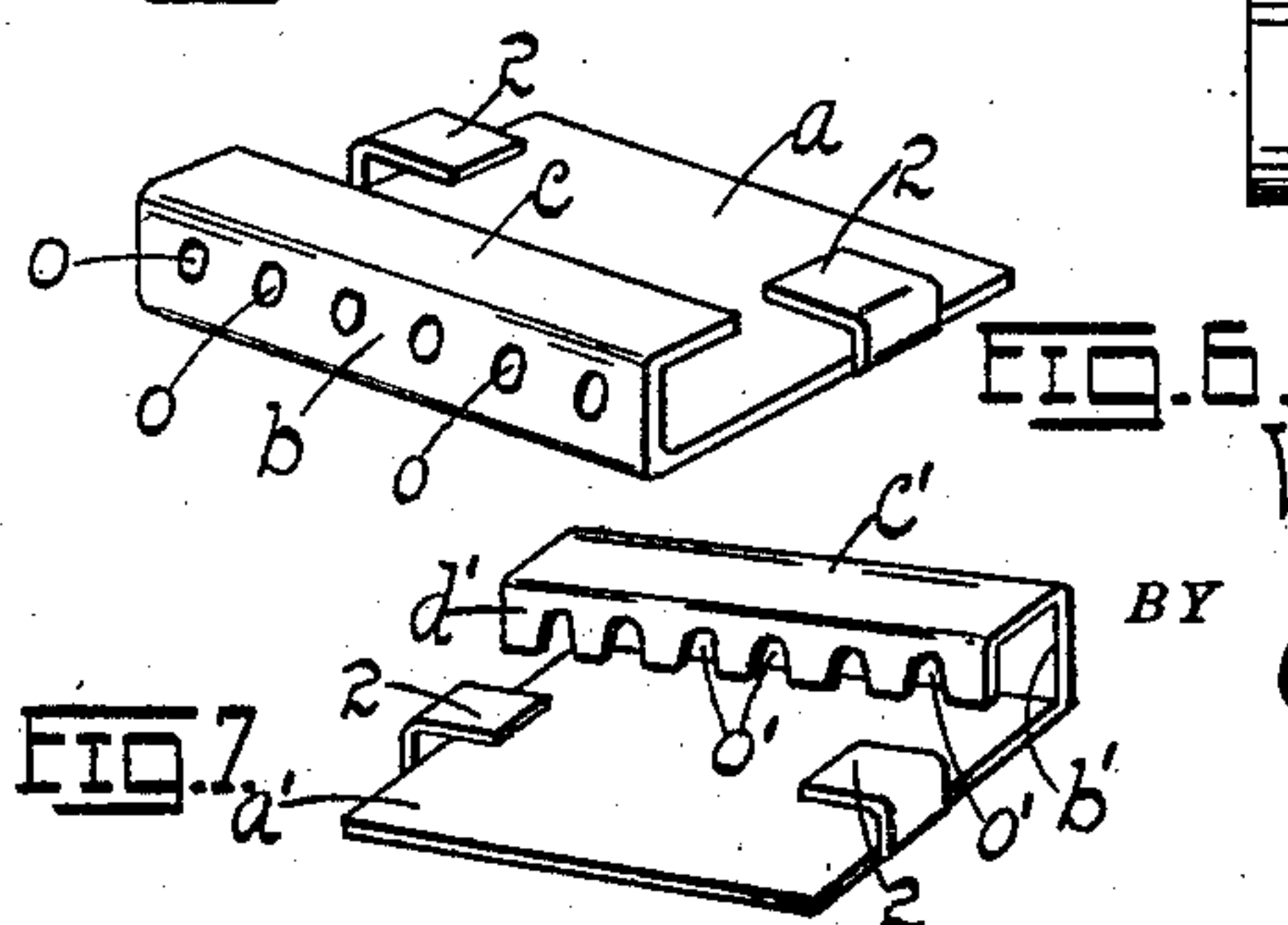
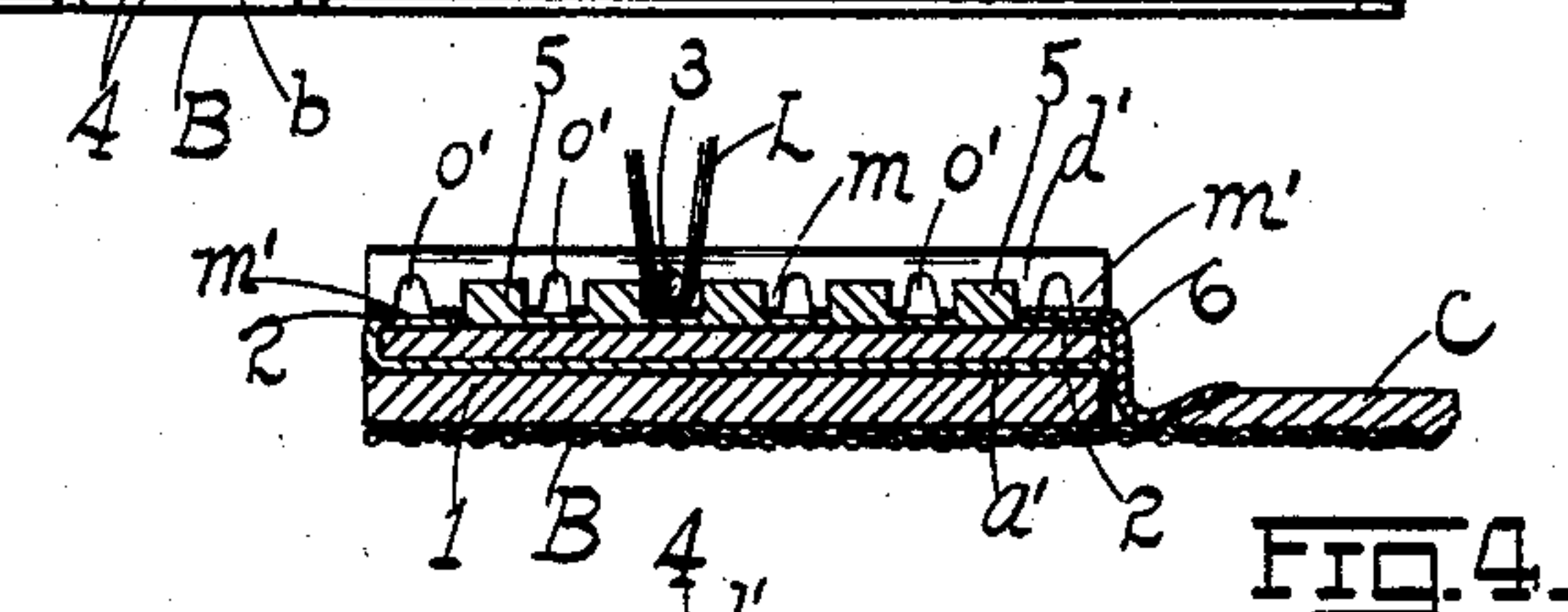
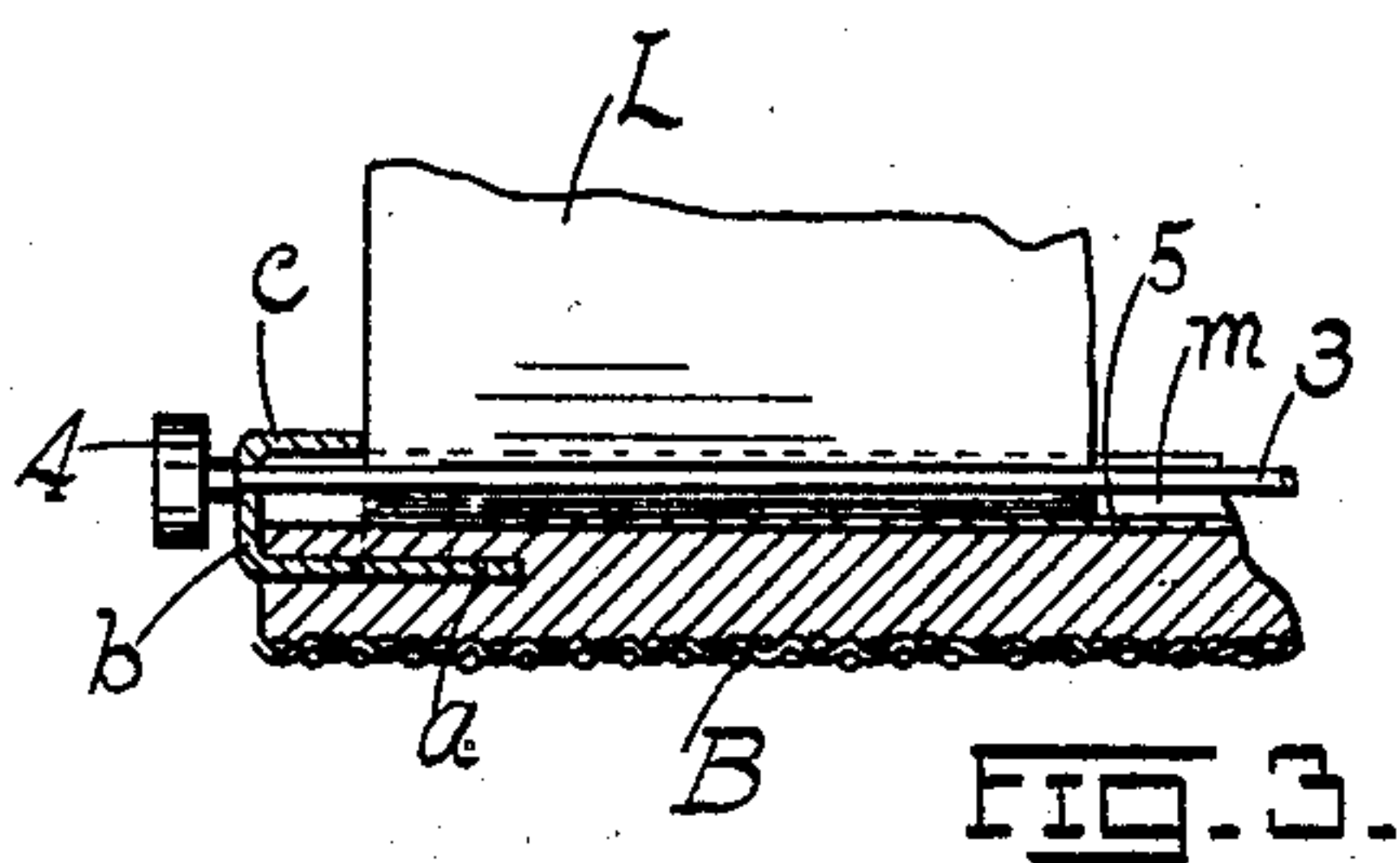
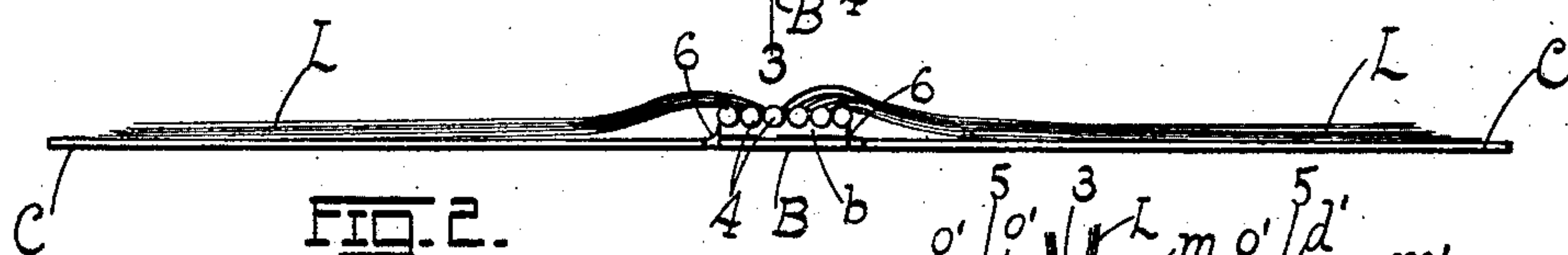
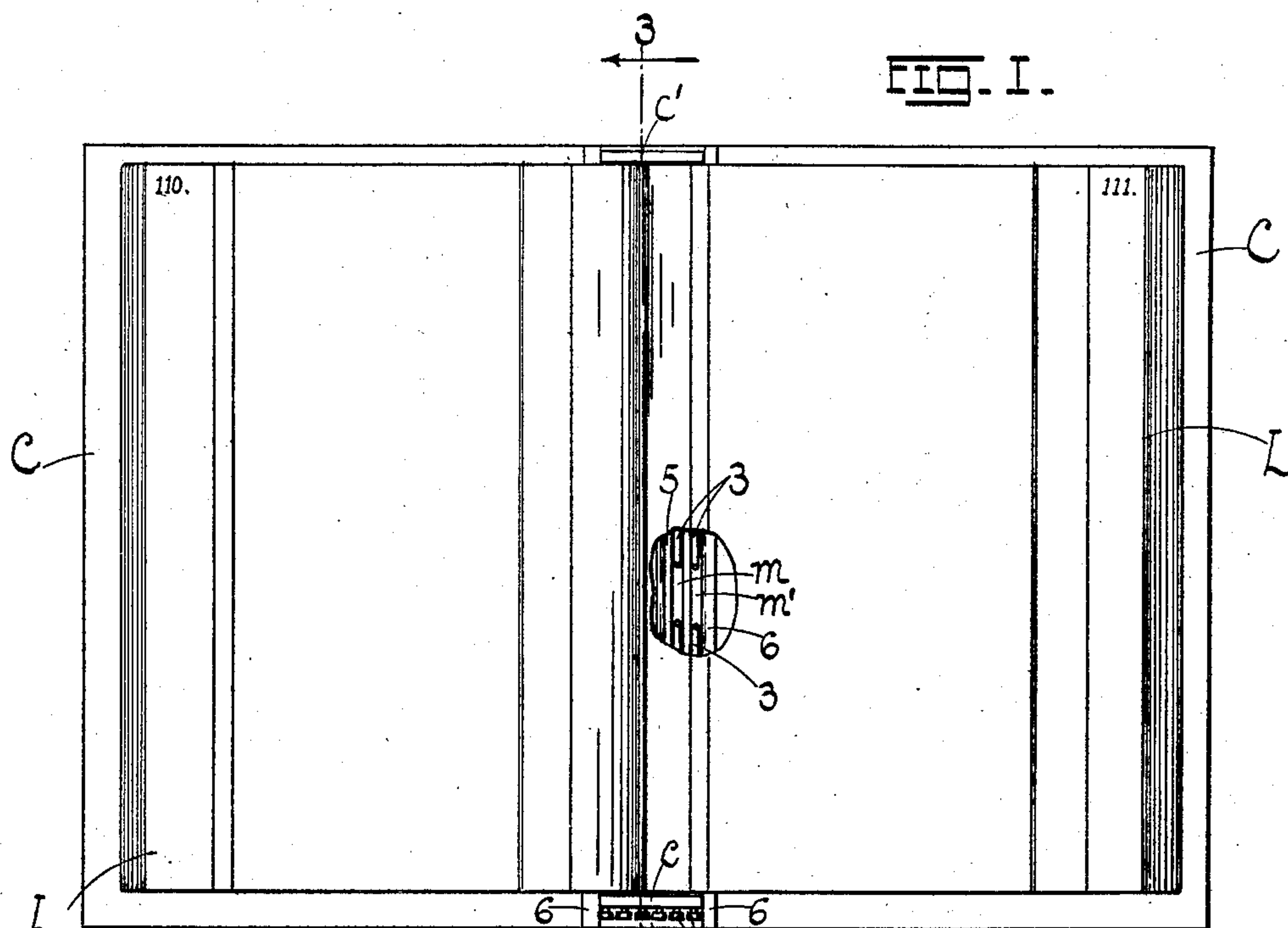


W. H. INGRAHAM.  
 LOOSE LEAF INVOICE AND SIMILAR BOOK.  
 APPLICATION FILED APR. 9, 1910.

966,098.

Patented Aug. 2, 1910.



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# UNITED STATES PATENT OFFICE.

WILLIAM H. INGRAHAM, OF ST. LOUIS, MISSOURI.

LOOSE-LEAF INVOICE AND SIMILAR BOOK.

966,098.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed April 9, 1910. Serial No. 554,438.

*To all whom it may concern:*

Be it known that I, WILLIAM H. INGRAHAM, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Loose-Leaf Invoice and Similar Books, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in loose-leaf invoice and similar books; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a plan of the book opened out, parts being broken; Fig. 2 is a bottom end view; Fig. 3 is a broken longitudinal section on the line 3—3 of Fig. 1 taken through the back; Fig. 4 is a cross-sectional detail on the line 4—4 of Fig. 3, taken through the back and stiffener strip; Fig. 5 is a broken detached plan of one of the leaf-clamping rods; Fig. 6 is a perspective of the bottom anchor member detached; and Fig. 7 is a perspective of the top anchor member detached.

The object of my invention is to construct a book (such as an invoice, ledger and the like) whose complement of leaves may be at any time removed and fresh leaves substituted, the means for securing the leaves to the back being simple, cheap to construct and quickly and readily manipulated; one permitting the book when opened out, to lie perfectly flat thereby enabling the accountant or bookkeeper to pass his hand readily from the left hand leaf to the right hand leaf; one adapted to accommodate any predetermined number of sets of leaves, any set being detachable without the necessity of disturbing an adjacent set; and one possessing further and other advantages better apparent from a detailed description of the invention which is as follows:—

Referring to the drawings, C, C, represent the book covers, and B the back to which the covers are hinged in the usual way. On the inside of the back is disposed a stiffener 1 in the form of preferably a stiff card-board or equivalent strip cemented to the back. At each end of the strip 1 are secured anchor members, the lower one comprising a metal plate having a leg *a* embedded in the strip

and cemented (or otherwise secured) thereto, an outward bend or fold *b* bearing against the end of the strip 1, and an inward terminal flange *c* disposed parallel to the leg *a* and to the strip 1. The upper anchor on the other hand comprises a leg *a'* similarly embedded in the strip 1, an outward fold *b'* bearing against the end of the strip, an inward fold *c'* bent parallel to the leg *a'*, and a final laterally deflected flange *d'* bent at right angles to the leg *a'* and against the face of the strip 1. In addition, each leg *a, a'*, is provided with side members or arms 2, 2, which are bent against and clenched to, the strip 1, whereby the anchor members become securely fastened to the stiffening strip.

Formed in the fold *b* of the bottom anchor, immediately above the plane of the face of the strip 1 are a series of openings or holes *o* for the free insertion of a corresponding series of leaf-clamping rods 3, the bases or lower ends of the rods terminating in enlarged heads or finger-holds 4, by which the rods may be manipulated. On the other hand, the terminal flange *d'* of the upper anchor is provided with marginal recesses *o'* for the reception of the opposite ends of the rods when fully inserted, each rod being provided at said end with a peripheral groove or notch *n* which automatically locks or springs into engagement with, the wall of the recess *o'* into which the rod has been inserted, the automatic engagement referred to being brought about by the pressure against the rod by the complement of leaves inserted between it and the strip 1.

Disposed on the inner face of the strip 1, between the terminal openings *o, o'* of the respective anchors is a corrugated strip 5 provided with a series of parallel grooves or depressions *m* extending from an opening *o* of one anchor to an opening *o'* of the opposite anchor. Since the strip 5 does not extend the full distance across the stiffener 1, stopping short as it does at the outer pair of openings *o, o'* of the respective anchors, there are thus formed the outer or bounding depressions *m'* which, while not in the shape of grooves such as the grooves *m*, yet serve their purpose equally as well as presently will appear.

The operation of the device, or rather the manner of fastening the loose leaves into the



book may be described as follows:—A complement of leaves *L* is taken and folded at the middle so as to form pages in the usual way. The outer face of the common fold of said leaves is then laid into one of the grooves *m* between the anchor members, whereupon a rod 3 is passed through an opening *o* opposite said groove, and over the inner face of said common fold or crease thus formed in the leaves; the upper end of the rod is inserted into the corresponding recess *o'* of the opposite anchor, and when the notch *n* of the rod comes opposite the walls or edges of the recess, the spring of the rod coupled with the pressure of the leaves behind it, will cause the notch *n* to automatically lock with or engage the flange *d'* of the anchor, and the leaves thus become clamped to the back, or rather to the stiffening member 1 thereof. In the same manner the other sets of leaves are secured in position.

It will be seen from the foregoing that the grooves *m* serve to aline the folds of the leaves with the openings *o* and their corresponding recesses *o'*, and at the same time serve to guide the rods as they are being pushed through the openings *o* toward and into their corresponding recesses *o'*. Since however, a full channel-shaped (or equivalent) groove such as *m* can not be formed opposite the exterior set of openings *o* and recesses *o'* without carrying the width of the strip 5 beyond the side edges of the stiffener 1, the strip 5 is made to stop short of the outer openings *o* and recesses *o'*, thereby leaving the marginal depressions *m'* (Fig. 4) which answer the same purpose as the grooves *m*.

To make a neat connection between the covers *C, C*, and stiffener 1, and to prevent the exposure of the clenching arms 2, 2, a strip of fabric 6 is preferably interposed between these parts as shown. Obviously the guide grooves *m* (*m'*) need not necessarily be formed in a separate strip or sheet such as 5, as these formations might be impressed in the strip 1; neither do I wish to be understood that the manner of securing the anchors for the rods as here described is the only available one. Other mechanical methods might be resorted to in practice. By a slight pressure against the notched end of a rod 3, the notch *n* may be disengaged from its recess *o'*, and withdrawn, thereby permitting the removal of the particular set or complement of leaves secured thereby, and the insertion of a fresh lot of leaves. While specifically referred to herein as a loose-leaf invoice, the book may be a ledger, day-book, or any character of book whatsoever.

Having described my invention, what I claim is:—

1. In combination with a book-back pro-

vided with a series of parallel grooves on the inner face thereof, a series of folded leaves having the outer faces of their common folds inserted into the grooves, a fitting at one end of the back provided with openings opposite the grooves, a series of rods inserted through said openings and bearing against the inner faces of the common folds of the respective series of leaves, a fitting at the opposite end of the back adjacent the edges of the leaves, the ends of the rods being provided with notches engaged by said last named fitting for locking the rods against movement, and for clamping the leaves to the back.

2. In combination with a rigid book-back provided with a series of parallel grooves on the inner face thereof, series of folded leaves having the outer faces of their common folds inserted into the grooves, a fitting at one end of the back provided with openings opposite the grooves, a series of rods inserted through said openings and bearing against the inner faces of the common folds of the respective series of leaves, a fitting at the opposite end of the back adjacent the edges of the leaves, the ends of the rods being provided with notches engaged by said last named fitting for locking the rods against movement, and for clamping the leaves to the back.

3. In combination with a rigid book-back provided with a series of parallel grooves on the inner face thereof, series of folded leaves having the outer faces of their common folds inserted into the grooves, a fitting at one end of the back provided with openings opposite the grooves, a series of rods inserted through said openings and provided with terminal heads limited by said fitting, the rods engaging the inner faces of the folds of the several series of leaves, a fitting at the opposite end of the back adjacent to the leaves, the opposite ends of the rods being provided with peripheral notches engaged by said last mentioned fitting whereby the rods are held against displacement and the leaves fastened to the back.

4. In combination with a rigid book-back provided with a series of parallel grooves on the inner face, series of folded leaves having the outer faces of their common fold inserted into the grooves, an anchor at one end of the back having a member engaging the end and projecting beyond the inner face of the back, and a terminal flange bent parallel to said face, the member aforesaid being provided with holes opposite the grooves, an anchor at the opposite end of the back having a member engaging the end of the back, an inward fold parallel to the back and a terminal recessed flange bent toward the back, the recesses corresponding in number to the holes formed in the opposite anchor, and leaf-clamping rods

engaging the inner faces of the common  
folds of the leaves positioned with the outer  
faces of the folds in the grooves of the back,  
the rods terminating at one end in heads or  
5 enlargements beyond the holes of the first  
anchor through which they are passed, and  
the opposite ends being provided with  
notches for automatically engaging the walls

of the recesses of the adjacent anchor, sub-  
stantially as set forth.

10

In testimony whereof I affix my signa-  
ture, in presence of two witnesses.

WILLIAM H. INGRAHAM.

Witnesses:

EMIL STAREK,  
JOS. A. MICHEL.