

No. 615,327.

Patented Dec. 6, 1898.

C. D. WALLACE.  
TYPE WRITING MACHINE.

(Application filed May 11, 1898.)

(No Model.)

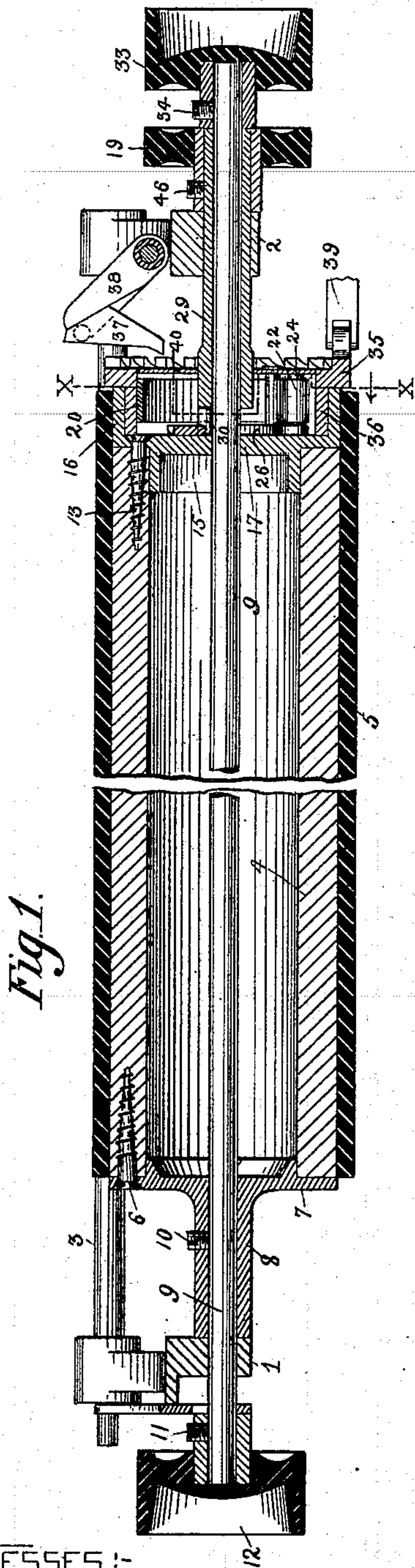


Fig. 1.

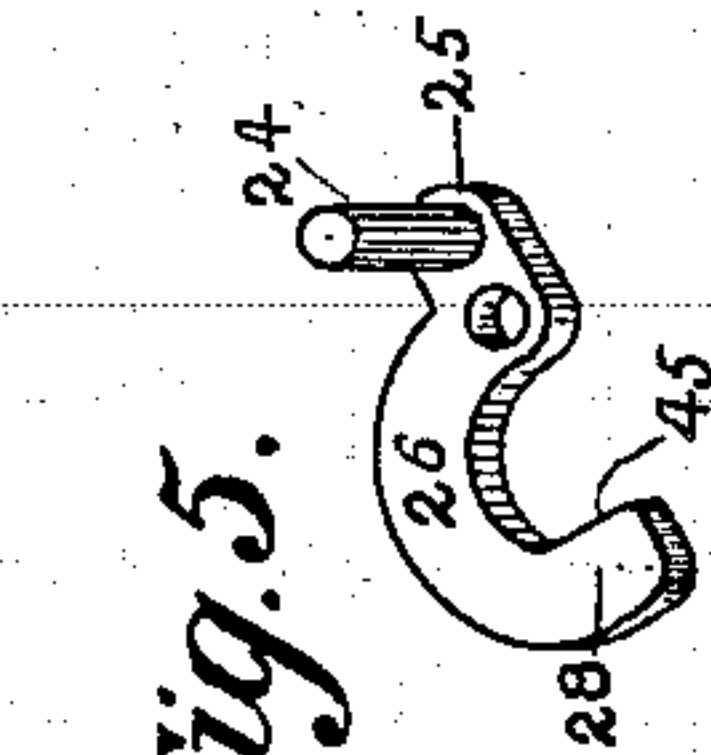


Fig. 5.

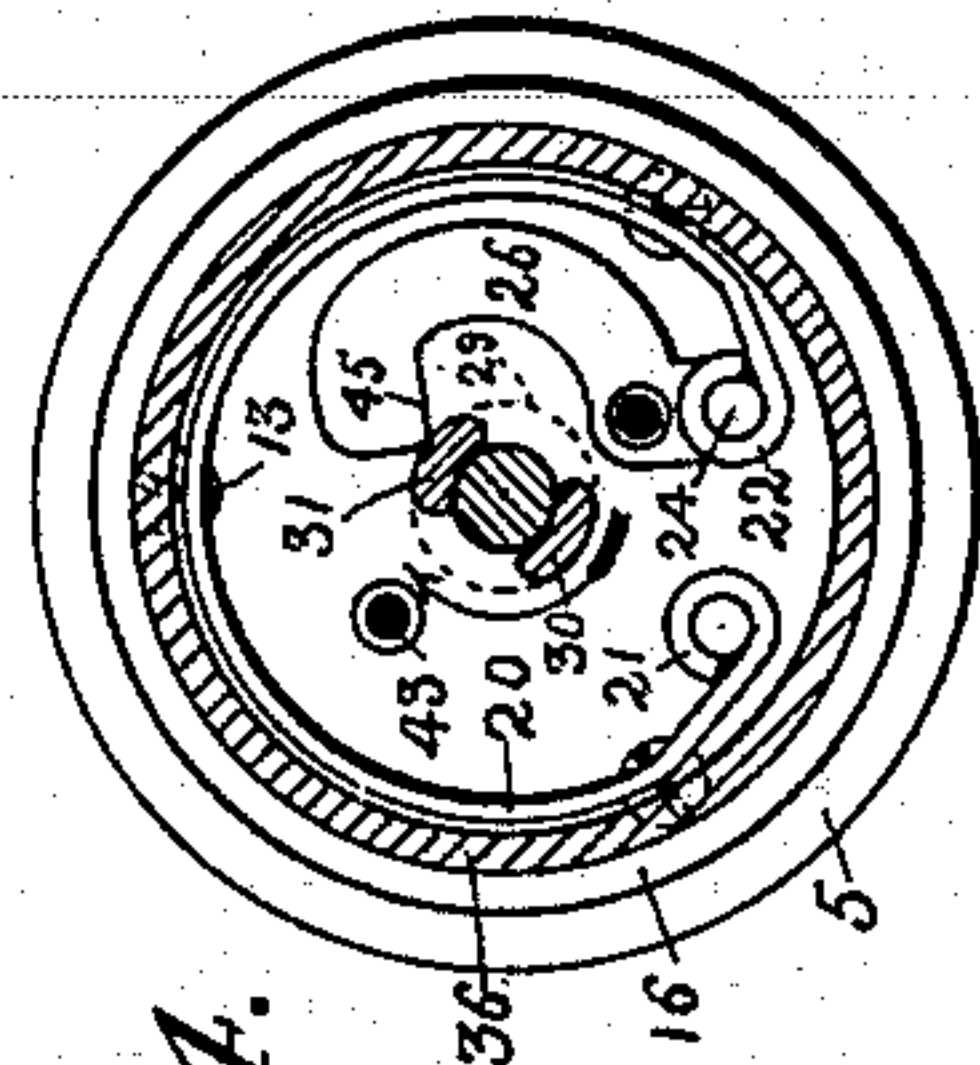


Fig. 4.

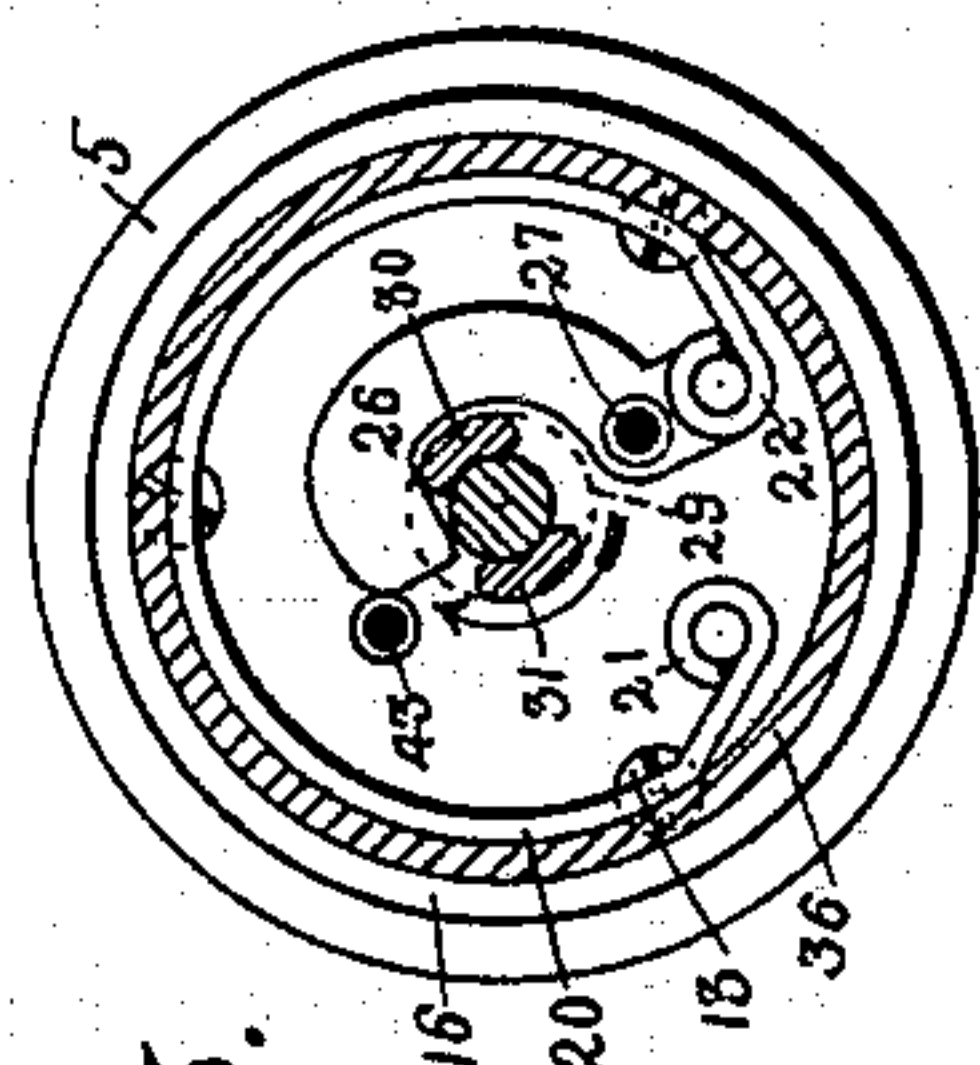


Fig. 3.

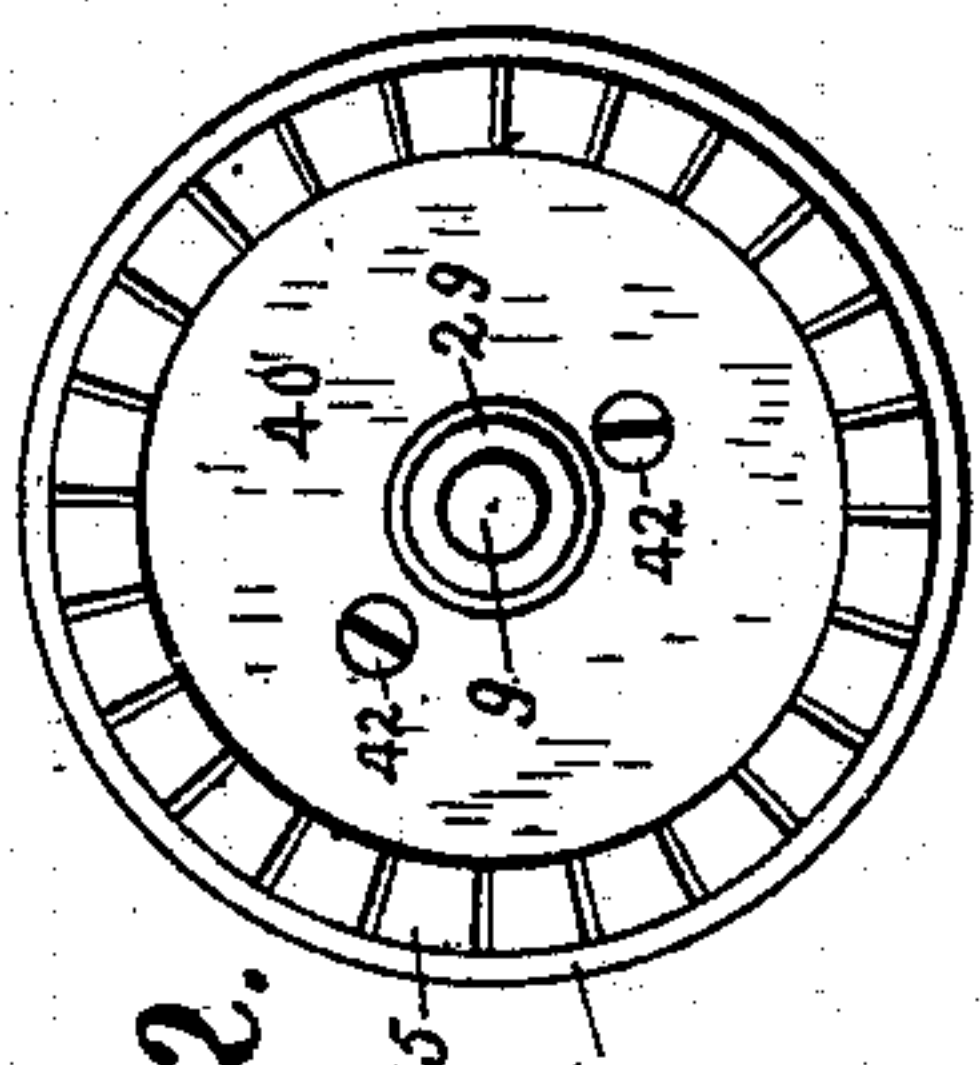


Fig. 2.

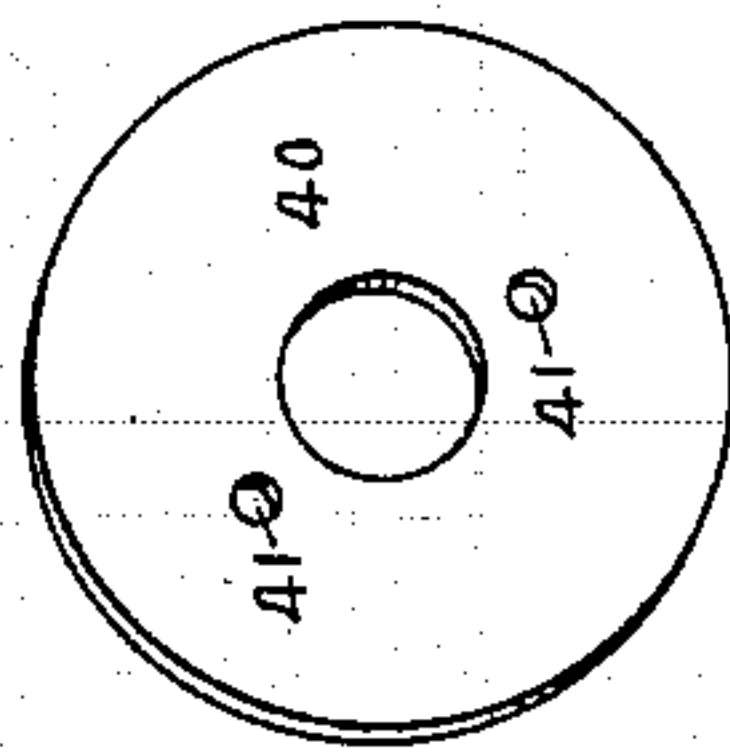


Fig. 9.

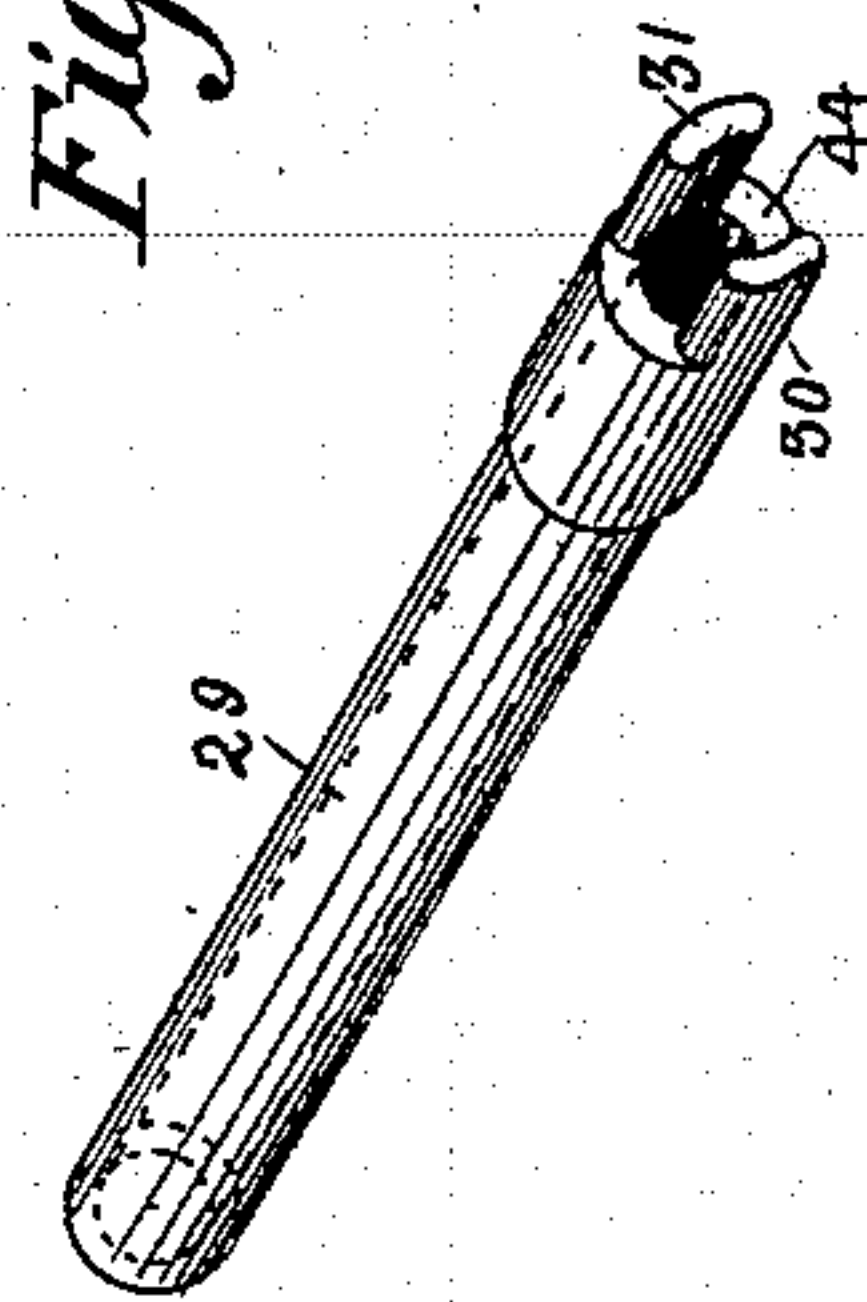


Fig. 8.

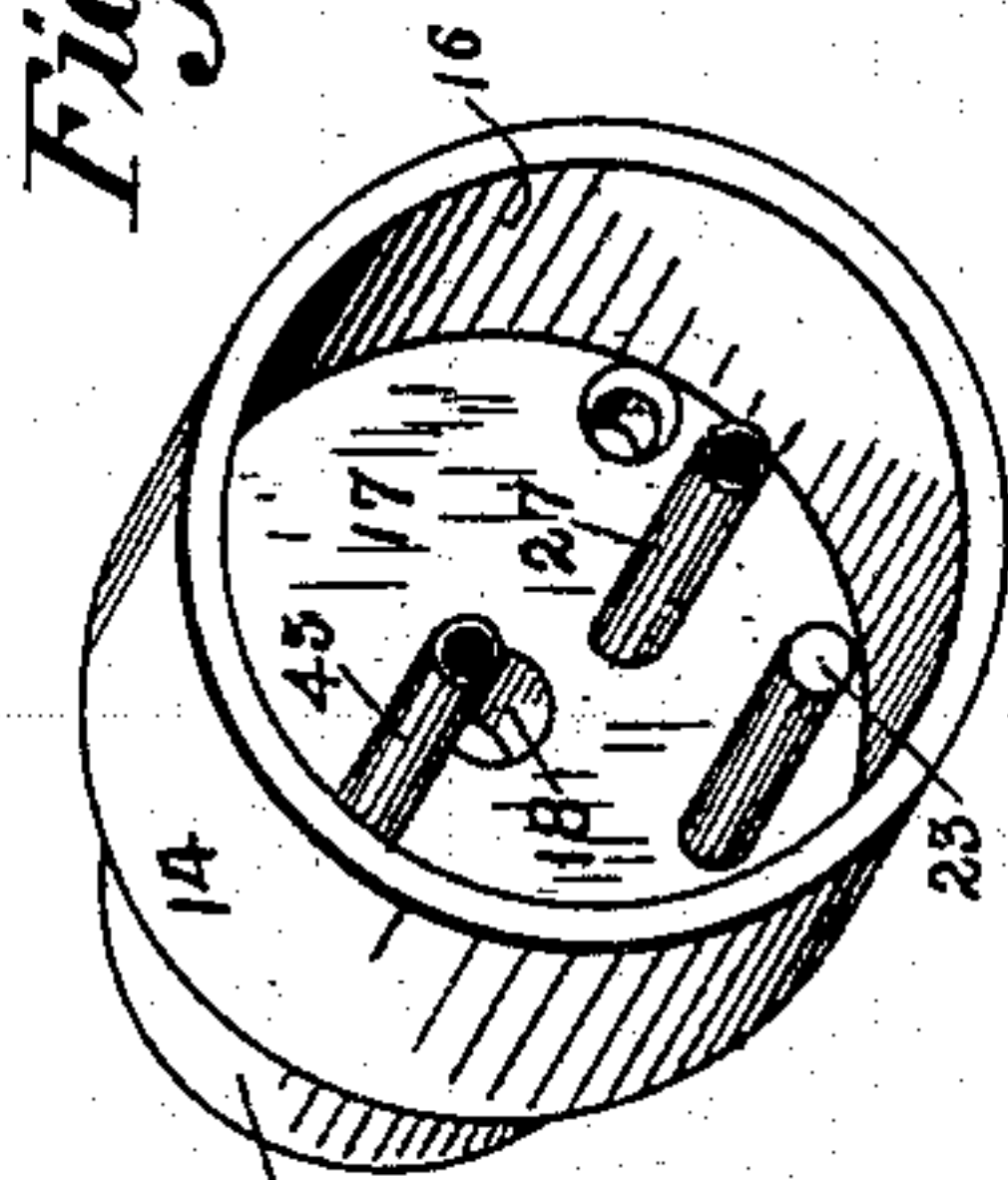


Fig. 7.

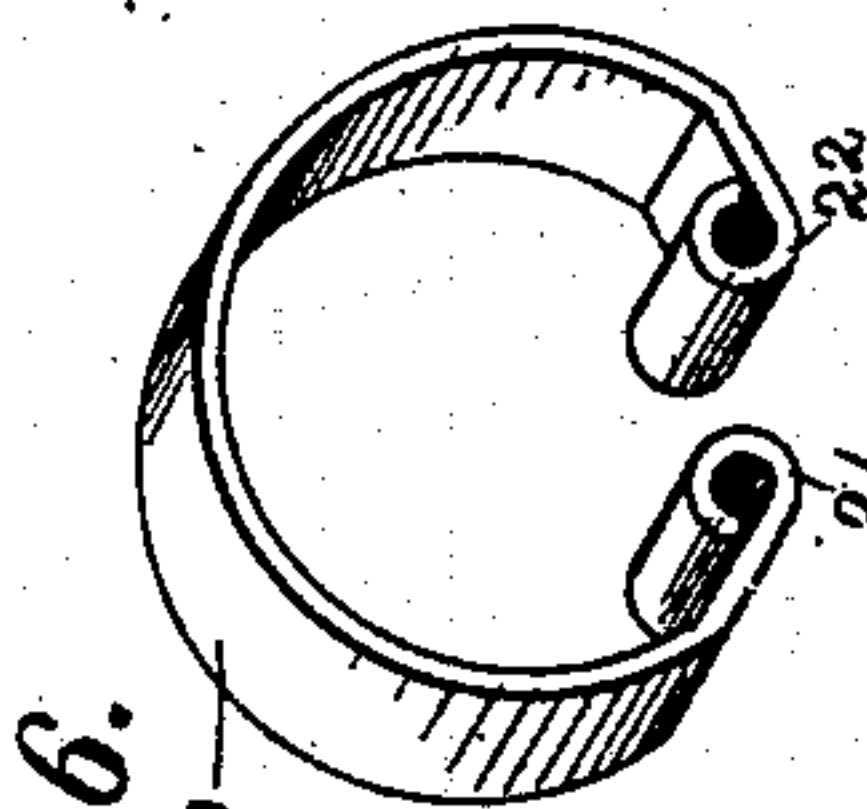


Fig. 6.

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# UNITED STATES PATENT OFFICE.

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## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 615,327, dated December 6, 1898.

Application filed May 11, 1898. Serial No. 680,344. (No model.)

*To all whom it may concern:*

Be it known that I, CASPER D. WALLACE, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to variable line-feeding devices for the cylindrical platens of type-writing machines, and has for its main object to provide a simple and efficient mechanism of this character and one in which the platen and its regular line-spacing ratchet-wheel are held normally in frictional engagement, but which engagement may be broken at pleasure, so as to rotate the platen independently of the line-spacing ratchet-wheel; and my invention consists in the various features of construction and combinations of devices hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a central vertical longitudinal section of a part of a type-writing machine embodying my improvements. Fig. 2 is an elevation of the right-hand end of the platen removed from the machine, but with its right-hand knob detached from the operating shaft or spindle. Fig. 3 is a vertical cross-section taken at the line *x x* of Fig. 1, with the parts in their normal condition. Fig. 4 is a similar view, but with the parts in their abnormal condition, or in the condition in which they are caused to assume when the platen is released from its ratchet-wheel. Fig. 5 is a detail perspective view of the spring-actuating lever. Fig. 6 is a similar view of the friction-spring. Fig. 7 is a similar view of the spring-case, &c. Fig. 8 is a similar view of the sleeve for operating the spring-actuating lever. Fig. 9 is a similar view of the cover-plate for the spring-box.

In the several views the same part will be found designated by the same numeral of reference.

1 designates the left-hand end bar, 2 the right-hand end bar, and 3 the back bar, of a platen frame or carrier, which may be of substantially the construction exhibited in my application filed February 3, 1898, Serial No. 668,933. The platen preferably comprises a

hollow wooden cylinder 4 and a surrounding rubber sheath or cover 5. At the left-hand end of the platen is secured by screws 6 a circular platen-head 7, provided with an elongated hub 8, which extends out to the left-hand end bar 1. A shaft 9 passes through the said end bar, through the hub, and through the cylinder-head 7, the hub being secured to said shaft by a set-screw 10. Upon the extreme outer end of said shaft is preferably affixed by a set-screw 11 a knob 12 for turning the platen. At the right-hand end of the platen is affixed by screws 13 13 the device 14, which comprises in one integral piece a cylindrical hub 15, which fits into the bore of the cylinder 4, and a cylindrical box or case 16, having a bottom or plate 17 at the junction of the parts 15 and 16. The device 14 besides performing the offices hereinafter mentioned constitutes also the right-hand platen-head. The plate or bottom 17 is perforated centrally, as at 18, through which the shaft or axle 9 passes freely. Within the box or case 16 is placed a C-shaped metallic spring 20, whose ends are formed with eyes 21 and 22, the eye 21 being fitted upon a pin 23, fixed in the plate 17, and the eye 22 being loosely fitted on a pin 24, fixed in the short arm 25 of a lever 26, which is pivoted upon a fixed hollow pin or socket 27 on said plate 17, the longer arm 28 of said lever being hook-shaped and extending inwardly substantially concentric with the shaft 9. Upon said shaft a hollow shaft or sleeve 29 is fitted, as shown more clearly at Fig. 1, and at the inner extremity of said sleeve are formed two lugs or projections 30 and 31, which serve as cams to actuate the lever 26. The sleeve 29 takes a bearing in the end bar 2 and is provided at its outer end with a finger-wheel or knob 19, which may be secured thereto by a set-screw 46. The said sleeve thus mounted in the end bar 2 of the frame serves as a bearing for the right-hand end of the platen-shaft 9, which, passing through and beyond said sleeve, is also provided at its outer end with a finger-wheel or knob 33, secured to the shaft by a set-screw 34. The hub of the said knob 33 abuts the outer end of said sleeve to prevent any outward motion of the latter.

35 designates a ratchet-ring, and formed



integral therewith is a circular hub or flange 36, which passes into the space between the outer side of the C-shaped spring and the inner surface of the spring box or case, which is concentric with said flange and which takes a bearing thereon. The tension of the C-shaped spring is such that the end having the eye 22 tends to move away from the portion having the eye 21, and, owing to this expansive action of the spring, it is caused to bear with great force against the interior surface of the flange 36, and thus the ratchet-wheel is frictionally connected with the spring-box or right-hand platen-head, and this connection is so firmly established that when the ratchet-wheel is rotated under the force of the usual line-spacing pawl there is not the slightest slip between the parts and the motion of the ratchet-wheel is communicated perfectly to the platen.

Any form of ratchet ring or wheel and line-spacing pawl and lever may of course be employed. For convenience I have shown herein the construction illustrated in my afore-said application, the line-spacing pawl being designated by the numeral 37 and the lever by the numeral 38. In connection with the ratchet wheel or ring is employed a detent 39, as usual, for holding the platen firmly during the time of writing.

The spring box or case is preferably provided with a cover-plate 40, having a central hole for the passage of the shaft 9 and small perforations 41 for the passage of the fastening-screws 42, whose points enter threaded holes in the sockets 43 and 27, attached to the plate 17.

Normally the friction-spring, its lever, and the sleeve 29, &c., are in the position shown at Fig. 3, and there is a frictional engagement between the ratchet-ring and the platen through the device 14, the spring, and the flange of the ratchet-wheel, and hence if the line-space pawl be actuated and the ratchet-wheel turned the platen will turn in unison therewith equal or line-space distances, according to the distance apart of the notches or spaces between the teeth of the ratchet-wheel and the throw of the line-spacing pawl. The platen will also be fed similar distances in line-space direction if either of the hand-knobs 12 or 33 be turned in the proper direction therefor, and by turning the hand-wheels 12 and 33 in the reverse direction the platen may be turned backwardly step by step through uniform distances corresponding to the spacing of the ratchet-wheel; but if the knob 19 be turned in a backward direction or away from the operator, considering the top of the knob, a different effect will be produced. When the knob 19 is turned backwardly, the sleeve 29 is caused to turn on the shaft 9, and either one of the projections 30 or 31, according to its position at the time, will operate to vibrate or force back the longer arm of the lever 26 and cause its inner arm to move in the direction of the fixed pin 23,

thereby at the same time causing a contraction or winding in of the spring 20 sufficient to take it out of frictional contact with the flange 36, or at least to reduce its pressure thereupon to such an extent as to destroy its operative engagement with the flange of the ratchet-ring, and thus leave the platen free to be turned independently thereof. In practice I contract or wind up the spring sufficiently to remove it entirely from contact with the surface of the flange, and I then preferably lock the said spring in this condition, so as to permit of the turning of the platen freely in either direction by the rotation of the shaft 9 and for any desired distance, either through a minute arc or through a large arc, or, if desired, one or more complete revolutions, thus providing for variable line-spacing to any desired extent and facilitating the work of correcting and of writing on ruled paper and printed forms with blank spaces therein to be filled up with the type-writer. The locking or holding out of engagement of the spring is effected simply by turning the shaft 29 backwardly, or to the right in Fig. 3, far enough to cause the point or free end of the longer arm of the lever to ride up on top of the cam or projection 30 or 31, the first part of this turning movement effecting, as before stated, the backward vibration of the lever and the disengagement of the spring from the flange 36, and the last part of said movement bringing the free end of the lever up on top of the cam or projection 30 or 31, against which it presses under the full force of the spring, thus establishing a firm frictional engagement between the device 14 and the sleeve 29 and entirely removing the frictional engagement between the device 14 and the platen-ring. It will be seen from the foregoing that the shaft 9 may now be rotated in either direction by means of its knobs or finger-pieces and that the platen will turn therewith, while the ratchet-wheel will remain at rest. When it may be desired to restore the frictional engagement between the platen and the ratchet-wheel, the sleeve may be turned in either direction—that is, either backwardly or forwardly—by the hand-wheel 19, the platen or its knob 12 being held with the left hand, and when the sleeve is thus turned the cam or projection is carried away from the point of the lever and allows it to slip off and fly toward the center and into either of the spaces, notches, or cut-aways 44 between the cams or projections 30 31, thereby permitting the spring to expand and again engage with the flange 36 of the ratchet-wheel.

In order to throw the lever back to the position shown at Fig. 4 and for the purpose of releasing the spring, the shaft must be turned in the direction of the arrow at Fig. 3, or, in other words, turned backwardly, and when turned in this direction the edge of the projection 31, acting on the extremity of the hook, causes the lever to vibrate backwardly, and when said lever has been swung to its



full extent a further movement of the sleeve will cause the projection 31 to run under the point of the hook, as illustrated at Fig. 4, and thus lock the hook back, as before explained.

5 It will be understood from Fig. 4 that when it may be desired to release the hook the sleeve may be turned in either direction. If turned toward the left, the projection 31 will be the operative projection again the next time, but  
10 if turned toward the right the projection 30 will operate on the next occasion to actuate the lever and its spring.

By reason of the fact that the lever cannot be moved back excepting by a backward rotation of the shaft in the direction of the arrow at Fig. 3 it will be seen that the right-hand knob 33 may be employed, as usual, to turn the platen in line-space direction equal  
15 distances without the employment of the line-spacing mechanism and at the same time without disengaging the spring-clutch mechanism. It will also be seen that the reason why the sleeve cannot be turned in a direction opposite to that of the arrow at Fig. 3 is because  
25 of the presence of the square or straight face 45 on the inner side of the hook-shaped lever, which lies nearer the center of rotation than the operating end of the projection 30 or 31, and this forms a stop or wall to the forward  
30 rotation of the shaft.

Various changes in detail construction and arrangement of parts may be made without departing from the spirit of my invention.

What I claim as new, and desire to secure  
35 by Letters Patent, is—

1. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel, means for turning the latter, a platen-head, a spring carried thereby for frictionally connecting said platen-head with said line-space  
40 ratchet-wheel, so that when the ratchet-wheel is turned the platen is turned therewith through the friction of said spring, and means for removing the friction of said spring to enable the platen to be turned independently  
45 of the ratchet-wheel.

2. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel, means for turning the latter, a platen-head,  
50 a spring carried thereby and frictionally engaging said ratchet-wheel, and a shaft connected to said spring for breaking such engagement.

3. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel, means for turning the latter, a platen-head  
55 carrying a spring to engage with said ratchet-wheel, a lever for moving said spring, and means for actuating said lever.

4. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel, means for turning the latter, a platen-head  
60 carrying a spring to engage with said ratchet-wheel, a lever for moving said spring and a sleeve for actuating said lever.

5. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel,

means for turning the latter, a platen-head, a C-shaped spring secured at one end to the platen-head, a lever pivoted to said platen-  
70 head and connected to the free end of said spring, and means for actuating said lever.

6. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel, means for turning the latter, a platen-head,  
75 a C-shaped spring secured at one end to the platen-head, a lever pivoted to said platen-head and connected to the free end of said spring, and a shaft for actuating said lever.

7. In a type-writing machine, the combination of a platen, a line-space ratchet-wheel  
80 having a flange, a spring-case attached to said platen, a spring within said case and having normally a frictional engagement with said flange, and means for breaking such engagement.  
85

8. In a type-writing machine, the combination of a platen, a spring-case secured at one end thereof, a line-space ratchet-wheel having a flange which is inserted within said case,  
90 a spring within said case pressing normally against said flange, a lever connected to said spring, and a shaft for actuating said lever.

9. In a type-writing machine, the combination of a platen, a spring-case attached at one  
95 end thereof, a line-space ratchet-wheel having a flange arranged within said case, a C-shaped spring attached at one end to said case, a lever pivoted to said case and attached to the free end of said spring, and a shaft for  
100 actuating said lever.

10. In a type-writing machine, the combination of a platen, a spring-case attached at one end thereof and provided with a shaft, a lever pivoted within said case, a spring attached at one end to one arm of said lever  
105 and at its other end to said case, a line-space ratchet-wheel having a flange adapted to the pressure of said spring, and a sleeve seated on said shaft and adapted to actuate said lever and remove the pressure of said spring  
110 from said flange.

11. In a type-writing machine, the combination of a platen, a spring-case attached at one end thereof and having a shaft, a lever  
115 pivoted within said case, a C-shaped spring attached at one end to a pin on said case and connected at its other end to one arm of said lever, a line-space ratchet-wheel having a flange arranged between said spring and said  
120 case and adapted to the pressure of said spring, and a sleeve seated on said shaft for actuating said lever.

12. In a type-writing machine, the combination of a platen, a spring connected to one  
125 end thereof, a line-space ratchet-wheel connected to said platen through the pressure of said spring, means for removing said pressure and for maintaining it out of action so as to enable the platen to be rotated freely  
130 while the ratchet-wheel remains at rest.

13. In a type-writing machine, the combination of a platen, a platen-head, a spring carried thereby, a line-space ratchet-wheel



connected to the platen through said spring, and means for retracting said spring and for holding it out of operative relation to said ratchet-wheel so as to enable the platen to be  
5 rotated freely independently thereof.

14. In a type-writing machine, the combination of a platen, a platen-head, a spring carried thereby, a line-space ratchet-wheel connected to said platen by the pressure of  
10 said spring, a lever connected to said spring, and a shaft provided with a projection for actuating said lever to retract the spring.

15. In a type-writing machine, the combination of a platen, a platen-head, a spring  
15 carried thereby, a line-space ratchet-wheel connected to said platen by the pressure of said spring, a lever pivoted to said spring, and a shaft provided with a projection for first actuating said lever and retracting the  
20 spring and then locking or holding the spring out of action.

16. In a type-writing machine, the combination of a platen, a spring-case attached to one end thereof, a lever pivoted within said  
25 case, a C-shaped spring attached at one end to said case, a line-space ratchet-wheel having a flange arranged within said case and adapted to receive the pressure of said spring, a shaft passing through said spring-case, and  
30 a sleeve seated on said shaft and provided with a projection for actuating said lever.

17. In a type-writing machine, the combination of a platen, a spring-case attached to one end thereof, a lever pivoted within said  
35 case, a C-shaped spring attached at one end to said case, a line-space ratchet-wheel having a flange arranged within said case and adapted to receive the pressure of said spring, a shaft passing through said spring-case, and  
40 a sleeve seated on said shaft and provided with two oppositely-disposed projections adapted each to actuate said lever.

18. In a type-writing machine, the combination of a platen, a spring-case attached at  
45 one end thereof, a hook-shaped lever pivoted within said case and having a straight face as 45, a C-shaped spring attached at one end to the shorter arm of said lever and attached at its opposite end to said spring-case, a line-  
50 space ratchet-wheel having a flange within said case adapted to receive the pressure of said spring, a shaft passing through said case, and a sleeve seated on said shaft and provided with one or more actuating projections  
55 for said lever and with one or more notches, as 44.

19. In a type-writing machine, the combination of a platen, a spring-case, a spring therein, a line-space ratchet-wheel connected

to the platen through the pressure of said  
60 spring, a shaft, and means intermediate said shaft and said spring for removing the pressure of said spring from the said ratchet-wheel and for transferring the pressure of said  
65 spring to said intermediate means, whereby the shaft and platen may be rotated independently of the ratchet-wheel.

20. In a type-writing machine, the combination of a platen, a platen-shaft, a sleeve thereon, a spring-case, a line-space ratchet-  
70 wheel having a flange, a spring within said case for pressing upon said flange and thus connecting it with the sleeve, the sleeve and spring being arranged so that when the sleeve is rotated in one direction the platen and the  
75 ratchet-wheel turn with it but when it is turned in the opposite direction the pressure of the spring is removed from the ratchet-wheel and transferred to said sleeve whereby the shaft and platen may be turned independ-  
80 ently of said ratchet-wheel.

21. In a type-writing machine, the combination of a platen, a spring-case attached thereto, a lever pivoted within said case, a C-  
85 shaped spring attached at one end to one arm of said lever and at its opposite end to said case, a line-space ratchet-wheel having a flange adapted to said spring and a sleeve provided on its outer end with a finger-piece and seated at its inner end upon the platen-shaft and  
90 provided thereat with one or more projections for actuating said lever.

22. In a type-writing machine, the combination of a platen, a line-space ratchet-ring having a flange, a C-shaped spring pressing  
95 normally around said flange and frictionally connecting the ratchet-ring to the platen, and means for releasing the pressure of said spring and disconnecting the platen and ring, so that the former may be turned independently of  
100 the latter.

23. In a type-writing machine, the combination of a platen, a line-space ratchet-ring, a C-shaped spring pressing normally around  
105 said ring and frictionally connecting the ratchet-ring to the platen, and means for releasing the pressure of said spring and disconnecting the platen and ring, so that the former may be turned independently of the  
110 latter.

Signed at New York city, in the county of New York and State of New York, this 10th day of May, A. D. 1898.

CASPER D. WALLACE.

Witnesses:

K. V. DONOVAN,  
ETHEL WELLS.