

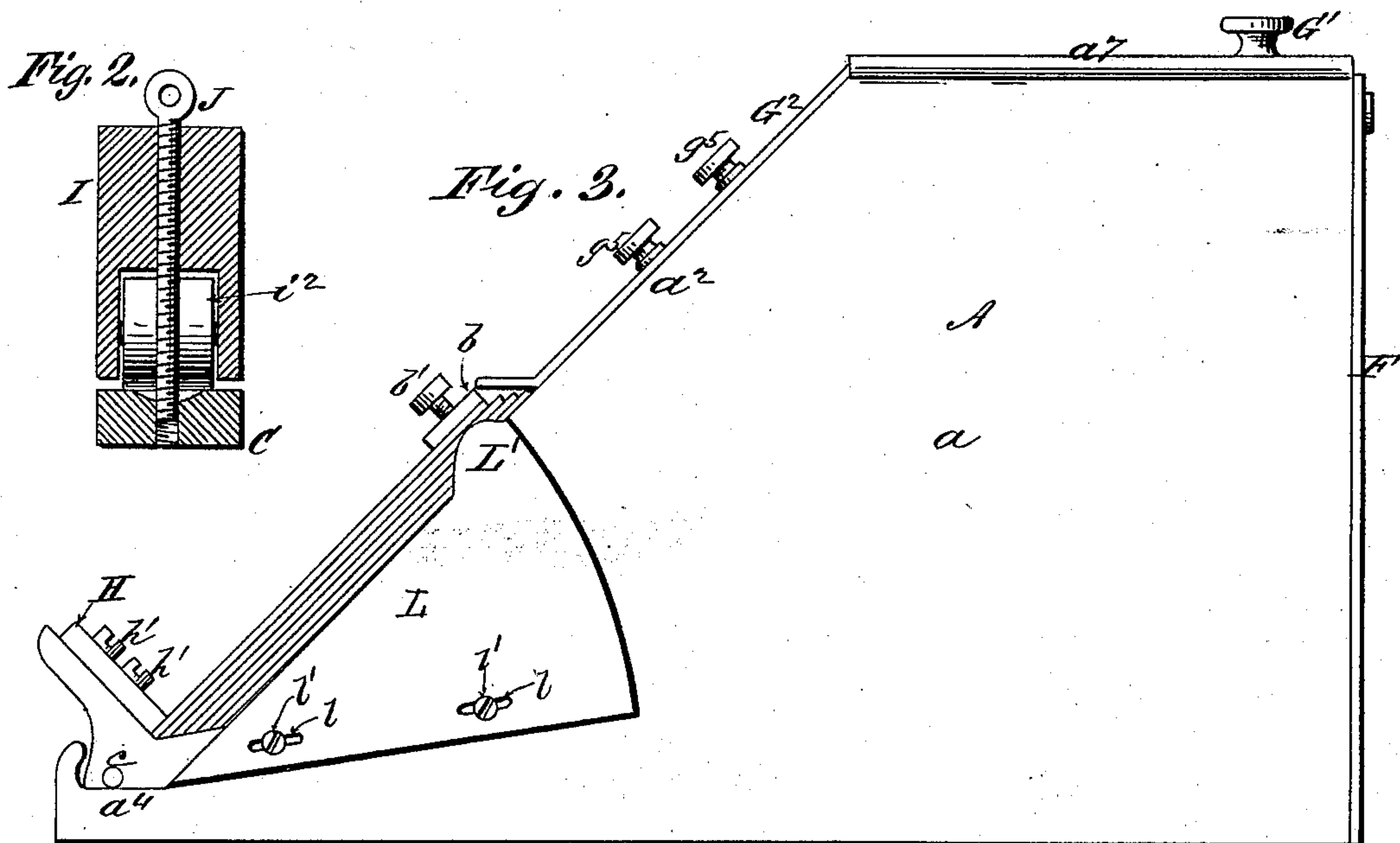
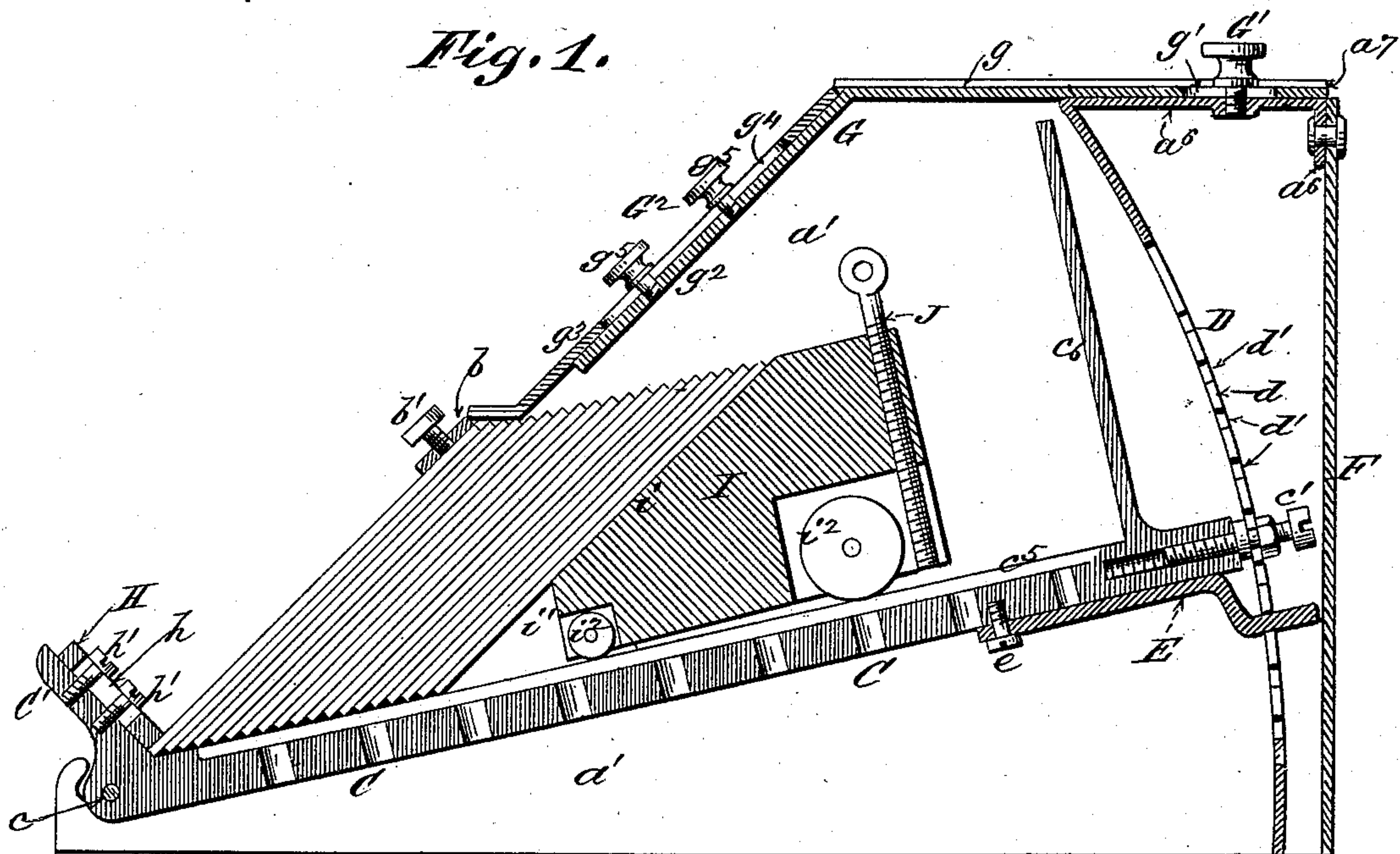
(No Model.)

3 Sheets—Sheet 1.

A. A. LOW.
LEAD AND RULE HOLDER.

No. 383,960

Patented June 5, 1888.



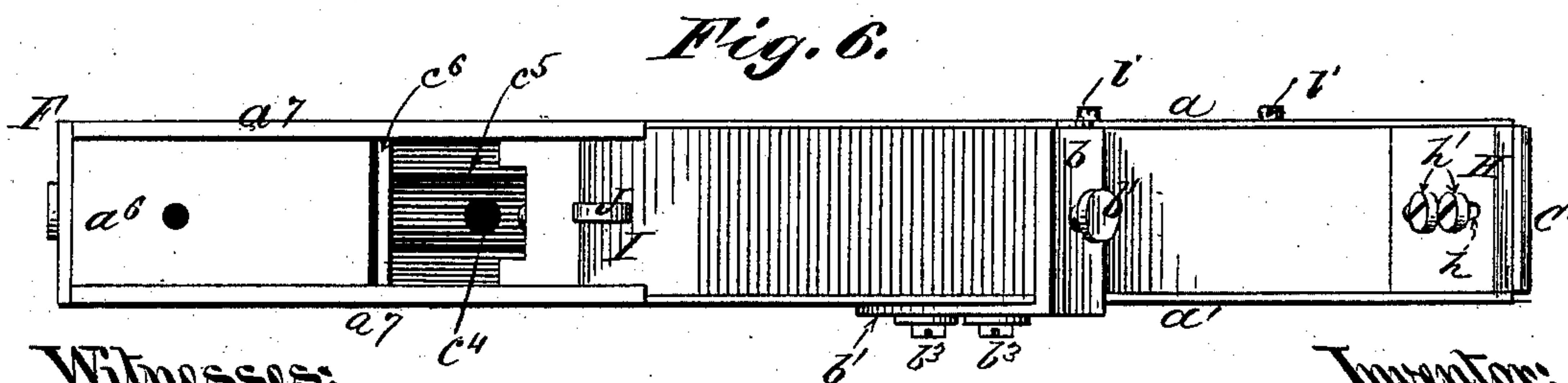
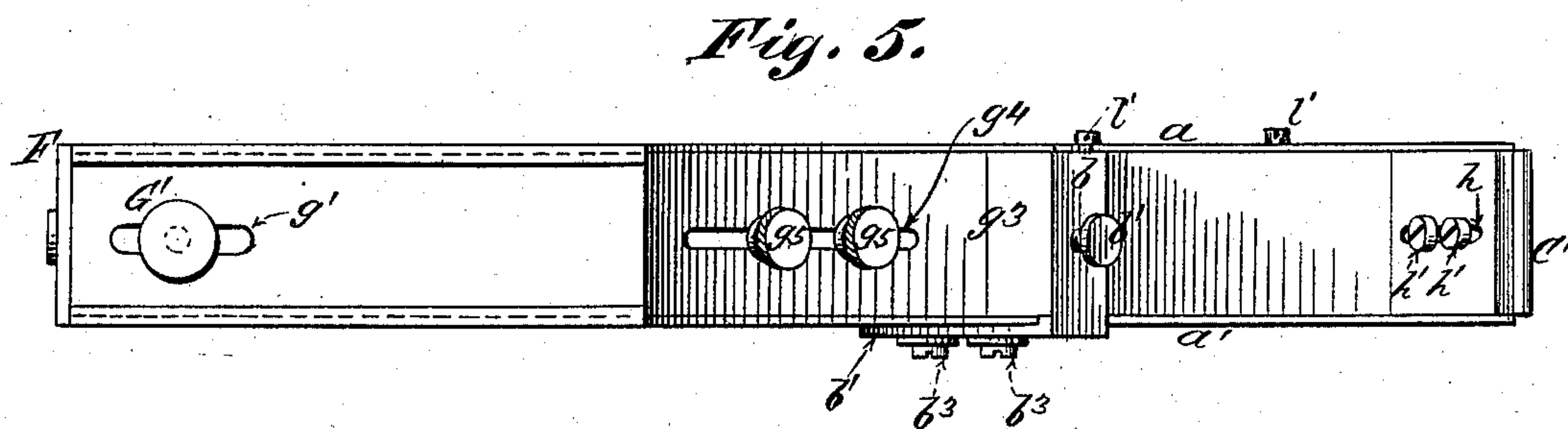
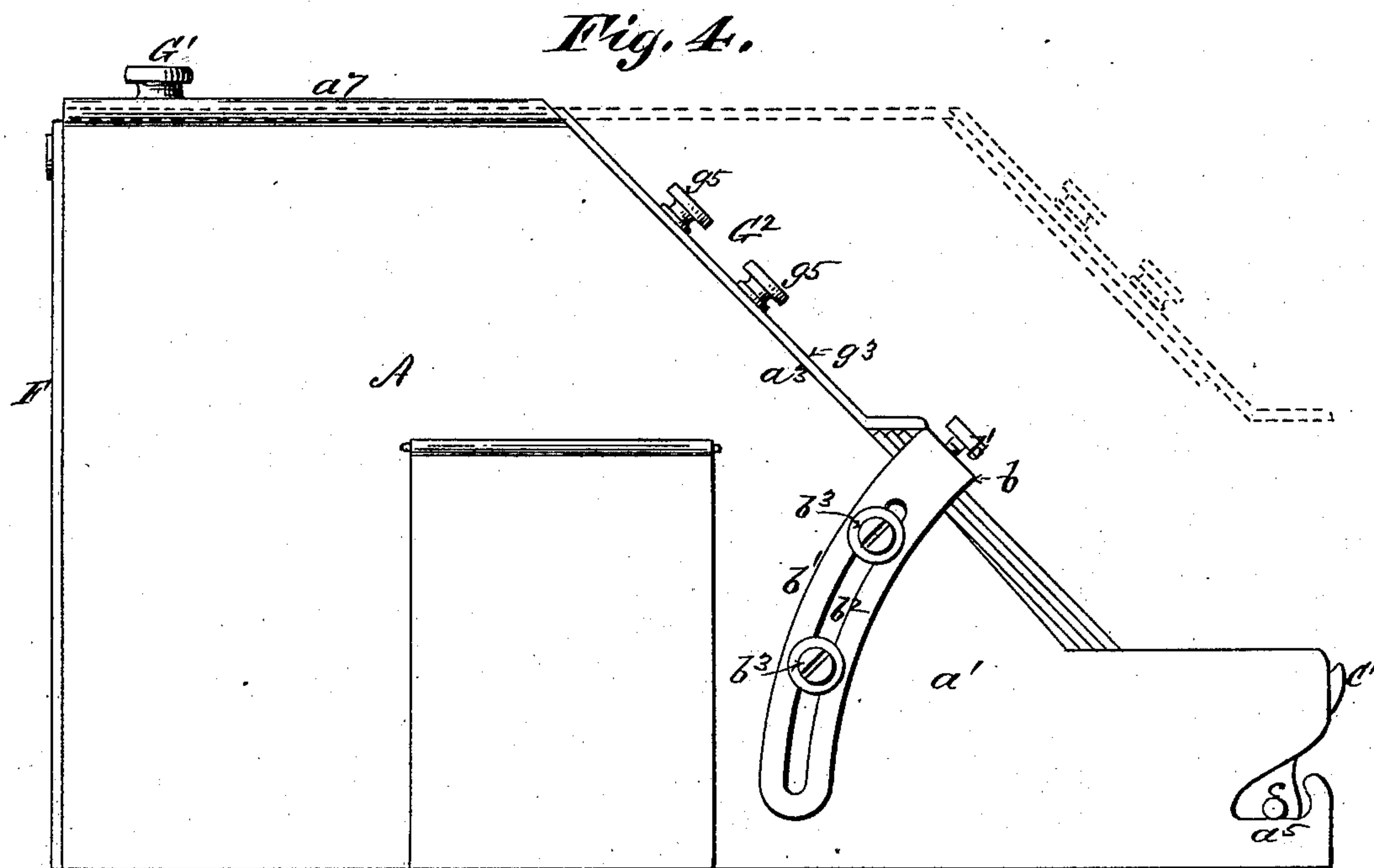
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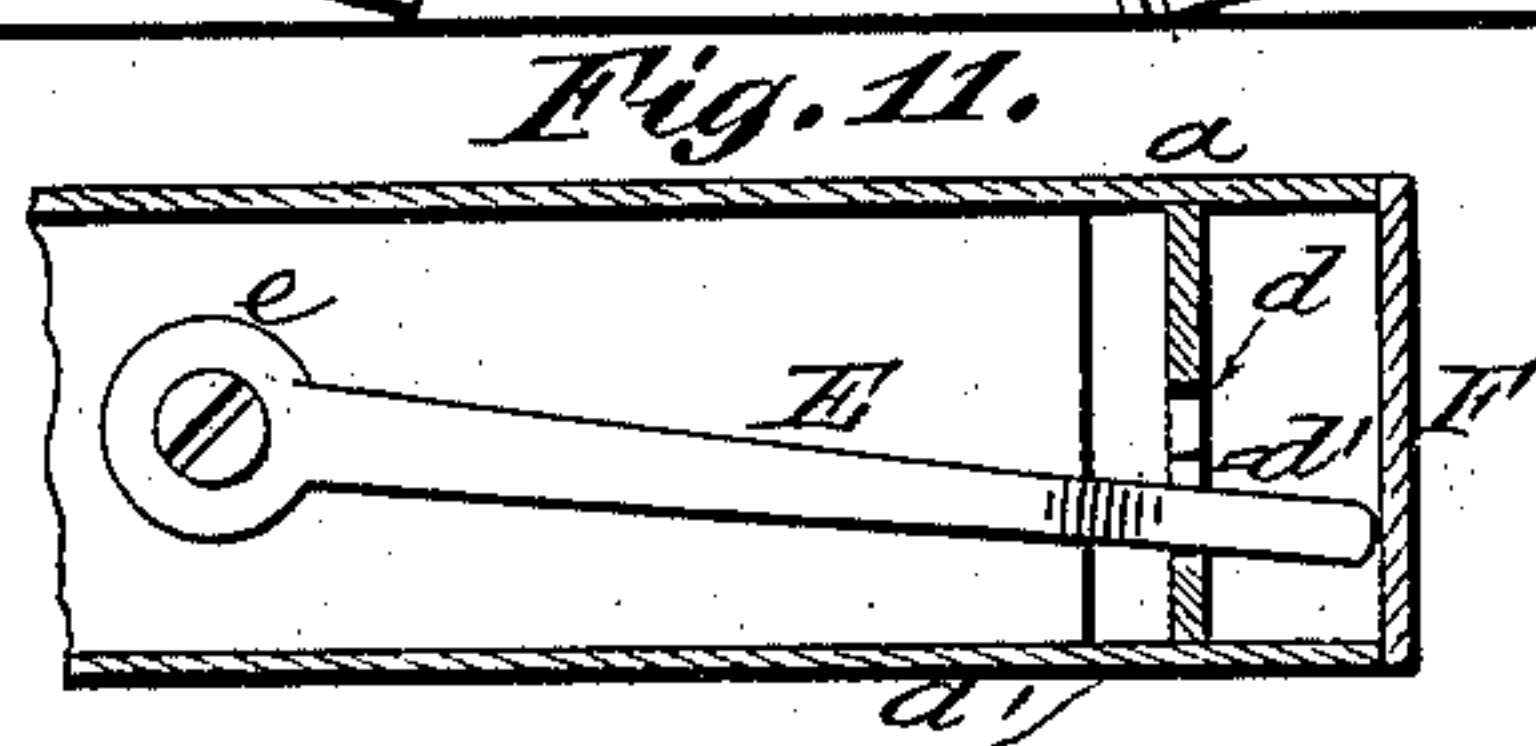
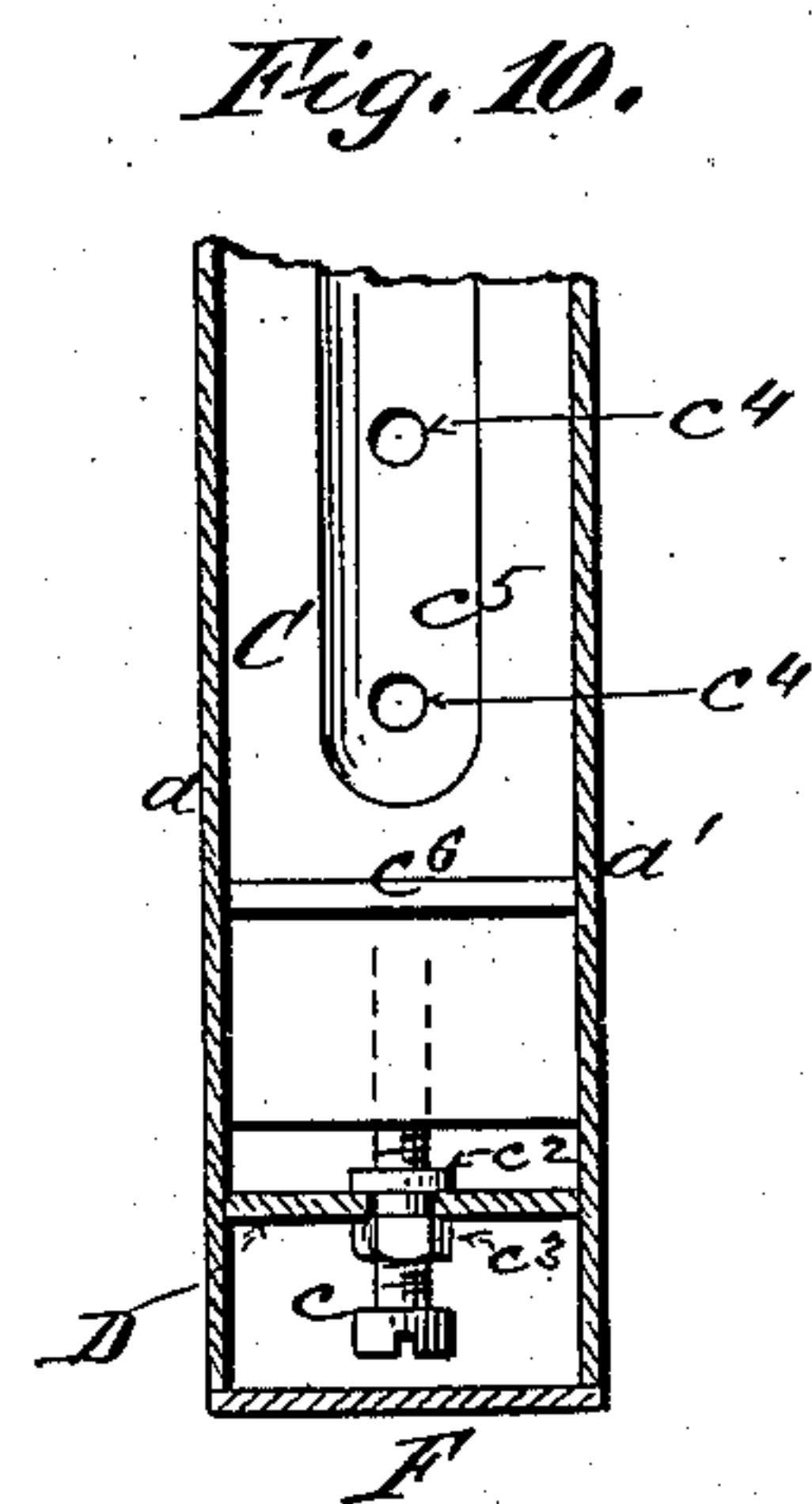
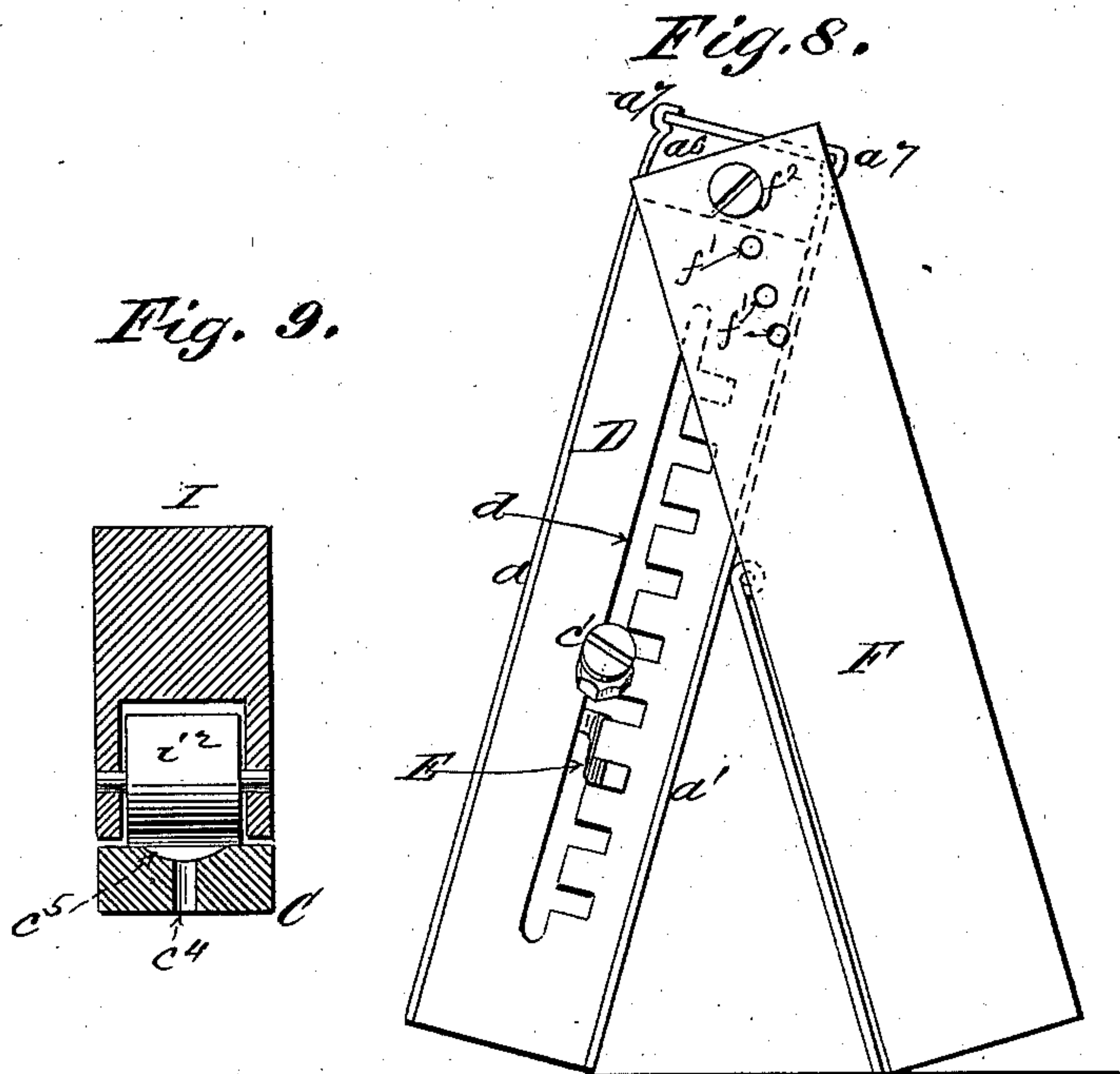
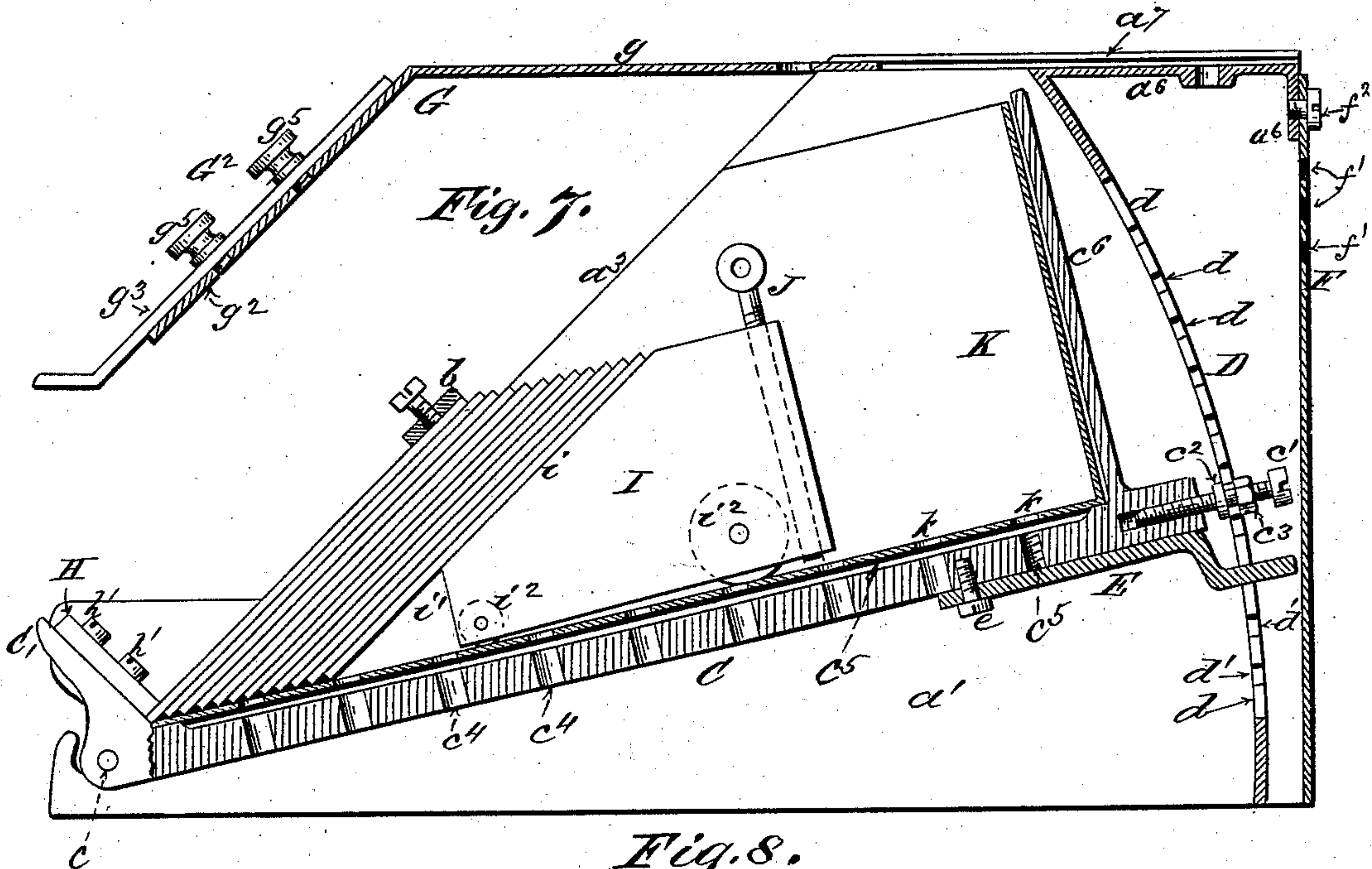
(No Model.)

3 Sheets—Sheet 3.

A. A. LOW.
LEAD AND RULE HOLDER.

No. 383,960.

Patented June 5, 1888.



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UNITED STATES PATENT OFFICE.

A. AUGUSTUS LOW, OF BROOKLYN, ASSIGNOR TO THE ALDEN TYPE MACHINE COMPANY, OF NEW YORK, N. Y.

LEAD AND RULE HOLDER.

SPECIFICATION forming part of Letters Patent No. 383,960, dated June 5, 1888.

Application filed December 16, 1886. Serial No. 221,716. (No model.)

To all whom it may concern:

Be it known that I, A. AUGUSTUS LOW, 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 Lead and Rule Holders for Compositors' Use, 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 invention relates to the class of apparatus for holding and presenting leads or rules for compositors' use heretofore originated by me, and for which I have obtained Letters Patent No. 356,845, dated February 1, 1887.

In this class of apparatus the lowest leads or rules in a line or column contained in an inclined channel or holder are successively removed, as required, through a suitably-situated lateral opening in the side of the channel or holder, the leads or rules being automatically fed successively into position for removal by the aid of gravity. In my recent applications for patents upon this subject filed October 30, 1886, Serial Nos. 217,616 and 219,985, filed November 26, 1886, the leads or rules are inclined backward, substantially as herein shown and described, and I do not seek to cover broadly herein the means for effecting this treatment of the leads or rules, but in this connection confine myself to the special and improved construction of parts hereinafter set forth, by which I am enabled to effect certain practical advantages in use not heretofore attained.

It is obvious that by lessening the angle at which the leads or rules are to descend, I am thereby enabled to decrease the pressure of the line or column above upon the lowest leads or rules, thus proportionately decreasing the resistance to be overcome by the hand of the compositor while effecting the removal of the leads or rules successively through the lateral opening at the front of the case or channel.

In my Letters Patent No. 356,845, dated February 1, 1887, I describe and show a channel-floor pivotally suspended at the front end of the case and adjustable in inclination. In the present case I also pivotally suspend the supporting-floor at or near the front end of

the case; and the features of novelty in this connection consist in providing for a slight adjustment of said supporting-floor longitudinally in order to regulate with accuracy from the back of the case or channel the position of the lower front edges of the holder, such lower front-end line-rest in the present case being attached to and forming a part of the floor.

Another feature of novelty consists in the special means employed herein for supporting the rear end of the floor and effecting its adjustment in inclination, a supporting lever or handle, pivotally connected to the floor-piece, being used as both a handle for raising and lowering the floor and as a catch, which, by entering any of a series of notches provided for the purpose, will sustain the floor in the required position.

In connection with an adjustable stop or screw upon the line-follower, another special feature of my present construction consists in forming the inclined floor of the channel or case with a series of perforations adapted to receive the lower end of the said adjustable pin or screw upon the follower when it is desired to lock or hold the follower in a prescribed position within the channel or case—as, for instance, when not in use or during the removal or transfer of the apparatus. Incidentally these perforations, in conjunction with a central groove in the upper side of the floor, afford means for the escape of dirt or other foreign substances which are liable to collect during use.

My present invention also includes the combination and arrangement, with the pivotally-suspended floor adjustable in inclination, of an upper front end line support, which is adjustable concentrically for the purpose of effecting and preserving the proper relation of the parts under all circumstances.

Another feature of my improved construction consists in making the lower front end rest adjustable upon its support for the purpose of regulating and controlling with accuracy the lower ends or heels of the leads or rules according to the requirements of the various thicknesses to be used in the case or channel.

My invention also includes a special form of

cover for the channel or case, consisting of a top plate sliding between the upper side walls and provided with a downwardly-projecting front plate, which is adjustable in length, so that it may be regulated to coincide with the height of the leads or rules, to the top only of which it is designed to extend, thus protecting all but the front surface of the lowest lead or rule in the column, the exposure of which is essential during use and unobjectionable when the case or channel is not in use.

In order to guard against all possibility of the unintentional displacement of the lowest lead or rule through the transverse exit when the device is not in use or during its temporary removal or transfer, I provide the upper front end guard with an adjustable pin or screw, by which the upper ends of the lowest lead or rule may be forced back beyond the front edge of the side wall of the case or channel. This front edge of the side wall, in front of which the leads or rules are withdrawn, is also of peculiar formation, as will be seen by reference to Fig. 3 of the drawings, for the purpose of facilitating the clearance and removal of the leads or rules.

The invention includes a swinging back-rest or brace, which, when not in use, acts as a cover to the rear end of the case or channel, inclosing and protecting the means for adjusting the inclined floor, but which, when it is desired to impart a lateral inclination to the channel or case, as and for the reasons explained in my recent applications for patents, may be used as a support or prop for the case or channel, as indicated in Fig. 8.

I do not design to confine myself strictly to the identical construction shown in the accompanying drawings, which are simply designed to illustrate practicable means for giving effect to the special features of my invention, and for convenience in illustration are disproportionate in some respects.

Figure 1 is a vertical longitudinal section of my improved device. Fig. 2 is a transverse section of the rear end of the line-follower and the adjoining portion of the floor upon a plane coinciding with the center of the adjustable stop or screw. Fig. 3 is an elevation of the right-hand side of the case or channel. Fig. 4 is an elevation of the left-hand side of the case or channel; Fig. 5, a plan of the same closed; Fig. 6, a similar view with the cover removed; Fig. 7, a vertical longitudinal section of the case in which a storage channel or tray has been introduced; Fig. 8, an end view of the device illustrating the use of the back cover as a brace or support when it is desired to incline the case or channel laterally. Fig. 9 is a transverse section of the follower and adjoining portion of the floor, taken upon a plane coinciding with the axis of the rear roller in the follower; Fig. 10, a top view of the rear portion of the adjustable floor, showing the adjoining wall, &c., in section; Fig. 11, a bottom view of the rear portion of the adjustable

floor, showing the adjoining side walls, &c., in section.

The front edges, a^2 a^3 , of the side walls of the channel or holder A are inclined at an angle approximating that which the greater variety of leads or rules will be made to assume in their descent, the longer and heavier leads or rules requiring a greater elevation of the floor than the smaller leads or rules.

Any deviation from the fixed front lines of the side walls is compensated for upon the left-hand side by making the upper end front rest b adjustable concentrically with the mean position of the pivot c of the adjustable floor C—that is to say, if it is necessary to increase the degree of inclination of the floor C beyond that shown in the drawings, the upper front end rest is correspondingly adjusted forward so as to maintain the proper relation between the parts. This adjustment may be effected in various ways. As shown in the drawings, the lateral projection or rest b is mounted upon an arm, b' , by which it is secured to the left-hand side wall, a' , the arm b' being formed with a slot, b^2 , through which the binding-screws b^3 b^3 pass. The slot b^2 is substantially concentric to the mean position of the pivot c , and it is also preferably made wide enough to admit of more or less lateral adjustment when necessary to compensate for any slight change in the position of the pivot c .

The opposed bearing-surface L, upon the right-hand side, is permanently attached to the floor-piece C, projecting upward therefrom and partaking of its motion when adjusted, so that the relative positions of these parts are maintained under all circumstances. The bearing L is cut away underneath the gage-point L' , substantially as shown, for the purpose of facilitating the clearance and withdrawal of the leads or rules. In attaching the bearing L to the floor-piece provision is made for a slight degree of adjustment, as by the slots l and set-screws l' in Fig. 3.

Between the side walls, a a' , near the rear of the device, is arranged the curved segment D, concentric with the mean position of the pivot c . This segment is formed with a longitudinal slot, d , through which the adjusting-screw c' projects. The inner end of the said screw c' engages a female screw-thread formed in the rear end of the floor-piece C, and it is held against longitudinal movement by the collar c^2 and nut c^3 , so that by its rotation in one or the other direction it will cause the floor C to advance or recede, within certain limits, as the case may be, the pivot c resting loosely upon the upper edges of the bearings a^4 a^5 , and sliding back or forth thereon under the impulse of the screw. The nut c^3 also affords a means of holding the screw in a prescribed position; but the rear end of the floor C is designed to be supported positively by other means than the screw c' , a laterally-swinging lever, E, being provided for this purpose. The inner end of the lever E is pivotally at-

tached to the under side of the floor C, as at *e*, and its outer end projects through the slot *d*, so as to afford a handle. Notches *d d'* are formed in the segmental piece D, which open
5 into the said slot *d*, and when it is desired to support the floor C in a prescribed position the outer portion of the lever E is simply swung into the approximate notch, as will be understood by reference to Figs. 1, 7, 8, and 11.

10 A swinging cover, F, is pivoted to a cross-piece, *a⁶*, between the upper rear side walls, and is designed to inclose and protect the screw *c'* and lever E; or it may, if required, be used as a brace or rest, as shown in Fig. 8, when it is
15 desired to incline the channel or holder laterally.

For the smaller and more numerous sizes of leads and rules the floor will occupy what may be called its "normal position," approximately
20 that illustrated in the drawings, in which position it is designed to inclose the upper part of the channel or compartment by a sliding cover, G. The horizontal portion *g* of this cover G is supported in the horizontal grooves
25 *a⁷ a⁷*, formed in the upper edges of the side walls, *a a'*, and is held therein by a set-screw, *G'*, which engages a female screw-thread in the cross-piece *a⁶*. The horizontal portion *g* of the cover G is formed with a slot, *g'*, through which
30 the screw *G'* passes. By this means the cover G is given a certain degree of adjustment horizontally, so that it may be brought forward beyond the lowest lead or rule when leads or
35 rules longer than those shown are used; or, in the case of the use of longer leads or rules, the inclined front portion, *G²*, of the cover G may be contracted in length to conform to the new requirements, the said front inclined section,
40 *G²*, being made of two parts—*i. e.*, the rigid extension *g²* and the adjustable plate *g³*, substantially as shown. The movable plate *g³* is preferably formed with the longitudinal slot
45 *g⁴*, through which the set-screws *g⁵ g⁵* pass and engage with female screw-threads in the rigid extension *g²*.

The upper front line end support, *b*, is provided with an adjustable stop or screw, *b'*, which in use is retracted so as not to project
50 beyond the inner surface of the said upper front line end support, the object of its use being to afford a means of forcing back the upper portion of the line, when not in use, beyond the front edge of the bearing-surface L, so that the lowest lead or rule cannot be dis-
55 lodged laterally. The lower front line end support, H, is secured adjustably to the forward extension, C', of the floor C by any appropriate means. As shown in the drawings, it is formed with a slot, *h*, through which the
60 set-screws *h' h'* pass before entering the female screw-threads formed for their reception in the extension C'. The upper surface of the latter extends forward at a right angle to the length of leads or rules when in position.

65 The floor C is formed with a series of perforations, *c⁴ c⁴*, and its upper surface is formed

with a central groove or gutter, *c⁵*. The groove or gutter *c⁵* not only serves to decrease the frictional contact with the follower I, but also facilitates the collection and discharge through
70 the perforations *c⁴ c⁴* of dirt or other foreign substances which would otherwise be liable to accumulate objectionably during the use of the device. The perforations *c⁴* also afford means
75 for engaging the lower end of the adjustable stop or screw J, situated at the rear of the follower I. When it is desired to hold the follower in a certain position against movement in the channel, the stop J is adjusted so that it
80 will enter any of the series of holes *c⁴*, and certain of the latter may be provided with female screw-threads for the purpose of positively engaging the end of the stop J and thereby locking the follower in position for transportation
85 or storage purposes.

Where a storage channel or tray, K, is used, as illustrated in Fig. 7, its bottom is formed with holes *k*, which coincide with the perforations *c⁴* in the adjustable supporting-floor C, and the action in such case is the same as
90 though the leads or rules rested directly upon the said supporting-floor C.

The front bearing or line supporting edge, *i*, of the follower I is formed at the angle with relation to the supporting-floor C at which it
95 is desired to maintain the leads with relation to the said floor under all circumstances, the variations in the angle of their inclination from a vertical line being effected by the adjustment of the rear end of the supporting-floor,
100 as hereinbefore set forth. The extreme lower front end, *i'*, of the follower I is formed so as to extend at right angles to the floor of the channel or compartment.

The lower edge of the follower is provided
105 with one or more rollers or wheels, *i² i²*, substantially as shown, which project sufficiently below the under side of the follower to prevent frictional contact with the floor. The adjustable floor C is formed with a rectangular
110 back, *c⁶*, at the rear for the purpose of isolating the segment D and the means of adjustment from the contents of the channel.

It is obvious that the apparatus may be varied somewhat in detail from the actual construction shown without deviating from the
115 spirit and intent of my invention.

The cover F may be provided with a series of perforations, *f'*, if desired, for the purpose of varying the lateral inclination of the chan-
120 nel by means of the set-screw *f²*, which may be passed through any of the said holes before engaging with the cross-piece *a⁶*.

I am aware that in my application for patent concurrent herewith, No. 222,238, filed
125 December 22, 1886, I show and describe certain features of construction which are also shown herein, and I therefore wish it to be understood that I expressly disclaim herein all features specifically claimed in said applica-
130 tion and confine myself herein to the subject-matter of the claims hereinafter set forth.

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

1. In a lead and rule holder substantially such as described, a floor-piece which is adjustable longitudinally, substantially in the manner and for the purpose described.

2. In a lead and rule holder substantially such as described, the combination and arrangement, with the floor-piece C, pivotally suspended at its front end and provided at its rear end with the swinging catch or lever E, of the concentric segment D, formed with the longitudinal slot d , having lateral notches d' , for the reception and support of the said lever E, substantially in the manner and for the purpose described.

3. In a lead and rule holder substantially such as described, the combination, with a floor-piece pivotally suspended at its front end, of the concentric segment D, formed with the slot d and provided with the adjusting-screw c' , arranged and operating substantially in the manner and for the purpose described.

4. In a lead and rule holder substantially such as described, the floor-piece C, formed with the central groove, c^3 , and series of perforations c^4 , for the purpose and substantially in the manner described.

5. In a lead and rule holder substantially such as described, the combination, with a floor-piece formed with a series of perforations, substantially as described, of a line-follower provided with an adjustable stop adapted to engage the said perforations, for the purpose and substantially in the manner set forth.

6. In a lead and rule holder substantially such as described, a floor-piece formed with a forward extension substantially at right angles to the position of the leads or rules upon the said floor, substantially in the manner and for the purpose described.

7. In a lead and rule holder substantially such as described, the combination, with the floor-piece formed with the forward extension, substantially as described, of the adjustable lower front line end rest or support arranged and operating substantially in the manner and for the purpose described.

8. In a lead and rule holder substantially such as described, the combination, with the

adjustable floor-piece pivotally suspended at its front end, of the concentrically-adjustable upper front line end support, b , arranged and operating substantially in the manner and for the purpose described.

9. A lead and rule holder substantially such as described, formed with a back plate or cover, F, at its rear end, the upper extremity of which is pivotally connected to the holder in such manner as to permit of the lower end being swung outward laterally, for the purpose and substantially in the manner described.

10. In a lead and rule holder substantially such as described, the sliding cover G, formed with the horizontal plate g and forward extension, G^2 , the latter projecting downward at an angle substantially the same as that of the inclination of the leads and rules in the compartment and inclosing the space above the transverse front guard, b , in combination with the latter and with the inclined parallel side walls of the holder, for the purpose and substantially in the manner described.

11. In combination with a lead and rule holder substantially such as described, the sliding cover G, formed of the horizontal plate g and extension g^2 , and provided with the adjustable plate g^3 , substantially in the manner and for the purpose described.

12. In a lead and rule holder substantially such as described, the sliding cover G, consisting of the inclined front portion, g^2 , projecting downward from the main portion g , which rests between parallel guides a^7 a^7 , and is formed with a longitudinal slot, g' , and is provided with a set-screw, G' , engaging the frame of the holder for the purpose of securing the cover rigidly in a prescribed position, substantially in the manner and for the purpose described.

13. In a lead and rule holder substantially such as described, the side bearing L, formed with the gage L' and receding backward and downward from that point, substantially in the manner and for the purpose described.

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