

F. A. YOUNG.  
TYPE WRITING MACHINE.  
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959,829.

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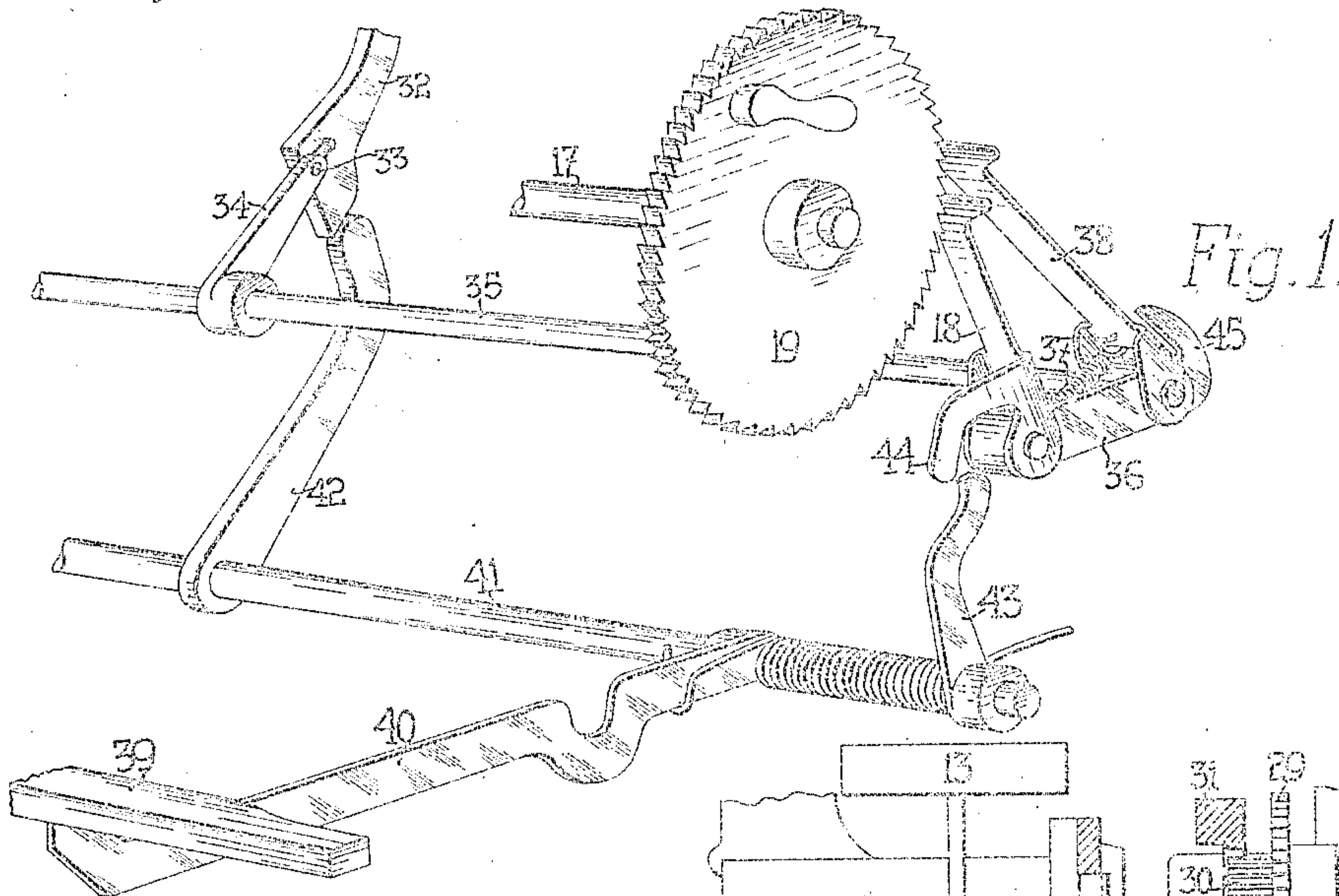


Fig. 2.

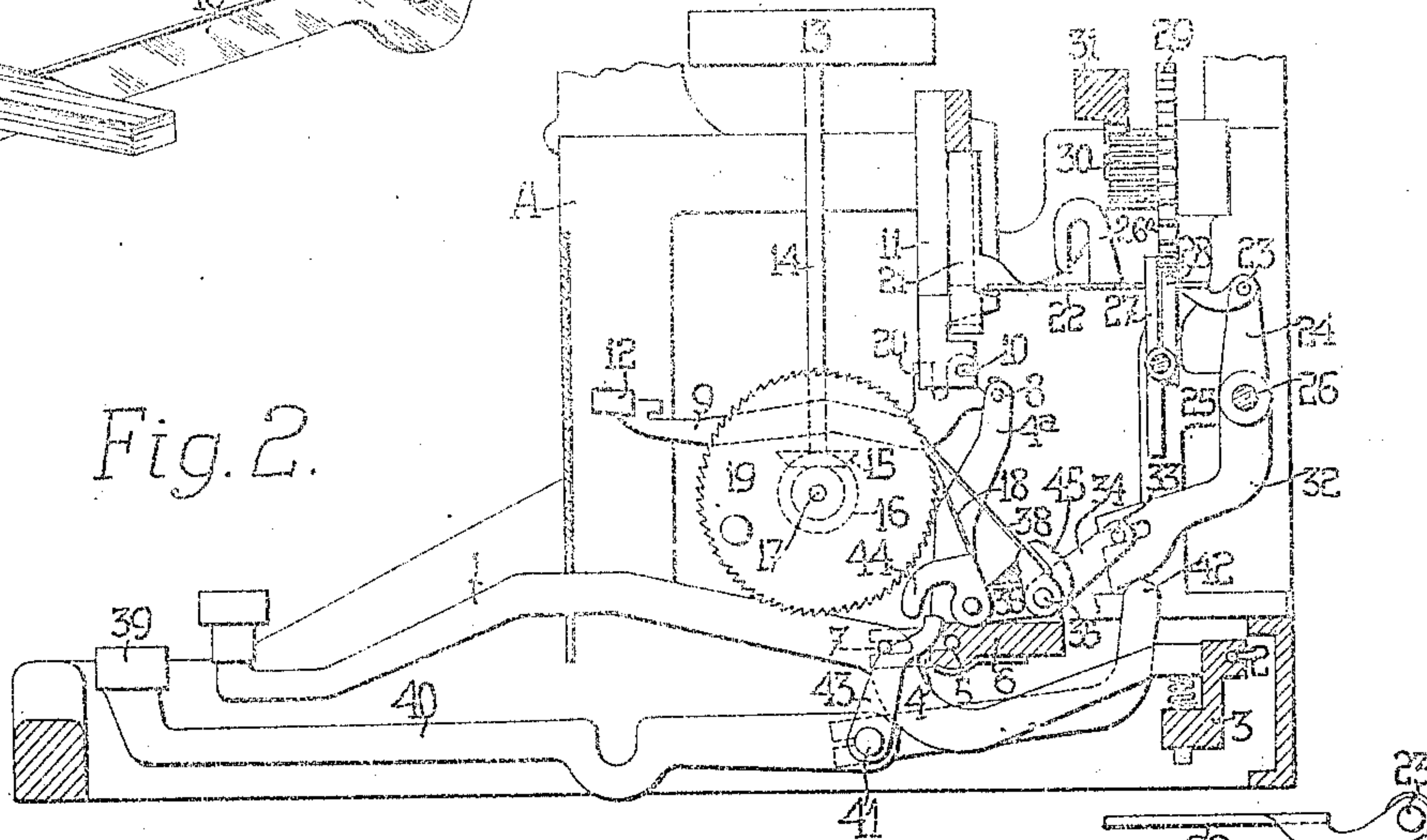


Fig. 3.

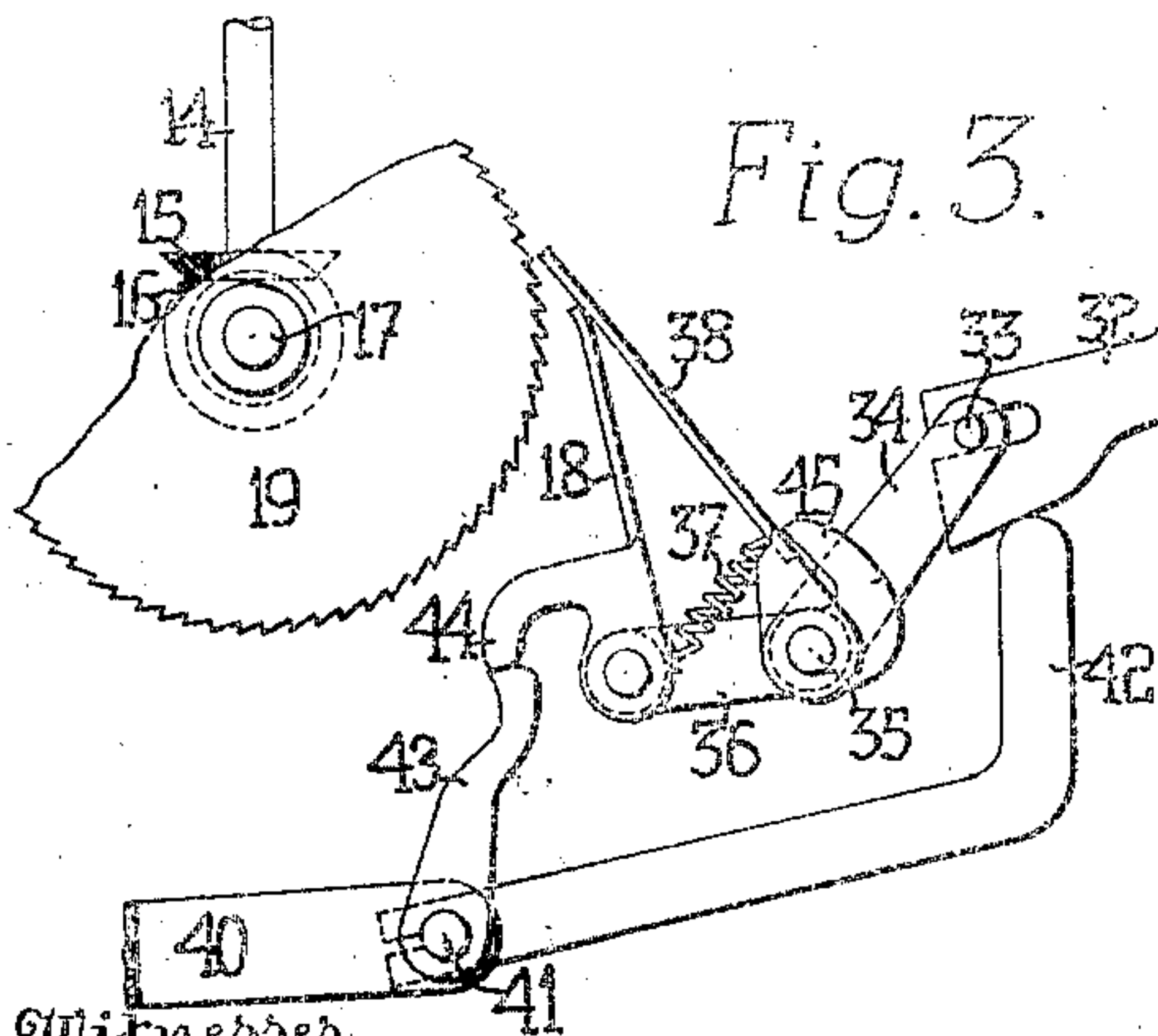
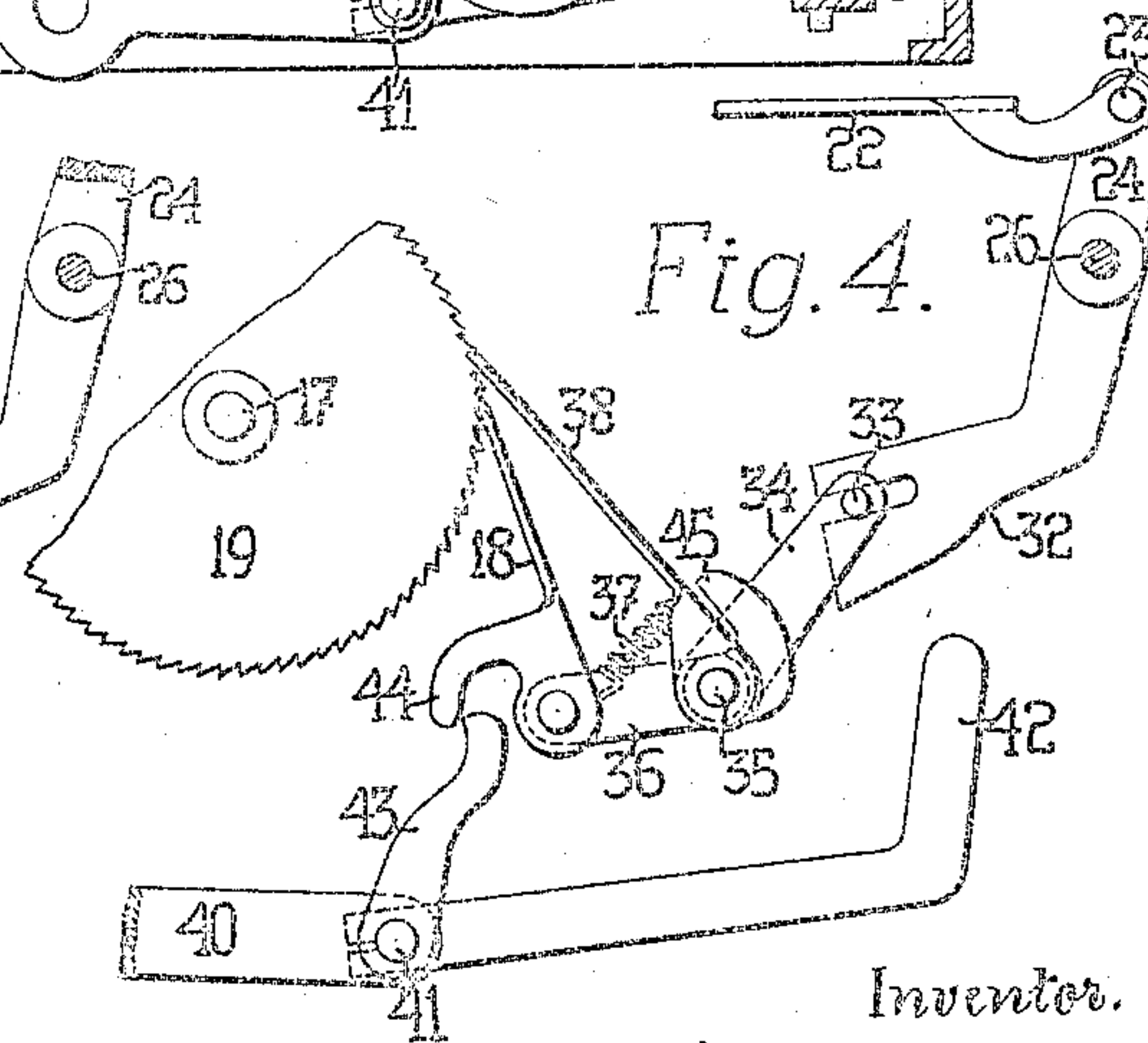


Fig. 4.



Witnesses.

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# UNITED STATES PATENT OFFICE.

FRANK A. YOUNG, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

959,829.

Specification of Letters Patent.

Patented May 31, 1910.

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*To all whom it may concern:*

Be it known that I, FRANK A. YOUNG, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the ribbon-winding mechanisms of typewriting machines.

In the Underwood and other writing machines, the ribbon is wound by means of power applied at the finger keys. Said keys usually operate a universal bar whereby is controlled the mechanism which permits the step-by-step escapement of the paper-carriage. Usually connected to this escapement mechanism, are reciprocating pawls which drive the ribbon-winding ratchets. The space-key, which feeds the paper-carriage to produce a blank or space between words, also usually operates the ribbon-winding mechanism, so that the ribbon is fed idly between words, or when paragraphing, or otherwise spacing the paper by means of the space-key. This causes the ribbon to be used irregularly, and in some cases is a further objection where the ribbon is vibrated to cover and uncover the printing point at every key stroke, it being desirable in such machines to cause the ribbon to feed as slowly as possible through the vibrator.

According to the present invention, the space-key operates a trip which throws out the ribbon-winding pawl, so that the latter, although reciprocated in the usual manner, does not turn the ratchet nor wind the ribbon; the latter being, therefore, fed only by the type-operating keys.

The accompanying drawings show the ribbon-winding and controlling parts at one side of the machine; but it will be understood that they are duplicated on the opposite side thereof.

Figure 1 is a detail perspective view of the principal parts of the invention. Fig. 2 is a side elevation of an Underwood typewriting machine with the invention applied thereto, the parts being shown in normal positions. Fig. 3 is an enlarged detail view, showing the positions of the ribbon-feeding pawl and cooperating parts when the space-bar is depressed. Fig. 4 is a similar view, showing the positions of the parts when a key is depressed.

The Underwood typewriting machine is provided with key levers 1, fulcrumed at 2 on a bracket 3, to operate a type-bar 9, through the medium of a lever 4, 4<sup>a</sup>, fulcrumed at 5 on a bracket 6, one arm 4 of the lever being connected with the key-lever at 7, and the remaining arm 4<sup>a</sup> being connected at 8 with the inner end of the type-bar 9, fulcrumed at 10 in a segment 11, and carrying a type 12.

A ribbon (not shown) interposed between the types and the platen, is coiled on spools 13 mounted on vertical shafts 14, connected by gears 15, 16 to a shaft 17, turned step by step by a pawl 18, engaging a ratchet wheel 19 fast on said shaft 17.

The type-bars 9 are equipped with heels 20, which, as the types approach the platen, operate a universal bar 21, forming part of the carriage feed mechanism, and carried by a frame 22 pivotally attached at 23, to rock arms 24, the latter hinged to the escapement bracket 25, at 26. The usual ribbon-vibrating mechanism includes a slotted actuator 26<sup>a</sup> on the universal bar. The carriage escapement also includes a pair of dogs 27, 28, alternately engaging an escapement wheel 29, connected to a pinion 30 in mesh with a rack 31, on a carriage (not shown). The operation of the universal bar not only effects the feed of the carriage, but also turns the rock arms 24 to operate a crank arm 32, connected at 33 with the operating arm 34 of a rock shaft 35, to which is secured an arm 36, pivotally supporting the ribbon-feeding pawl 18, which is held by a spring 37 in engagement with the ratchet 19, to turn the latter and the ribbon shaft 17 step by step. The depression of the key 1, draws the ribbon-feeding pawl idly over the ratchet to take a new bite thereon, and the return of the key to normal position causes the pawl to feed the ribbon. A retaining pawl or detent 38 also usually engages the ratchet.

By depressing the usual space-key or bar 39, the escapement is operated to space between words. The space-bar is carried on spacing levers 40 fast on a spring-retained rock shaft 41 journaled in the frame A, said rock shaft having an arm 42 to engage and swing the crank arm 32 of the escapement.

A finger 43, mounted on the space bar rock shaft 41, is interposed in the path of the ribbon-feeding pawl, or of a releasing



nose or cam 44 carried thereby, to effect the disengagement of the pawl from the ratchet, each time the space-bar is operated. Normally, the finger lies apart from the releasing nose or cam (as in Figs. 2 and 4) to allow the ribbon-feeding pawl to operate as usual, but upon the actuation of the space-bar 39, the releasing finger 43 is moved into the path of the nose or cam 44 actuated with the ribbon pawl on the idle stroke, and operates as a fulcrum to cause the pawl to tilt or swing back away from the ratchet (as shown in Fig. 3).

A stop 45 prevents the pawl from being thrown to an excessive degree. The return of the space-bar to normal position, withdraws the finger and enables the spring 37 to return the pawl into mesh with the ratchet.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a key-operated escapement and a ribbon-feeding mechanism operated thereby, including a pawl and ratchet device, of a space bar operatively connected with the escapement, and release mechanism operated by the space bar to disconnect the pawl and ratchet.

2. In a typewriting machine, the combination with a key-operated escapement and a ribbon-feeding mechanism operated thereby, including a pawl and ratchet device, of a space bar operatively connected with the escapement, and a fulcrum moved by the operation of the space bar into the path of the

pawl to effect the disengagement of the latter from the ratchet.

3. In a typewriting machine, the combination with a key-operated escapement and a ribbon-feeding mechanism operated thereby, including a pawl and ratchet device, of a space bar operatively connected with the escapement, a cam or nose on the pawl, and a finger movable into the path of said cam or nose when the space bar is operated to effect the disengagement of the pawl and ratchet.

4. In a typewriting machine, the combination with an escapement and a ribbon-feeding mechanism operated thereby, including a pawl and ratchet device, of a space bar operatively connected with the escapement mechanism, and a ribbon-feed release operated by the space bar to intercept the pawl on its idle stroke and effect its release from the ratchet.

5. In a typewriting machine, an escapement mechanism capable of operating a pawl, whereby to actuate a ribbon-feeding ratchet, and a space bar to operate the escapement through which the ribbon-feeding pawl is actuated, of a ribbon-feed release interposed in the path of the pawl when operated from the space bar, whereby to utilize the movement imparted to the pawl by the escapement, to disengage said pawl from the ratchet.

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Witnesses:

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