

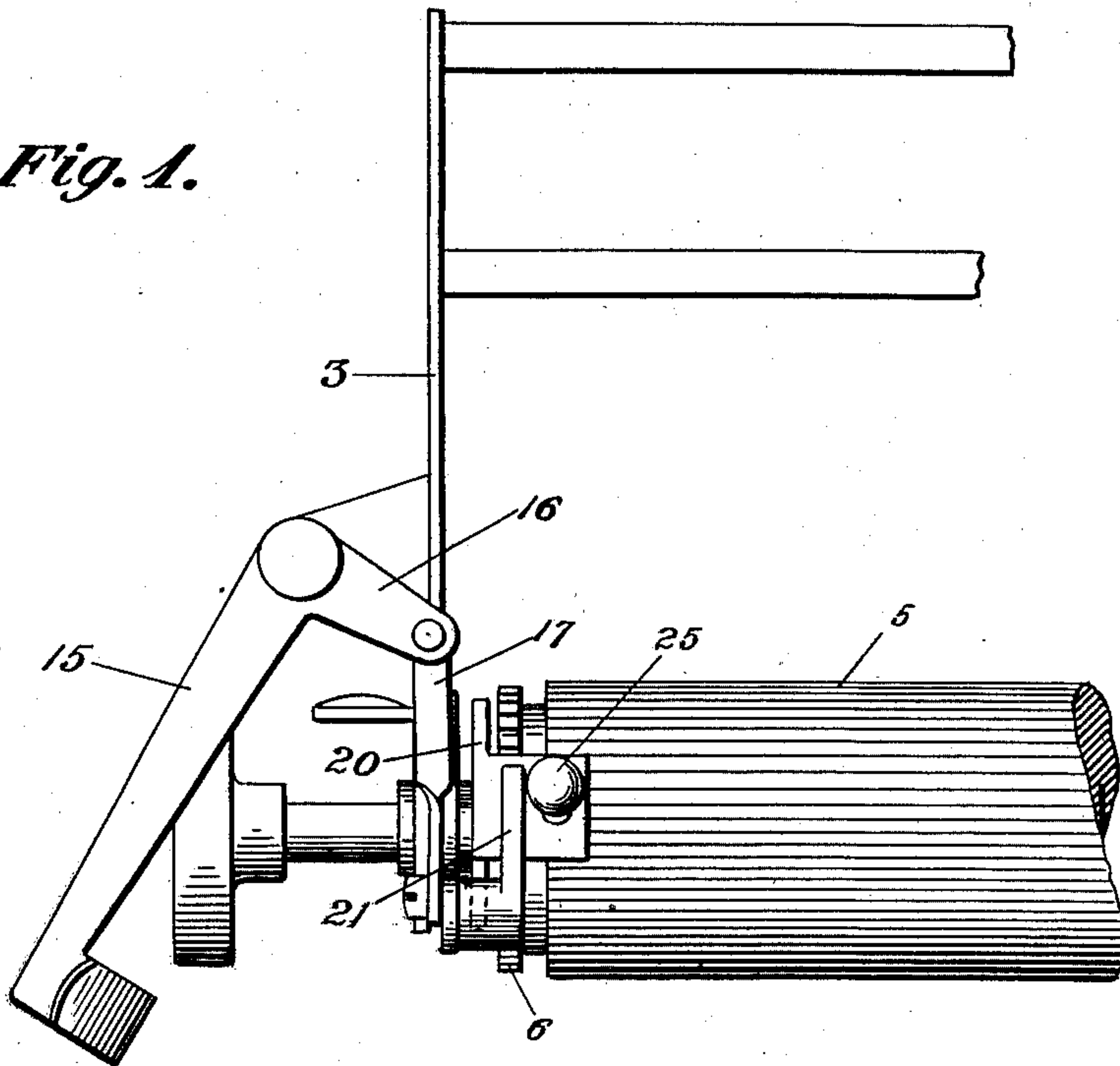
E. B. HESS.  
TYPE WRITING MACHINE.  
APPLICATION FILED NOV. 14, 1908.

990,736.

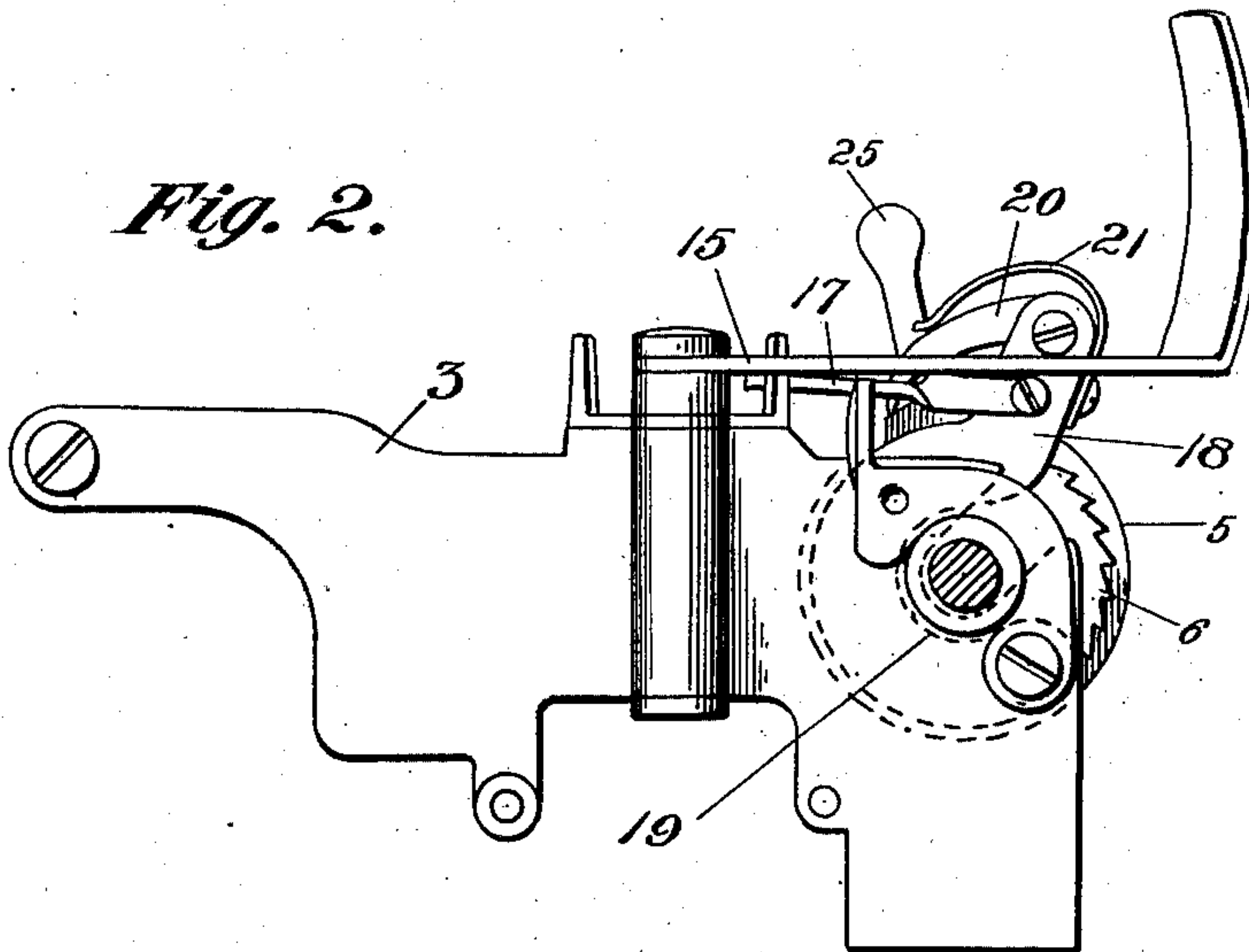
Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
L. F. Browning  
E. F. Uicker

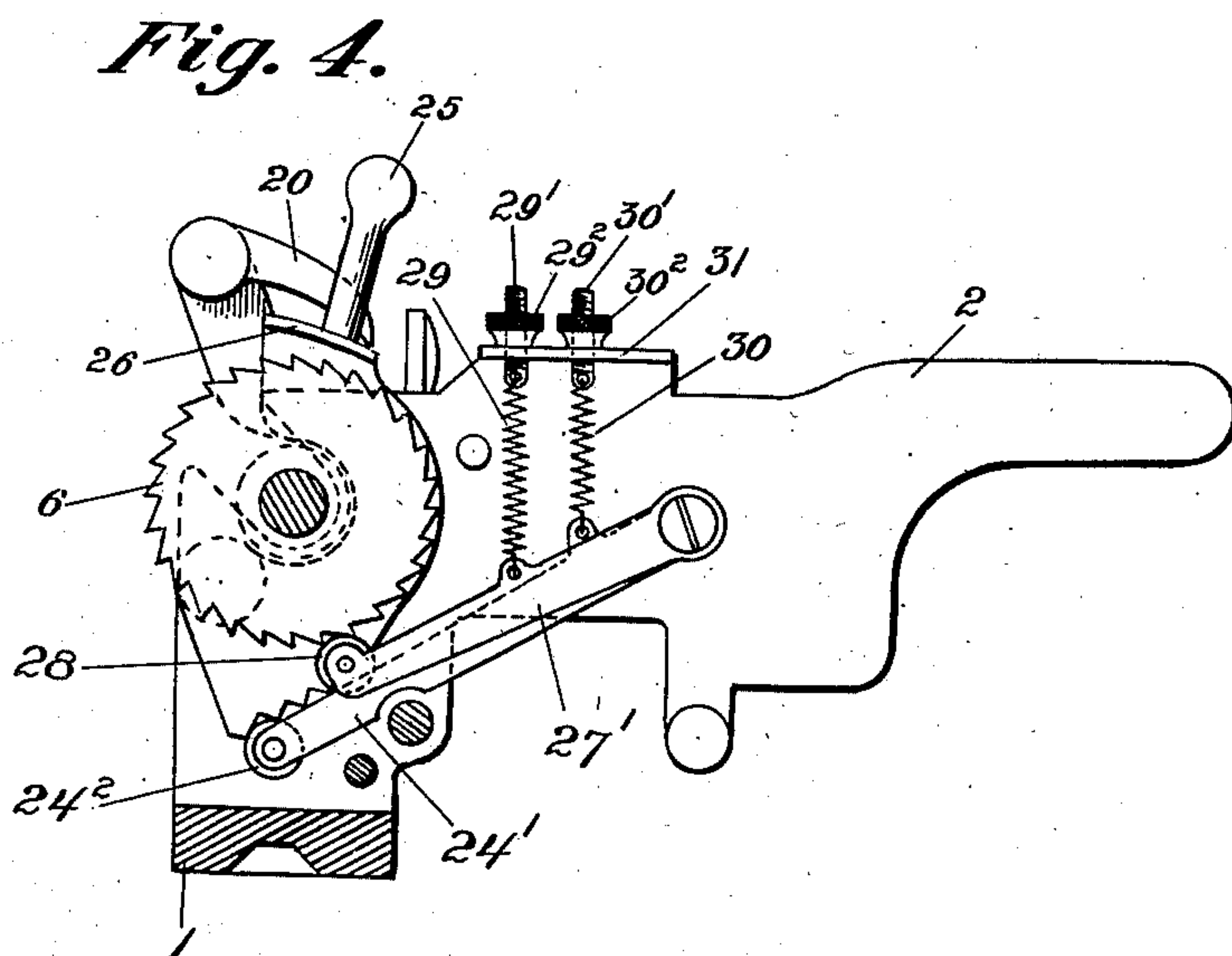
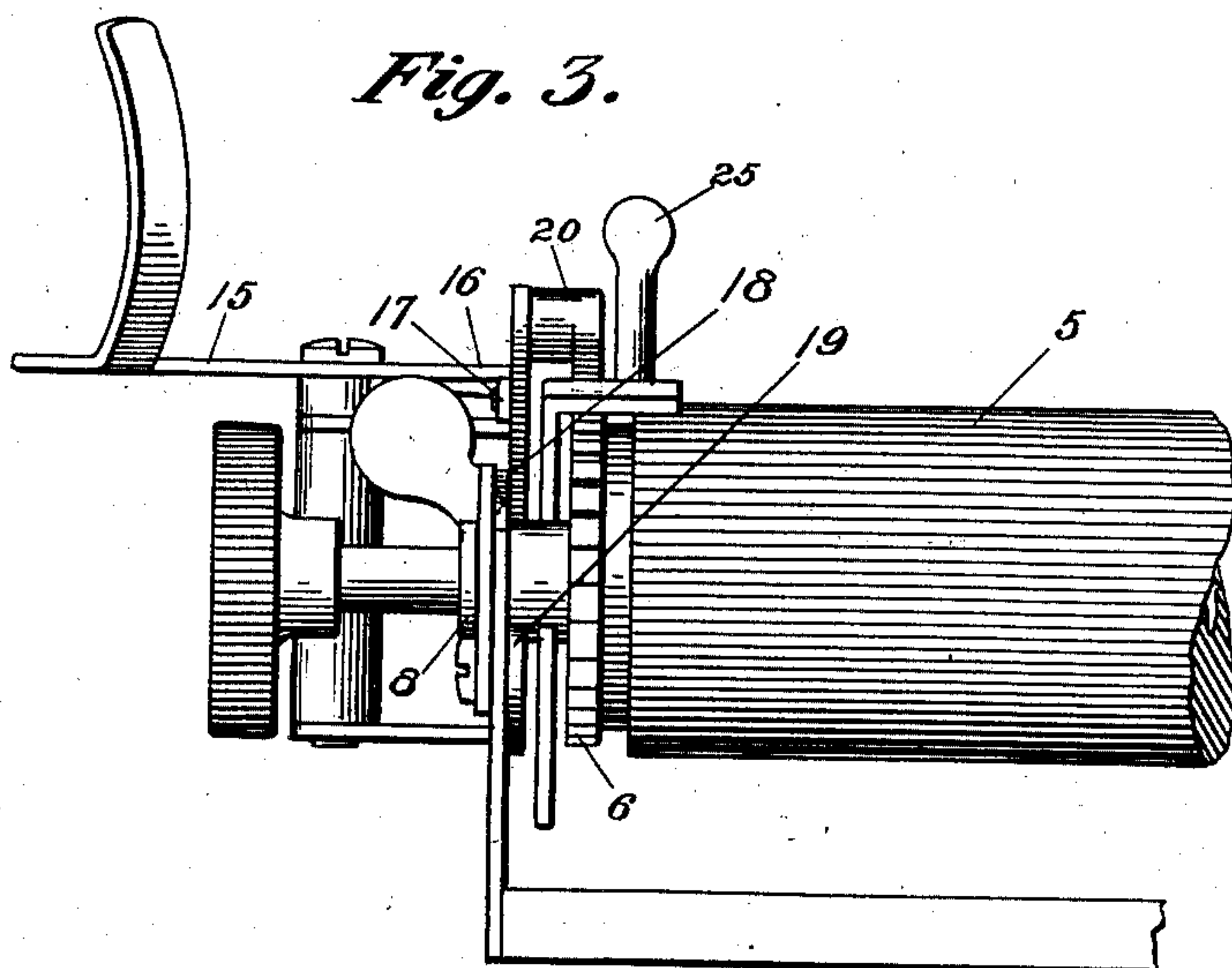
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By *Alb. J. Forney*  
Edward C. Davidson

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3 SHEETS—SHEET 2.



Witnesses:  
L. J. Browning  
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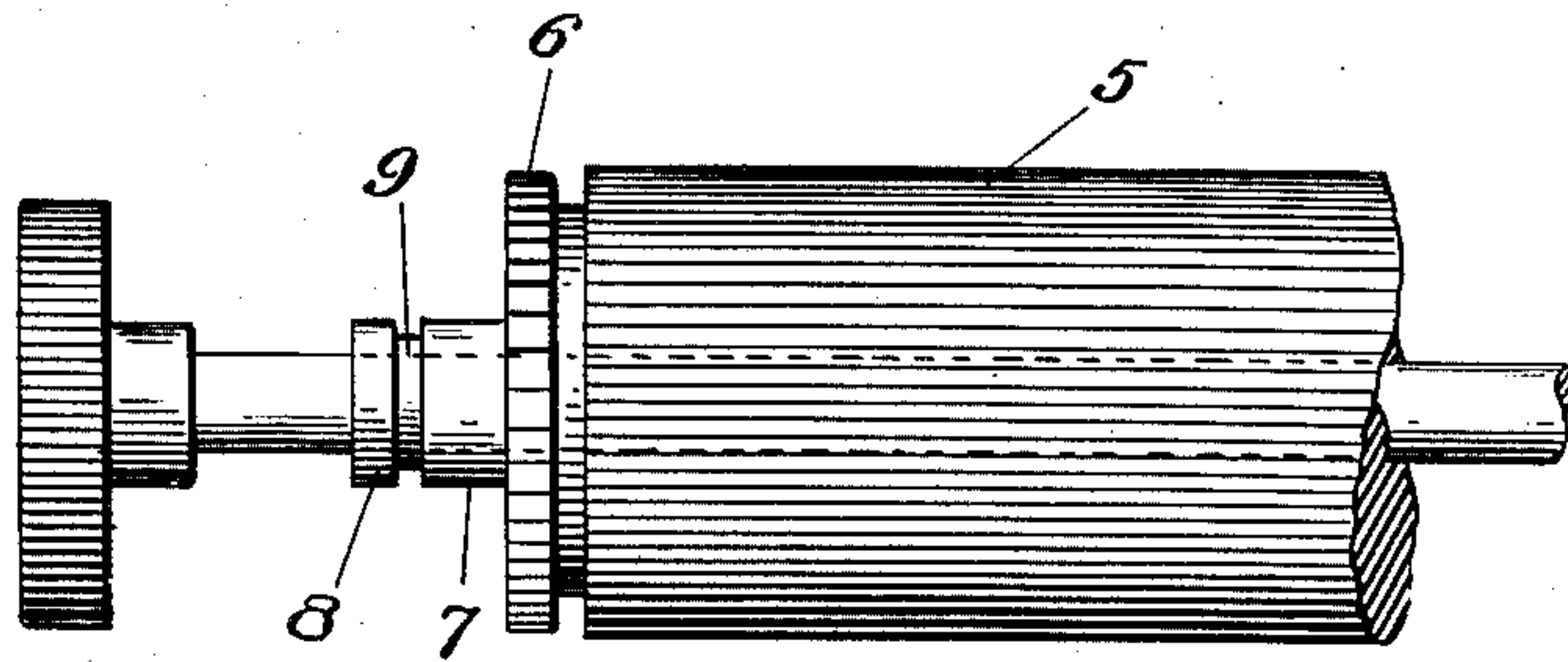
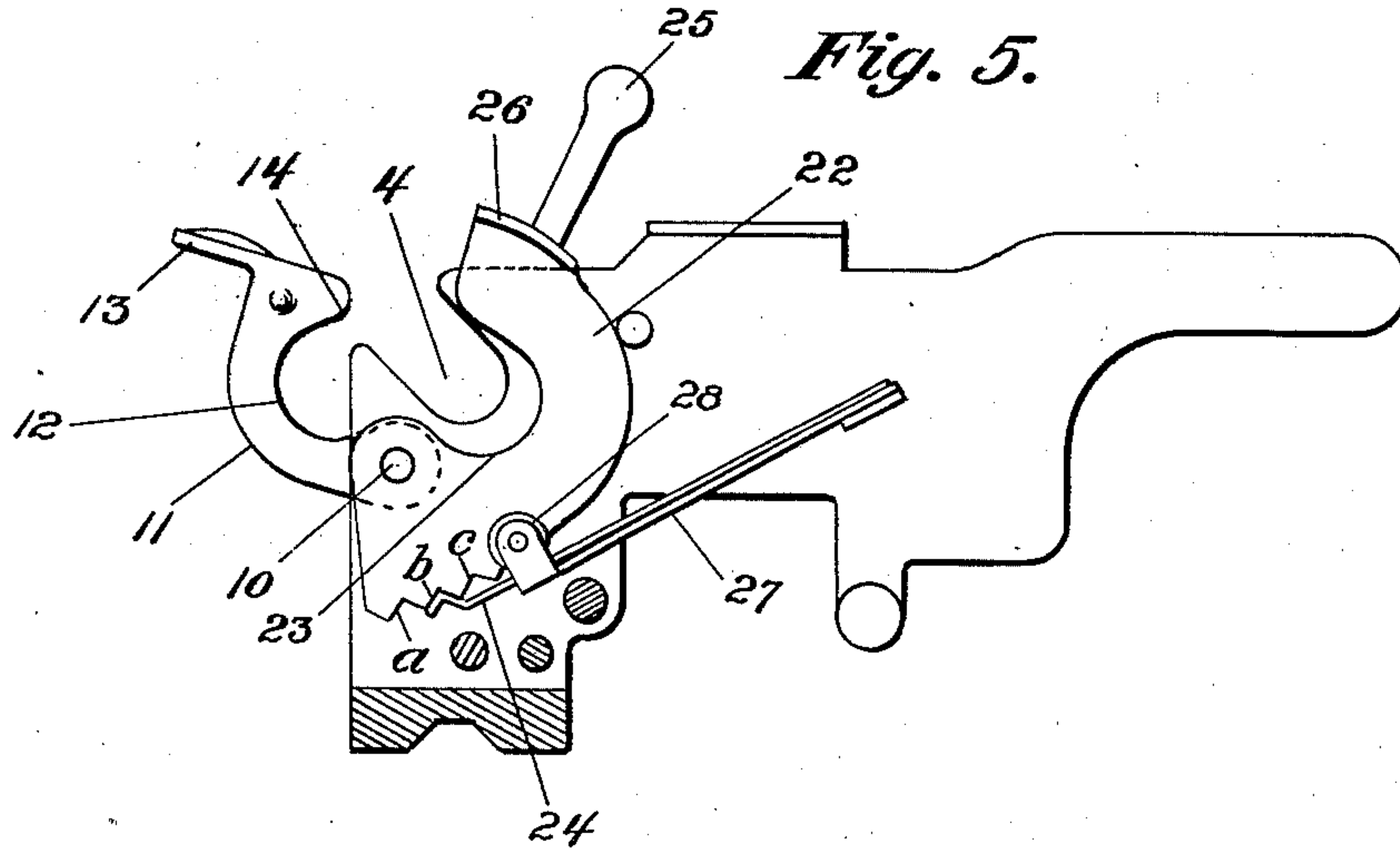
Edward B. Hess Inventor  
By his Attorney  
Edward C. Davidson

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3 SHEETS—SHEET 3.



Witnesses:  
L. F. Browning.  
E. F. Ucker

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By his Attorney  
Edward C. Davidson



# UNITED STATES PATENT OFFICE.

EDWARD B. HESS, OF NEW YORK, N. Y., ASSIGNOR TO ROYAL TYPEWRITER COMPANY,  
OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## TYPE-WRITING MACHINE.

990,736.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed November 14, 1908. Serial No. 462,576.

### *To all whom it may concern:*

Be it known that I, EDWARD B. HESS, a citizen of the United States of America, residing in the borough of Manhattan, city, county, and State of New York, have invented certain Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to an organization providing for the ready removal of the platen and its shaft from the carriage frame; and also certain improvements in the line space devices.

In the accompanying drawings: Figure 1 is a plan view: Fig. 2, an elevation taken from the left hand side of the carriage with the platen shaft in section: Fig. 3, a front elevation of the left hand end of the platen: Fig. 4, a section viewed from the right and taken just inside the right hand end plate of the carriage: Fig. 5, a view similar to Fig. 4 with the platen removed from the carriage and the platen driving line space devices omitted: and Fig. 6, an elevation of the left hand end of the platen showing its ratchet wheel and shaft and the turning knob at one end.

The carriage has a usual base rail 1 and side plates 2, 3, appropriately connected by tie rods. The front corners of the side plates are recessed as at 4 to receive the platen shaft and the circular bottoms of the recesses form each one-half of the respective platen shaft bearings. The platen 5 has secured to it the usual ratchet wheel 6 concentric with which the shaft is formed with an enlarged hub the parts of which 7, 8, are separated by an annular recess 9. The curved bottoms of the slots or recesses 4 fit into the annular recesses 9. On the outer side of each end plate is pivoted at 10 a locking arm 11 curved to form a circular recess 12 and having also a thumb piece 13 and a locking nose or cam face 14. The parts are so proportioned that when the locking arms are thrown rearward to lock the platen in the frame, the nose or cam piece 14 frictionally contacts with the face 8 of the enlarged hub but by a gentle, or reasonable amount of pressure may be forced past it so that the circular recess 12 of the arm embraces one-half the circumference of the part 8 and constitutes the remainder of the platen shaft bearing. Pivoted on the left hand side plate in the usual way is the ordi-

nary line space lever 15, the short arm 16, of which is connected by a link 17 with a rocker arm 18 having an open circular recess 19 turning upon the enlarged part 7 of the platen shaft hub. This rocking arm 18 carries in its upper end a ratchet driving pawl 20 to which is applied a spring 21. As the line space lever is moved inwardly, the rocking arm 18 is thrown rearwardly and the driving pawl 20 engages the teeth of the ratchet wheel in rear of a vertical plane passing through its axis. The line space adjusting device consists of a plate 22 having a circular recess 23 that embraces and turns on that part 7 of the platen shaft hub lying between the rocker arm 18 and the ratchet wheel. It is normally held in engagement with the part 7 of the platen shaft by a plate spring 24 whose free end, as in Fig. 5, may be struck up into V-shape to engage either one or the other of the recesses *a, b, c* in the edge of the plate 22. The upper end of the plate is provided with a handle 25 that stands normally in rear of a vertical plane passing through the platen axis and by means of this handle the plate may be rocked so that the spring 24 may engage either recess *a, b, c*. At the upper edge of the plate 22 is a flange 26 that overlies the periphery of the ratchet wheel. This flange is of such dimensions circumferentially, as that it determines the engagement of pawl 20 with the ratchet wheel so that on rearward movement of the pawl, it will, according to the adjustment of plate 22, carry the ratchet wheel through a partial revolution of one, two, or three teeth to afford three different line spaces. Of course, at the right hand end of the platen, there is only the platen bearing formed by recess 4 of the end plate and the locking arm 11 having the platen bearing circular recess 12.

In Fig. 5, 27 is an ordinary plate spring carrying in bearings in its free end a roller 28 that engages the spaces between the teeth of the ratchet wheel and performs the function of a ratchet detent to prevent overthrow of the ratchet.

In Fig. 4, in lieu of plate springs 24, 27, there are two lever arms 24' and 27'. In bearings in the end of arm 24' is a roller 24<sup>2</sup> adapted to engage the recesses *a, b, c*, in the plate 22, and in the arm 27' there is a roller 28 adapted to engage the spaces between the ratchet teeth. Each of these arms has ap-



plied to it the lower end of a coiled spring 29, 30, whose upper ends are attached to eyes in the lower ends of threaded bolts 29', 30' that pass through a flange 31 at the upper edge of the left hand side plate of the carriage; and to these screw bolts are applied adjusting nuts 29<sup>2</sup>, 30<sup>2</sup>. In this or other appropriate ways, the spring tensions upon the arms 24' and 27' may be adjusted. This construction provides for the use of line spacing devices operating in the well known way and permits of the removal of the platen shaft with the platen and ratchet wheel merely by withdrawing the locking arms 11 without disturbing the relationship of any of the parts.

In the construction disclosed herein the platen shaft bearings are composed in part of recesses in a fixed part of the carriage, *i. e.*, the end plates, and in part of recesses in the latches 11 and may readily be opened. The rocking pawl carrying arm 18 has also an open recess with a circular bottom upon which it turns or pivots on the platen shaft; and the line space adjusting plate 22 has also an open recess with a circular bottom that turns or pivots on the platen shaft. The ratchet wheel 6 is fixed at the end of the platen and the turning knob may be permanently fixed to the shaft. This construction and arrangement of parts makes it possible to have the pawl rocker arm and the adjusting plate turn about the platen axis which is a desirable thing in line space devices. By merely throwing open the latches 11 and swinging the parts 18 and 22 into proper position the platen, its shaft and ratchet, united as shown in Fig. 6, may be removed from the carriage.

I claim:

1. In a writing machine, a line space mechanism comprising a revoluble platen, a ratchet wheel, a rocker arm turning about the axis of the platen and carrying a ratchet

driving pawl, a detent engaging the ratchet wheel and comprising a pivoted arm and an adjustable coiled spring attached to and imposing spring tension upon the arm, a guard plate serving to determine the throw imparted to the ratchet wheel and having an edge with a plurality of notches in it and a positioning detent adapted to engage either of said notches and comprising a pivoted arm and an adjustable coiled spring attached to and imposing spring tension upon the arm.

2. The combination with the platen shaft, the platen and ratchet wheel carried thereby and shaft bearings comprising latches adapted to be opened to permit removal of the shaft, of line space devices comprising a ratchet drive pawl, an arm on which the pawl is pivoted having a circular recess adapted to engage the shaft laterally so that the arm may rock on the shaft as a center and a line space adjusting plate also having a circular recess adapted to engage the shaft laterally so that the plate may turn thereon, whereby by opening the latches the shaft, platen and ratchet may be removed.

3. The combination with the platen shaft, the platen and ratchet wheel carried thereby and shaft bearings comprising latches adapted to be opened to permit removal of the shaft, of line space devices comprising a ratchet drive pawl and an arm on which the pawl is pivoted having a circular recess adapted to engage the shaft laterally so that the arm may rock on the shaft as a center, whereby by opening the latches the shaft, platen and ratchet may be removed.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. HESS.

Witnesses:

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L. F. BROWNING.