

W. J. KAUFFMAN.
TYPE WRITER CARRIAGE ACTUATING MECHANISM.
APPLICATION FILED JULY 7, 1906.

1,065,050.

Patented June 17, 1913.

5 SHEETS—SHEET 1.

Fig. 2.

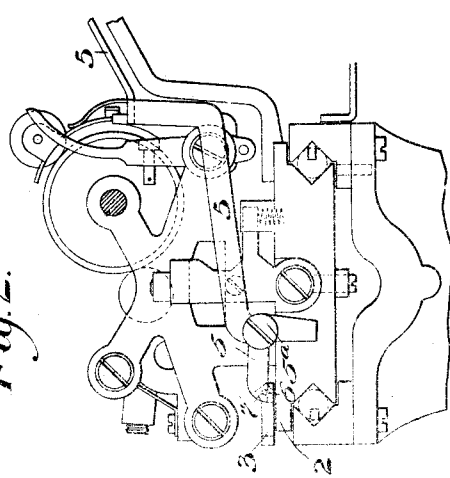
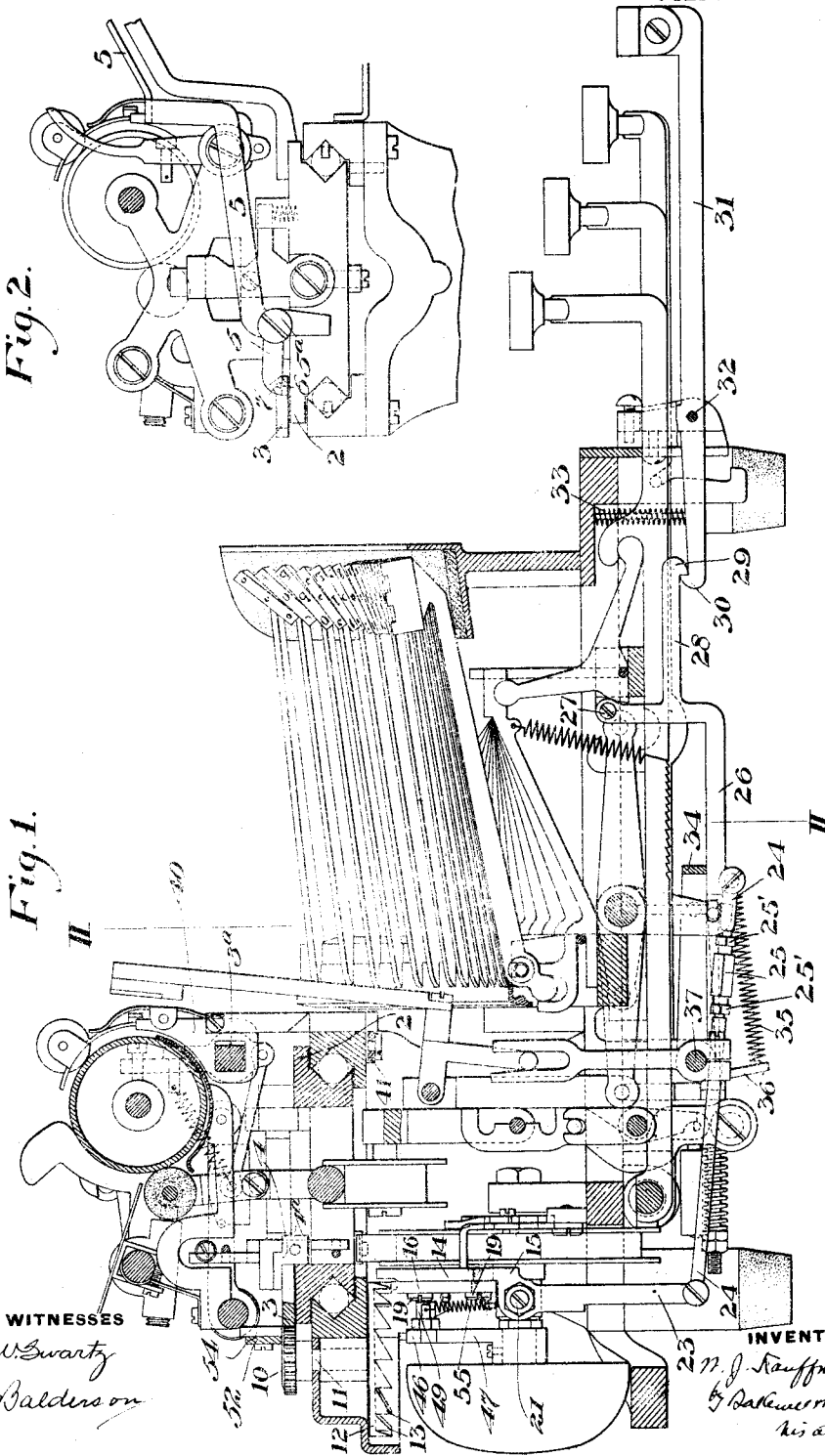


Fig. 1.



WITNESSES

W. W. Swartz
R. F. Balderson

INVENTOR

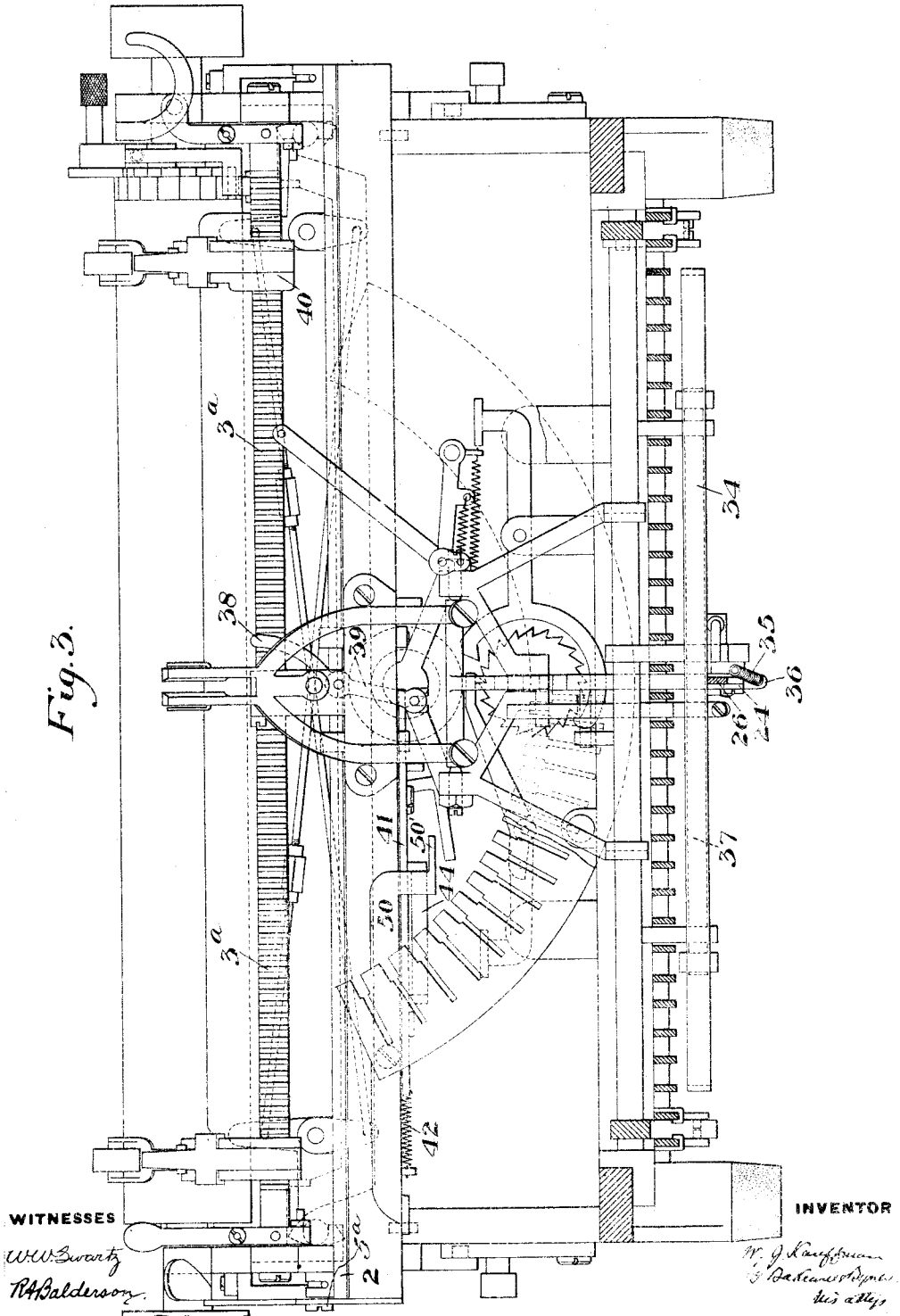
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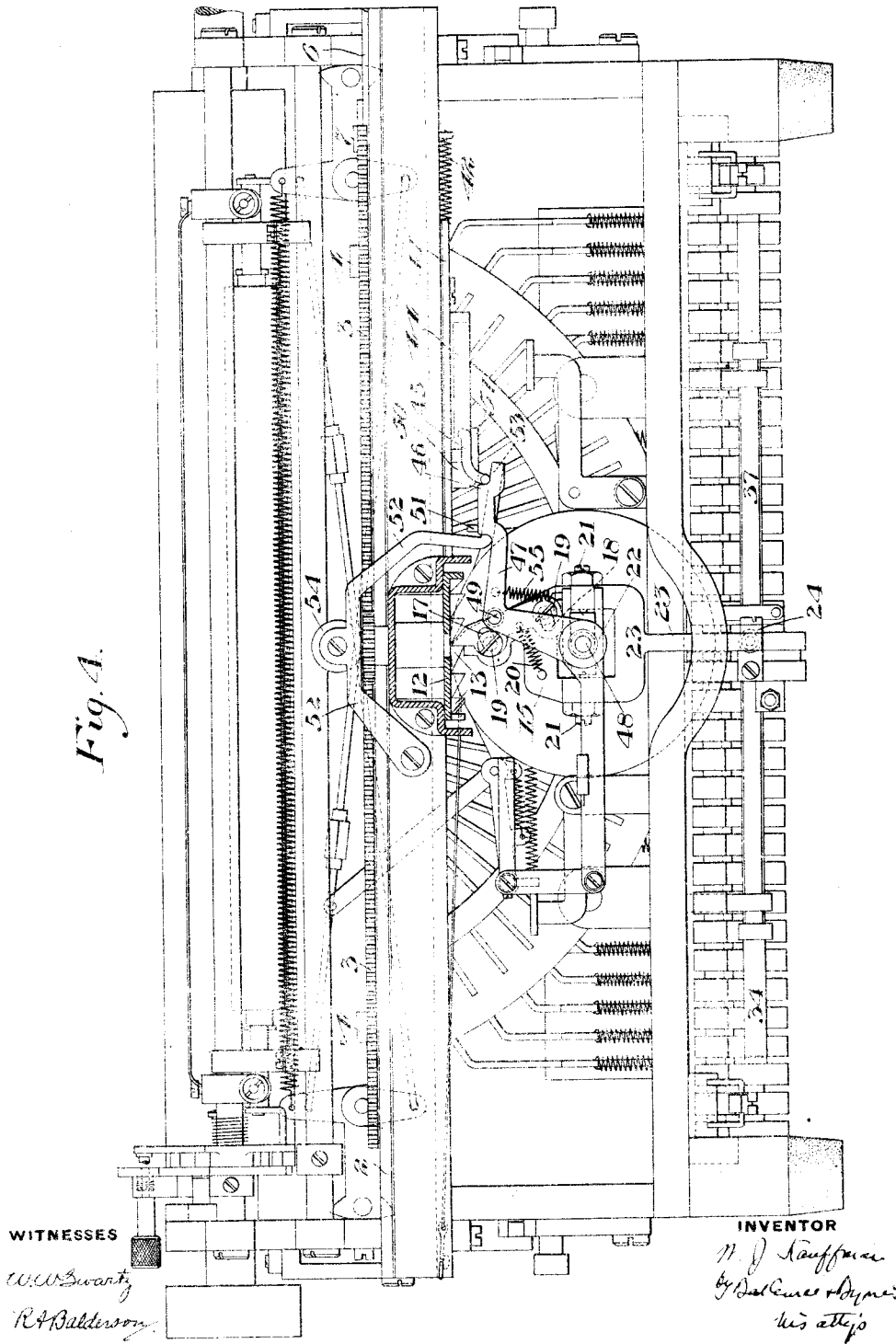
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5 SHEETS—SHEET 3.

Fig. 4.



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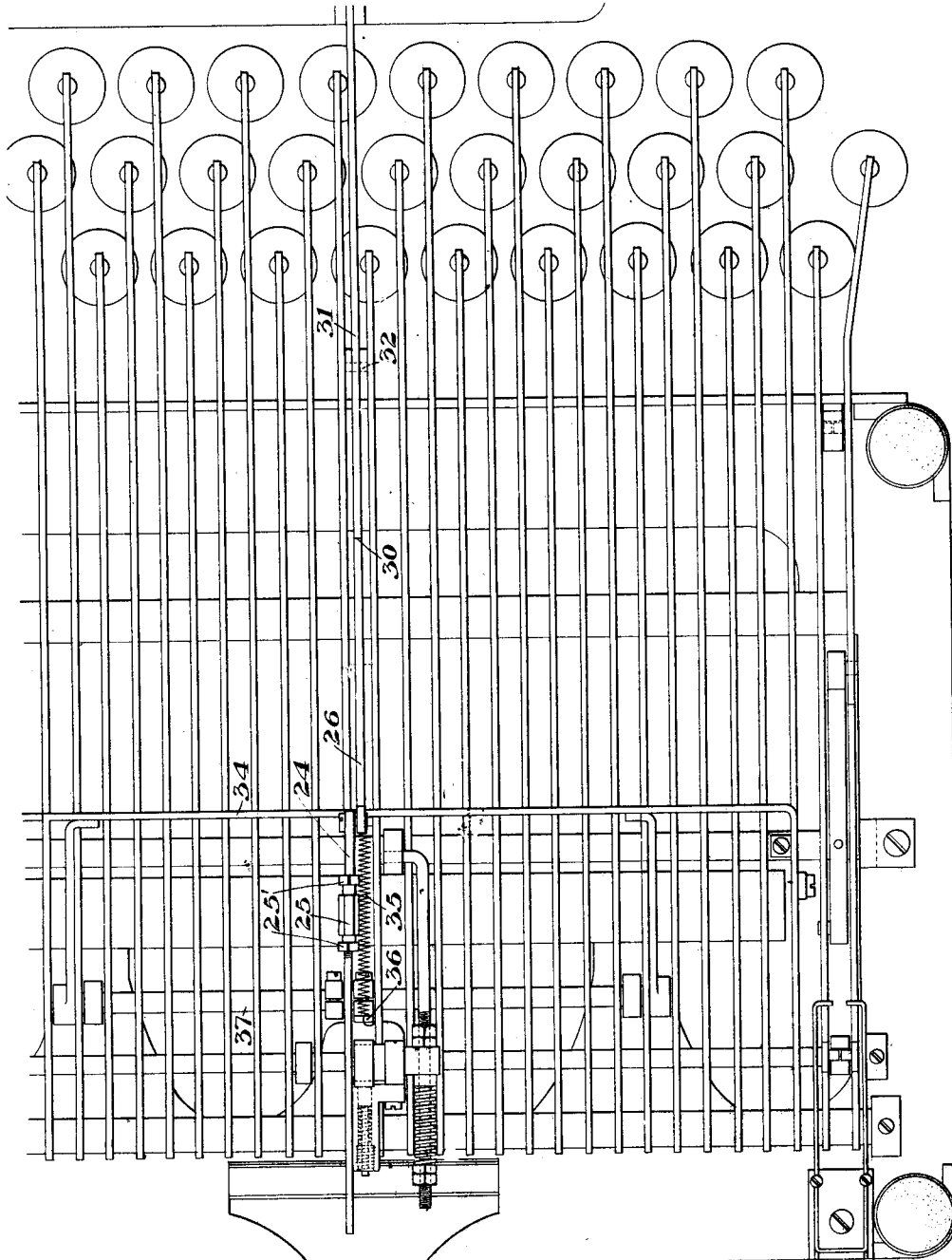
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5 SHEETS-SHEET 4.



WITNESSES

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Fig. 5.

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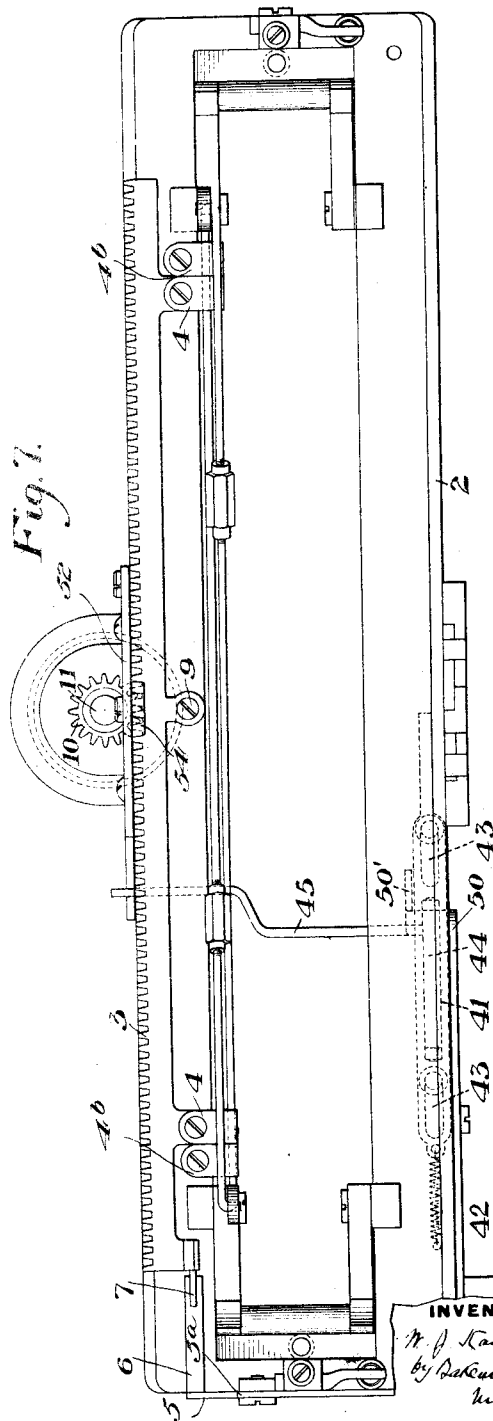
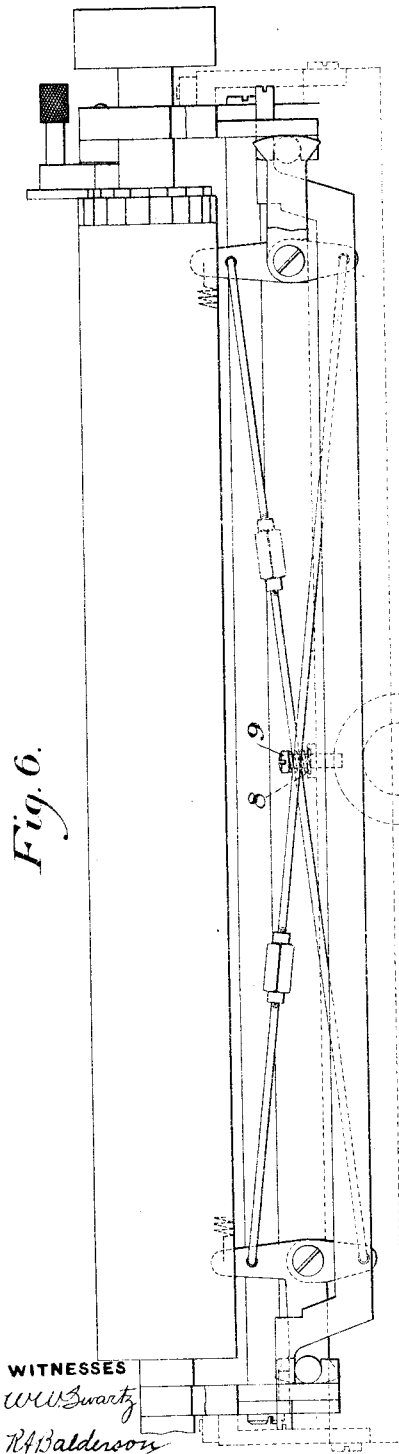
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5 SHEETS—SHEET 5.

1,065,050.



UNITED STATES PATENT OFFICE.

WILLIAM J. KAUFFMAN, OF CLEVELAND, OHIO.

TYPE-WRITER CARRIAGE-ACTUATING MECHANISM.

1,065,050.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed July 7, 1909. Serial No. 325,119.

To all whom it may concern:

Be it known that I, WILLIAM J. KAUFFMAN, of Cleveland, Cuyahoga county, Ohio, have invented a new and useful Type-Writer Carriage-Actuating Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal central section of a typewriter showing my improved carriage actuating mechanism and looking toward the right side of the machine. Fig. 2 is a partial end view, viewed from the left side of the machine. Fig. 3 is a cross section on the line II—II of Fig. 1. Fig. 4 is a rear view. Fig. 5 is a bottom plan view of the key lever mechanism. Fig. 6 is a detail view of the platen partly in section showing the carriage bed in dotted lines. Fig. 7 is a plan view of the carriage bed with the platen removed.

My invention relates to the connections for actuating the carriage of a typewriter, and is designed to provide a simple, cheap and reliable mechanism for this purpose; also to provide for easy disengagement for moving the carriage independent of the mechanism to allow easy detaching of the platen carrier from the carriage base and to provide improved means for locking the platen carrier at the end of the line and for releasing the lock to allow further characters to be written.

It further consists in certain combinations hereinafter described and claimed.

In the drawings, 2 represents the frame of the platen carrier having pivoted at its rear the rack 3. This rack is provided with forwardly projecting lugs 4, 4 attached thereto and having pivot pins 4^a entering suitable lugs or brackets 4^b on the platen carrier. The rack is tilted upwardly and swings on the pivots 4^a by a finger lever 5 pivoted at 5^a to the end of the platen carrier and having a lateral arm 6 arranged to engage a pin 7 projecting from the rack 3 over the end of the arm 6. This swinging of the rack bar releases it from its pinion, and thus allows the carriage to be moved freely in either direction. As the weight of the rack is hardly sufficient to restore it to normal position when released

I preferably provide the spring 8 surrounding screw-pin 9 and arranged to force the rack downwardly whenever released.

The pinion 10 engaging the rack is secured to the upper end of a stub-shaft 11 mounted in bearings at the rear of the carriage bed and having at its lower end a ratchet-wheel 12 with teeth 13 on its downwardly projecting rim. Each of these teeth is alternately engaged by a pawl 14 rigidly secured to a tilting frame 15, and by a shifting or vibrating fulcrum pawl 16 pivoted 65 on the fixed pawl. The swinging pawl has slots 17 and 18 near its upper and lower ends through which extend the fulcrum pins 19 fastened in the fixed pawl. The movable pawl is normally drawn forward to the limit of the slots (when out of engagement with the teeth of the ratchet wheel 12) by the small spring 20 secured to the fulcrum frame and the pawl. The tilting frame 75 is preferably in the shape of a loop with the side members bent forwardly in their upper portions, these side arms carrying the pivotal trunnions 21 which are in the form of pointed screws projecting into bearings in the central post 22. From the lower end 80 of the tilting loop frame projects the arm 23 pivoted at its lower end to a link or connecting rod 24 having an adjustable turn-buckle device 25 (and preferably provided with lock nuts 25'), and pivoted at its front 85 end to the rear arm 26 of a three-armed lever pivoted at 27 to the frame of the machine. The forward arm 28 has a hook-shaped end 29 and is engaged by the corresponding hook-shaped end 30 of the spacing lever 31. This spacing lever is pivoted 90 to the frame at 32 and is held in normal position by the spring 33. The universal bar 34 bears upon the rear arm of the three-armed lever so that whenever a key lever is 95 depressed this three-armed lever will be swung independently of the spacing lever. The three-armed lever is held in normal position by a spring 35 extending from the connection between the link 24 and arm 26 100 to an arm 36 and secured to the rock-shaft 37 on which the universal bar 34 is mounted.

When the spacing lever 31 is depressed its hooked end forces up the forward arm 28 of the three-armed lever and thus draws its rear arm 26 forwardly and downwardly and

swings the pawl frame. When a key lever is depressed the universal bar bears upon the rear arm 26 of the three-armed lever and swings this lever independently of the spacing lever.

When the spacing lever or a key lever is depressed the pawl frame is tilted backwardly, thus detaching the shifting pawl 16, from a tooth and causing the fixed pawl 14 to engage the same tooth and act as a detainer. During this back movement the shifting pawl 16 is released from the ratchet tooth and is drawn backward by the spring 20 rotating on the lower pin 19 into a position to engage the next tooth. On release of the spacing lever or the key lever, the movable pawl is moved by the power of the carriage actuating spring which swings the movable pawl against the action of the spring 20 and moves the platen carrier the distance of one space, bringing the pawl 16 into the position shown in Fig. 4. If the platen carriage is moved backward the shifting pawl is first moved on the lower pin 19 until the limit of its movement of the slot 17 is taken up when the pawl will be swung on the upper pin 19 a distance great enough to allow the teeth 13 to pass the pawl. The spring barrel and tape connection for actuating the carriage may be of any desirable type.

To lock the carriage at the end of the line I provide a two-armed lever having an upper arm 38 and a lower arm 39, this lever being pivoted on the carriage bed. The upper arm is in the path of the marginal stop 40 which is secured to the swinging rod 3^a on the platen carrier, while the lower arm is pivotally connected with the slide 41 loosely mounted on the lower side of the carriage bed. This side is normally drawn in one direction by the spring 42, is guided by screws extending through slots 43 therein, said slide having pivoted thereon a rock-shaft 44 with a rod 45 projecting therefrom and extending under the carriage bed to its rear. The rear end of this rod is normally held against the shoulder 46 of a bent lever 47 pivoted to the frame at 48. This lever 47 is provided with a forwardly projecting pin 49 which moves into the path of the pawl-carrying frame 15 when the lever is tilted upwardly. Consequently, when the marginal stop engages the lever 38, the rearwardly projecting rod pressing on the shoulder 46 of the rear lever 47 will move the pin 49 into the path of the upper pin 19 on the pawl frame 15 and thus prevent further feeding of the carriage. This rear projecting rod 45 may then be lifted to disengage the lock by a finger lever 50 pivoted to the frame of the machine at 50^a and having a projection 50' extending beneath said rod 45. When this finger lever is actuated the rod 45 is tilted rocking the shaft 44 on the slide and the carriage may then be fed until

the rod 45 strikes a pin or shoulder 51 projecting from the rear lever 47 which again swings the lever and locks the feed.

To prevent excessive strain on the stop-lever 47 when the rack is swung to disengage it from the pinion, I provide the lever 52 pivoted to the rear portion of the carriage bed extending over the top of the pinion and having a depending end 53 which extends under the stop-actuating rod 45. This lever 52 carries a small roller 54 which travels on the upper side of the rack 3. Whenever the rack is tilted upwardly to disengage it from the pinion, this lever will engage the stop actuating rod 45 and carry it into inoperative position, thus preventing a strain or pressure being brought upon it which might bend it out at the end of the carriage travel. To draw the stop lever 47 to normal position when released I provide the spring 55 which will swing this lever and return the parts to their normal position.

The advantages of my invention result from the small number of parts and their efficient action; the carriage is locked at the end of the line and may be readily released for the writing of further characters, after which it is again locked until the carriage is returned; the tilting of the rack affords a simple and easy means for cutting the connections of the latter spacing mechanism so that the carriage may be moved by hand in either direction; the pawl escapement is simple and positive in its operation.

Variations may be made in the form and arrangement of the parts without departing from my invention.

I claim:—

1. In a typewriter, a pair of spacing pawls carried by a tilting frame, means to actuate said frame, a lever for locking the tilting frame at the end of the line, said lever having a plurality of projections, a pivoted rod for engaging the projections to shift the locking lever to lock the frame, the rod being arranged to engage the first projection to lock the frame, means to rock said rod to disengage it from the first projection to release the frame, said rod being arranged to engage the second projection when moved in a predetermined distance to again lock the frame; substantially as described.

2. In a typewriter, a pair of spacing pawls carried by a tilting frame, means to actuate said frame, a lever for locking the tilting frame, said lever having a plurality of stops, a pivoted rod for engaging the stops to shift the locking lever to lock the tilting frame, said rod being arranged to be rotated to clear the first stop to release the frame, and arranged to engage the next stop to lock the carriage after it has again been operated; substantially as described.

3. In a typewriter, a tilting frame, spac-

ing pawls carried thereby, a pivoted lever connected thereto, a hook on the end of said lever, and a spacing lever having a hooked end arranged to engage the hook on the pivoted lever, to actuate the tilting frame; substantially as described.

4. In a typewriter, a tilting frame, a fixed pawl carried thereby, a second pawl pivotally mounted at both ends to the first pawl, a spacing lever, operating connection between the spacing lever and the tilting frame, and a universal key-operated bar arranged to operate said connections; substantially as described.

5. In a typewriter, a tilting frame, a pawl rigidly secured thereto, a shifting fulcrum pawl pivoted to the rigid pawl and having a fulcrum at each end, a spacing lever, and connections operated thereby and arranged to actuate the tilting frame; substantially as described.

6. In a typewriter, a tilting frame, a pawl rigidly secured thereto, a spring actuated pawl pivoted at both ends to the rigid pawl, and arranged to rotate on both pivots at different times, and means to actuate the tilting frame; substantially as described.

7. In a typewriter, a tilting frame having a rigid and a movable pawl secured thereto, said movable pawl having two fulcrums, means to swing the last pawl on either fulcrum at different times, and means to actuate the tilting frame; substantially as described.

8. In a typewriter, a platen carrier, a locking lever, a spring actuated slide, a swinging rod mounted on the slide and arranged to actuate the locking lever, and means to move the slide to lock the spacing pawls from movement; substantially as described.

9. In a typewriter, a platen actuated lever, a spring actuated slide connected to

said lever, a pivoted rod carried by the slide, and a lever arranged to be operated by the rod to lock the spacing pawls from movement; substantially as described.

10. In a typewriter, a tilting frame, a pair of pawls carried by the frame, a stop actuating slide, a platen operated lever pivoted to said slide arranged to engage the tilting frame, and a releasing lever pivoted to the frame of the machine having a projection extending beneath the stop actuating slide; substantially as described.

11. In a typewriter, a platen carrier, having a movable rack, a pinion engaging the rack, a tilting frame, a pair of pawls carried by the frame, a locking device for the tilting frame, said device having a stop actuating slide, and means for disengaging the stop from the slide when the rack is moved; substantially as described.

12. In a typewriter, a vertically swinging rack, a pinion engaging the rack, pawl mechanism for the pinion, a stop, a stop actuating slide arranged to lock the pawl mechanism, a rod pivoted on the slide and arranged to actuate the stop, and means arranged to move the pivoted rod to inoperative position when the rack is raised; substantially as described.

13. In a typewriter, a platen operated lever pivoted to the frame of the machine, a slide connected thereto, a spring connected to the slide, a rock shaft pivoted to the slide and having a projecting rod, and means operated by the projecting rod to be thereby moved into the path of a spacing pawl mechanism; substantially as described.

In testimony whereof, I have hereunto set my hand.

WILLIAM J. KAUFFMAN.

Witnesses:

BYRON R. WATSON,
GEO. M. KAUFFMAN.