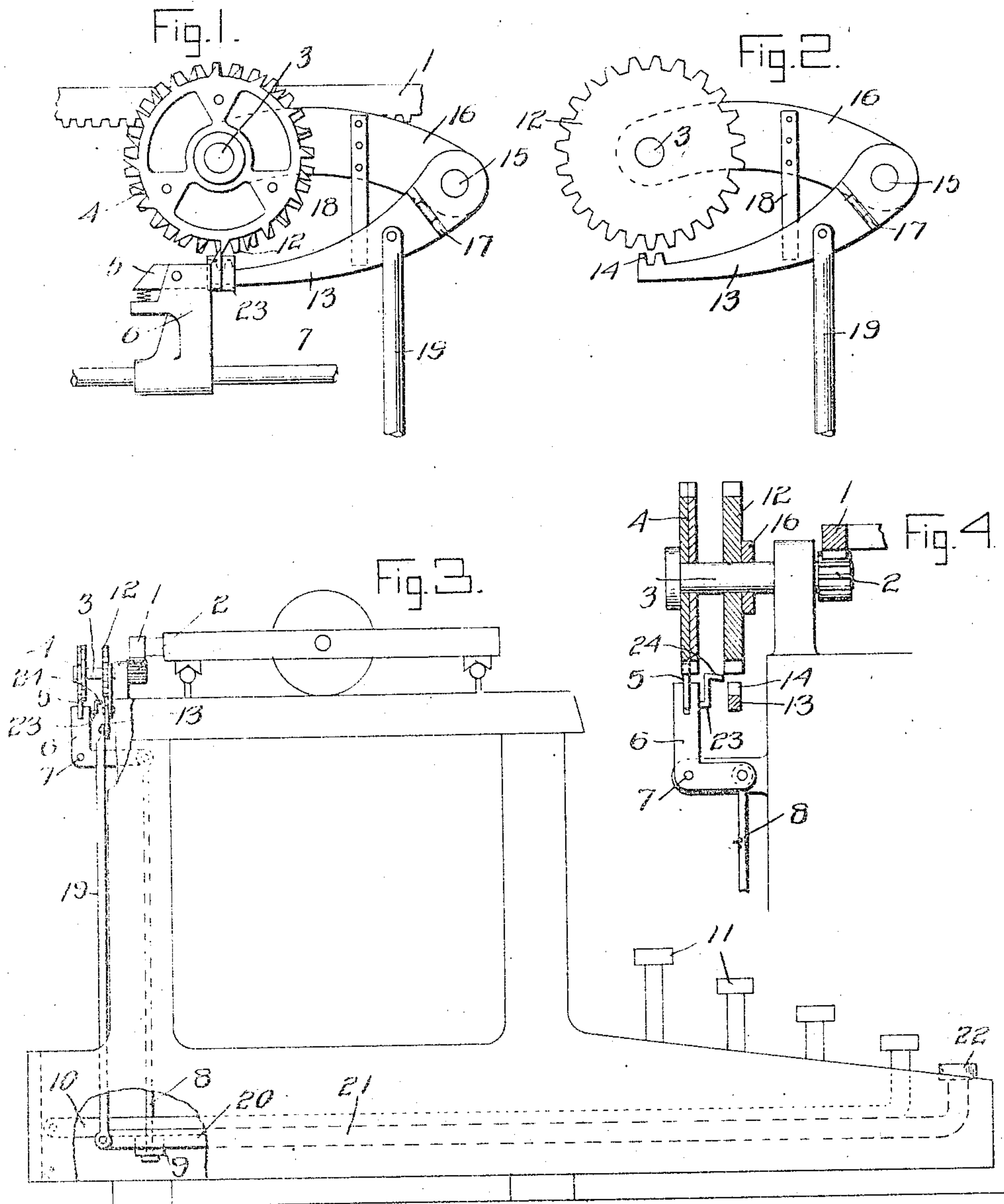


C. MERCER.  
 BACK SPACING DEVICE FOR TYPE WRITERS.  
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966,035.

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CHARLES MERCER, OF MUSKOGEE, OKLAHOMA.

BACK-SPACING DEVICE FOR TYPE-WRITERS.

966,035.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed January 31, 1910. Serial No. 541,120.

*To all whom it may concern:*

Be it known that I, CHARLES MERCER, a citizen of the United States, residing at Muskogee, in the county of Muskogee and State of Oklahoma, have invented new and useful Improvements in Back-Spacing Devices for Type-Writers, of which the following is a specification.

My invention relates to typewriting machines, and more particularly to back-spacing mechanism for such machines.

The primary object of the invention is to provide a mechanism of this character operated by a key or lever and adapted, when actuated, to move the carriage back accurately one space at a time.

Another object is to provide a safety device or attachment for use in connection with such mechanism whereby the parts will be prevented from becoming locked or injured in case the back-spacing key and a character key are struck at the same time. To this end the back-spacing mechanism and escapement are so arranged that the latter, when operated, does not prevent the other from moving, but simply renders it temporarily inoperative.

With the above and other objects in view, and to improve and generally simplify devices of this character, my invention consists in the construction and arrangement of parts hereinafter described, and illustrated in the accompanying drawings, in which:—

Figure 1 is a detailed elevation of the escapement and back-spacing mechanisms.

Fig. 2 is a similar view of the back-spacing mechanism alone. Fig. 3 is a conventional side elevation of a typewriting machine, showing my improvements applied thereto.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1.

My invention is especially adapted for use in connection with the Remington machine, and is so illustrated in the drawings, but, with slight changes, and in certain of its aspects it may be advantageously applied to machines of other makes.

Referring to the drawings in detail, 1 designates a rack secured to the typewriter carriage and movable therewith. In engagement with this rack is a pinion 2, fixed upon a shaft 3 journaled in the frame of the machine. Fast on the outer end of the shaft 3 are the escapement wheels 4, which co-operate with a pawl 5, pivotally mounted in one arm of a bell crank lever 6, carried on

a rock shaft 7. To the outer end of this bell crank lever is connected one end of a link 8, the other end of which is secured to a bar 9 on which the levers 10, carrying the character keys 11, bear. When therefore, any character key is depressed, the pawl 5 is caused to oscillate, and thus permit one tooth of the wheels 4 to pass, the carriage being urged forward by a spring (not shown) in a well known manner. The above described escapement mechanism is of the usual construction found in the type of machine referred to above. It is often necessary or desirable, however, in making corrections, doing tabulating, etc., to move the carriage back a space or two, in a direction the reverse of that in which the spring is urging it, and it is also essential that this back-spacing be done accurately. My improved back-spacing mechanism is designed to accomplish these results, and will now be described.

Fast on the shaft 3, and just inside the escapement wheels 4, I arrange a toothed wheel 12, of approximately the same diameter. A swinging dog 13 is provided at one end with teeth 14, adapted to engage the teeth of the wheel 12, and at the other end is pivoted at 15 to a bracket 16, which is itself pivotally mounted at its other end on the shaft 3. The dog 13 is provided, intermediate its ends, with a transverse hinge 17, the purpose of which will be hereinafter described, and a leaf spring 18 is rigidly secured to the bracket 16 and bears against the side of the dog 13 remote from the escapement wheels. Pivoted to the dog 13 is one end of a link 19, the other end of which is secured to one end of a key lever 20, pivoted as at 21 to a fixed support, and terminating at its forward end in a key 22, or other suitable button or thumb pieces. When it is desired to back-space, the forward end of key lever 20 is depressed, thus thrusting the link 19 upward. This, in turn, forces the teeth 14 of the dog 13 into engagement with the toothed wheel 12, and then, by a further movement, the entire dog and bracket 16 are given a bodily swinging motion around the shaft 3 as a center. This results in turning the wheel 12, and with it the pinion 2, and thus the carriage is shifted back one space. To shift another space, the key is released, the dog drops back by gravity to the position shown in Fig. 2, and when the key is again depressed, the dog



takes a fresh hold on the wheel 12, and moves it another step. It is essential to the successful operation of a device of this character, however, that no delay or injury result if a character key and the back-spacing key are accidentally struck by the operator at the same time. I therefore provide means whereby, when any character key is depressed it renders temporarily inoperative the mechanism controlled by the back-spacing key. To this end I attach a small Z-shaped member, 23 to the inside of the bell crank lever 6 adjacent the pawl 5, and so arrange it, that, when the lever 6 is swung inward, the end 24 of the member 23 will enter between the teeth 14 of the dog 13, and the wheel 12, constituting a shield overlying said teeth. It will therefore readily be understood that, when any character-key is depressed and the member 23 occupies the position described, the back-spacing key lever may be freely operated, and the dog 13 with the bracket 16 swung about the shaft 3, but the dog will be prevented by the shield 24 from engaging or moving the wheel 12. If, on the other hand, a character-key be struck while the back-spacing key is depressed, the end 24 of the member 23 will abut against the side of dog 13, and, owing to the hinged construction of the latter, it will yield and be deflected slightly inward without injury or damage.

It will thus be seen that I have provided a back-spacing mechanism possessing great simplicity, accuracy, safety, and other desirable features, and it is thought the numerous advantages of my invention will be readily appreciated by those skilled in the art.

What I claim is:

1. In a typewriting machine, a carriage, an escapement mechanism, a back-spacing

mechanism, and means controlled by said escapement mechanism when operated for rendering the back-spacing mechanism temporarily inoperative.

2. In a typewriting machine, a carriage, escapement and back-spacing mechanism therefor, a key for each mechanism, and means actuated by the escapement key when struck for rendering inoperative the mechanism actuated by the back-spacing key.

3. In a typewriting machine, a carriage escapement and back-spacing mechanism therefor, a key for each mechanism, a member adapted, when the escapement key is depressed, to render the back-spacing mechanism inoperative, and said back-spacing mechanism being constructed to yield if engaged by said member when already in operative position.

4. In a typewriting machine, a carriage, an escapement mechanism therefor, a back-spacing mechanism including two members adapted to be thrown into engagement, and means controlled by said escapement mechanism for preventing the engagement of said members at times.

5. In a typewriting machine, a carriage, an escapement mechanism therefor including a shaft, a toothed wheel carried by said shaft, a swinging dog adapted to engage said wheel and turn it, to back-space said carriage, and a member associated with said escapement mechanism adapted at times to prevent said dog from engaging said wheel.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES MERCER.

Witnesses:

C. E. GOULD,  
E. J. MERCER.