

W. VAN DER EERDEN.  
TYPE WRITER.  
APPLICATION FILED JULY 11, 1910.

1,007,825.

Patented Nov. 7, 1911.

Fig. 1

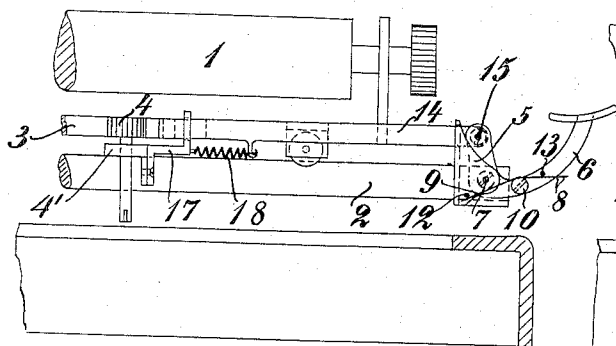


Fig. 2

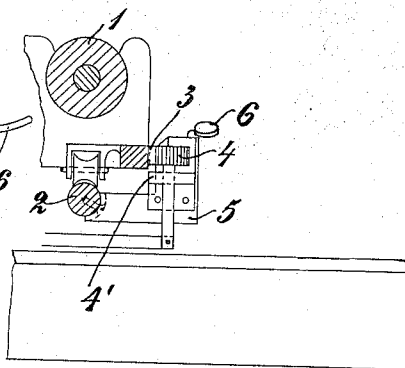


Fig. 3

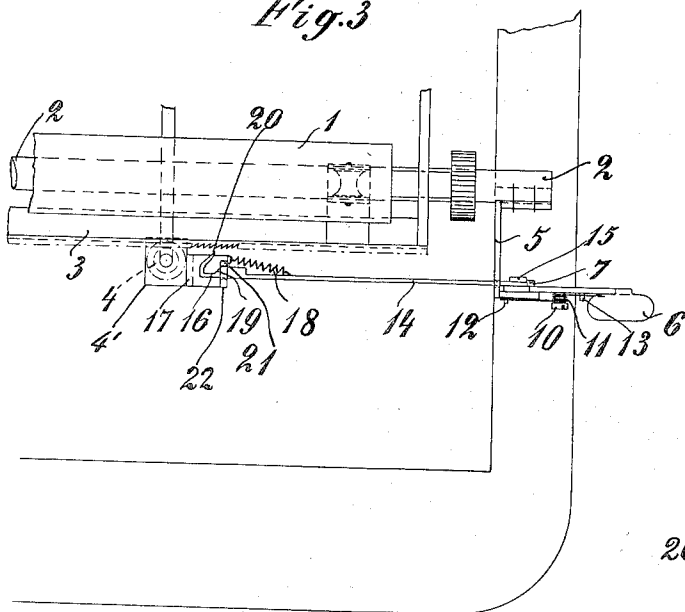


Fig. 4

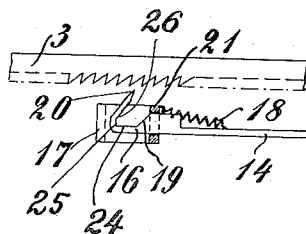
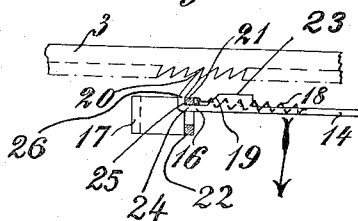


Fig. 5



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILHELM VAN DER EERDEN, OF BERLIN, GERMANY.

TYPE-WRITER.

1,007,825.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed July 11, 1910. Serial No. 571,411.

*To all whom it may concern:*

Be it known that I, WILHELM VAN DER EERDEN, a subject of the Emperor of Germany, and residing at 94 Lindenstrasse, Berlin, Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Type-Writers, Particularly Referring to Platen-Return-Key Arrangements, of which the following is a specification.

This invention relates to improvements in back-spacing mechanism for typewriter carriages and has for one of its principal objects the provision of such a mechanism, preferably key-operated, which is so arranged and constructed as to cause back-spacing of the carriage a distance of one tooth thereafter to lock the carriage against further back movement under acquired momentum.

One of the features of this invention is to cause a locking engagement of the back-spacing mechanism with the carriage for the purpose of not only preventing further back movement of the carriage under momentum, but to prevent such movement by reason of the locked position of the back-spacing mechanism with the carriage when such mechanism has reached its final back-spacing movement.

The invention will be more fully described in connection with the accompanying drawing and will be particularly pointed out and described in and by the appended claims.

In the drawings: Figure 1, is a fragmentary view, partly in section, of a portion of the base of a typewriter and one end of the carriage and illustrating one application of my invention thereto. Fig. 2, is a vertical sectional view of Fig. 1. Fig. 3, is a plan view of Fig. 1. Fig. 4 is an enlarged detail view, partly in section, showing a portion of the device of my invention in connection with the carriage feed rack with the parts in a starting position. Fig. 5 is a view similar to Fig. 4 illustrating the final position of the parts when the carriage has been back-spaced a distance equal to one tooth of the feed rack.

Like numerals of reference designate similar parts throughout the different figures of the drawings.

Mounted on the base of the typewriter is a carriage rail 2 on which the carriage and the platen 1 are supported and shifted during the writing operation. The carriage is pro-

vided with a feed rack 3 which is engaged by the usual key-operated feed pinion 4, having a suitable bearing 4'.

My improved back spacing mechanism includes a support 5, rigidly mounted to any stationary part, and a key 6 pivotally mounted on said support at 7. A spring supporting stud 10 is mounted on the key 6 and a spring 11 is wound on the stud 10 and engages a stop 13, with one end, on the key 6, and a stop 12, with the other end, on the support 5. The spring 11, normally maintains the back-spacer mechanism in the position shown in Fig. 3. The key 6 is in the form of a bell-crank and a link 14 is pivoted to one arm thereof at 13 and on the other end of said link is formed a rack-engaging pawl 16, having a toothed portion 20 for engaging the teeth of the rack 3. A support 17 is mounted on the bearing 4' and is provided with an angle portion 22 having an opening therein through which the pawl is reciprocated. The angle portion 22 is provided with a locking stop drive member 21 which, in the specific construction shown, is formed integral with the angle portion 22 and constitutes one of the walls of the opening in the angle 22 through which the pawl reciprocates.

The pawl 16 is provided with a cam portion 19 which coacts with the stop guide 21 to throw the pawl into and out of mesh with the teeth of the rack 3. If desired the cam portion 21 may be continued as indicated at 23 in a straight portion. A spring 18, connected with the link 14, and preferably with the stop guide 21, serves to maintain the cam portion and the pawl into engagement with the stop guide 21 in any position which the parts assume, as will be obvious by reference to Figs. 4 and 5.

The pawl 16 is preferably hook-shaped and is so proportioned on its interior that it will embrace the stop guide 21 and be held in locking engagement therewith when the key 6 is depressed to its limit of movement. The stop guide 21 serves to limit the movement of the key 6 and arrest the back-spacing mechanism when the hook-shaped pawl is in engagement with the stop guide 21, as shown in Fig. 5. The interior wall portions 24, 25, and 26 closely embrace the stop guide 21 and inasmuch as depression of the key 6 is always maintained under pressure of the fingers, this movement will thus serve to engage the portions 24, 25 and 26 with the stop

guide 21 and hold these portions in engagement with the stop guide 21 by a strong pull to the right. Now the angle of the tooth member 20 is such that the portion 26 will engage the stop guide 21 so as to prevent outward movement of the pawl 16 in the direction of the arrow shown in Fig. 5. It will thus be seen that this pawl 16 will be locked in engagement with the stop guide 21 and that when the pawl 16 is so locked engaging the stop guide 21 the pawl itself will prevent back-spacing movement of the carriage, a distance greater than one tooth, by reason of the fact that the tooth portion is held in engagement with the teeth of the rack 3.

It is well known that typewriters operators work at a relatively high speed and therefore the pressure imparted to the key 6 will be in the nature of a sudden impact succeeded by a sustained pressure. This sudden impact of the key 6 will cause a somewhat precipitate back-spacing movement of the carriage and therefore the carriage will acquire a certain momentum which will tend to cause it to move backwardly a distance greater than the back-spacing movement which it was intended to impart to the carriage. This greater or additional movement of the carriage under its momentum would cause the incline teeth of the rack 3 to disengage the pawl 20 and throw it out of engagement with the rack and as a result of this disengagement the carriage would immediately move in the opposite direction and therefore the space which the operator desired to get access to would not be accessible. It will therefore be seen that a great advantage is obtained in moving the carriage backwardly, or back-spacing the same, a predetermined distance and then locking it in such predetermined back-spaced position against movement in either direction, so as to permit the insertion of a letter in the desired space thereby assuring a position of the inserted letter in its proper location between two other letters. It is a well known desideratum and object of all typewriter makers to provide a machine which will write and impart to the written matter the best possible appearance and regularity and therefore the advantages of locking the carriage in the predetermined back-spaced position, will be obvious.

It will be readily understood that the cam portion 19 will throw the tooth portion 20 out of mesh with the rack 3 upon release

of the key 6, or upon return movement of the link bar 14 from the position shown in Fig. 5 to the position shown in Fig. 4.

While I have herein shown and described one form of my invention I do not wish to be limited thereto except for such limitations as the claims import.

I claim:

1. A typewriter comprising in combination, a carriage provided with a rack, and a key-controlled back-space mechanism comprising a stop-guide, and a spring-controlled hook-shaped pawl engaging said rack to back-space the carriage and provided with a cam engaging said guide for guiding the pawl toward and away from said rack, said pawl having inner portions shaped to embrace and be locked with said stop-guide at the end of its carriage-spacing movement whereby the pawl is arrested by said stop guide and held in locked engagement with the rack to prevent further back-space movement of the carriage.

2. A typewriter comprising in combination, a carriage provided with a rack, and a key-controlled back-space mechanism comprising a stop guide, and a spring-controlled pawl engaging said rack to back-space the carriage and provided with a cam engaging said guide for guiding the pawl toward and away from said rack, said pawl having portions shaped to embrace and be locked with said stop guide at the end of its carriage-spacing movement whereby the pawl is arrested by said stop guide and held in locked engagement with the rack to prevent further movement of the carriage.

3. A typewriter comprising in combination, a carriage provided with a rack, and a key-controlled back-space mechanism comprising a stop-guide, and a pawl engaging said rack to back-space the carriage and provided with devices for causing movement of the pawl toward and away from said rack, said pawl having parts to embrace and be locked with said stop guide at the end of its carriage-spacing movement whereby the pawl is arrested by the stop guide and held in locked engagement with the rack to prevent further movement of the carriage.

In testimony whereof I affix my signature in presence of two witnesses.

WILHELM VAN DER EERDEN.

Witnesses:

OSKAR ARENDT,  
HENRY HASPER.