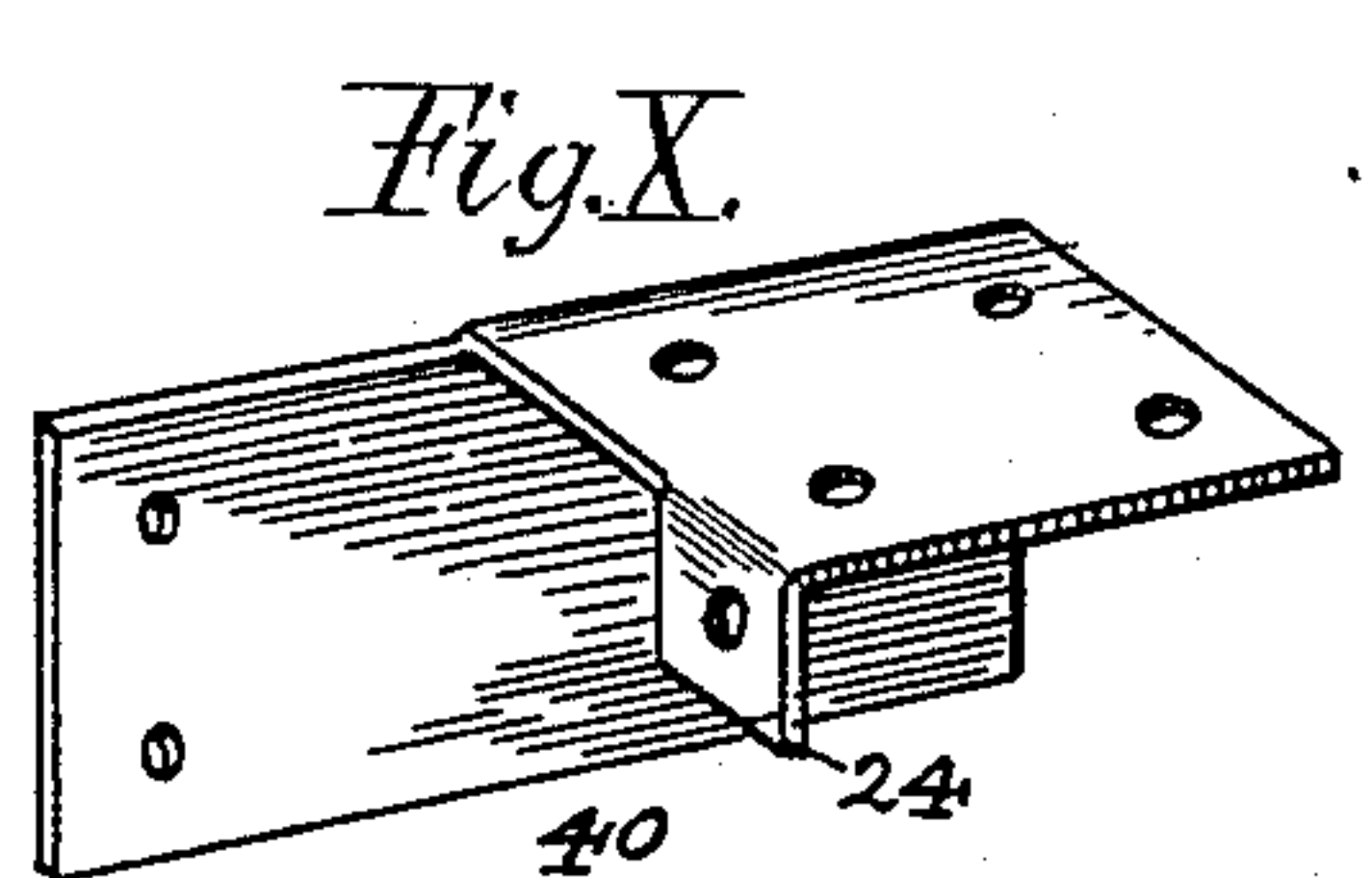
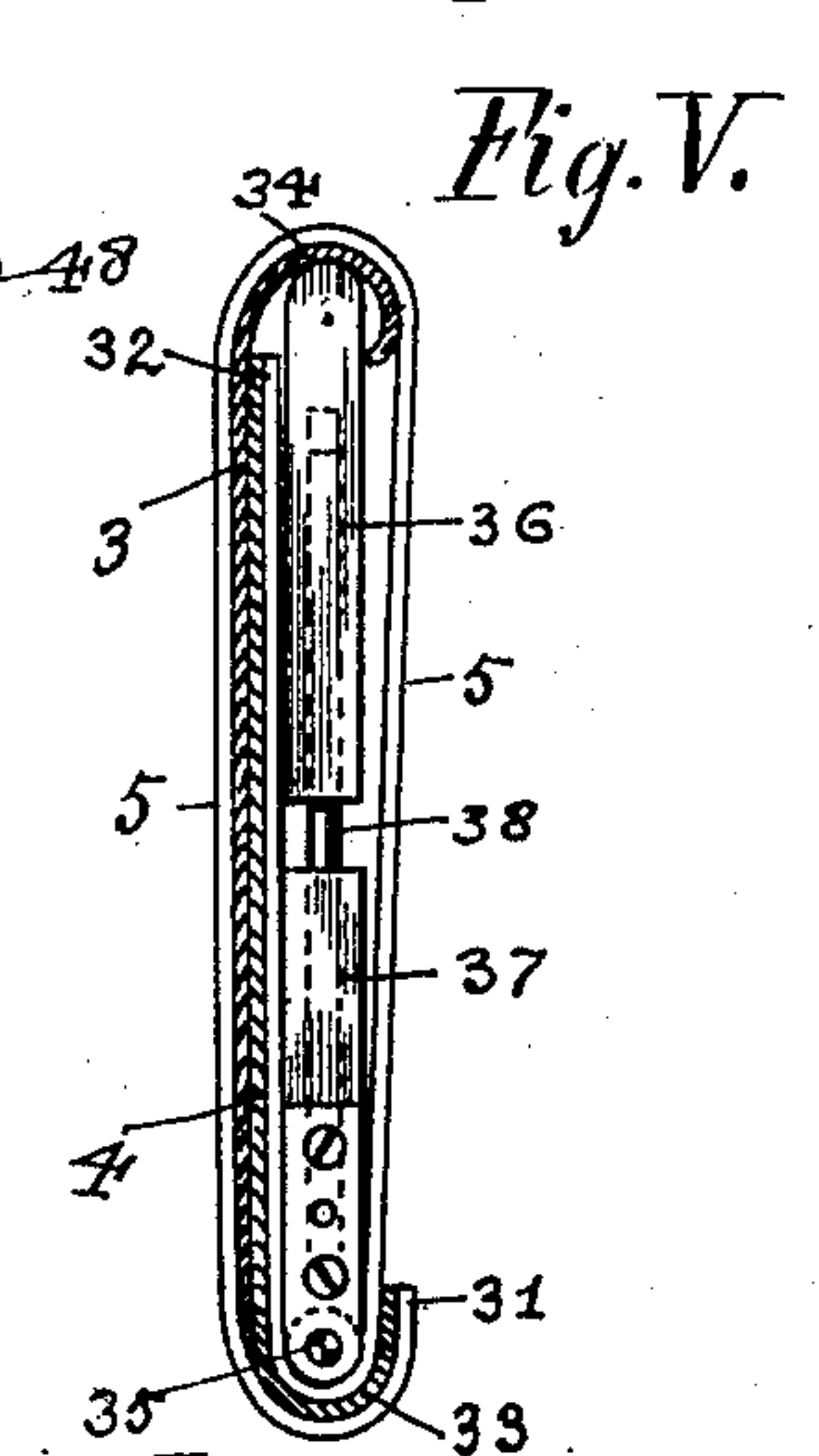
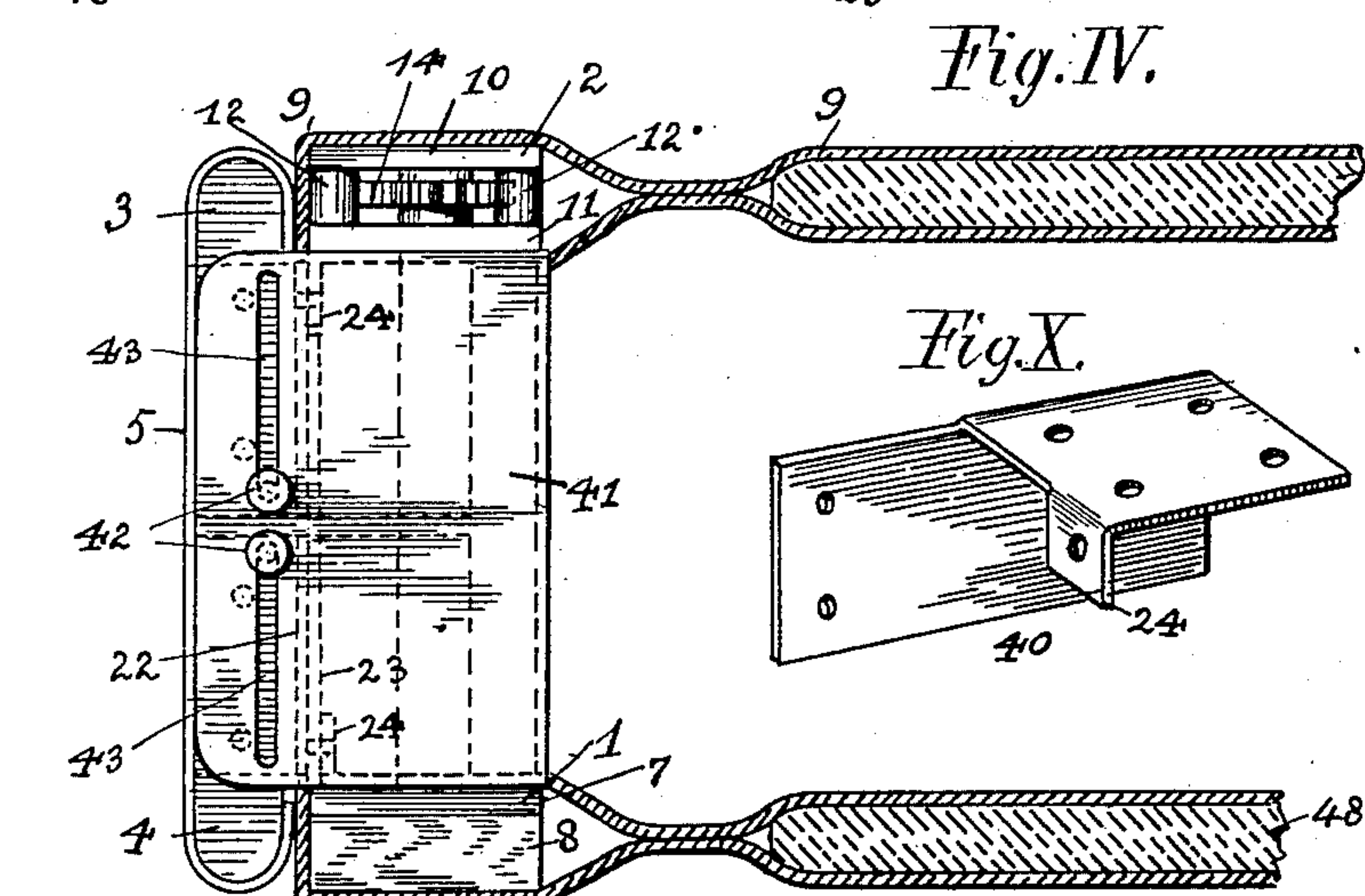
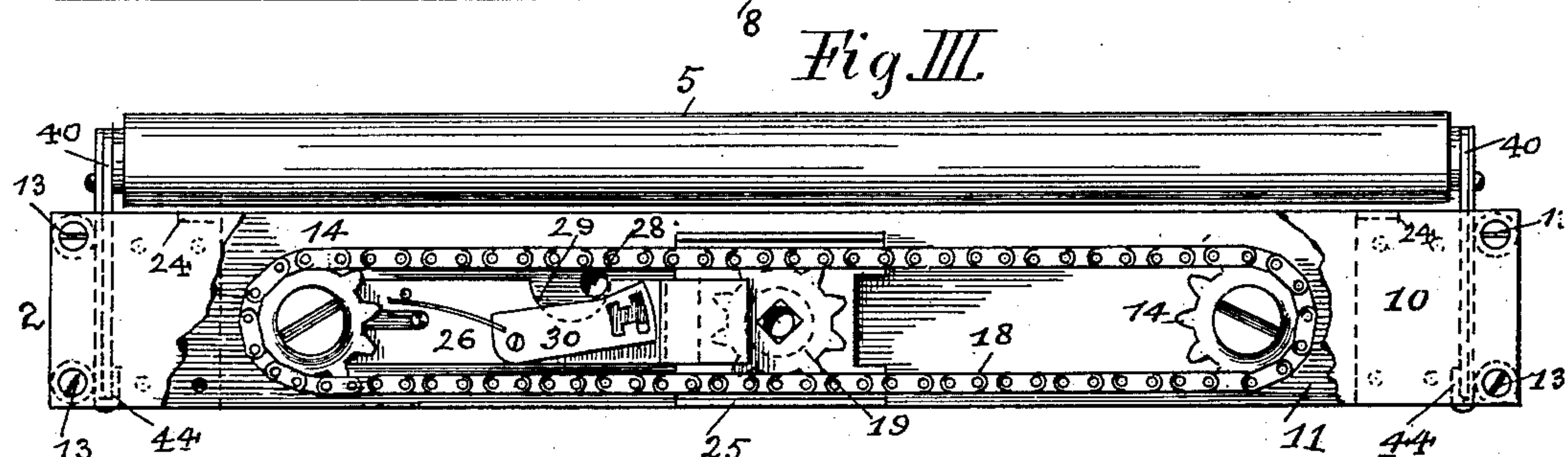
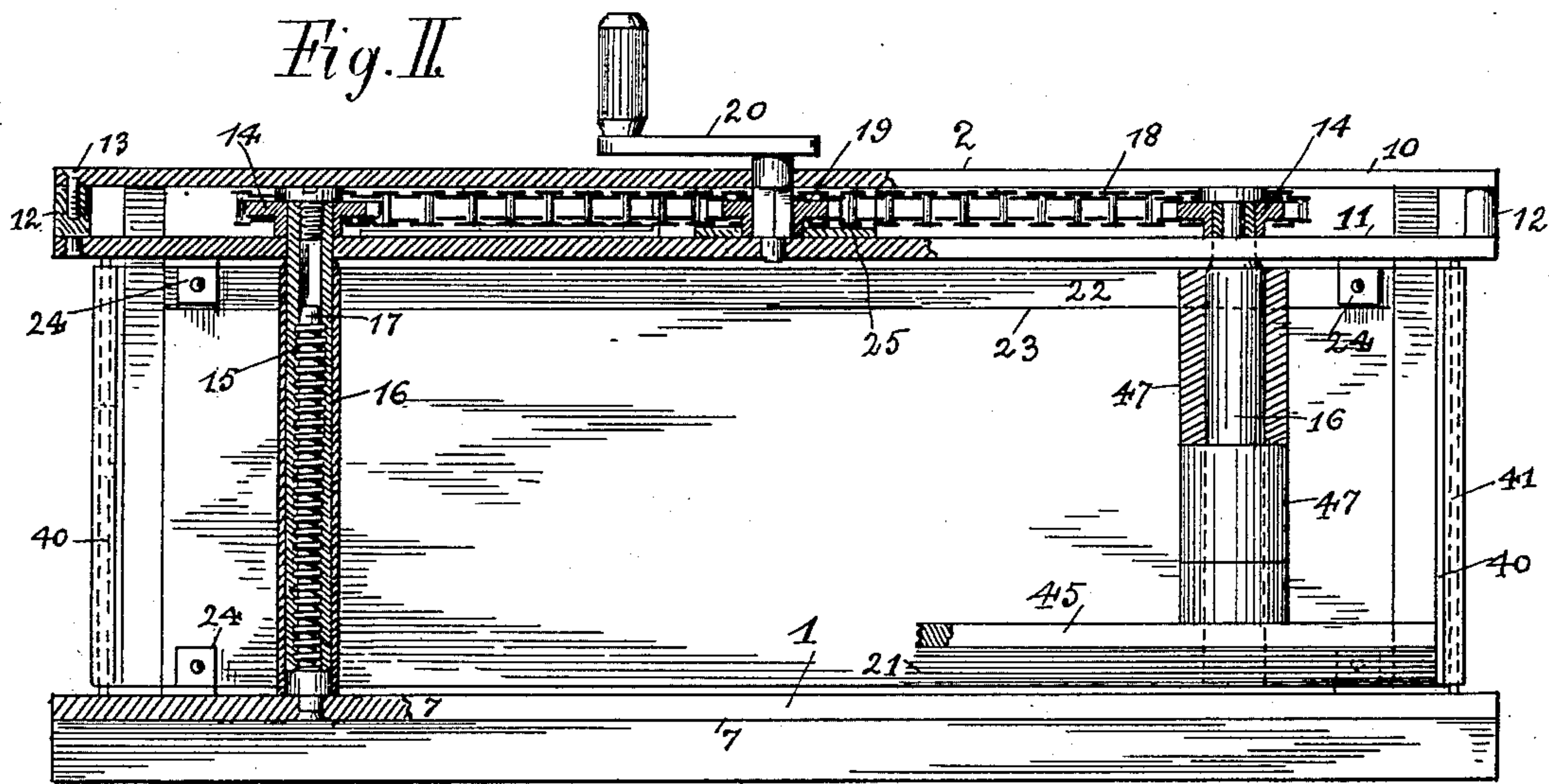
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(Application filed May 4, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ELIAS L. McCLURE, OF SAN FRANCISCO, CALIFORNIA.

## LOOSE-LEAF LEDGER.

SPECIFICATION forming part of Letters Patent No. 677,256, dated June 25, 1901.

Application filed May 4, 1899. Serial No. 715,525. (No model.)

*To all whom it may concern:*

Be it known that I, ELIAS L. McCLURE, a citizen of the United States, residing at San Francisco, county of San Francisco, and State of California, have invented certain new and useful Improvements in Loose-Leaf Ledgers; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to what are called "loose-leaf" ledgers adapted for filing and securing a variable quantity of summarized leaves or sheets of accounts and to certain improvements therein.

My improvements consist in a novel mechanism for expanding and closing the main binding-bars and locking the same, in an extensible back-covering that preserves its form symmetrically as the covers and main binding-bars are adjusted to receive a greater or less quantity of leaves, and in other features hereinafter explained, and illustrated in the drawings herewith and forming a part of this specification.

Referring to the drawings, Figure I represents in perspective a loose-leaf ledger made according to my invention. Fig. II is an elevation, partially in section, of the main binding-frame with the contents and covers removed. Fig. III is a plan view of Fig. II with the top covering-plate broken away. Fig. IV is an end view of the ledger with the contents removed and the covers partially broken away. Fig. V is a section through the extensible back-covering and the parts to which this covering is attached, the binding-frame being closed. Fig. VI is a side view of the stretcher-frame that maintains tension of the extensible back-covering. Fig. VII is an end view of one of the back-plates over which the extensible back-cover fits and by which it is supported. Fig. VIII is an end view of the other back-plate matching Fig. VII. Fig. IX is a cross-section through the expansible back-cover when extended, the plates on which it is held, and stretching device to maintain uniform tension of the flexible band. Fig. X is a view in perspective of one of the plates connecting the main binding-bars and the back-plates.

The principal members of the structure in-

clude a bottom main bar 1, a top main bar 2, means to expand or adjust the latter parallel to the bottom bar 1, the back-plates 3 and 4, and the flexible and extensible back-cover 5, and the flat binding or covers 9.

The lower main bar 1 is composed of a metal bar 7, reinforced by a bar 8, of wood or other suitable material, to give it stability and like depth with the top bar 2, to present a symmetrical appearance, also to receive a similar cover-binding 9.

The movable top bar 2 is composed of two plates 10 and 11, joined at the end by the blocks 12 and screws 13, the chamber or space between these plates being occupied by the sprocket-wheels 14, a chain connecting these, and a locking device hereinafter described.

The top bar 2 is raised by means of the revolving screw-threaded tubes 15, incased in the tubes 16 and fitting on the fixed screws 17, that are fastened in the bottom plate 7. The screw-threaded tubes 15 are turned by the sprocket-wheels 14 and these in turn by the pitch-chain 18, driven by a central sprocket-wheel 19, and a key 20, that fits therein, as seen in Fig. VII. The tubes 15 and 16 act as register-pins for the leaves, that are provided with accurately-punched holes accordingly, the whole presenting an appearance as in Fig. I when the ledger is filled and in use.

Behind the leaves 21 and covering the mechanism are the back-plates 22 23, attached to the bars 7 and 11 by the lugs 24 on the plates 40, as seen in Fig. II and indicated by dotted lines in Fig. IV. The sprocket-wheel 19 engages at both sides in the bight of the pitch-chain 18, is held in position by a plate 25, and has a squared hole to receive the key 20. To lock the ledger and secure the leaves 21, I provide a sliding bar 26, moved by a key inserted at 27, which fits on the post 28 and sweeps in the curve 29, as seen in Fig. III. This bar 26 when moved forward covers and obscures the holes in the sprocket-wheel 19 and prevents the key 20 from being inserted. To render this locking device secure, one or more tumblers 30 are provided in the usual manner. This describes the manner of raising the top clamping-bar 2 from its closed or lowest position, as seen in Figs. II and IV, so as to receive a larger number of leaves 21, also to clamp or bind the leaves so the whole



will be firmly held, as in the case of a common bound book.

Referring now to the flexible and extensible back-covering 5 and the sliding plates 3 and 4, and especially to Figs. V and IX, this cover 5 is attached to the lower plate 4 at 31 and at 32, the bight passing from 31 around the curved end 33 of this plate, then upward and over the curved edge 34 of the plate 3, then downward and around the roller 35, and upward again to the upper edge of the plate 4, where it is fastened at 32. The roller 35 is supported on a stretcher-frame composed of the two bars 36 and 37, joined and guided by the dowel-pins 38 and expanded by the screws 39, as seen in Fig. VI, the top edge abutting in the curved top 34 of the plate 3, so as to compensate in case the leather cover 5 should stretch by tension and use.

The plates 3 and 4 are attached to the bars 1 and 2 by the angular plates 40, (shown in Fig. X,) the lugs 24 being bent from the horizontal portion of these plates, as indicated in said Fig. X. These members 40 are, as shown, simply bent metallic plates to connect and hold the several parts together, as described. They may be made in any form suitable for the purpose, as the particular form shown is not essential to function.

If the bar 2 is raised or lowered or the ledger is expanded or closed, it will be seen that the flexible back-covering 5 slides over the curved top 34 of the plate 3 and passes around the roller 35, maintaining a uniform tension at all points, presenting a smooth and symmetrical appearance, and is supported by the plates 3 and 4 on the inside, so the whole has the characteristics of a common bound account-book.

The stretcher-frame that supports the roller 35, or a smooth bar which can be substituted for the latter, bears at the top within the curved portion of the plate 3, acting as a strut, and moves with this plate, taking up or compensating in the bight of the flexible back-covering 5, as before explained.

When the top bar 2 is raised or the ledger is expanded, as indicated in Fig. IX, the connecting members 40 are separated, exposing the interior of the back between these plates. To cover such aperture I provide the end plates 41, held at their outer ends by the screws 42, that slide in the slots 43, and at their inner ends by being bent around the plates 40, as shown by dotted lines at 44 in Fig. III, thus incasing the whole of the operative mechanism and securing it against dust or injury.

It will be understood that while two of the screws 17 and register-tubes 15 and 16 are described a center one can be added, so as to fasten the leaves 21 at three points.

The main bars 1 and 2 and the mechanism to adjust the same I employ for holding and securing vouchers or papers of any kind. In that case I provide an intermediate bar 45, and in case the papers are few, or less than

will fill the frame, the space is made up with distance-collars 47, preferably in sections of variable length to fill out between the bars 11 and 45, as shown in Fig. II. This latter-named use of my invention is described as a useful adaptation thereof and to show how the same devices will provide for transferring, temporary, and permanent filing.

The lids or main covers 9 are of the usual construction, covered with leather that is lapped around the bars 1 and 2, as shown in Fig. IV, and stiffened with boards 48. The leaves 21 are perforated and slotted, so as to fit over the register-shells 15 and 16, the same as set forth in my application for Letters Patent on loose-leaf ledgers, Serial No. 689,341, filed August 23, 1898.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a loose-leaf ledger, the combination of a fixed back-plate, a movable back-plate sliding upon said fixed back-plate, both having curved edges, means for moving said movable plate relatively to the said fixed back-plate, a flexible covering attached at its ends to the ends of the fixed back-plate, passing around both back-plates, and means whereby it is maintained in uniform tension as the movable plate is moved relatively to the fixed plate, substantially as specified.

2. In a loose-leaf ledger, the combination of a fixed back-plate, a movable back-plate sliding upon said fixed back-plate, both having curved edges, means for moving said movable plate relatively to the fixed back-plate, a flexible back-covering attached at its ends to the ends of said fixed back-plate, passing around both back-plates, means whereby it is maintained in uniform tension as the movable plate is moved relatively to the fixed plate, and means for readjusting the tension of said back-covering in case of change of tension by stretching or shrinkage, substantially as specified.

3. In a loose-leaf ledger, the combination of the top and bottom bars 2, 1, means to separate and approximate said bars while held parallel, back-plate 3 curved at top, back-plate 4 curved at bottom, said back-plates overlapping in the middle, and flexible back-covering 5, surrounding said back-plates, substantially as specified.

4. In a loose-leaf ledger, the combination of the binding-bars 1, 2, overlapping back-plates 3, 4, said plate 3 attached to and moving with top binding-bar 2, curved extension 34 on plate 3, roller 35, and flexible back-covering 5, its ends attached to back-plate 4, surrounding back-plate 3, and passing over curved extension 34 and roller 35, substantially as specified.

5. In a loose-leaf ledger, the combination of overlapping back-plates 3, 4, having curved edges, roller 35, flexible covering 5, attached to one of said plates and sliding over the curved edge of the other and over roller 35,



and means for adjusting said roller 35 and thereby regulating the tension of said flexible back-covering, substantially as specified.

5 6. In a loose-leaf ledger, the combination of overlapping plates 3, 4, having curved edges, flexible back-covering 5, attached to plate 4, sliding around plate 3, an adjustable tension device enwrapped by said back-covering, guard-plates 22, 23, and means for  
10 holding and operating said guard-plates, substantially as specified.

7. In a loose-leaf ledger, the combination of the top and bottom bars 2, 1, fixed screws 17, screw-threaded tubes 15, sprocket-gears  
15 14, chain 18, connecting and producing coin-

cident operation in said gears and screw-threaded tubes, overlapping plates 3, 4, having curved edges, a flexible back-covering 5, surrounding said plates 3, 4, and means for  
20 maintaining said covering in a uniform tension as the ledger is expanded or contracted by the operation of said screw-threaded tubes, substantially as specified.

These features I believe to be novel and useful and ask that Letters Patent be granted  
25 therefor.

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Witnesses:

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