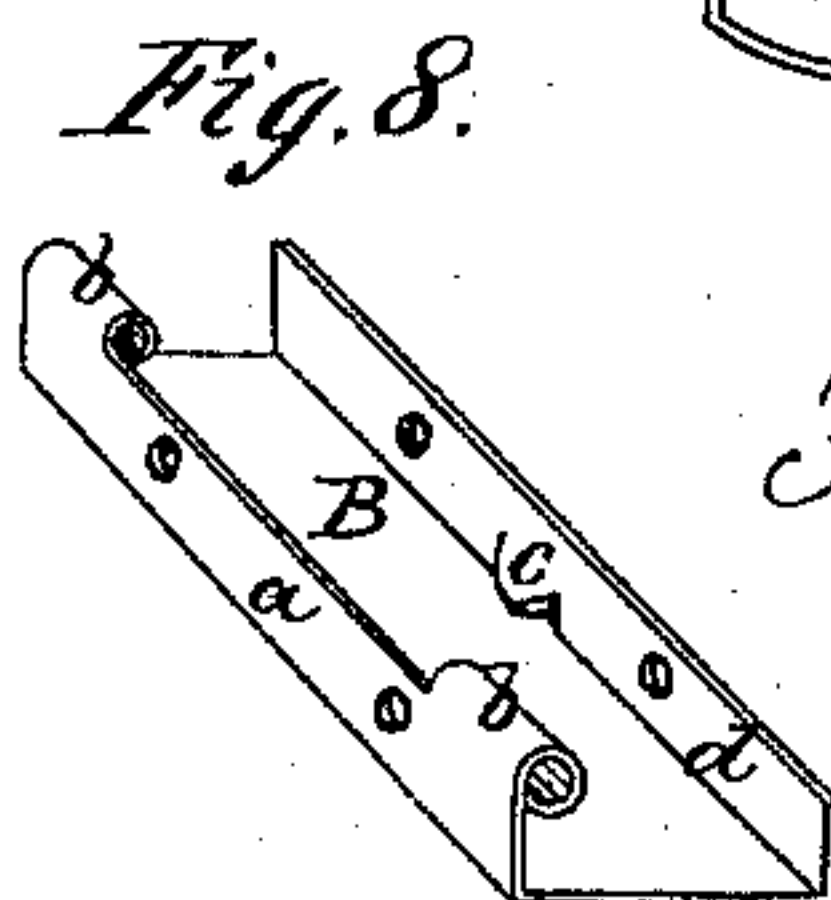
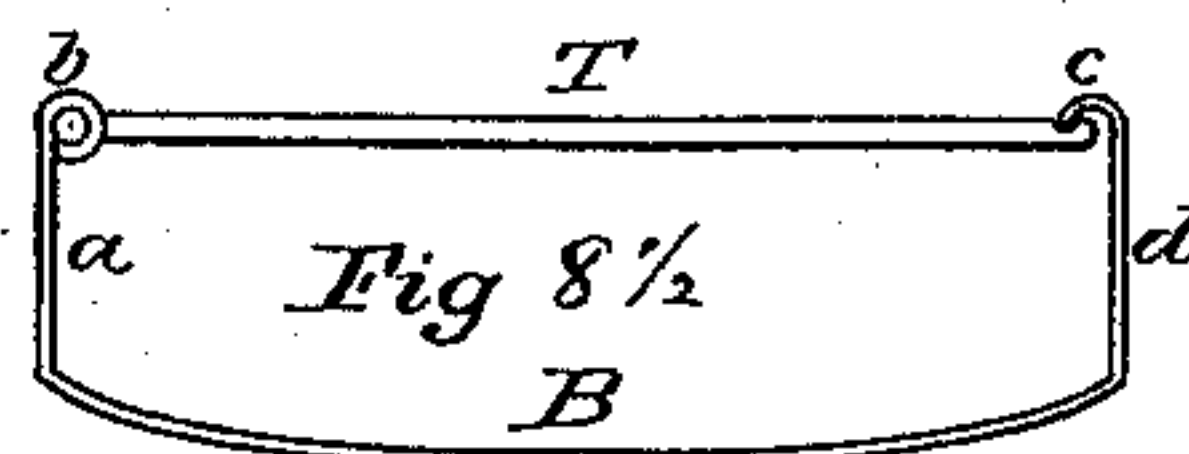
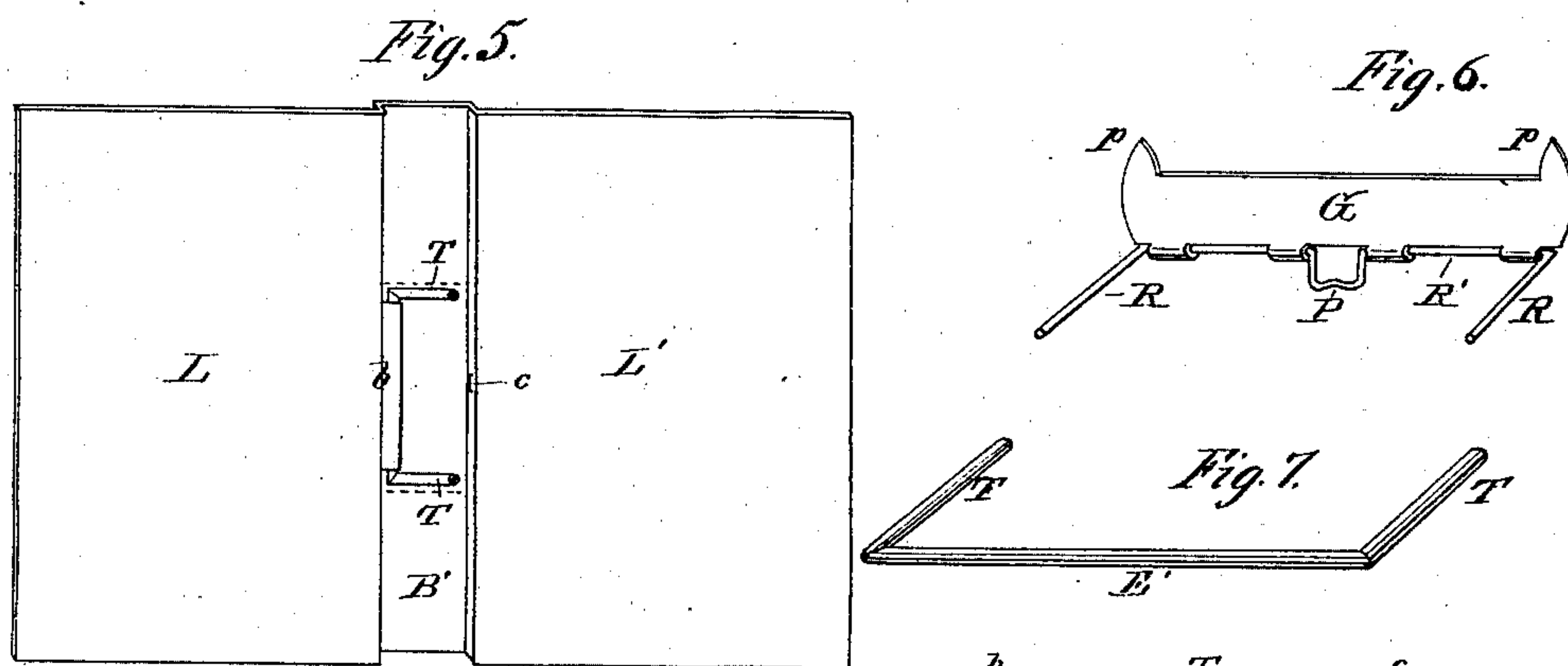
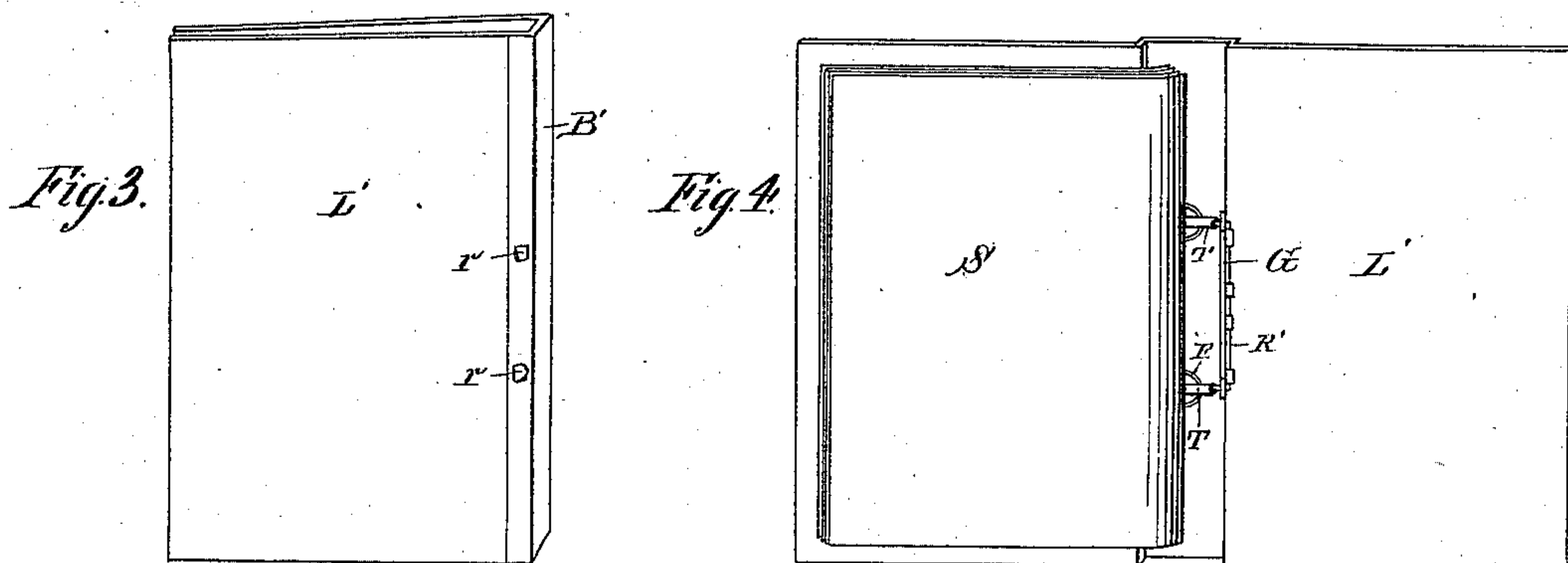
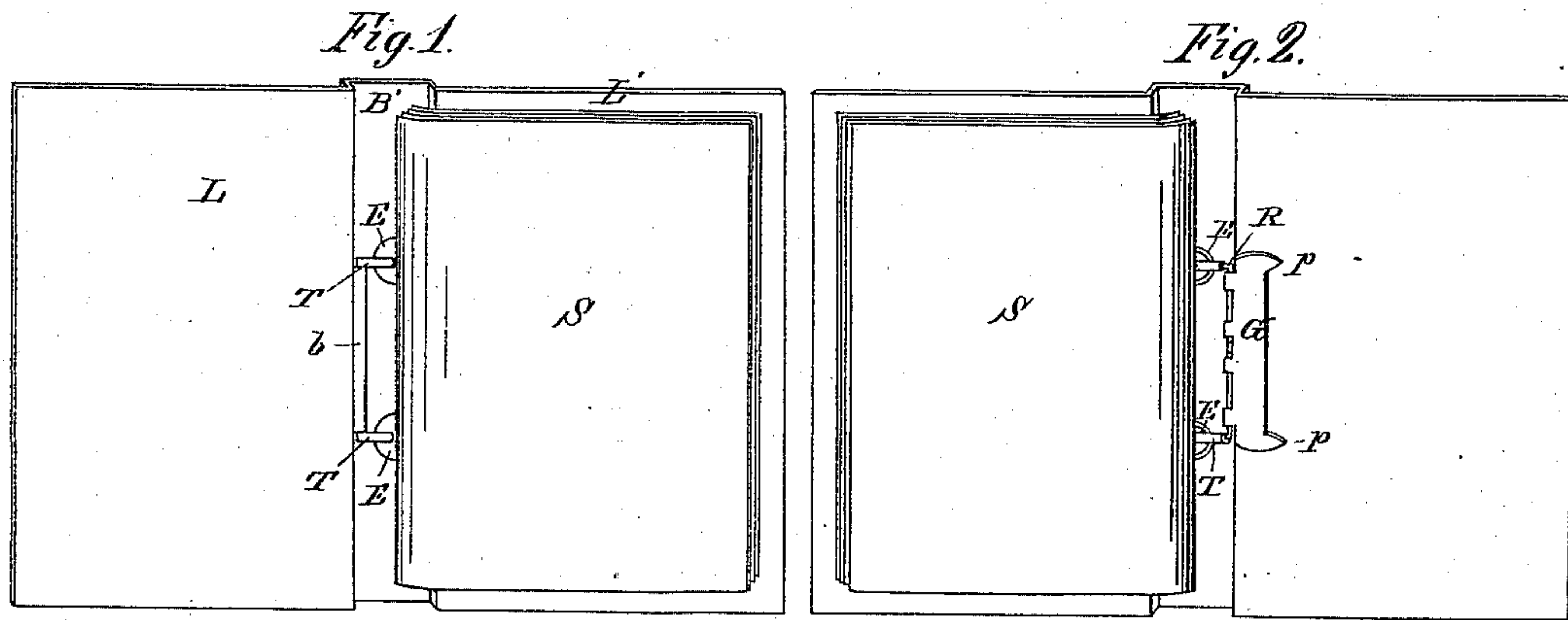


2 Sheets--Sheet 1.

F. W. SMITH & J. S. SHANNON,
Temporary Binder.

No. 232,374.

Patented Sept. 21, 1880.



WITNESSES.
F. B. Townsend
W. C. Adams.

INVENTORS.
Frederick W. Smith
James S. Shannon
per W. C. Dayton
Attorney

F. W. SMITH & J. S. SHANNON. ^{2 Sheets—Sheet 2.}

Temporary Binder.

No. 232,374.

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Fig. 9.

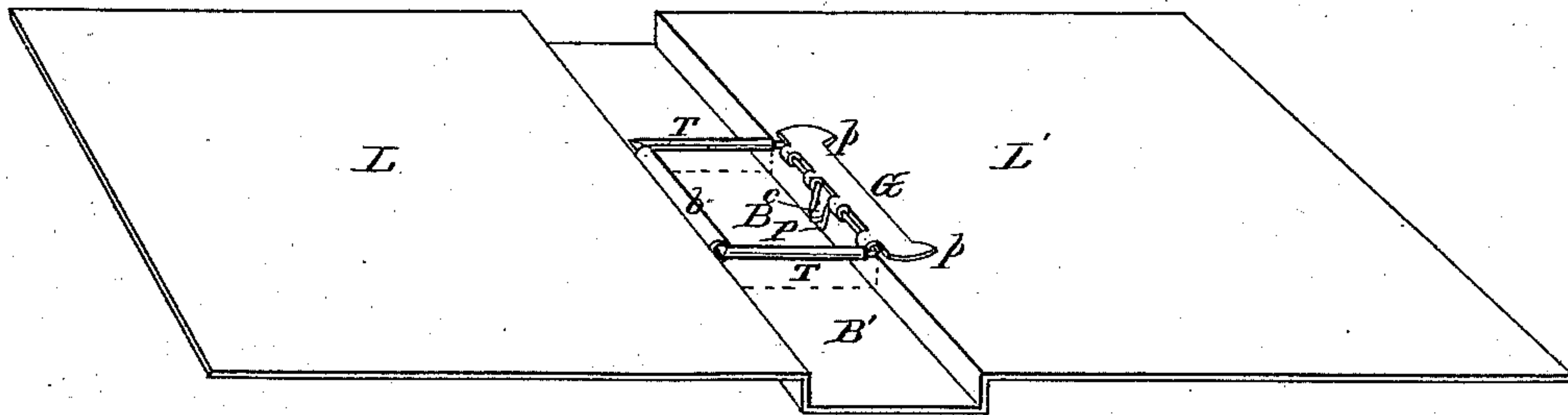


Fig. 10.

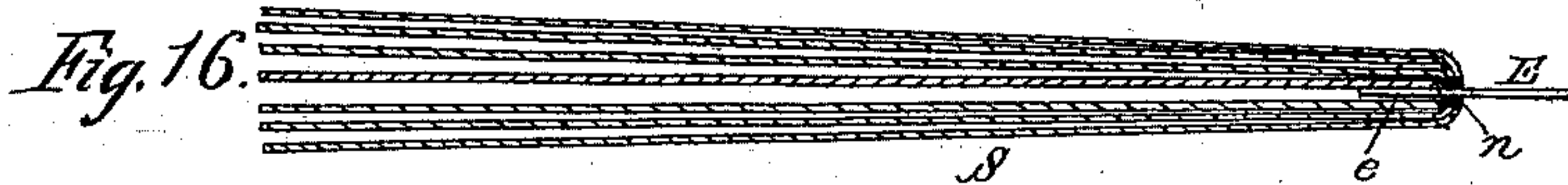
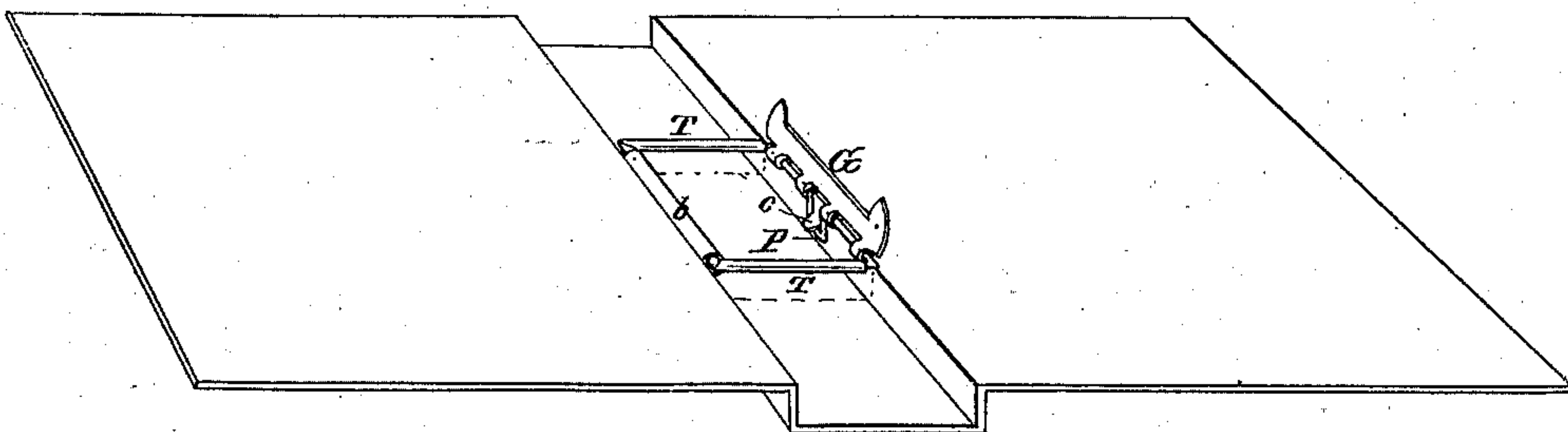
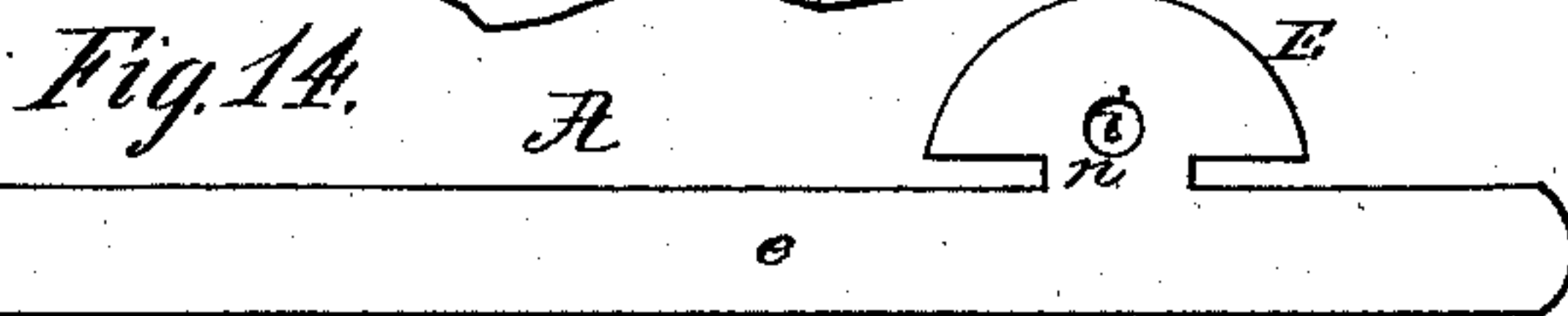
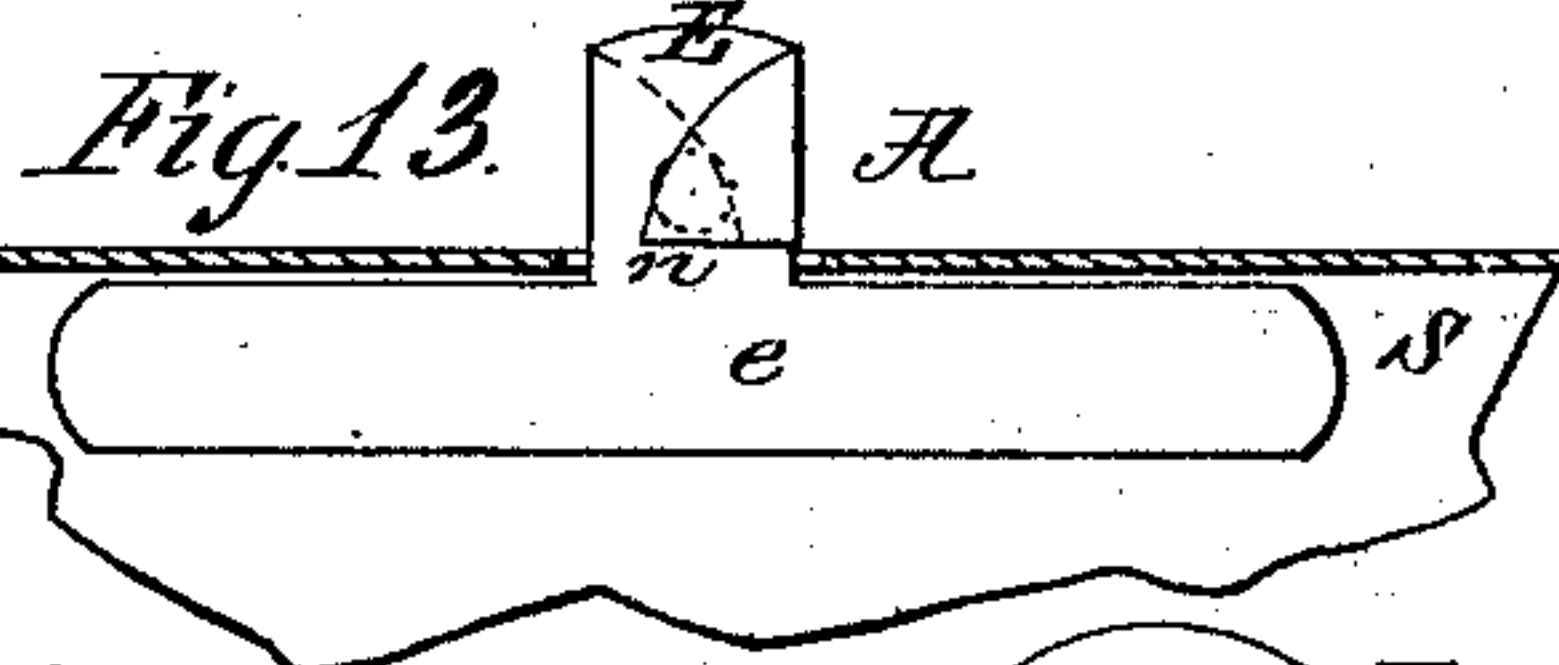
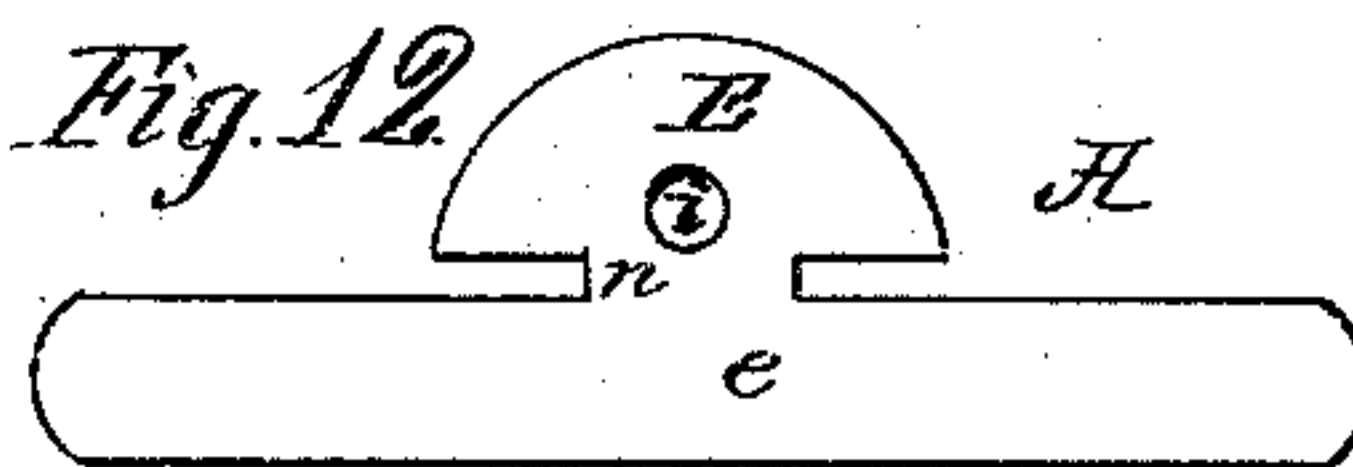
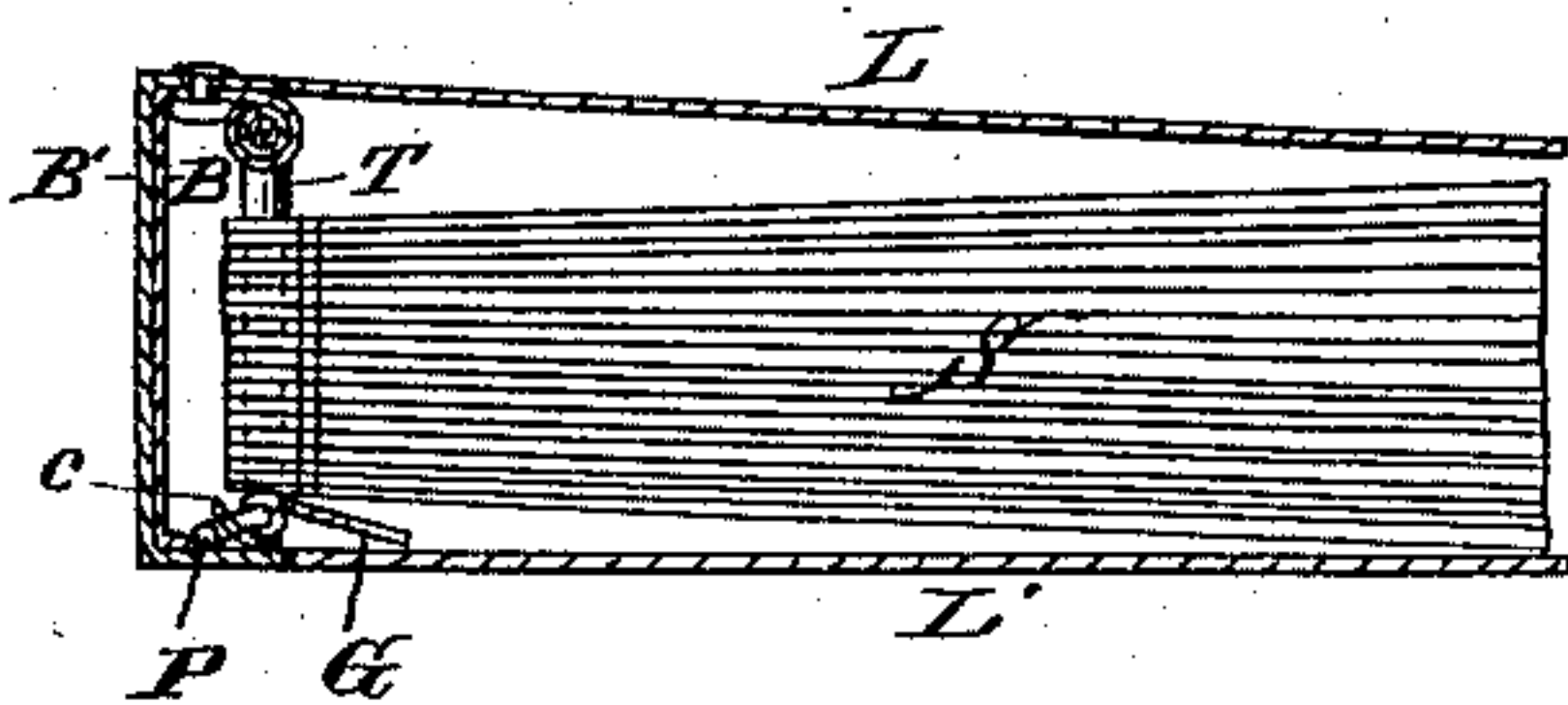


Fig. 11.



WITNESSES.

L. B. Leonard
W. C. Adams.

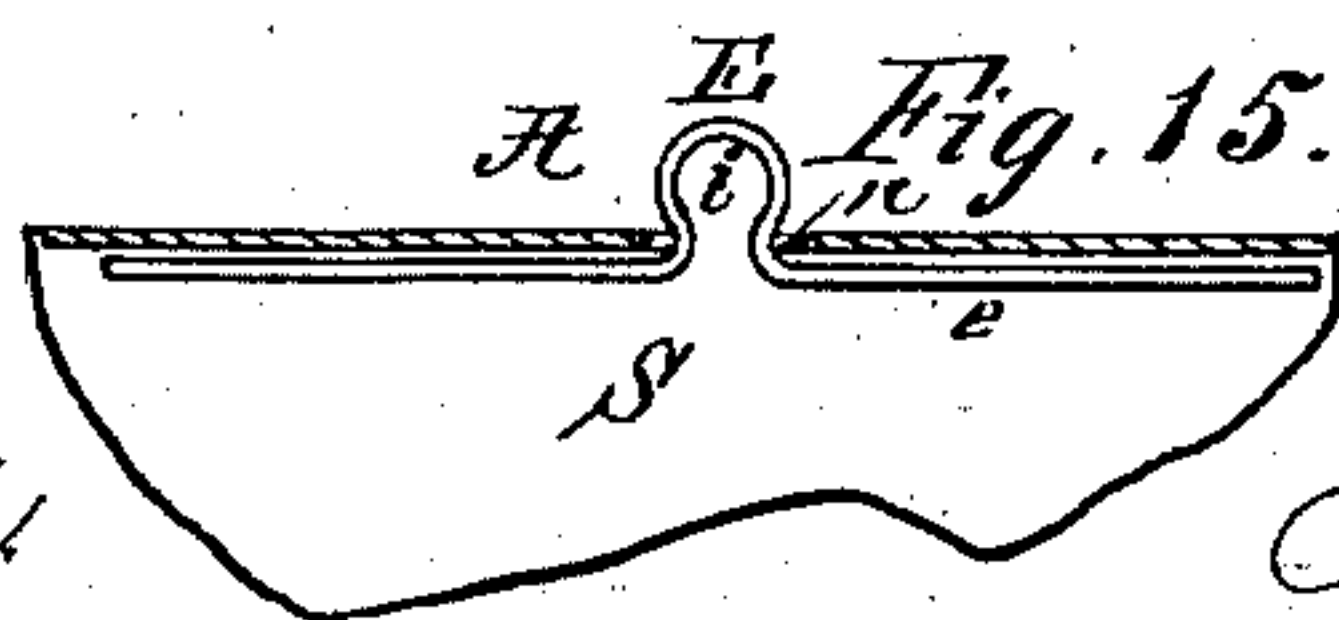


Fig. 15.

INVENTORS.

Fredrick W. Smith
James S. Shannon
per W. E. Dayton
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK W. SMITH AND JAMES S. SHANNON, OF CHICAGO, ILLINOIS;
SAID SMITH ASSIGNOR TO SAID SHANNON.

TEMPORARY BINDER.

SPECIFICATION forming part of Letters Patent No. 232,374, dated September 21, 1880.

Application filed October 23, 1879.

To all whom it may concern:

Be it known that we, FREDERICK W. SMITH and JAMES S. SHANNON, both of Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Temporary Binders; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters
10 of reference marked thereon, which form a part of this specification.

Our invention relates to a temporary binder intended for binding sheet-music, magazines, and similar matters, and has for its object to
15 provide a binder in which the leaves or bound parts will lie flat, or nearly so, when the volume is opened upon the piano or table, and from which an intermediate part may be readily removed, or into which one may be inserted,
20 without disarranging the parts already bound.

The accompanying drawings, which form part of this specification, copiously illustrate our invention, which consists in the several devices and combinations therein shown and
25 hereinafter described and claimed.

Figures 1, 2, and 4 exhibit the open binder with contents thrown to one side, showing the position of the binding device. Fig. 3 shows the binder closed. Fig. 5 is a view of the inside of the binder with transfer-wires removed.
30 Figs. 6, 7, and 8 show the binding devices detached from each other and from the cover. Fig. 8½ is an alternative construction of the binder proper. Figs. 9 and 10 more plainly
35 show the binding devices in the cover, and illustrate a described mode of locking and unlocking the fastening. Fig. 11 is a central transverse section of the binder and contents. Figs. 12, 13, 14, and 15 show the means by
40 which the several sheets of a single piece of music are bound together, and by which the part formed of the united sheets or a pamphlet or magazine is removably held by the binding devices.

45 The cover of the binder consists of the lids L and L' and the rigid swell-back B'. The binding devices, separately considered, consist of the back-piece B, Fig. 8, the connected parallel tubes T T, Fig. 7, and the connected transfer-wires R R, Figs. 6, having the metal plate
50 G hinged thereto.

The back B is preferably secured to the cover-back B' in the process of making the latter, and is inclosed beneath the inner covering thereof. Said back B is provided with the
55 vertical portions *a* and *d*, (shown in Fig. 8,) to one of which, *a*, are hinged the tubes T T at *b b* by means of their connecting portion E'. The opposite vertical portion *d* is provided with the catch *c*. The transfer-wires
60 R R are parallel projecting ends of the wire R', adapted to enter and reach the bottom of the tubes T T. The part R' of the wire bent to form the transfer-wires R R is centrally bent to also form the loop P, which properly projects
65 at right angles to the plane of the wires R R. This loop is intended to engage the catch *c* upon the vertical portion *d* of the back-piece B. The wire R' has hinged thereto a thin metal plate, G, as clearly shown in Fig. 6. The
70 wires R R being inserted in the tubes T T, the binding device is closed by swinging the movable parts upon the hinge *b* until the loop P engages the catch *c*. In the act of swinging the parts mentioned the plate G serves as a
75 convenient handle. When turned up into the plane of the loop, as seen in Fig. 10, both the wire R' and the plate G readily spring inward to engage the catch *c* by the loop, and also to permit the loop to be disengaged in opening
80 the binder under proper inward pressure by the finger upon the plate G; but when turned down out of the plane of the loop, or against the open lid L', as shown in Fig. 9, said plate is in position to prevent the lateral springing of
85 the wire R', and thus practically locks the binder closed.

Except for the purpose of facilitating the removal or insertion of intermediate sheets or articles to be filed, as will be explained farther
90 on, the transfer-wires R R, with the looped wire R' and plate G, might be dispensed with, and material advantages be still gained by the use of the hinged tubes T T alone. In that case they need not be tubular, and may be
95 adapted to catch at their ends under suitable projections formed on the flange *d* of the back-piece B. Thus the upper ledge of *d* might be turned over inwardly, as shown in Fig. 8½, to catch the ends of the binding-wires T, the
100 back-piece or flange *d* being adapted to spring to allow the catch to engage or disengage with

the wires; or the ends of the tubes T may spring toward or from each other to engage or disengage catches formed on the flange *d*, the back being rigid; or, further, a slide may be
5 arranged on the inner face of the flange *d* to carry a wire over the ends of the tubes T to secure them.

The binder constructed with the hinged wires or tubes T may be made to hold papers,
10 pamphlets, and sheets transferably by puncturing the articles to be bound near the back, and at points to receive the tubes T; but in order to secure the end above announced—namely, the flat or nearly-flat position of the
15 opened sheets when bound—we employ a special device, invented by one of us, and forming the subject of a separate application for patent by him. This device consists of a tag flexible in itself or flexibly joined to the article to
20 be secured in the binder illustrated in Figs. 12, 13, 14, 15, and 16, and designated, as a whole, by the letter A. For sheet-music and similar folded leaves, or for single leaves to be bound, this tag consists of a piece of linen-backed pa-
25 per or similar flexible piece, A, having the body *e* gummed on one surface, the neck *n* and the head E forming a projecting tag, having the hole *i* to pass over the tubes T. Two of the tags are applied to each article to be bound in
30 proper position to pass over the wires or tubes T. The two are sometimes made in a single piece, as shown in Fig. 14.

In applying the tags to folded sheets the head E is folded upon itself to the width of
35 the neck *n*, a slit is cut through the sheets in their fold, and the head is passed outwardly through such slit. The head E is then unfolded, so that its shoulders prevent its withdrawal through the slit. When the central
40 sheet (as of music) is a single leaf (and preferably when it is not) the body *e* is gummed thereto at its rear edge, as shown in Fig. 16. The tags thus hold all the leaves of the music-sheet together, and by the projecting heads E
45 the sheets are all equally held in the binder. Passing through the fold of the sheets, the flexible piece A permits the sheets to open immediately in the fold, and therefore to lie flatly open, as if unbound. Being held in the binder
50 by flexible attachments at points wholly beyond the sheets, the presence in the binder of other sheets similarly held, unless greatly crowded, does not materially prevent such broad opening at the fold.

55 In the case of heavy pamphlets or magazines, the leaves of which are already bound together, the wire form of the tag shown in Fig. 15 may be used. The neck and head of this form are not flexible, but the body may
60 turn within the book, and thereby produce substantially the effect of a flexible tag.

In order to enable one having the binder to readily apply the hinge-tags, the plate G, attached to the transfer-wires R R, is provided
65 with the cutting pointed projections *p p*, of proper width for the tags. These points are properly spaced to cut both slits at once, and

for this purpose are pressed outward by the hand through the fold of the sheets.

To secure regularity and evenness of music-
70 sheets when bound, we have also provided that the space between the binding-wires and between the points *p* shall be one-third the standard height of a music-sheet; wherefore, by using the plate G as a measure from the
75 top or bottom of the sheet, the slits may be cut to bring the edges of the bound sheets of music even with each other.

The mode of applying the tagged sheets to the binder is so obvious as not to require ex-
80 planation. The tubes T are disengaged at their outer ends and swung up into position to enter the eyes *i* of the head E, and after applying to them the piece to be inserted they are thrown back again and secured, as already
85 explained.

When the transfer-wires R are used the binder is unlocked by turning the plate G up, as shown in Fig. 10, and the loop P is sprung
90 off the catch by inward pressure upon the center of the plate. Being unfastened, the tubes T are swung to a vertical position and the transfer-wires withdrawn, when the tubes are ready to receive an additional sheet. The
95 transfer-wires are then returned to their place in the tubes, and the binder proper is again closed and fastened, as before described.

If, as is often the case, it is desired to remove a sheet from the middle of the body of music in the binder, all above said sheet is
100 lifted off the tubes along with the transfer-wires, which are thus left in the tag-eyes. The sheet wanted is then taken off the tubes and the remainder are restored by inserting the
105 transfer-wires again in the tubes. The lifted part of the contents are thus quickly and without trouble returned to their former place upon the tubes without derangement of their order.

Having thus described our invention, we
110 claim—

1. In combination with the hinged tubular wires T of the binder described, the transfer-wires R, adapted to be held by engagement with the binder-back, so as to hold the bind-
115 ing devices closed, substantially as described.

2. The plate G, hinged to the connecting-wire R' of the projecting transfer-wires R R, in combination with a catch adapted to en-
120 gage with the loop P of the wire R' to secure the binder closed, substantially as and for the purposes specified.

3. In combination with the binding tubes or wires T and hinge-tags A, the plate G, provided with the puncturing-points *p p*, whereby
125 said plate is adapted to properly puncture the sheets and lock the binding-wires in place.

4. The plate B, adapted to be secured to the back of the binding-case, and provided at one edge with the loops *b b*, to receive and
130 hinge the tube T, and at the other side with a locking-catch, *c*, combined with said tube T, and the transfer-wire R, provided with a loop, P, to engage with said catch *c*.

5 5. The tube T, hinged to the back of the binding-case at one side thereof, combined with a transfer-wire, R, adapted to be inserted in said tube and thereafter locked to the other side of said back, substantially as set forth.

10 6. A temporary binder-case consisting of a rigid back and hinged lids, L L', combined with binding-tubes T, hinged to one side of said back, transfer-wires R, adapted to enter said tubes, and provided with a locking-loop, P, and locking-plate G, to cause a secure engagement with the locking-catch c, as set forth.

15 7. The plate B, with its opposite edges turned up in parallel flanges, provided on one side with the loops b and on the other with the flange d and catch c, combined with tubes T T, secured and hinged in said loops, and the transfer-wires R R, adapted to be inserted in

said tube, and provided with the loop P, perpendicular to the plane of said transfer-wires, and the plate G, hinged to the part R' of said transfer-wires, whereby when said plate is turned up into the plane of the loop P the latter may readily be caused to spring off the catch c, but when turned to a plane oblique to the plane of said loop such flexure of wire R' will be prevented, the whole being adapted to be secured to the rigid back of a temporary binder-case.

30 In testimony that we claim the foregoing as our invention we affix our signatures in presence of two witnesses.

FREDK. W. SMITH.
JAMES S. SHANNON.

Witnesses:

M. E. DAYTON,
W. C. ADAMS.