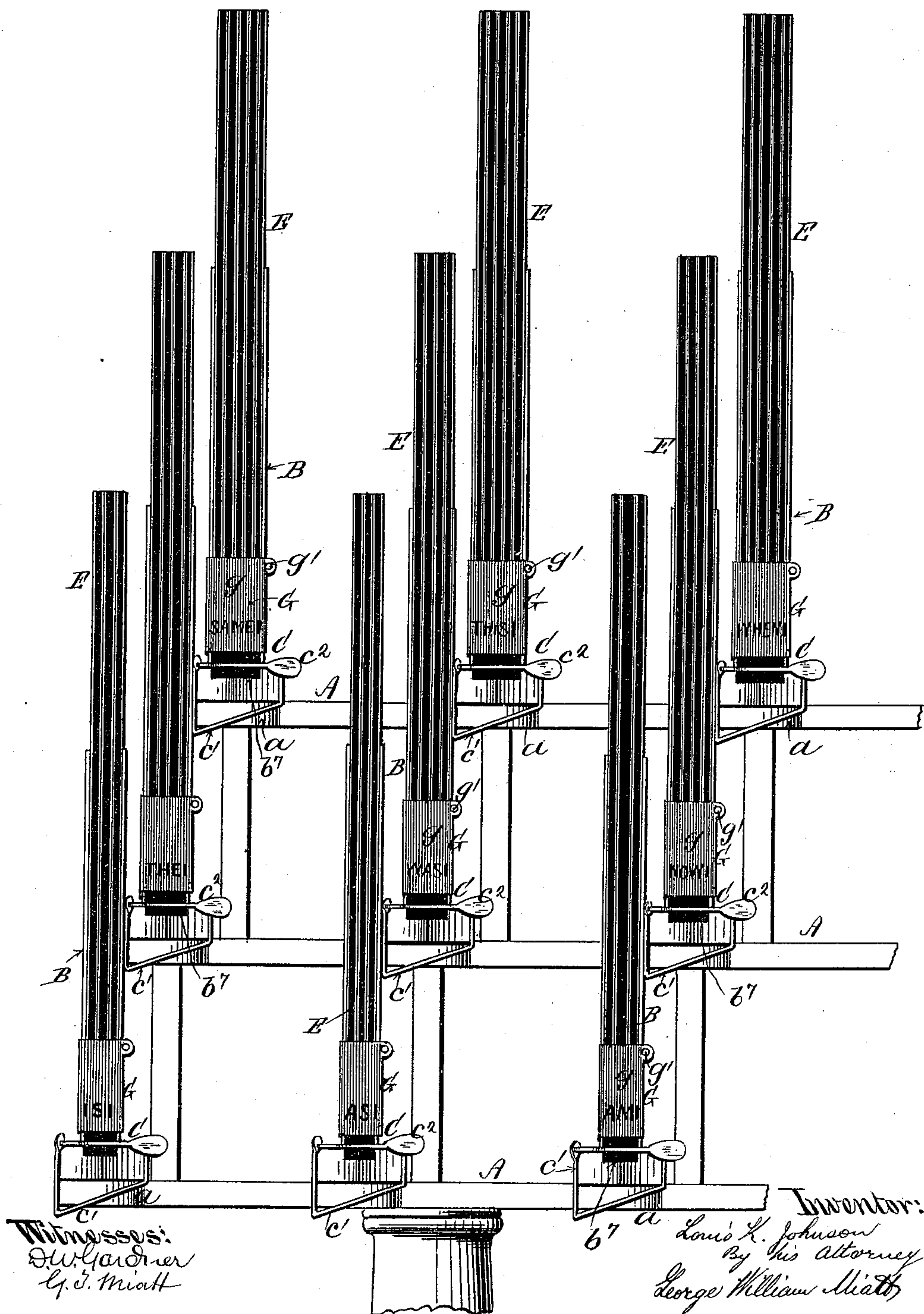


4 Sheets—Sheet 1.

No. 494,573.

Patented Apr. 4, 1893.

*Fig. 1.*



(No Model.)

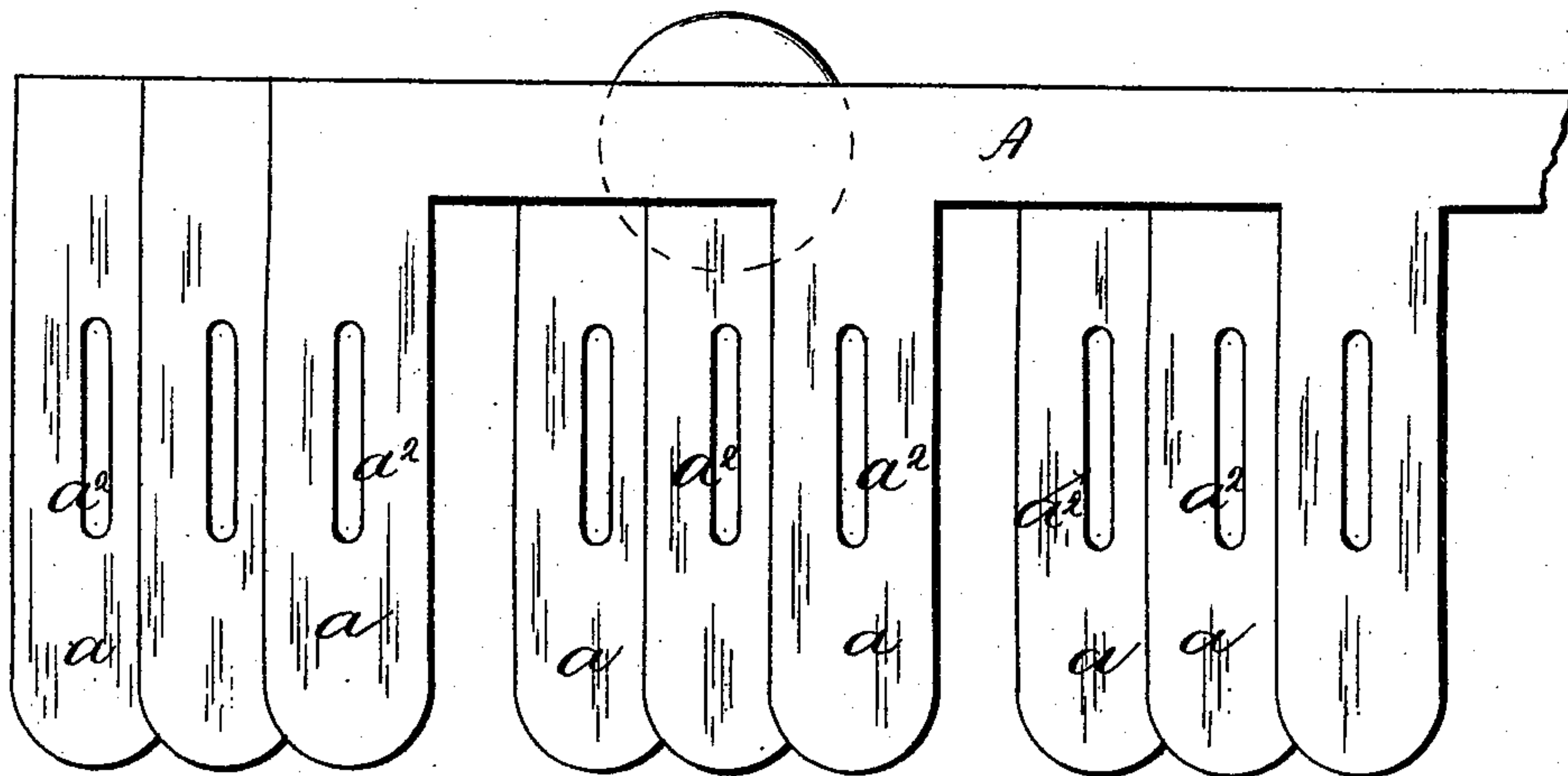
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L. K. JOHNSON.  
TYPE SETTING APPARATUS.

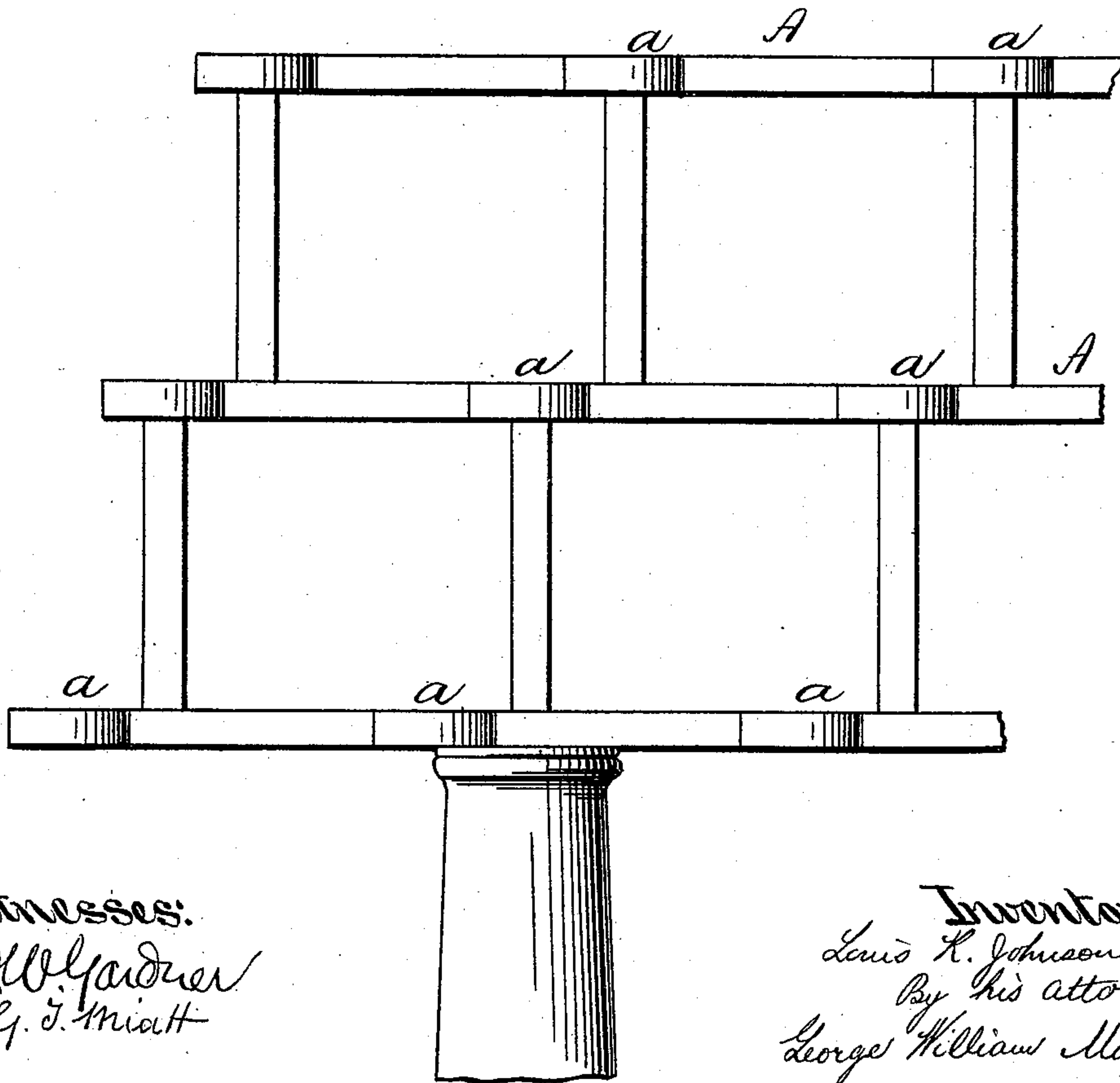
No. 494,573.

Patented Apr. 4, 1893.

*Fig. 2.*



*Fig. 3.*



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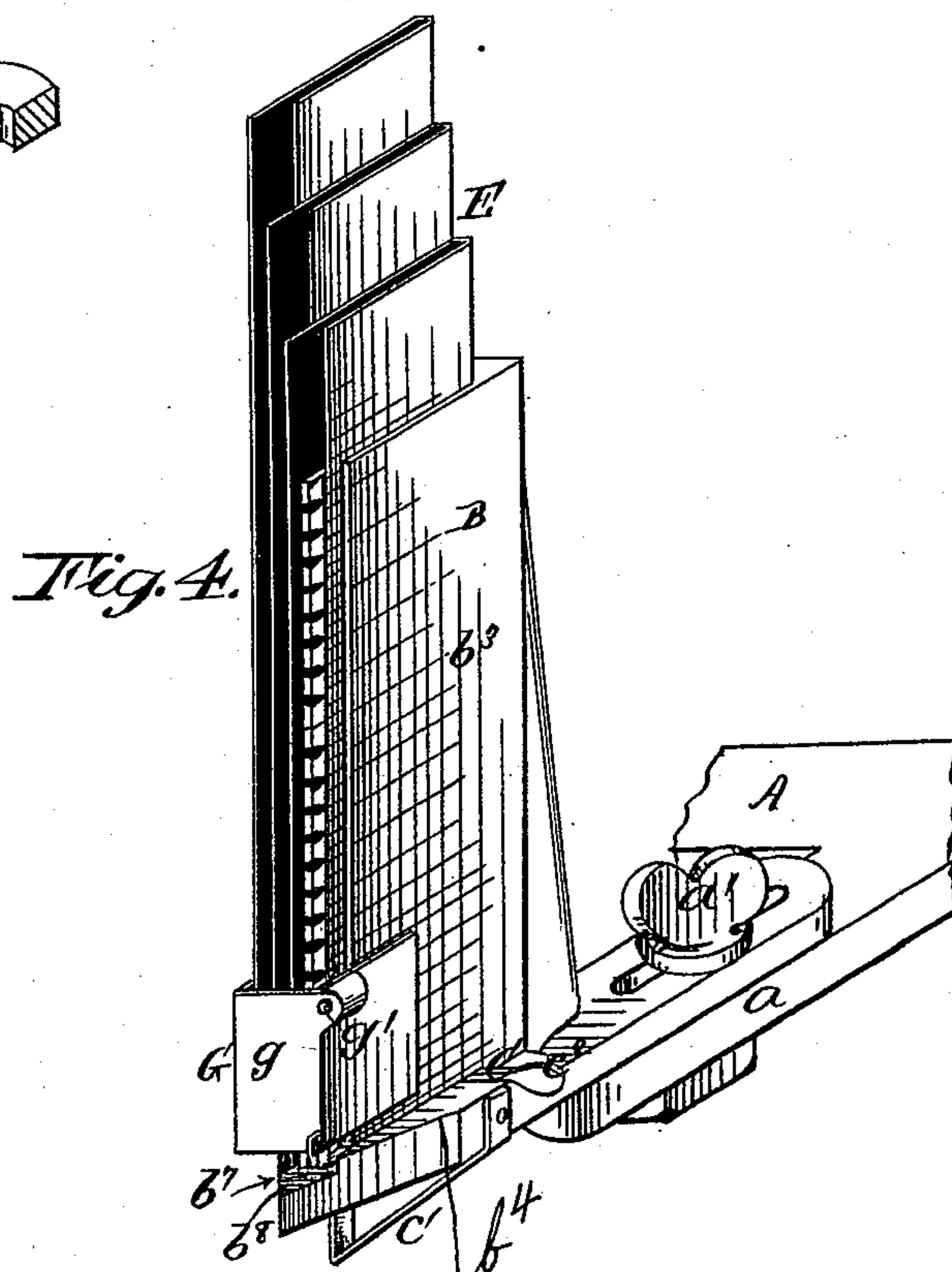
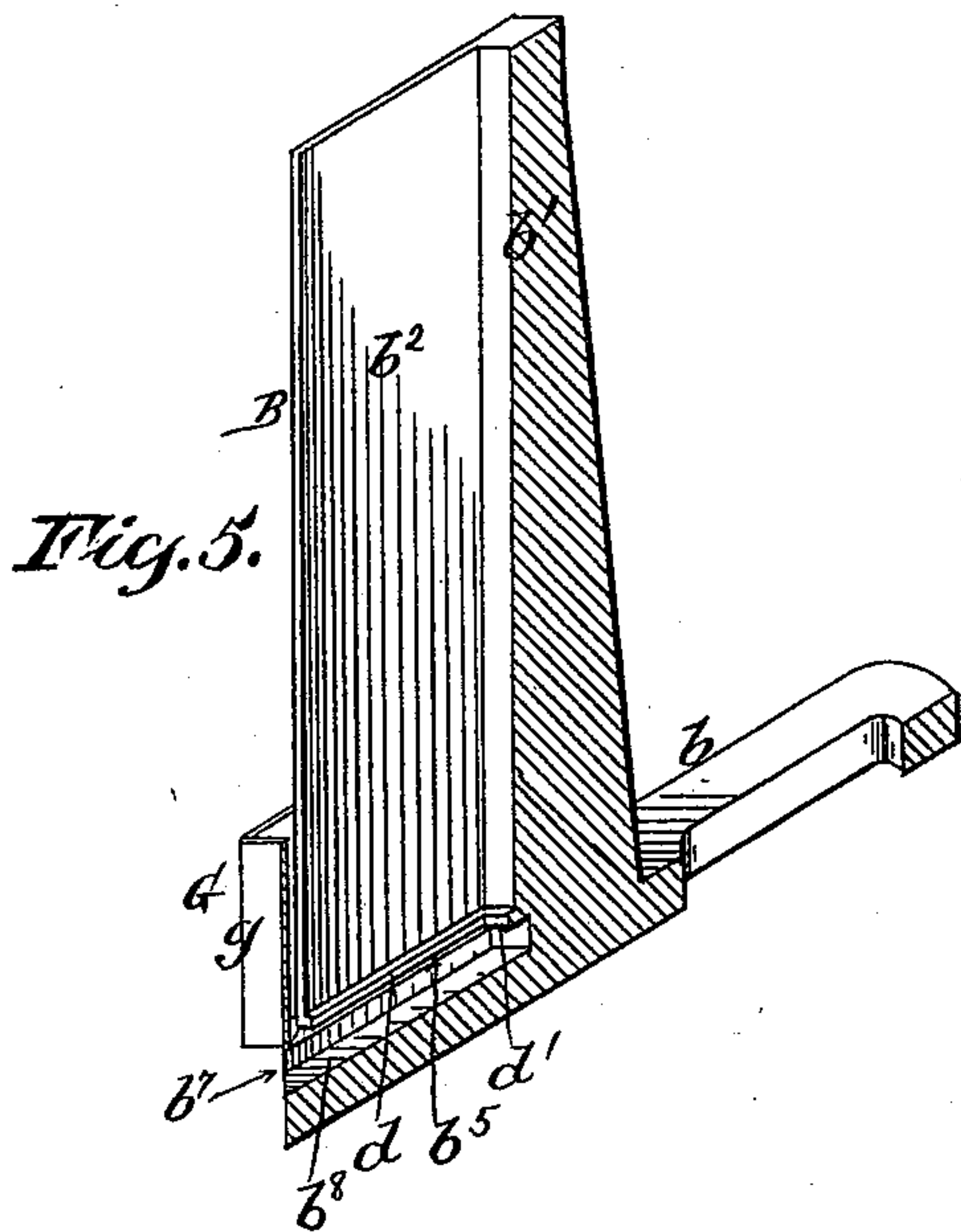
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4 Sheets—Sheet 3.

L. K. JOHNSON.  
TYPE SETTING APPARATUS.

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(No Model.)

4 Sheets—Sheet 4.

L. K. JOHNSON.  
TYPE SETTING APPARATUS.

No. 494,573.

Patented Apr. 4, 1893.

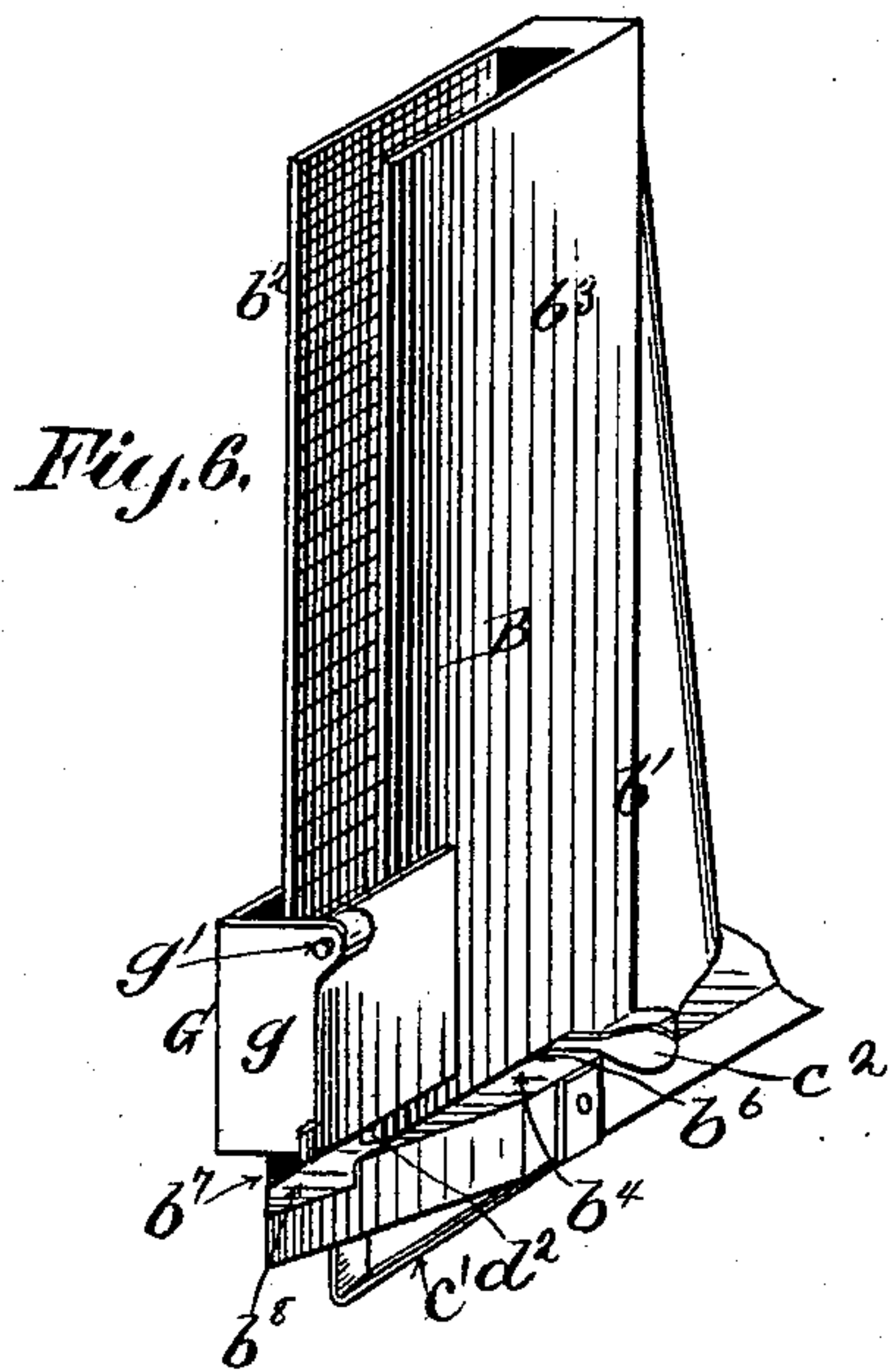


Fig. 6.

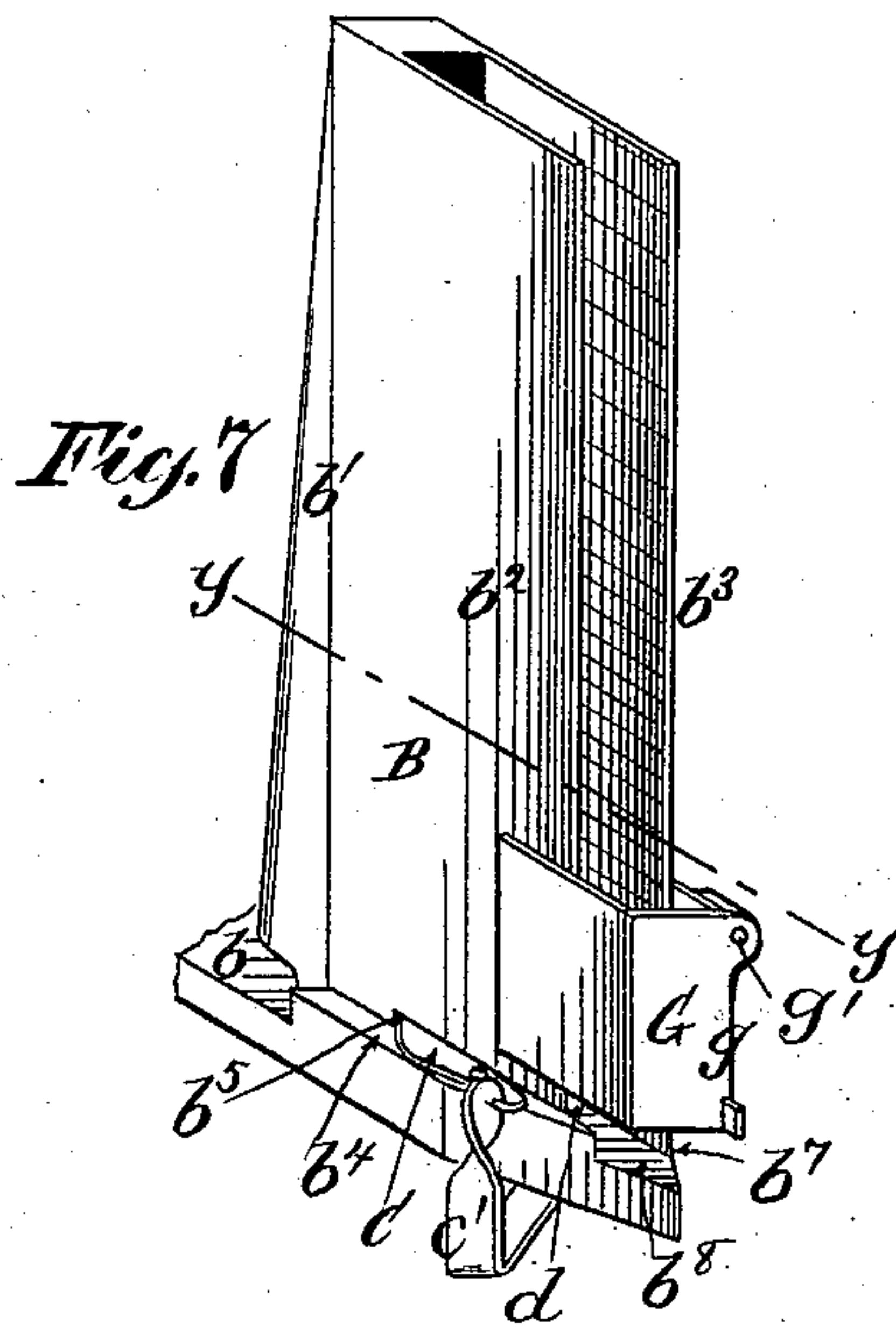


Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

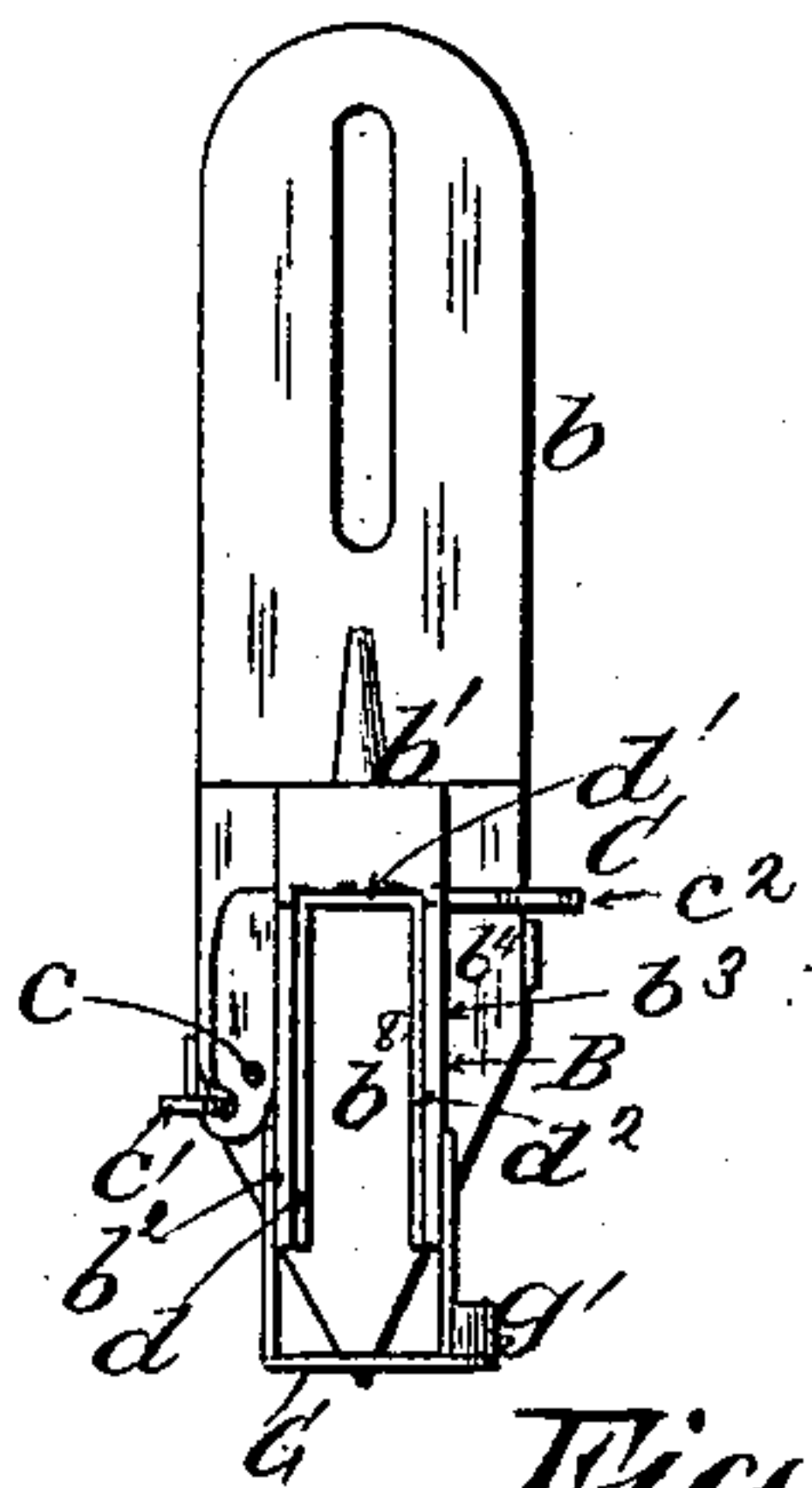


Fig. 11.

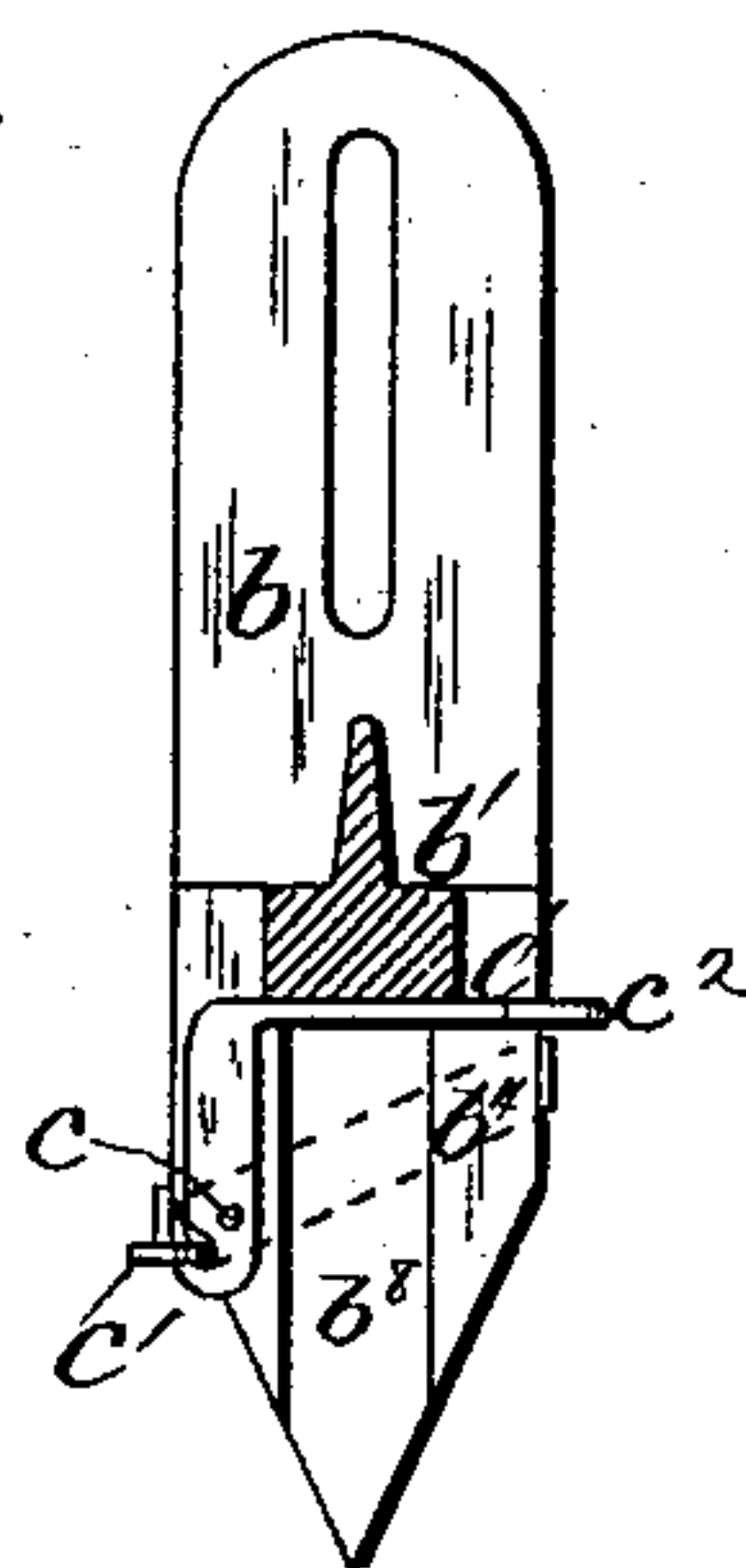


Fig. 12.

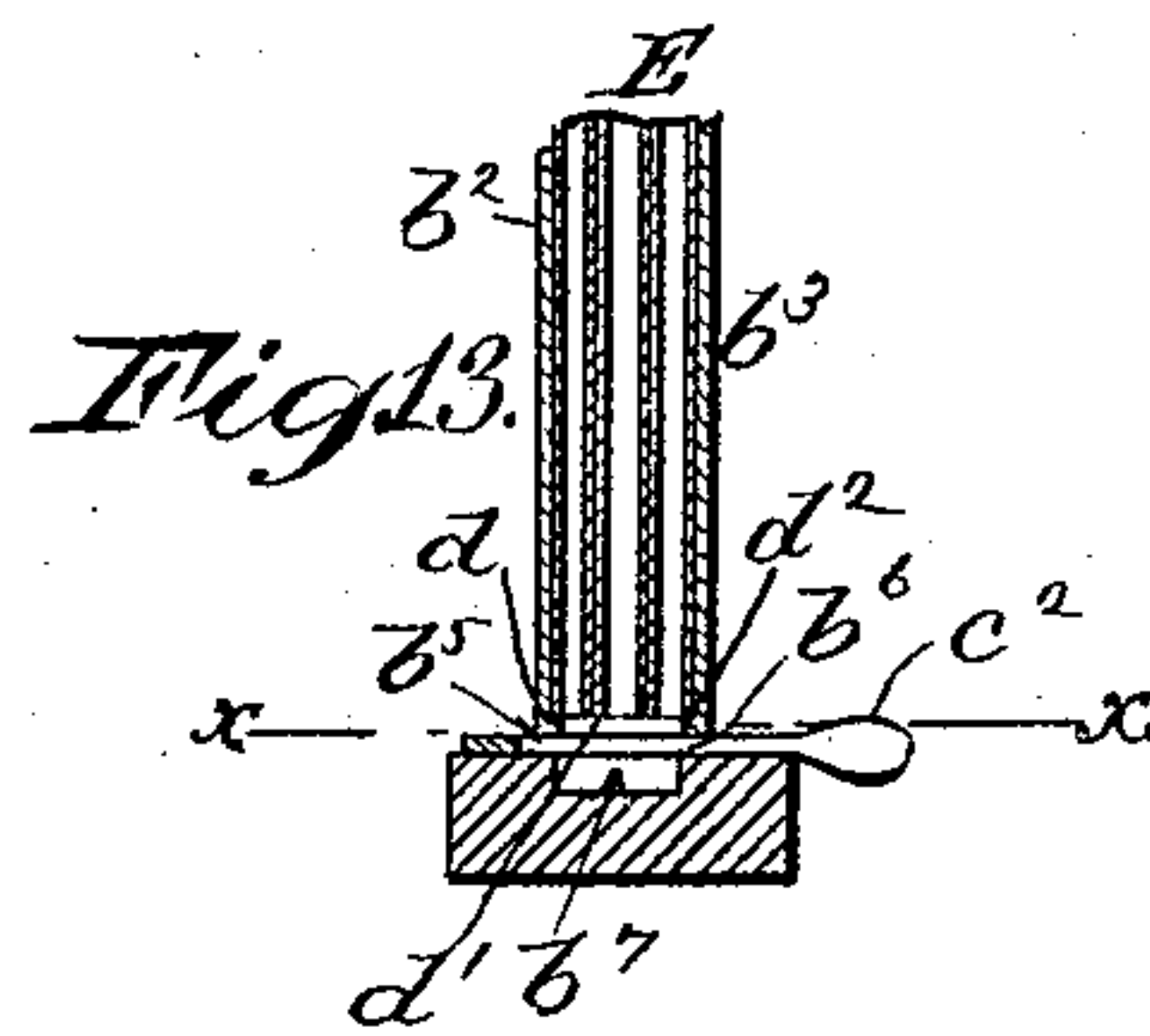
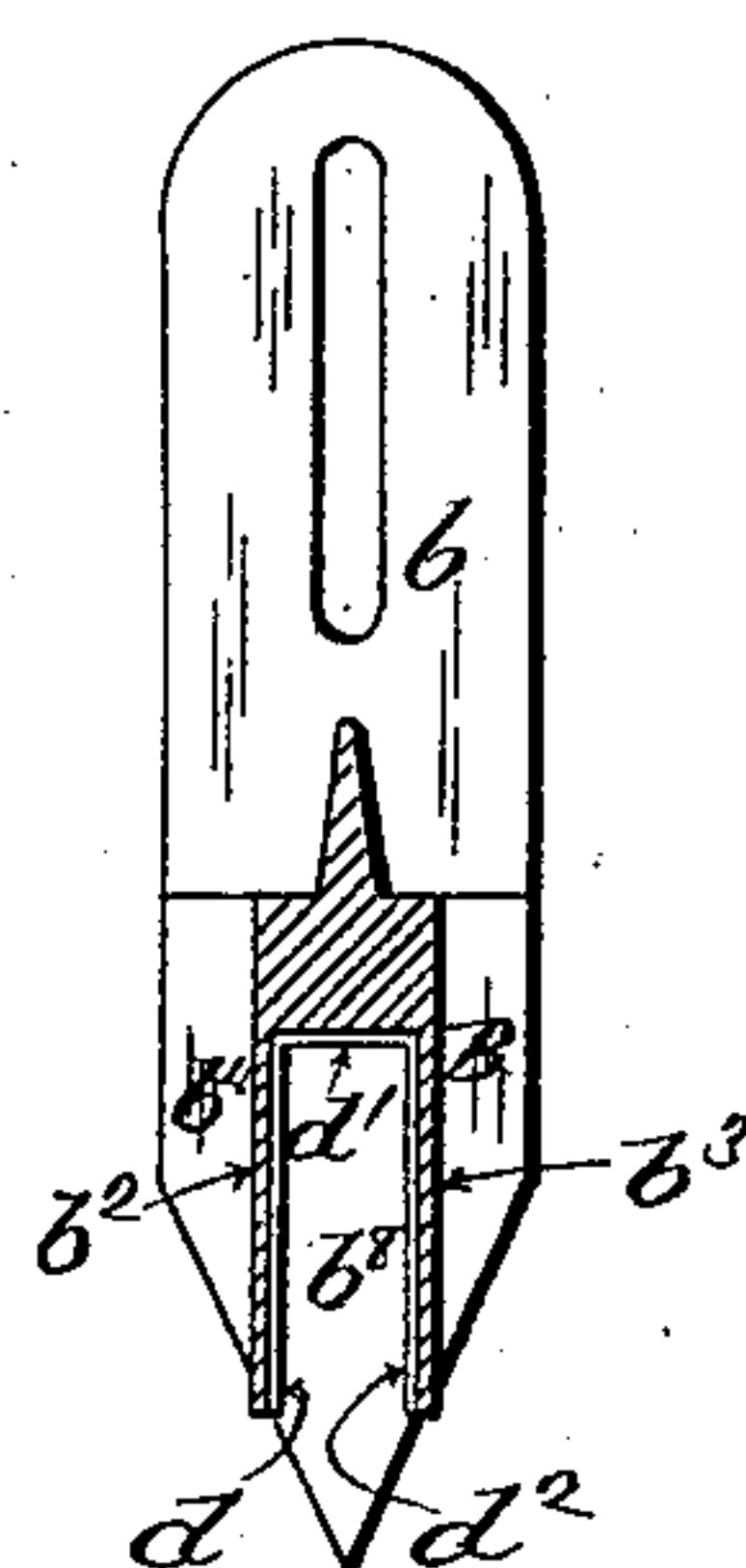


Fig. 13.

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# UNITED STATES PATENT OFFICE.

LOUIS K. JOHNSON, OF BROOKLYN, NEW YORK, ASSIGNOR TO ABBOT  
AUGUSTUS LOW, OF SAME PLACE.

## TYPE-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 494,573, dated April 4, 1893.

Application filed August 31, 1891. Serial No. 404,181. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS K. JOHNSON, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Setting Apparatus, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My improvements relate to the class of type holding cases in which the types are arranged in columns in prescribed positions with relation to each other, in type containing channels which are supported in substantially vertical positions in a suitable frame or case, the lower types in each channel resting upon a stationary shoulder or finger piece from which they are removed by the fingers of the compositor.

My present invention consists primarily in arranging the type containing channels in groups upon a common seat or support, so that two or more characters representing a word or number, may be grasped and withdrawn at one operation. Thus the words "and" "the" "an" "in" "is" &c. may be conveniently grouped and arranged with a "space" so as to be readily grasped, withdrawn and inserted in the "stick" in a shorter time, and with an expenditure of less muscular energy than heretofore, it having been actually demonstrated that in average newspaper work for instance, by my method less than one third the number of arm movements between the case and the stick are required as compared with the ordinary method of setting each letter or character separately.

A secondary feature of my invention consists in the special construction and arrangement of parts for supporting and manipulating the types substantially as hereinafter set forth, especially in the mechanism for detaching the types and projecting them between the fingers of the compositor.

In the accompanying drawings I illustrate the embodiment of my invention in practical form, although I do not wish to confine myself strictly to the identical form and construction of parts herein shown since it is obvious that various modifications may be made in arrangement and details without deviat-

ing from the essential features of my invention.

Figure 1, represents a front elevation of a series of nine groups of channels arranged in a common support or frame, the types being omitted. Fig. 2, is a top view of the frame or bed; Fig. 3, a front elevation of the same; Fig. 4, a perspective view of one of the channel supports, removed from the frame, and showing the lower portions of three type containing channels in position. Fig. 5, is a vertical section, in perspective, of one of the type channel supports. Fig. 6, is a perspective view of the right side of the front end of one of the type channel supports; Fig. 7, a similar view of the left side thereof. Fig. 8, is a top view of a type channel support; Fig. 9, a horizontal section upon plane of line  $x$ ,  $x$ , Fig. 13; Fig. 10, a horizontal section upon plane of line  $y$ ,  $y$ , Fig. 7, the front guard and type forwarding mechanism being omitted; Fig. 11, a view similar to Fig. 9, showing type in position; Fig. 12, a similar view, showing the types advanced; Fig. 13, a vertical section through the channel support and three type containing channels resting thereon.

The frame work A, may be of any suitable form and construction provided it affords flanges or brackets  $a$ , for the reception of the channel supports B, which are attached to the brackets  $a$ , by set screws  $a'$ , or other suitable means. The brackets  $a$ , are preferably slotted longitudinally, as at  $a^2$ , to provide for the adjustment of the channel supports B. The base plates  $b$ , of the channel supports are also preferably slotted longitudinally, for a like reason. Each channel support B, is formed with a spine  $b'$ , which supports the vertical side walls  $b^2$ ,  $b^3$ , of the holder. These side walls  $b^2$ ,  $b^3$ , do not extend down to the supporting shoulder  $b^4$ , so that horizontal slots  $b^5$ ,  $b^6$ , are formed in which the type lever C, rests and operates.

Interior shoulders  $d$ ,  $d'$ ,  $d^2$ , are formed around the lower walls and spine of the holder B, as shown in Figs. 4, 8, 10 and 13. These shoulders  $d$ ,  $d'$ ,  $d^2$ , support the lower edges of the type-containing channels E. When adapted for the reception of two type containing channels, one side wall and the back of each of the latter rest upon the shoulders  $d$ ,  $d'$ ,  $d^2$ . When more than two type contain-



ing channels are to be accommodated those in the middle rest only at the rear upon the shoulder  $d'$ , upon which they are held by the front guard G, which also supports the fronts of the other channels, one of the walls of each of which is made of greater width than "type high."

The floor  $b^8$ , of the channel support is formed with the depression or recess  $b^7$ , into which the lowest types from the channels drop. This depression  $b^7$ , however is not equal in depth to the thickness of the type, so that the latter project slightly above the surface  $b$ , and in the path of the type lever C. The type lever C, is rectangular and is pivoted to the floor  $b$ , at  $c$ . Normally the type lever C, rests in the position shown in Fig. 11, owing to the pressure of the torsion or other form of spring  $c'$ . The outer end of the type lever C, projects laterally beyond the channel support B, and is formed with a broad finger bearing  $c^2$ , by which it may be drawn forward into the position shown in Fig. 12, thereby advancing the lower types into position to be withdrawn by the fingers.

The front guard G, is made in any suitable manner to afford a support for the fronts of the channels. As shown in the drawings it consists of a plate  $g$ , secured by a substantial hinge  $g'$ , which while affording strength sufficient to hold the channels against forward movement, admits of the guard being swung out of the way to facilitate the insertion or removal of channels.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a compositor's hand case substantially such as described, the combination of a plurality of interchangeable type containing channels, a common support for the lower ends of said channels consisting of a flange in one plane upon which the lower edges of the said channels rest, and a common type supporting shoulder below the said channel support upon which the columns of types are supported independent of their channels, for the purpose and substantially in the manner set forth.

2. In a compositor's hand case substantially such as described, the combination of a plurality of interchangeable type containing channels, a common support for the lower ends of said channels consisting of a flange in one plane upon which the lower edges of the said channels rest, and a common type supporting shoulder below the said channel support formed with lateral openings between it and the said channel support upon which type shoulder the columns of types are supported independent of their channels, for the purpose and substantially in the manner described.

3. In a compositor's hand case substantially such as described the combination of a plurality of interchangeable type containing channels, a common support for the lower ends of said channels consisting of a flange in one

plane upon which the lower edges of the said channels rest, a common type supporting shoulder below the said channel support formed with lateral openings between it and said channel support upon which type shoulder the columns of types are supported independent of their channels, and a front plate for supporting the channels and the types above the channel support against displacement, substantially in the manner and for the purpose described.

4. In a compositor's hand case substantially such as described, the combination of two or more interchangeable type containing channels E, the type channel holder B, formed with the spine  $b'$ , side walls  $b^2$ ,  $b^3$ , and shoulders  $d'$ ,  $d^2$ ,  $d^3$ , for the lower edges of the type containing channel E, the type lever C, and the type supporting shoulder  $b^8$ , formed with the transverse openings or slots  $b^5$ ,  $b^6$ , between it and the said shoulders  $d'$ ,  $d^2$ ,  $d^3$ , and shaped in front to admit of the removal of the lowest types from all the type columns simultaneously by and between the fingers of the operator substantially in the manner and for the purpose described.

5. In a compositor's hand case substantially such as described the combination of two or more interchangeable type containing channels, E, the type channel holder B, formed with the spine  $b'$ , side walls  $b^2$ ,  $b^3$ , and shoulders  $d'$ ,  $d^2$ ,  $d^3$ , for the lower edges of the type containing channels E, the type lever C, and the type supporting shoulder  $b^8$ , formed with the recess  $b^7$ , and with transverse slots  $b^5$ ,  $b^6$ , between it and the said shoulders  $d'$ ,  $d^2$ ,  $d^3$ , and shaped in front to admit of the removal of the lowest types from all of the type columns simultaneously by and between the fingers of the operator, substantially in the manner and for the purpose described.

6. In a compositor's channel case substantially such as described, the combination of a type channel holder formed to support independently a plurality of type containing channels, and a plurality of columns of types, and a finger lever arranged to cut off, and forward simultaneously by and between the fingers of the operator the lowest types from their columns, substantially in the manner and for the purpose described.

7. In a compositor's channel case substantially such as described, the combination of a type channel holder formed to support independently a plurality of type containing channels and a plurality of columns of types, a finger lever arranged to cut off and forward simultaneously by and between the fingers of the operator the lowest types from their columns, and a retractile spring for automatically returning the said finger lever to its normal position substantially in the manner and for the purpose described.

LOUIS K. JOHNSON.

Witnesses:

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