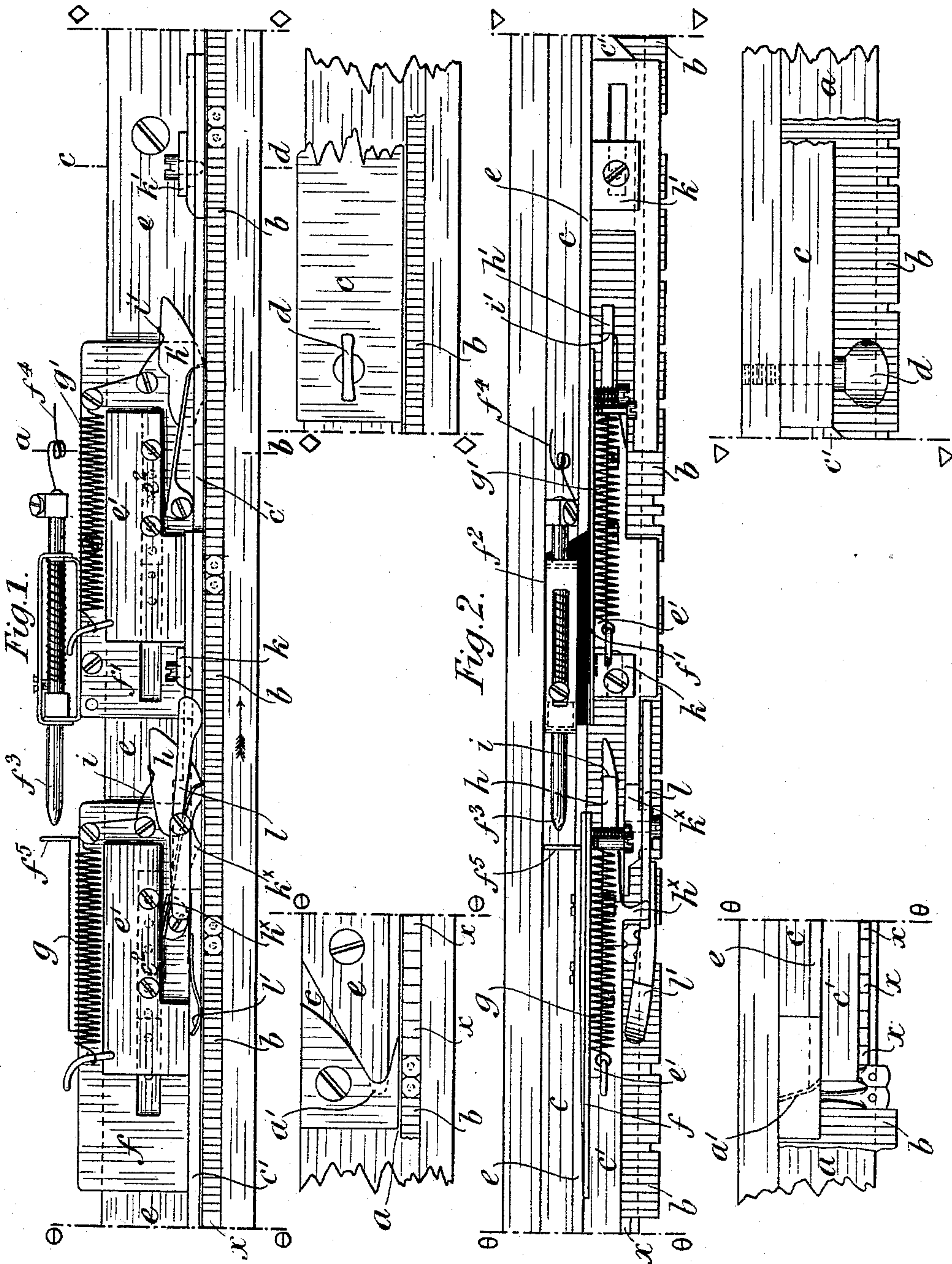


J. HOOKER.

INDICATOR MECHANISM FOR TYPE SETTING MACHINES.

No. 495,588.

Patented Apr. 18, 1893.



Witnesses  
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(No Model.)

3 Sheets—Sheet 2.

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Fig. 4.

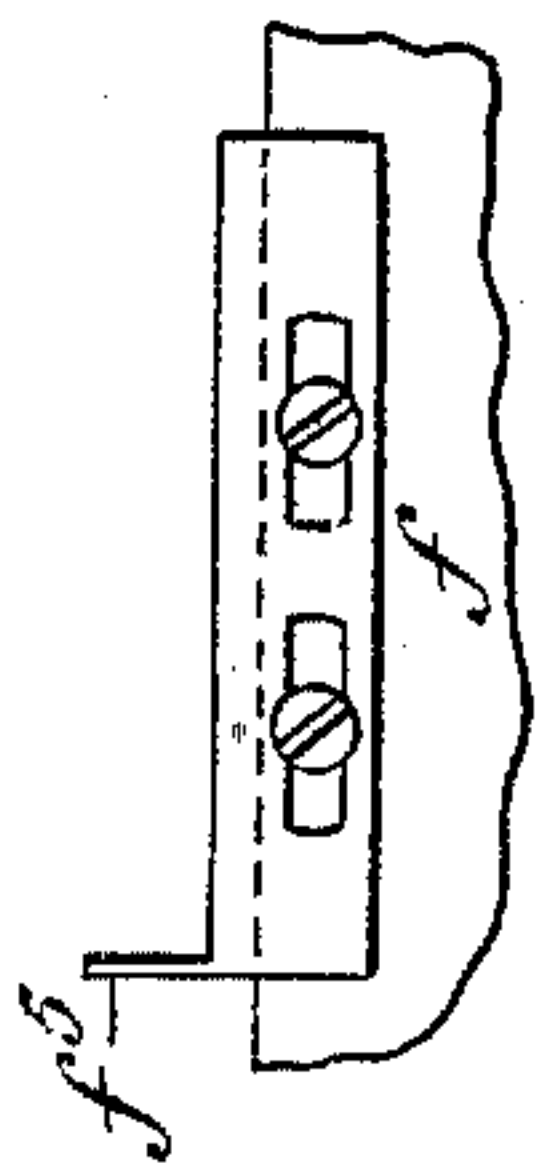


Fig. 3.

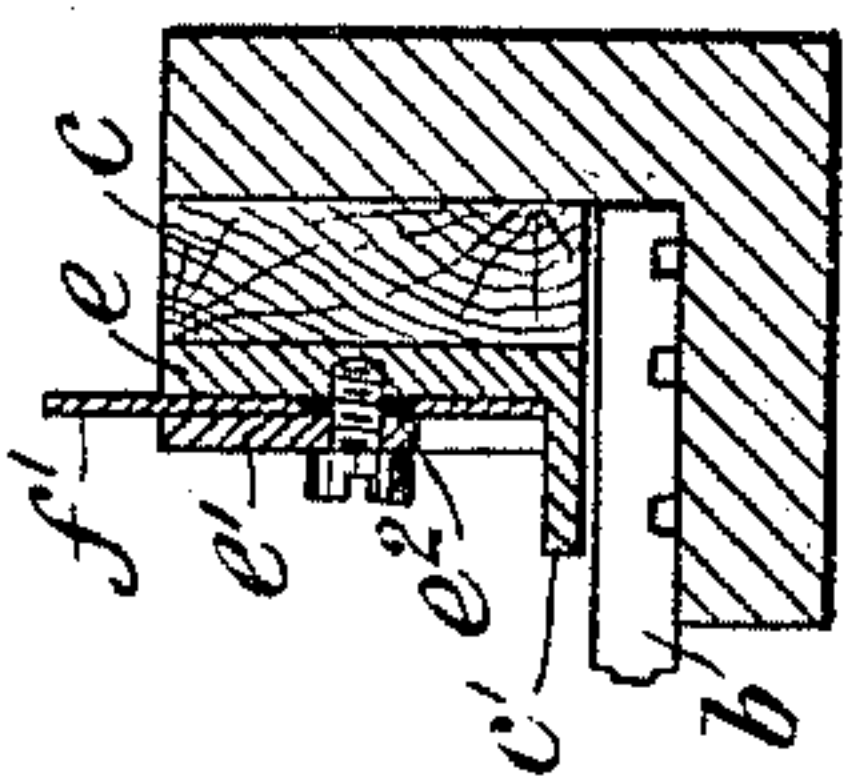


Fig. 5.

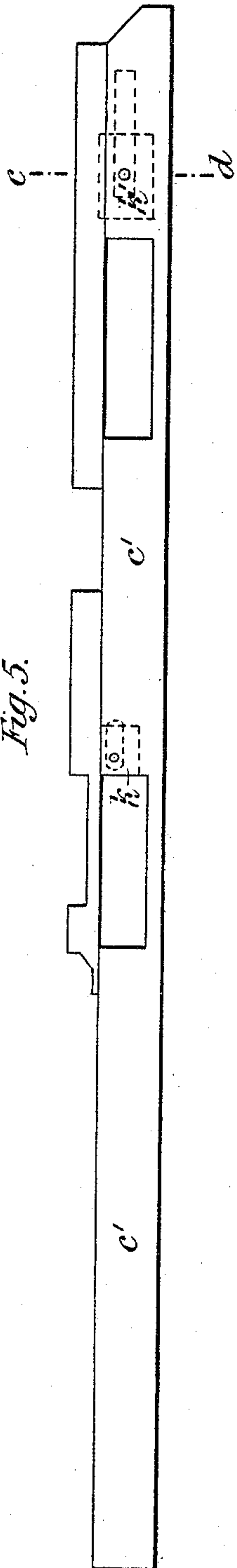


Fig. 7.



Fig. 8.

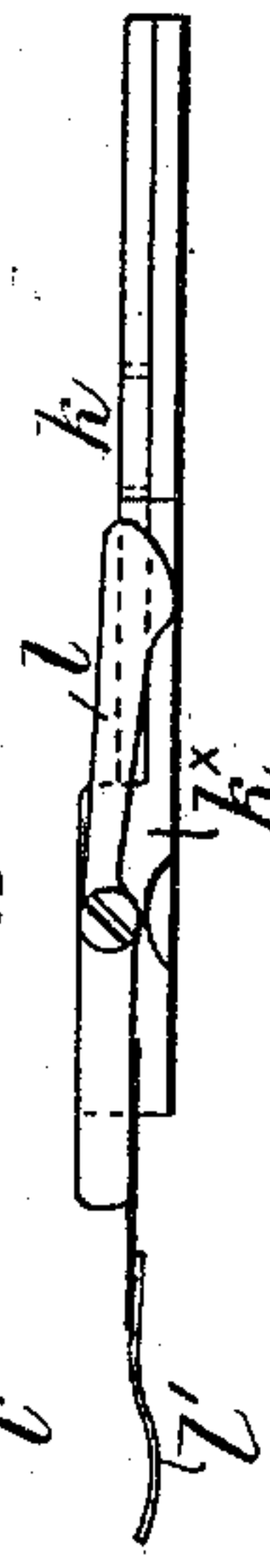
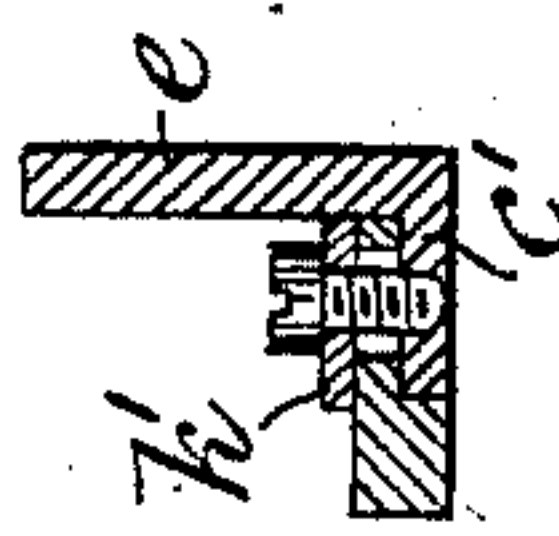


Fig. 6.



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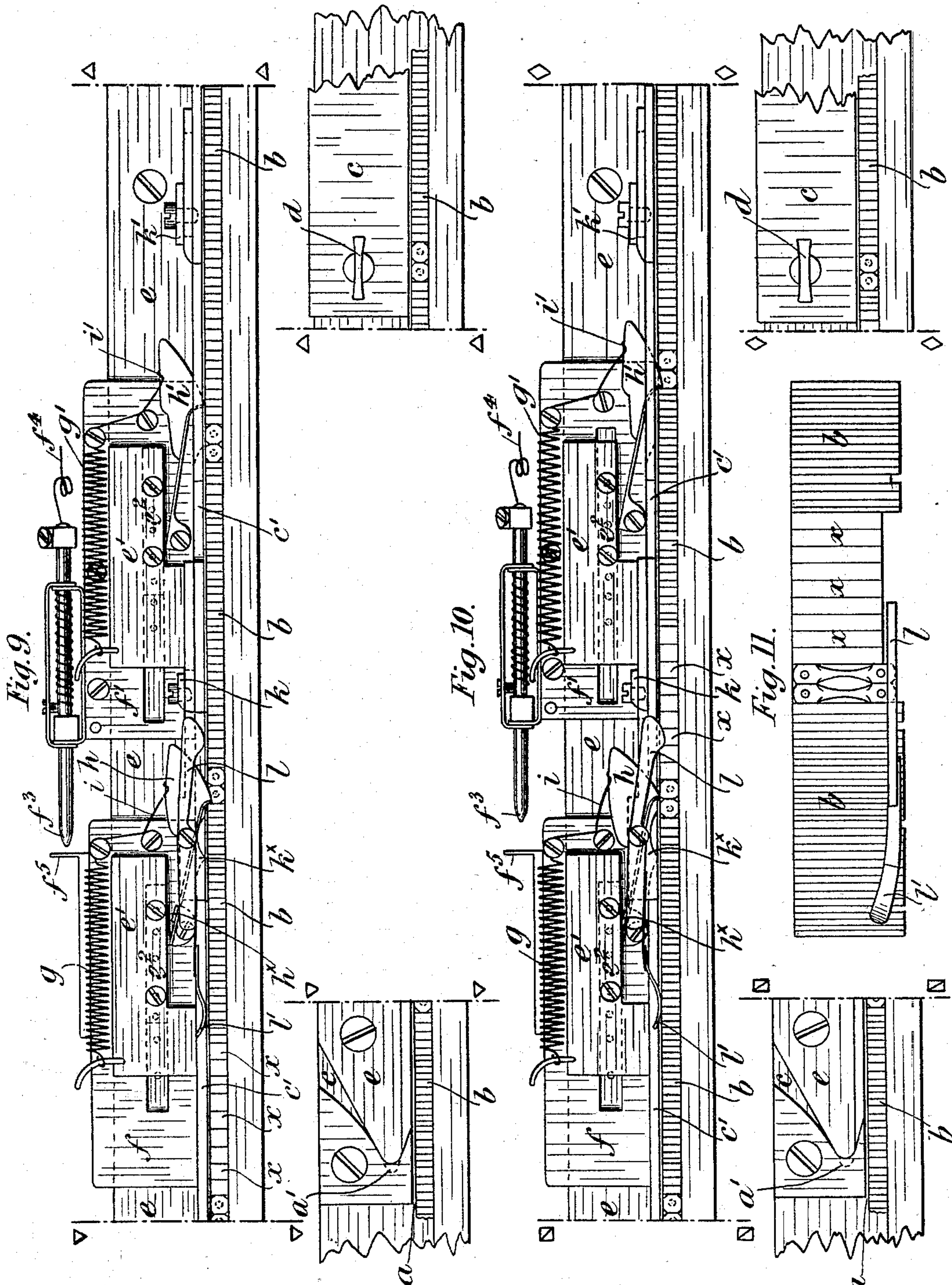
3 Sheets—Sheet 3.

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# UNITED STATES PATENT OFFICE.

JOHN HOOKER, OF BECCLES, ENGLAND.

## INDICATOR MECHANISM FOR TYPE-SETTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 495,588, dated April 18, 1893.

Application filed January 16, 1893. Serial No. 458,612. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HOOKER, printer, a subject of the Queen of Great Britain, residing at Lancaster Place, Station Road, Beccles, in the county of Suffolk, England, have invented certain new and useful improvements in indicator mechanism to be used with type-setting machines to indicate when any line that has been set up is too long or too short, of which the following is a specification.

My improvements relate to mechanism for giving warning to the operator using a type setting machine should any line of type issuing from the machine be either too short or too long beyond some short limit which can readily be rectified when the lines come to be justified (that is made absolutely to correct length) either by hand or by justifying mechanism.

According to my invention I cause the continuous line of type as it comes from the composing machine to travel along below two catches carried by two slides which when the catches catch on to the foremost type of any of the lines are drawn forward until the catches are tripped by coming against fixed inclines the slides are then drawn back by springs. Each slide carries a contact piece, and when these contact pieces come into contact with one another an electric circuit is completed and a bell rung, thereby giving warning that one of the lines is either too long or too short. The parts are arranged in such manner that if the first of the catches commences to be drawn forward by the type before the second catch commences to be drawn forward by reason of the line in advance of the first catch being too short the contact pieces are thereby brought into contact and the bell rung but if the line in advance of the first catch is too long and the second catch after being carried forward by the type gets liberated from the type and drawn back before the first catch is liberated the contact pieces are likewise brought together and the bell rung.

Figures 1 to 11 show the mechanism. Fig. 1 is a front view, Fig. 2 a plan and Fig. 3 a cross section on the line *a b*, Fig. 1. Fig. 4 is a back view of the contact piece *f*<sup>5</sup>. Fig. 5 is an under side view of the piece *C'* and Fig. 6

a cross section on the line *c d*, Fig. 1. Figs. 7 and 8 are plan and side views of the pieces *K* and *L*. Figs. 9 and 10 are views similar to Fig. 1 but with the type and parts in different position to illustrate the working of the mechanism. Fig. 11 is a plan of the piece *ll'* and part of the line of type shown in Fig. 10.

*a* is a channel along which a continuous line of type *b* is made to travel in the direction of the arrow Fig. 1.

*c* is a guard of wood fixed in any convenient manner to the back of the channel above the type, and which keeps the type from being accidentally displaced. In the drawings it is shown to be held in place by its left hand end entering a socket *a'* fixed to the back of the channel and by a thumb screw *d*.

*e* is a metal plate secured to the front of the guard *c*, and having a flange *c'* extending outward from its bottom edge.

*f f'* are slides capable of being slid to and fro between the plate *e* and plates *e'*, which are fixed to it, distance pieces *e*<sup>2</sup> being between them, the slides *f f'* are slotted as shown and the distance pieces lie in these slots.

*g g'* are springs by which the slides are drawn back until the right hand end of the slots comes against the right hand of the distance pieces.

*h h'* are catches jointed to the slides. These catches are pressed downward by springs *i i'* so that their ends project downward through slots in the flange *c'* and rest upon the type which are traveling along the channel *a*.

*k k'* are stops fixed to the flange *c'*. When the catches are drawn forward by the traveling line of type, the inclined forward ends of the catches come after a time against these stops and are thereby lifted and released from the type. The slides are then drawn back by their springs.

*l* is a lever pivoted to an arm *k*<sup>x</sup> which extends from the stop *k* as shown clearly in Figs. 7 and 8.

*l'* is a spring fixed to the tail end of the lever *l*: it bears upon the type as shown, and tends to press downward the right hand end of the lever.

*h*<sup>x</sup> is a projection on the side of the catch. The tail end of the lever *l*, strikes against



this projection and raises the catch whenever the right hand end of the lever is not resting upon the type.

$f^2$  is a block of insulating material fixed to the slide  $f'$ .

$f^3$  is a spring contact piece carried by this insulating block and coupled to one pole of a battery by an insulated wire  $f^4$ .

$f^5$  is a contact plate fixed to the slide  $f$ , and in electrical connection with the other pole of the battery. An electric bell is placed in the battery circuit so that whenever the circuit is completed the bell is rung.

The action of the mechanism is as follows:—

15 Normally both slides  $f f'$  are drawn back by their springs into the position shown in Figs. 1, 2 and 9, and the catches  $h h'$  rest upon the type as shown in Figs. 1 and 2. When a line which is too short is passing below the catch  
20  $h$ , this catch will as soon as the short line has passed beyond it, catch on to the end of the next line as shown at Fig. 9 and the catch will be drawn forward with the type before the catch  $h'$  commences to be similarly drawn forward, and so the contact  $f'$  is drawn against the  
25 contact  $f^3$  and the bell is rung. If the short line forms the end of a paragraph, and is intended to be a short one as represented in the next line which is coming toward the catches  
30 then the contact is retained from coming into action and the bell is not rung. This is by reason of the short thick spaces  $x$  which are at the end of the line not being long enough to come below the end of the lever  $l$  and uphold it, the lever is therefore turned downward by the action of the spring  $l'$  and the  
35 tail end of the lever then lifts the catch  $h$  as above explained as shown at Fig. 10, and the catch is not drawn forward and so no contact  
40 can be made. If the line passing below the catch  $h$  is longer than the limit allowed, then catch  $h'$  is caught and drawn forward by the type before the catch  $h$  and when it is brought against the stop  $k'$  it is released and drawn  
45 back by the spring  $g'$  before the catch  $h$  is re-

leased and consequently the contacts  $f^3 f^5$  are again brought together and the bell is rung. If the line is of correct length or is within the limits allowed for its being slightly too long or too short, the catch  $h'$  will commence to be  
50 drawn forward by the end of the line before the catch  $h$  has been drawn forward by the end of the next line sufficiently far for the contact pieces to have been brought together—and the catch  $h$  will be released before the re-  
55 leasing of the catch  $h'$  consequently there will be no bringing together of the contact pieces.

The mechanism above described is placed close up to to where the continuous line of  
60 type issues from the composing machine, so that when the compositor is warned by the ringing of the bell that one of the lines is too long or too short, but little rearranging of the type will be necessary.  
65

What I claim is—

1. The combination of the channel  $a$ , slides  $f f'$ , springs  $g g'$  for drawing the slides back, catches  $h h'$  carried by the slides for drawing them forward, and electrical contacts  $f^3 f^5$  carried by the slides, and which if brought together complete an electrical circuit and thereby cause an electric bell to ring or give other signal, substantially as described.  
70

2. The combination of the channel  $a$  slides  $f f'$  springs  $g g'$ , for drawing the slides back, catches  $h h'$  carried by the slides for drawing them forward, electrical contacts  $f^3 f^5$ , lever  $l$ , spring  $l'$  for putting the mechanism out of action when a line which has intentionally been  
80 made a short one is passing below the catch  $h$ .

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Witnesses:

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