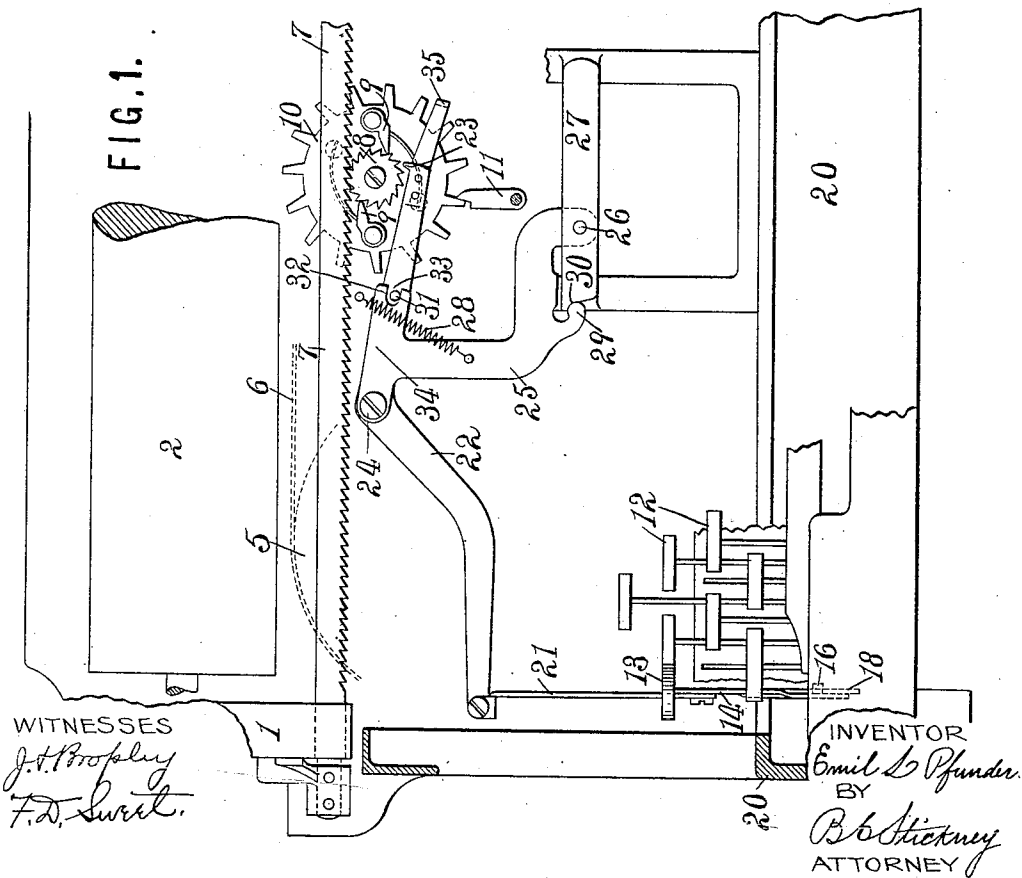
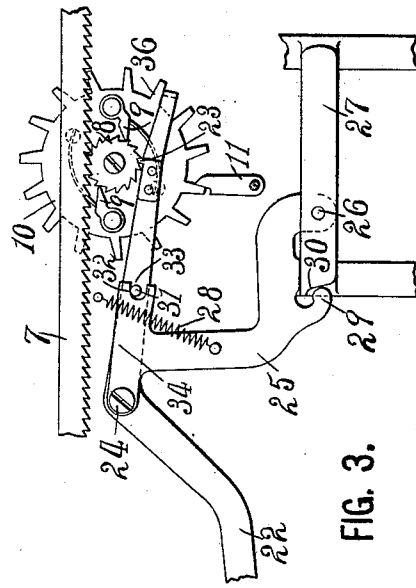
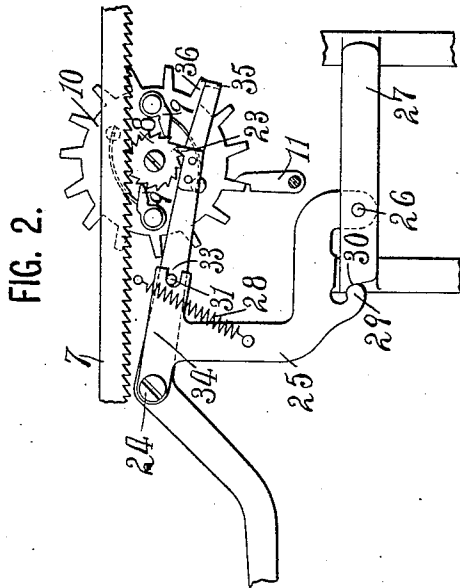


E. L. PFUNDER.
TYPE WRITING MACHINE.
APPLICATION FILED SEPT. 13, 1911.

1,042,033.

Patented Oct. 22, 1912.

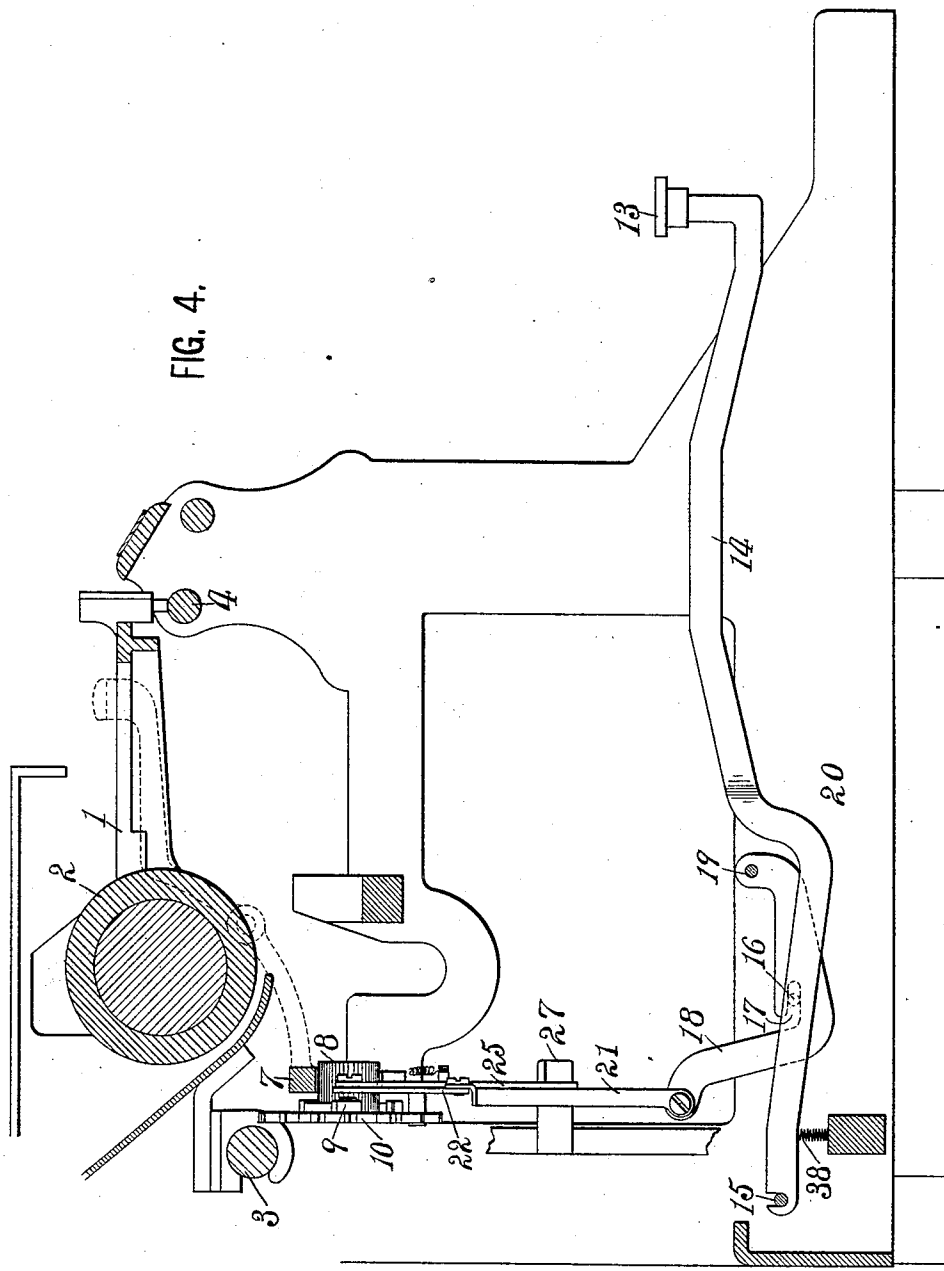
2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

EMIL L. PFUNDER, OF HARTFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

1,042,033.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed September 13, 1911. Serial No. 649,129.

To all whom it may concern:

Be it known that I, EMIL L. PFUNDER, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to mechanism whereby the power-driven carriage of a typewriting machine may be spaced or fed backwardly by means of a key at the keyboard.

The object of my invention is to provide improved, simple, and efficient means readily applicable to existing machines, for this purpose.

In carrying out my invention, depression on a key first swings a dog or lever about its pivot to engage with an escapement pinion and then a pin on the lever strikes a link, whereby both link and lever are swung about the link pivot, to rotate said pinion one tooth, thereby back-spacing the carriage.

In the accompanying drawings, Figure 1 is a front elevation showing my improvements adapted to an Underwood typewriting machine, the parts being shown in normal position. Fig. 2 shows the parts at the moment the dog lever engages the pinion. Fig. 3 shows the parts at the moment the dog lever has completed rotating the pinion. Fig. 4 is a sectional side elevation of the machine, with the parts in normal position.

The usual carriage 1 carrying the platen 2 travels on rails 3 and 4, and is propelled by spring barrel 5 and strap 6. A rack 7 on the carriage meshes with a pinion 8, which is connected by pawls 9 to an escapement wheel 10; the latter being operated by dogs 11, actuated by keys 12. The pawls 9 cause the escapement wheel to be rotated by the pinion to control the feed of the carriage, but allow the carriage to run back independently of the escapement wheel 10.

At the keyboard is provided a back-space key 13, Fig. 4, on a lever 14 pivoted at 15. A pin 16 on said lever engages a slot 17 on

an arm 18, pivoted at 19 to the machine frame 20, whereby depression on key 13 rocks said arm. A link 21 is pivoted at one end to arm 18, and at its other end to a lever 22 having a dog or projection 23 thereon. Said dog lever is pivoted between its ends at 24 to a link 25 which is pivoted at 26 to a bracket 27 of the machine frame 20. A spring 28 holds the link 25 normally with a projection 29 thereon resting against a stop portion 30 of the bracket 27.

Depression on key 13 rocks arm 18, Fig. 4, pulling the link 21 down and rocking dog lever 22. This swings the lever 22 first about its pivot 24, bringing its dog 23 into engagement with one of the teeth of pinion 8, Fig. 2. Then a pin 31 on lever 22 strikes the upper edge 32 of a slot 33 on the extension 34 of link 25, so that both link and lever, overcoming the tension of spring 28, are swung about the link pivot 26, whereby the dog 23, being in engagement with the pinion, rotates it backwardly to the extent of one tooth, Fig. 3. This motion of the pinion is transmitted to the rack 7, which moves the carriage backward one type distance.

A projection 35 at the end of lever 22 engages a tooth 36 of escapement wheel 10, while the pinion 8 is being rotated by dog 23, which locks the wheel, Figs. 2 and 3, to prevent back lash thereof. Springs 38 and 28 restore all parts to normal position upon release of finger key 13.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others. Having thus described my invention, I claim:

In a typewriting machine, the combination with a carriage having a rack, an escapement wheel and a pinion for said rack, of a dog lever, a link having one end pivoted to said lever between its ends, and the other end to the machine frame, a pin on said lever, a spring pulling said link against a stationary member to maintain it in position, a key lever to operate said dog lever,

and links to connect both levers; the movement of the key lever swinging the dog lever about its pivot to bring it into engagement with said pinion, and said pin abutting
5 against said link to turn the lever and link about the link pivot to rotate the pinion for back-spacing the carriage; and an extension

on said dog lever engaging with the escapement wheel to prevent back lash thereof, while said dog lever rotates said pinion.
EMIL L. PFUNDER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."