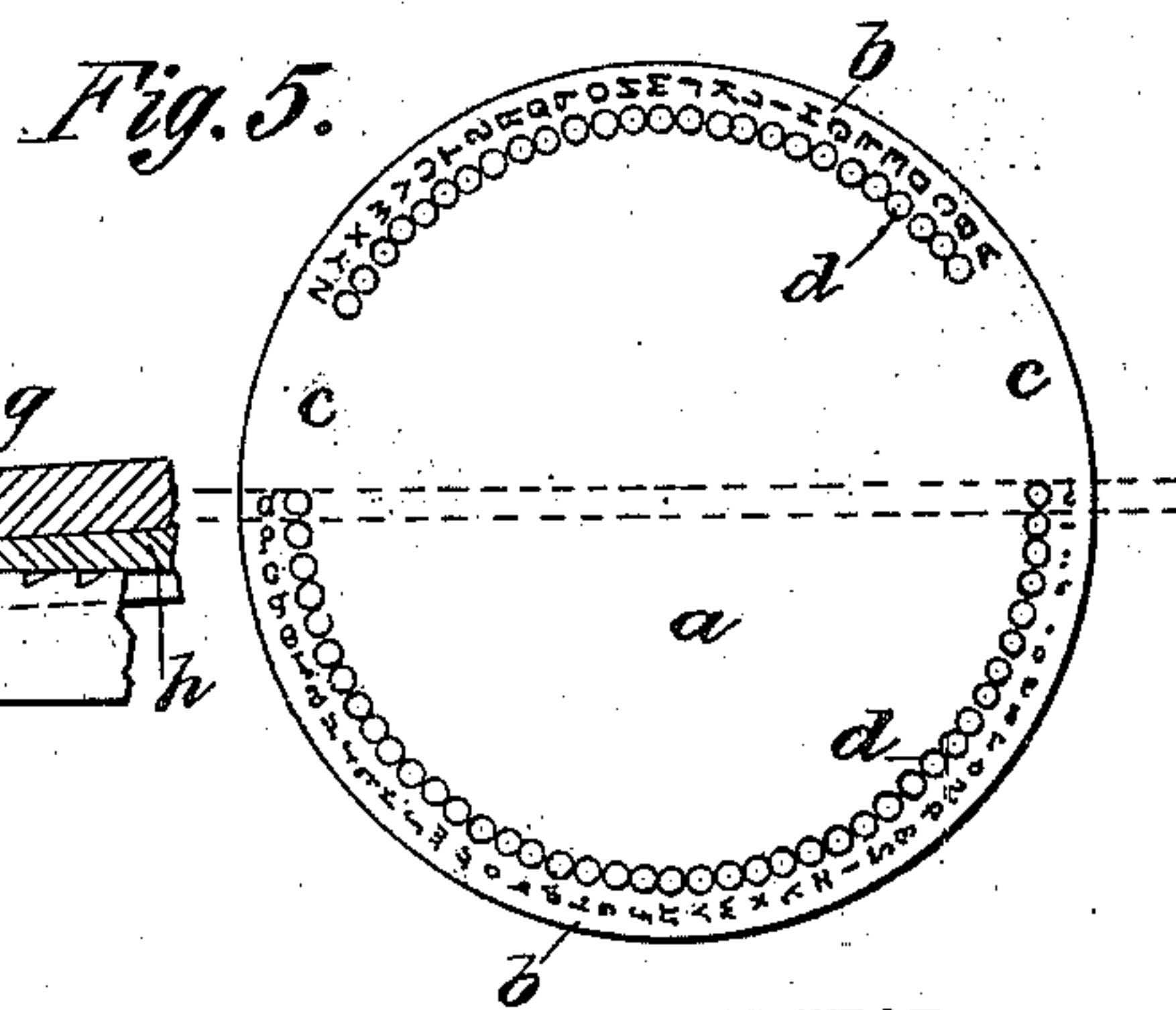
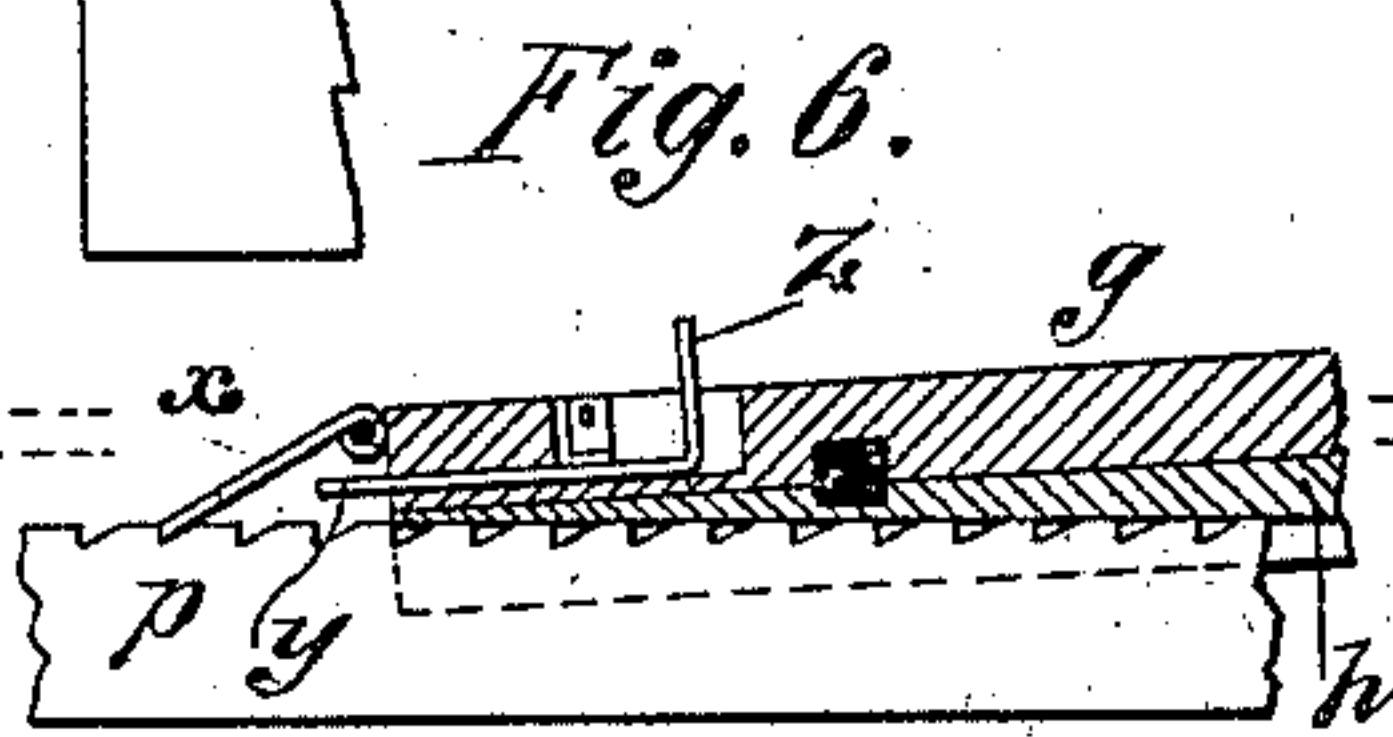
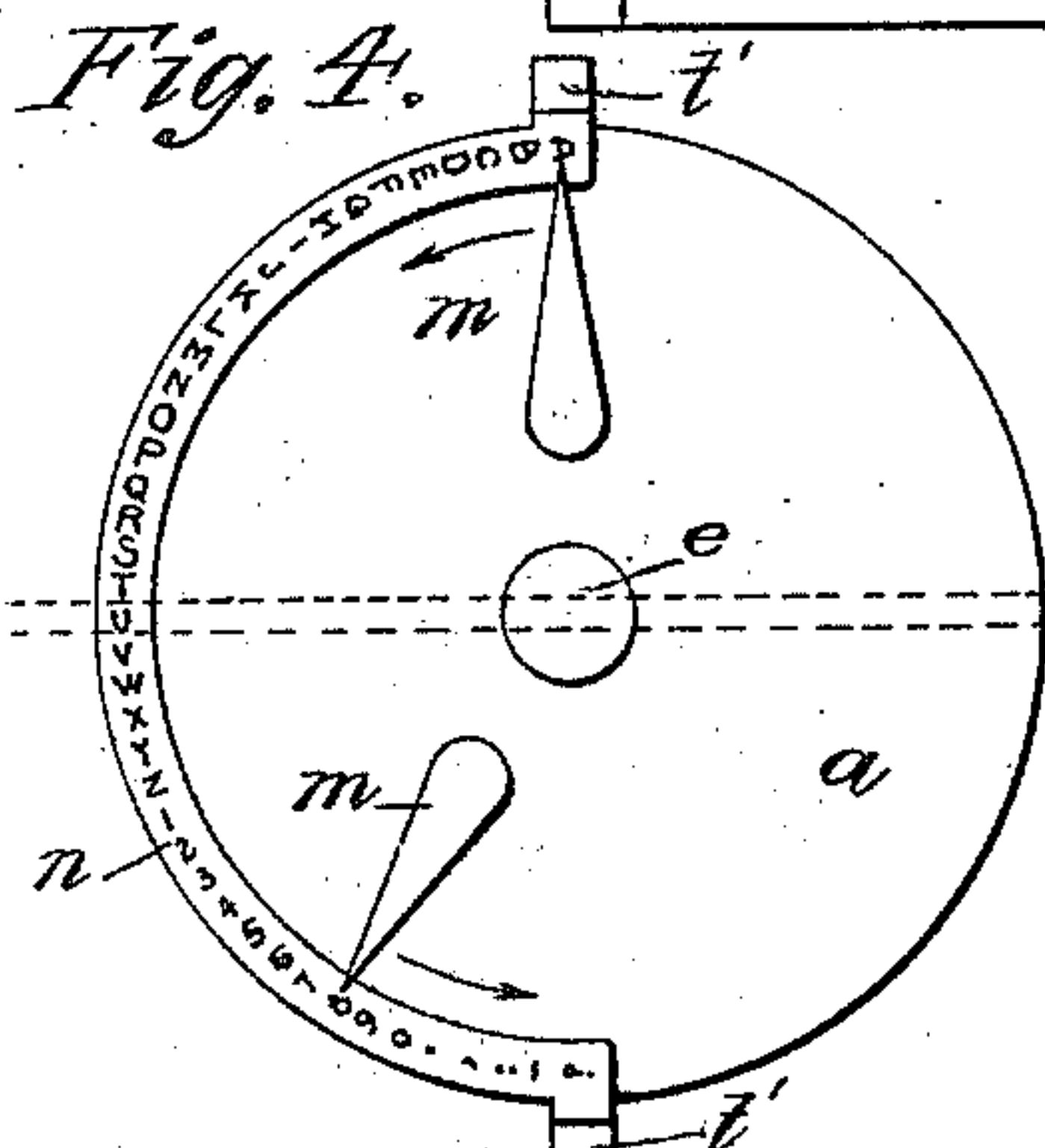
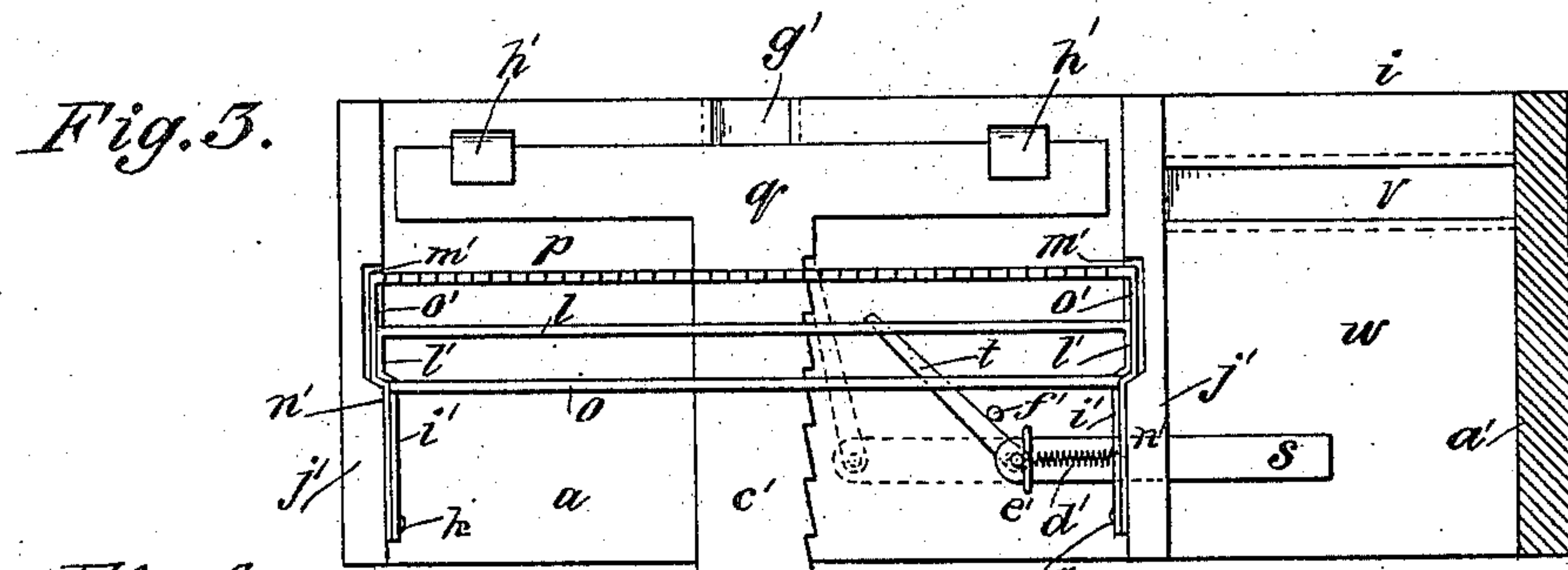
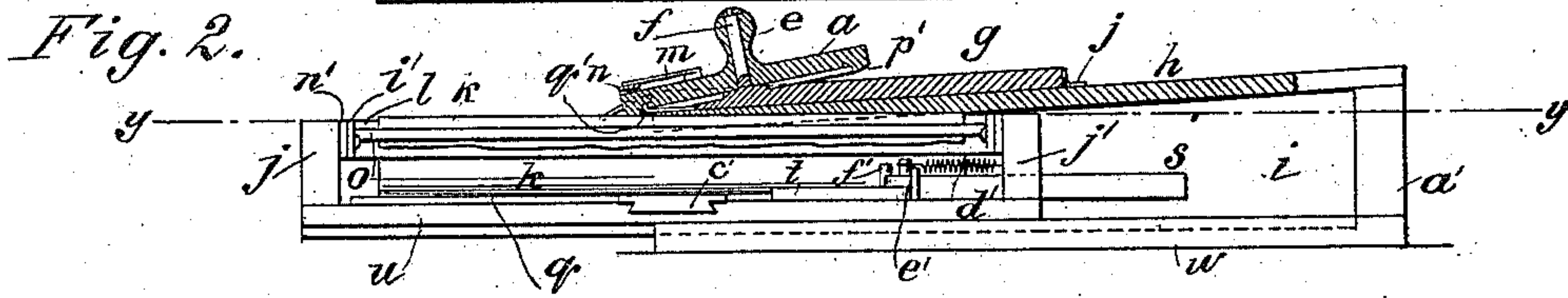
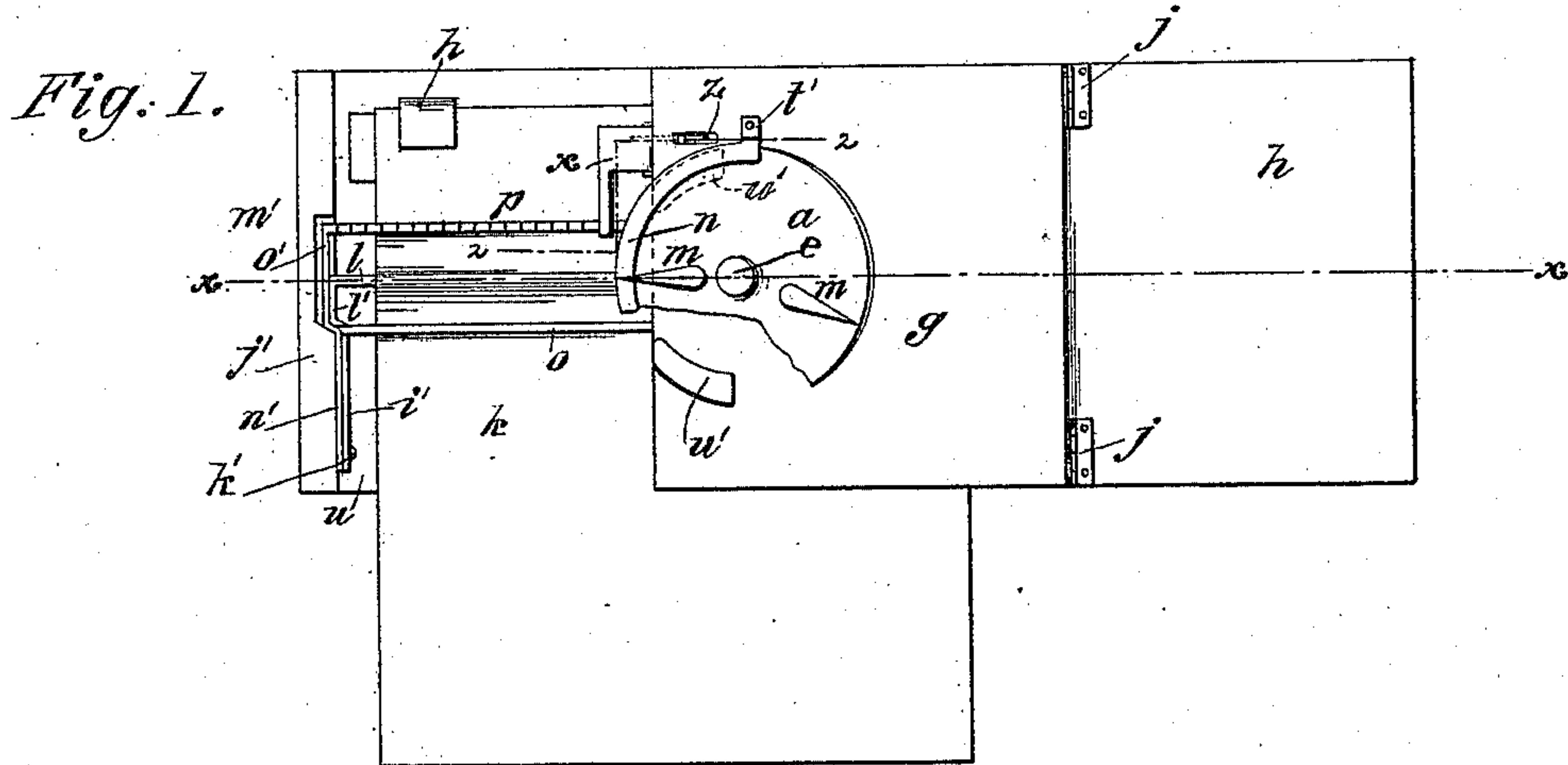


(Model.)

J. W. COLE.  
TYPE WRITING MACHINE.

No. 309,378.

Patented Dec. 16, 1884.



WITNESSES:

John B. Deemer  
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# UNITED STATES PATENT OFFICE.

JAMES WARREN COLE, OF SPEARVILLE, KANSAS.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,378, dated December 16, 1884.

Application filed November 2, 1883. (Model.)

*To all whom it may concern:*

Be it known that I, JAMES W. COLE, of Spearville, in the county of Ford and State of Kansas, have invented a new and Improved  
5 Type-Writing Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in type-writers; and it consists in the peculiar construction and combination of parts, as here-  
10 inafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate  
15 corresponding parts in all the figures.

Figure 1 is a plan view of the machine with a part of the type-wheel broken out. Fig. 2 is partly a side elevation and partly a longitudinal section on the line *x x* of Fig. 1. Fig.  
20 3 is a horizontal section on the line *y y* of Fig. 2. Fig. 4 is a plan view of the type-wheel on an enlarged scale, and showing its arrangement in detail, and also the index scale and pointers. Fig. 5 is a plan of the type-wheel  
25 inverted. Fig. 6 is a detail of the machine in section on the line *z z*, and Fig. 7 is a detail of the regulating device.

The type-wheel *a*, having two lines, *b*, of type arranged on the margin of its under side  
30 in the same circle, but separated by blank spaces *c*, and also having corresponding holes or recesses, *d*, in a smaller circle, is provided with a knob-handle, *e*, at the center of its upper surface, and is fitted at its center on the pivot-  
35 stud *f*, rising up from the free end of a plate, *g*, at a suitable inclination to cause the type-wheel to pitch downward at one side to the horizontal plane of the underside of the cover-  
40 plate *h* of a case, *i*, on the top of which the plate to which the type-wheel is pivoted is hinged at *j*, so that the type-wheel can be pressed down on the paper *k*, passing over the  
45 bar *l*, to make the impressions, the wheel being raised to shift it by the handle *e* for setting it by one or other of the pointers *m* and the  
scale *n* to cause the type having the letters to be printed to register with the impression-  
bar *l*.

The impression-bar *l*, over which the paper  
50 passes to be printed, two guide-bars, *o* and *p*,

under which the paper passes to prevent it from having contact with the type except on the impression-bar, the paper-clip slide *q*, for holding and shifting the paper for setting the lines, also the pawl-bar *s* and pawl *t*, for shift-  
55 ing the clip-slide, are arranged in a carriage, *u*, which slides in a grooved way, *v*, in the bottom plate, *w*, of the case, to shift the paper forward and backward to have the lines printed on it. The guide-bar *p* has notches in the up-  
60 per edge spaced according to the spaces required between the letters, and the plate *g* has a pawl, *x*, pivoted to it in such arrangement with the notched bar that the pawl will strike  
65 in the notches, and shift the carriage one notch just before the type-wheel makes the impres-  
sion.

To make wider spaces, for separating words and sentences, there is a little slide device, *y*, which projects sufficiently from the end of  
70 plate *g* under pawl *x* to prevent said pawl from acting more than enough to shift the carriage one notch of the bar *p* except when said slide is pushed back, which is to be done, when-  
75 ever longer spaces are required, by the third finger of the hand of the operator that works the type-wheel pressing on the arm *z* of this regulating-slide. In practice a spring will be  
80 attached to said slide to shift it forward again to the normal position. When the paper has been fed along under the impression-point to the extent of its width, the carriage *u* is pushed  
85 back by hand for the beginning of a new line, and the paper is shifted forward crosswise of the carriage by the pawl *t*, which is thrust forward by the slide *s*, to which it is pivoted,  
90 coming in contact with the end *a'* of the case just before the carriage *u* reaches the end of its return movement, said pawl being moved forward, in about the inclined position in  
95 which it is represented in Fig. 3, into one of the notches *b'* of the bar *c'* of the paper-clip *q*, and forcing the clip ahead by swinging around parallel to said notched bar, or nearly so. The  
slide *s* has a spring, *d'*, which pulls said slide  
100 back, ready for the next operation, as soon as the carriage moves forward again to the left hand. The swing of the pawl *t* to the left hand and toward the bar *c'* is limited to about the position represented in Fig. 3 by a suit-



able stop at the joint  $c'$ , so that as the spring  $d'$  shifts the slide  $s$  back the pawl  $t$  will shift away from bar  $c'$ , so that the paper-clip can be readily pulled back by hand for applying new sheets when required. The pawl  $t$  comes in contact with a stud-pin,  $f'$ , in this back movement of the slide, which shifts said pawl to the position represented, ready for engaging a new notch  $b'$  of the bar  $c'$  to shift the paper-clip again. The paper-clip is fitted to slide in a suitable guideway,  $g'$ , in the bottom of the carriage, and may be pulled out on the rear side for convenience in adjusting the paper under the clip-spring  $h'$ .

In practice the bar  $c'$  of the paper-clip will be jointed at the middle, or thereabout, to fold compactly when not in use. The impression-bar  $l$  connects at each end with an arm,  $i'$ , turned at right angles to it along the end pieces,  $j'$ , of the carriage, and pivoted to said end pieces at  $k'$ , to swing up out of the resting-place to facilitate the adjusting of the paper-clip under said bar when required. The arms  $i'$  have an offset at  $l'$  projecting into recesses  $m'$  in the end pieces of the carriage, wherein said arms and the ends of the impression-bar rest to sustain the pressure of the type-wheel in making the impressions. The guide-bars  $p$  and  $o$  are also attached to arms  $n'$ , also pivoted at  $k'$ , and also having offsets at  $o'$  resting in the recesses  $m'$  of the end pieces,  $j'$ , for support, said arms being to enable the guide-bar to swing away from the impression-bar to facilitate the adjusting of the paper on said bar and under said guide-bars. It will be noticed that the type-faces are arranged in a bevel of the margin of the type-wheel, as shown at  $p'$ , which is necessary to cause them to range parallel with the impression-bar in consequence of the oblique arrangement of the type-wheel, and the wheel is arranged obliquely to cause the type to range sufficiently low at the impression-point to reach the impression-bar located below the support of the type-wheel. The type are arranged in the two sections on the face of the type-wheel separated by the blank spaces  $c$ , to make proper and conspicuous divisions between the capitals and small letters, and the spaces also allow the type-wheel to be worked without making the impressions when it is necessary to shift the carriage for blank space. The holes  $d$  in the type-wheel coincident with the type are to receive the registering-point  $q'$ , projecting upward from the end of the table  $h$ , so as to enter one of said holes when the type-wheel is pressed down, and shift the wheel in case it has not been set exactly right by the operator. The registering-point is tapered, and the holes are drilled so close together that the partitions between them are sufficiently thin to turn one side or the other of the point, and thus prevent the wheel from being arrested on the point. An inking-pad,  $u'$ , is arranged on the plate  $g$  each side of the impression-point, over which the type must pass,

and by which they will be suitably inked in being shifted to the impression-point.

The indicator-scale  $n$  is marked on a curved plate extending around the type-wheel over the upper margin, and supported at the ends by brackets  $t'$ , so attached to the plate  $g$  that the type-wheel  $a$  may swing freely under said scale. The scale has the letters of the alphabet in capitals or small letters, as preferred, also the numerals and punctuation-points, while the type-wheel has the letters both in capitals and small, together with the numerals and punctuation-points, and is provided with two pointers,  $m$ , to be used with the scale, one of which is adjusted for use in printing capital letters alone, and the other is for small letters, numerals, and punctuation-points, said pointers being so adjusted that they serve for adjusting their particular letter-type by the one set of letters on the scale.

In practice the hinged plate  $g$ , carrying the type-wheel, will have a spring or springs suitably arranged between it and the cover, as shown in Fig. 6, or in any other suitable manner, to raise it clear of the point  $q'$ , ready for turning.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a type-writer, the combination, with the horizontal impression-bar  $l$ , of the hinged plate  $g$ , provided with the inclined stud  $f$ , and the type-wheel  $a$ , pivoted on said inclined stud, and having the type arranged on the beveled margin  $p'$ , substantially as herein shown and described, and for the purpose set forth.

2. The type-wheel  $a$ , having the type arranged on the bevel-margin  $p'$ , and being arranged on a center stud,  $f$ , of a jointed lever-plate,  $g$ , hinged to a base,  $h$ , in combination with an impression-bar,  $l$ , said base-plate  $h$  being inclined to the impression-bar, and the center stud,  $f$ , also inclined thereto suitably for causing the type to have parallel contact with the impression-bar, substantially as described.

3. The type-wheel  $a$ , having the capitals and small type arranged in two sections in one circle on the margin  $p'$ , with blank spaces  $c$  between said sections, and also having two pointers,  $m$ , and being arranged on the oblique stud  $f$  of hinged plate  $g$ , in combination with an impression-bar,  $l$ , and a scale,  $n$ , substantially as described.

4. The combination, with the top  $h$ , the impression-bar  $l$ , and the notched feed-bar  $p$ , of the hinged plate  $g$ , the pawl  $x$ , hinged to said hinged plate, and the type-wheel  $a$ , pivoted on an inclined stud of the said hinged plate, substantially as shown and described.

5. The combination of the type-wheel  $a$ , hinged plate  $g$ , impression-bar  $l$ , notched feed-bar  $p$ , pawl  $x$ , and adjusting-stop  $y$ , substantially as described.

6. The carriage  $u$ , paper-holding clip  $q$ , and



guide-bars *o p*, in combination with the impression-bar *l* and type-wheel, substantially as described.

5 7. The guide-bars *o* and *p*, arranged on pivoted arms *n'*, in combination with the paper-clip *q* and impression-bar *l*, arranged on pivoted arms *i'*, substantially as described.

10 8. The pawl *t*, pawl-slide *s*, spring *d'*, and stud *f*, in combination with the notched bar *e'* of the paper-clip, said pawl *t* having limited range of movement on its pivot-joint *e'*, substantially as described.

15 9. The combination of the type-wheel *a*, arranged on the cover of the case *i*, the carriage *u*, arranged to slide in said case, the paper-holding clip *q*, arranged to slide in the carriage, the impression-bar *l*, paper-guide bars, and the carriage and paper-clip feeding mechanisms, all substantially as described.

20 10. The combination, with the inclined top *h*, the impression-bar *l*, and hinged plate having inclined stud *f*, of the type-wheel *a*, pivoted on said stud, and having the type and coincident registering holes *d* on its beveled

margin *p'*, and the adjusting-point *q'*, secured 25 to the end of the top *h*, substantially as herein shown and described.

11. In a type-writer, the combination, with a case having an inclined top, to which a plate is hinged, which plate carries on a pivot 30 a type-wheel having a beveled edge for the type, and provided with pointers and guide-apertures, and which plate is also provided with a spacing-pawl, a gage-plate, and a guide-point, and which case is provided with a feed- 35 ing-pawl and a spring-pawl stud, of a carriage carrying an impression-bar and guide-bars, one of which guide-bars is notched for the engagement of the spacing-pawl, and said impression and guide bars being hinged by arms 40 to the carriage, and said carriage also carrying a sliding paper-clip having a notched arm for the engagement of the feeding-pawl, substantially as shown and described.

JAMES WARREN COLE.

Witnesses:

GEORGE HALL,  
LOUIS D. RENO.