No. 763,529. PATENTED JUNE 28, 1904.

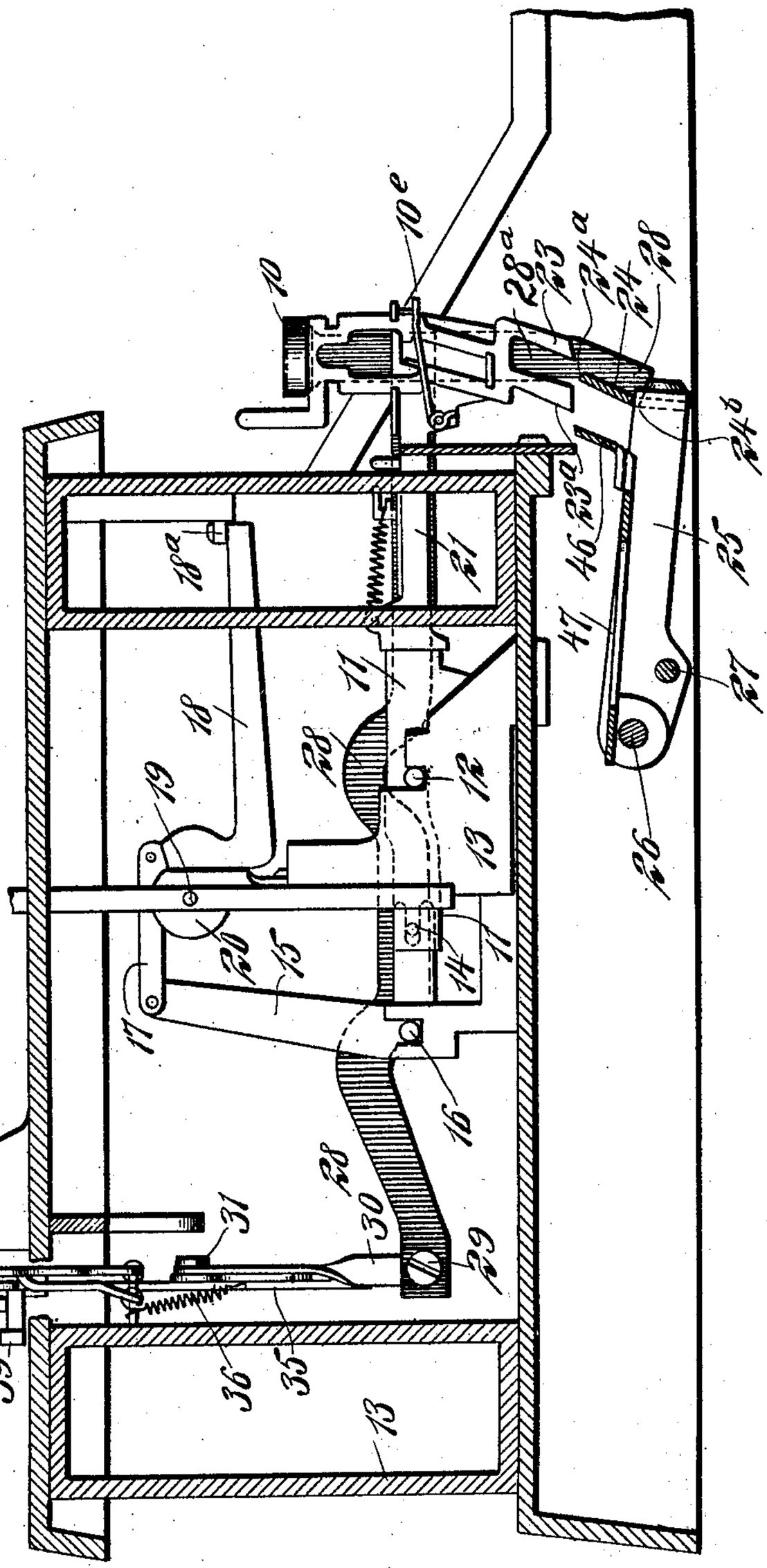
F. X. WAGNER.

CARRIAGE MECHANISM FOR TYPE WRITERS.

APPLICATION FILED JUNE 12, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

FIG. 1.



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NO MODEL. 4 SHEETS—SHEET 2.

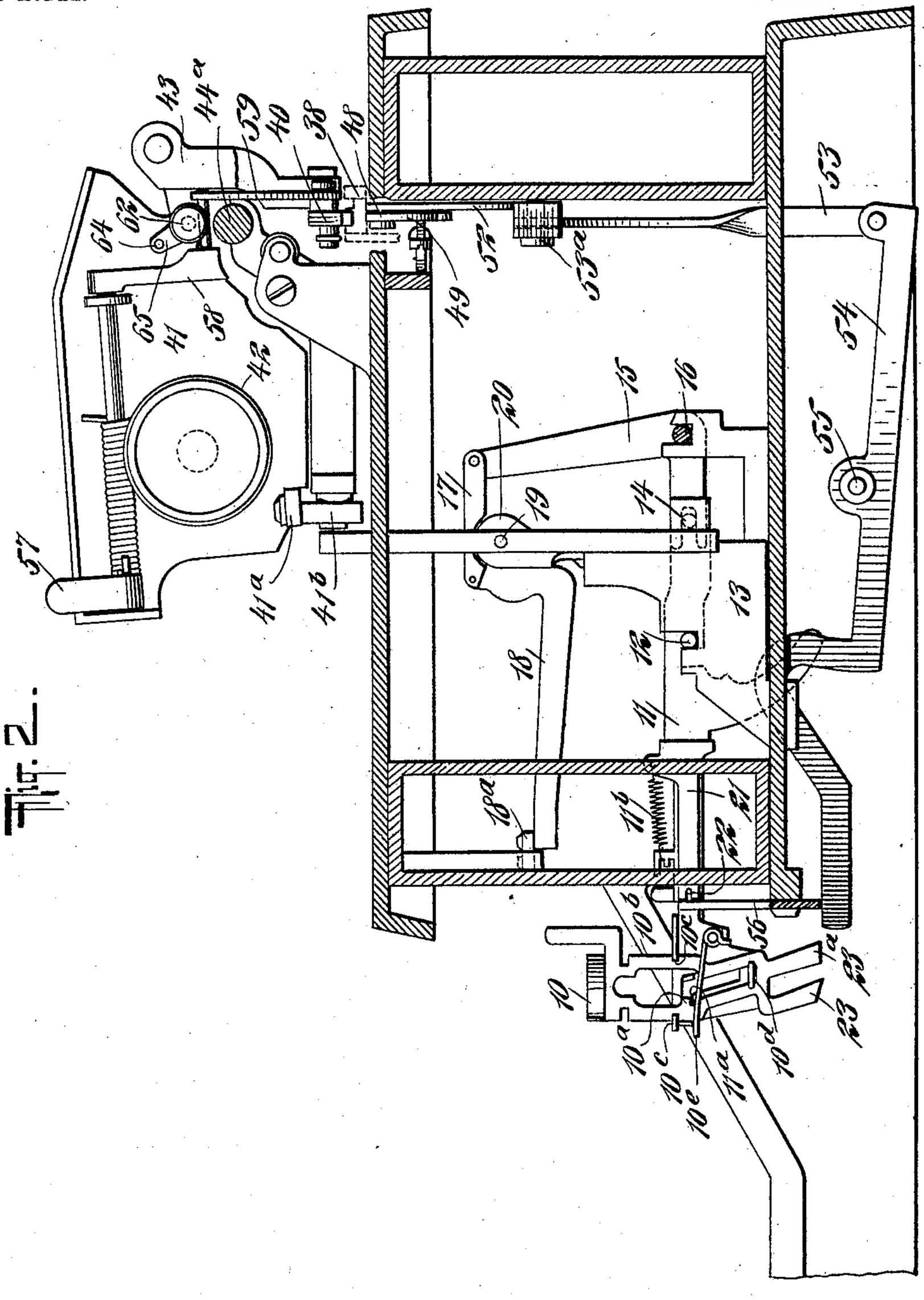

Fig. 2.

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NO MODEL. 4 SHEETS—SHEET 3.

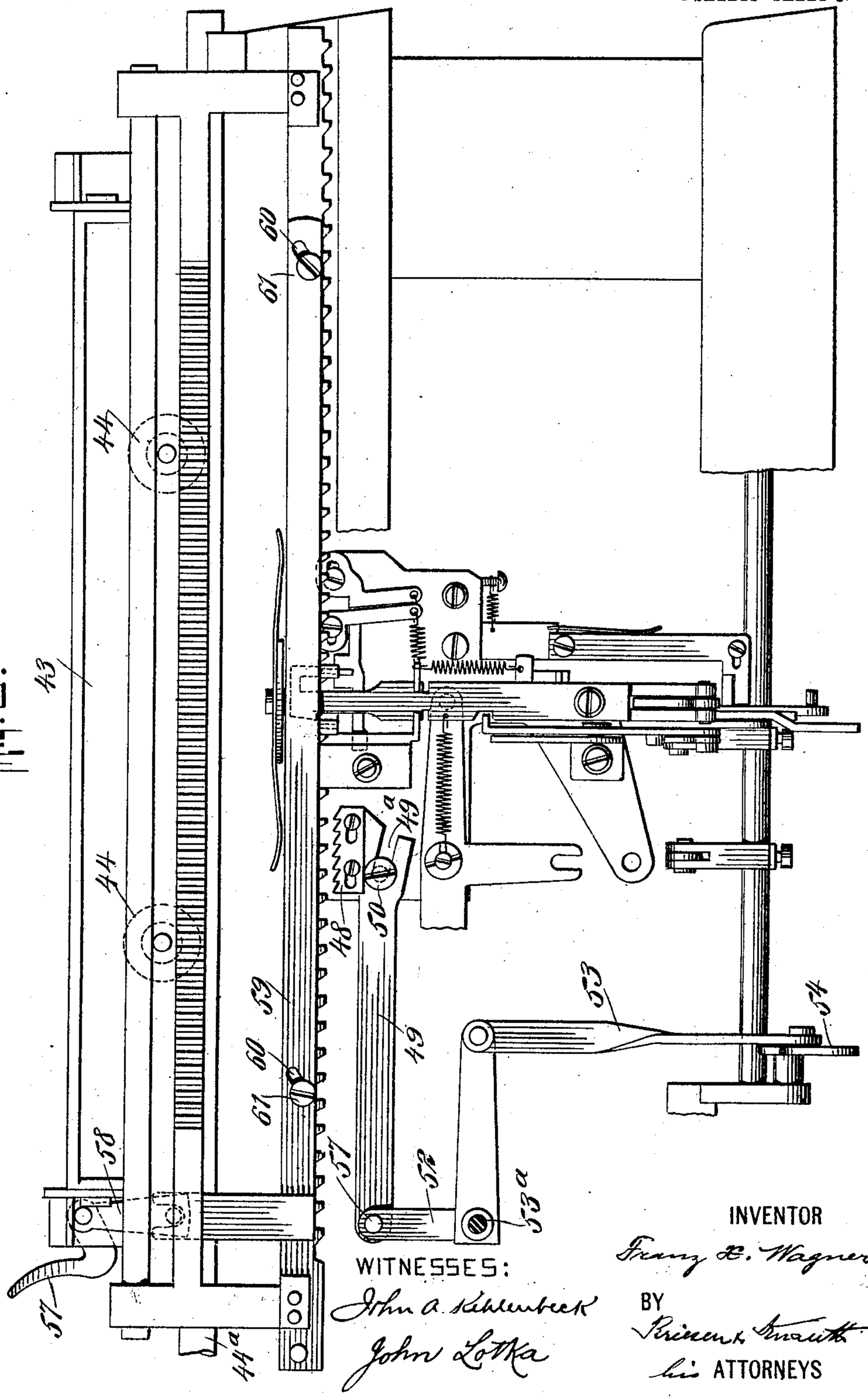

FIG. 3.

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CARRIAGE MECHANISM FOR TYPE WRITERS.

APPLICATION FILED JUNE 12, 1903.

NO MODEL. 4 SHEETS—SHEET 4.

Fig. 4.

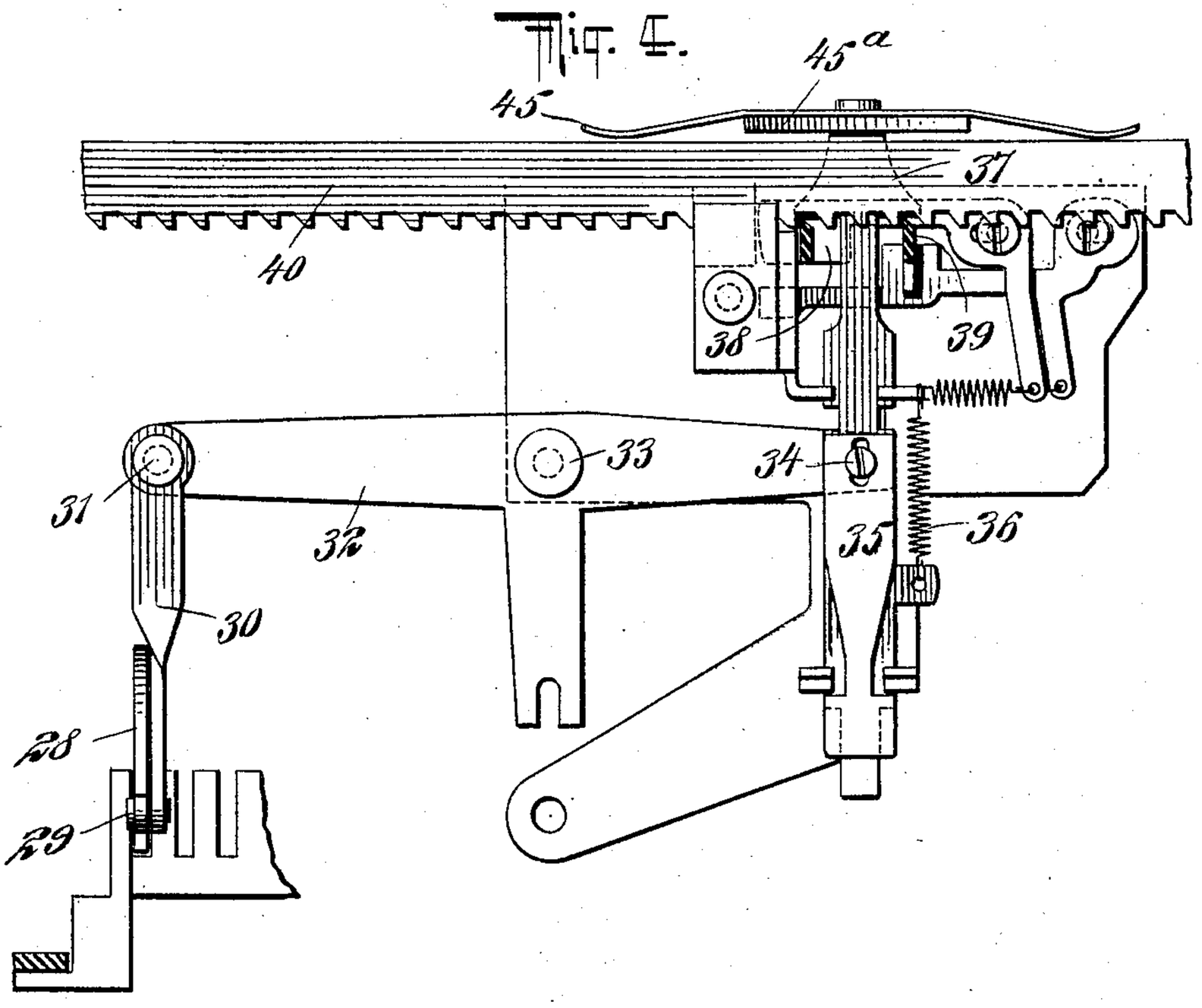


Fig. 5.

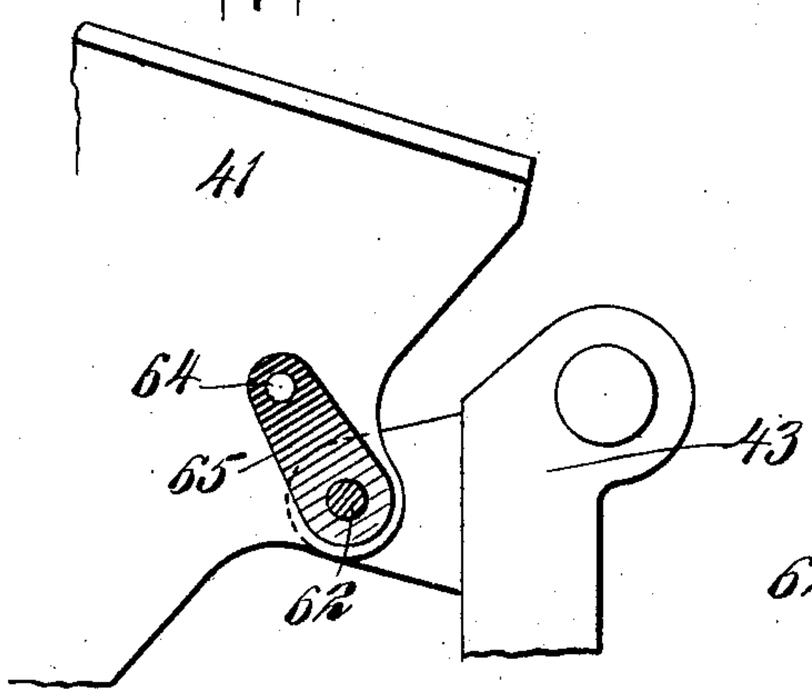
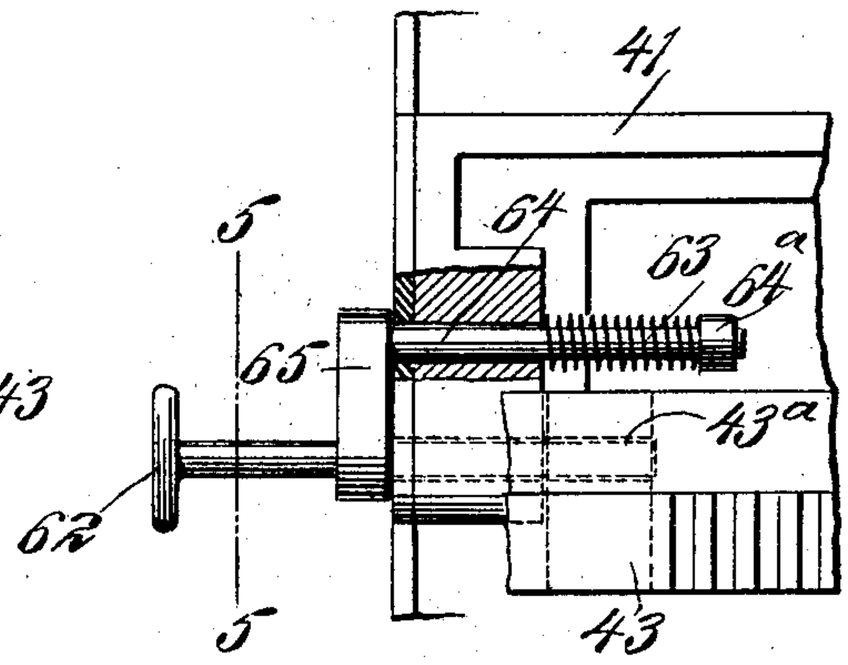


Fig. 6.



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No. 763,529. Patented June 28, 1904.

UNITED STATES PATENT OFFICE.

FRANZ X. WAGNER, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CARRIAGE MECHANISM FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 763,529, dated June 28, 1904.

Original application filed July 5, 1902, Serial No. 114,362. Divided and this application filed June 12, 1903. Serial No. 161,182.

(No model.)

To all whom it may concern:

Be it known that I, FRANZ X. WAGNER, a citizen of the United States, residing in the borough of Bronx, city, county, and State of New York, have invented certain new and useful Improvements in Carriage Mechanism for Type-Writers, of which the following is a specification.

My invention relates to type-writing machines, and has for its object to improve the carriage mechanism and brake mechanism and also to provide sundry keys which in addition to normally operating the type-levers are so constructed that they may be utilized for operating a carriage-release mechanism and one of the ordinary keys may besides its ordinary function have that of moving the carriage backward.

Although I have shown what I consider the best means for carrying my invention into effect, various modifications may be made without departing from the nature of my invention.

This application is a division of one filed by me in the United States Patent Office July 5, 1902, Serial No. 114,362.

Reference is to be had to the accompanying drawings, of which—

Figure 1 is a sectional elevation of a type-writer, taken from front to rear and showing certain parts of my invention. Fig. 2 is a similar sectional elevation looking in the opposite direction. Fig. 3 is a rear view. Fig. 4 is a detail rear view illustrating the escapement-release, the brake, and other mechanism connected therewith. Fig. 5 is a detail section on the line 5 5 of Fig. 6, illustrating the device for fastening the two sections of the carriage together; and Fig. 6 is a rear view of the same with parts in section.

10 is what I term a "double-function" key, attached to a key-lever 11, fulcrumed at 12 upon the frame 13 of the machine. The key-lever 11 has a pin-and-slot connection 14 with an elbow-lever 15, fulcrumed at 16 upon the machine. The elbow-lever is pivotally connected at its upper end with a link 17, said link being pivotally connected to a type-lever 18, fulcrumed at 19 upon brackets 20, forming part of or secured to a segment of the machine. The type-levers 18 carry the type 18^a.

The key-lever 11 is provided with a front key-section 21, slidable lengthwise of said key-lever 11 against the tension of spring 11^b, which serves to return it to its normal position, the lengthwise movement being limited by a pin and slot 22. The key-section 21 in turn carries the key 10, which under certain conditions to be more fully described hereinafter is adapted to be depressed against the tension of the spring 10^e independently of the key-section 21 and of the key-lever 11 to perform a function in addition to its ordinary one of bringing the type-lever 18 to the printing position.

The key 10 is normally held against independent downward movement relative to the key-lever 11 by a projection 10^a on the key-shank 10^b, which projects over a lug 11^a on the key-lever 11. The shank 10^b is guided in the independent downward movement of the key 10 by lips 10^c and 10^d. In the position shown in Fig. 1 the key 10 upon being depressed will serve to bring the type-lever 18, carrying the type 18^a, into the printing position through the medium of the key-lever 11, the elbow-lever 15, and the link 17. The depression of the key 10 is also adapted to operate a carriage-release mechanism and a brake mechanism. For this purpose each of said keys is provided with a toe or projection 23, adapted to engage a release-bar 24, carried by arm 25, fulcrumed at 26, and connected by a cross-bar 27.

28 is a release-bar pivoted at 16 upon the frame of the machine and having a downwardly-projecting member 28^a, said member 28^a being provided with a shoulder 24^a. The release-bar 24 engages the shoulder 24^a on the release-key 28, and its lower edge engages a lip 24^b on the said key. Thus when the key 10 and the key-section 21 are first slid inward on the key-lever 11, thus releasing the projection 10^a from the lug 11^a, and the key 10

being then depressed independently of the key-section 21 and the key-lever 11 the toe 23 will engage the release-bar 24, thus causing the release-key 28 to be moved downward through its connection 24^a and 24^b with the bar 24. The rear end of the release-key 28 is connected at 29 with a link 30, which is pivotally connected at 31 with a lever 32, fulcrumed at 33. This lever has a pin-and-slot connection 34 with a brake and a release-bar 35, which is normally drawn upward by a spring 36 and has a suitably-guided movement in a vertical direction. The release-bar at its upper end has a member 37 arranged to engage feed-dogs 38 39 of the escapement mechanism, so that upon a downward movement of the bar 35 the feed-dogs will both be thrown out of engagement with the rack 40, thus allowing the carriage 41, supporting the platen 42, to be propelled by its spring. The upper end of the bar 35 also carries a brake 45 in the nature of a semielliptic spring acting in conjunction with a pad or cushion 45^a. The ends of the spring normally do not touch the upper surface of the rack 40 at all or only very slightly. When the bar 35 moves downward, the pressure of the spring-arm is gradually increased, so as to augment the friction, and toward the end a still greater friction is produced by the engagement of the brake-cushion 45^a with the upper surface of the rack 40. It will be obvious that the release and brake will also be operated in the same manner when the key 28 alone is depressed. 23^a is another toe, forming part of the key 10 and is adapted to engage a bar 46, attached to arms 47, fulcrumed at 26, said arms 47 being loose relatively to the arms 25 and may be connected with a tabulating mechanism of any suitable construction.

To enable the carriage to be moved back in a direction contrary to its ordinary feed movement, I provide a toothed dog 48, secured to an arm 49, preferably by an adjustable connection. This arm is guided upon a pin or screw 50, working in an inclined slot 49^a, and is connected at 51 with a bell-crank lever 52, fulcrumed at 53^a. This bell-crank lever is connected by a link 53 with a lever 54, fulcrumed at 55. The forward end of this lever 54 is arranged to be engaged by the toe 23^a of a key of the character described with reference to Fig. 1 when the forward section of such a key is in the rear position. In order to lock the rear section or body of these keys against downward movement when the forward sections are moved back, the frame is provided with a plate 56, provided with teeth or prongs between which the key-levers move, and when the front key-sections are in their rear position the lip or flange 10^c takes over the prongs 56, so that only the key-section 10^b can move downward. It will be understood that by depressing the key which operates the back-spacing dog 48 the said dog is brought into engagement with the rack 40, owing to the inclined slot 49^a riding up on the screw 50, and moves the carriage to the right, or, in other words, in a direction contrary to its ordinary movement, and the action of the operating-key may be so limited as to feed the carriage to the right the distance of one letter-space. By operating the key twice or more the carriage may be moved to the right two or more letter-spaces.

57 is a release-lever, which through the medium of link 58 operates on a plate 59, which is guided by oblique slots 60 and screws 61, so that it may be thrown down against the escapement-dogs 38 39 to throw them away from the rack 40, and thus enable the carriage to be freely moved in either direction.

The carriage may be constructed of two portions, the rear portion 43 being provided with rollers 44, which run on a rod 44^a, while the front portion 41 has a bar 41^a, which runs on rollers 41^b. The two members of the carriage are connected by a hinged joint 62. The connection of the two carriage-sections may be a detachable one, as shown in Figs. 5 and 6, where the pivot 62 is permanently connected with the front section 41 and is adapted to engage a suituable aperture 43^a in the rear section 43. The pivot is movable lengthwise of the carriage and is normally projected inwardly by the action of a spring 63 upon a pin 64, which is connected with the pivot 62 by a cross-arm 65. If the pivot 62 is moved lengthwise of the carriage against the tension of the spring 63 until its end disengages itself from the aperture 43^a, the front section 41 of the carriage may be readily and easily detached from the rear section 43. Thus it becomes easy to employ front carriage-sections of different lengths. The movement of the pivot 62 is limited by a collar 64^a, fastened on the pin 64.

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

1. In an escapement mechanism for machine having a traveling carriage, the combination with the escapement proper, of means for releasing the carriage from the escapement, and a brake for retarding the carriage, connected with said releasing means and comprising a semi-elliptic spring adapted for frictional engagement with a retarding-surface.

2. In an escapement mechanism for machines having a traveling carriage, the combination with the escapement proper and means for releasing the carriage from the escapement, of a brake comprising spring-arms adapted to engage a retarding-surface, and a brake-cushion located between said spring-arms and arranged to engage the same retarding-surface after it has been first engaged by the spring-arms alone.

3. In a type-writing machine or the like, a carriage comprising a member arranged to travel at the rear portion of the frame and a front section pivotally and detachably con-

nected with said rear member, the connecting means comprising a pivot-pin mounted to slide lengthwise in the removable front section and adapted to engage a suitable aperture in the rear section, a cross-arm connected with said pivot-pin, and a spring-pressed pin connected with the other end of the cross-arm and arranged to slide in the front section of the carriage.

4. In a key-operated machine having a traveling carriage, the combination of mechanism for moving the carriage in a direction contrary to its ordinary feed movement, with a key movable into two positions, in one of which it acts as a type-key, while in the other it operates said back-spacing mechanism.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANZ X. WAGNER.

Witnesses:
JOHN LOTKA,
JOHN A. KEHLENBECK.