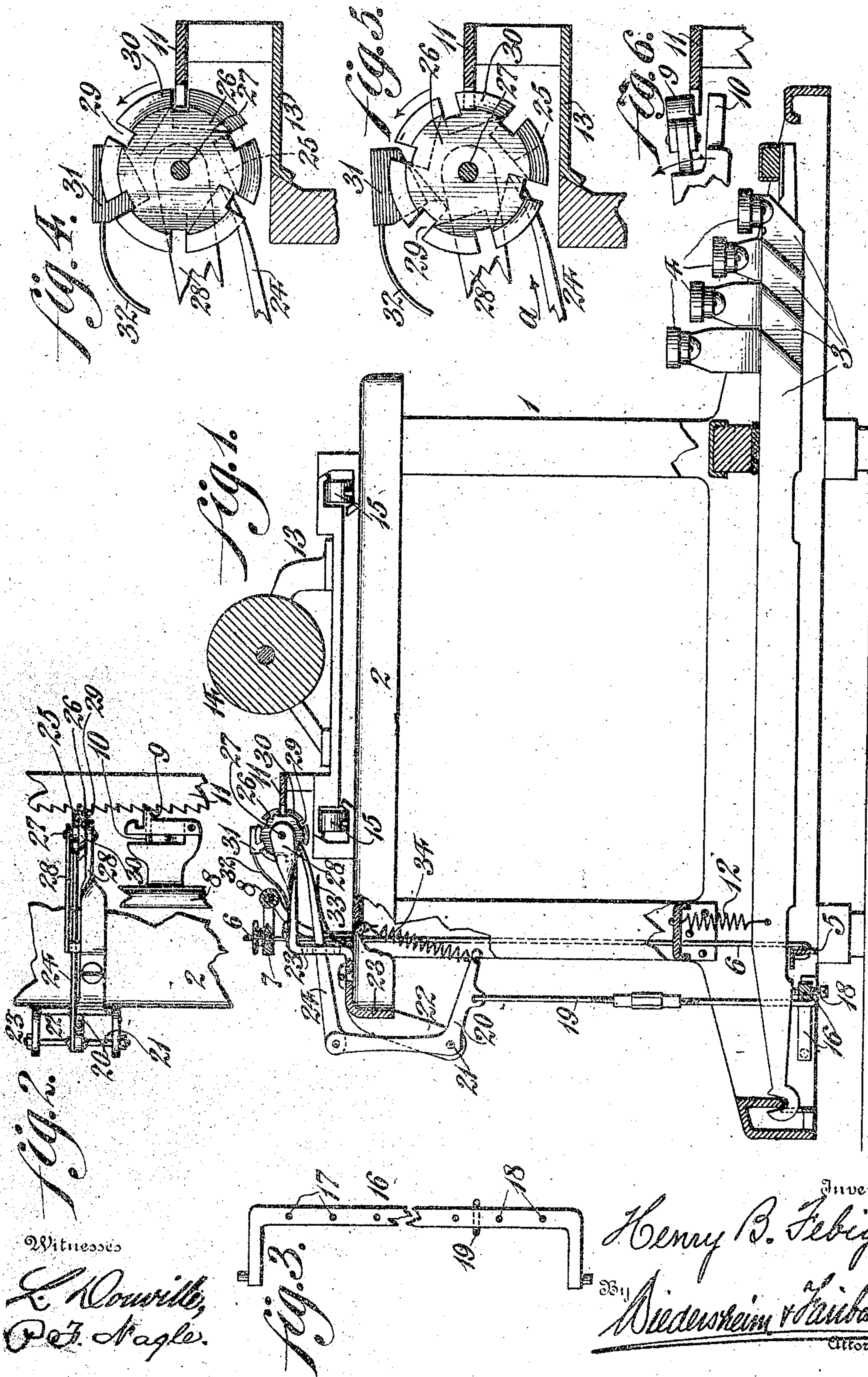


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PATENTED MAY 28, 1907.

H. B. FEBIGER.
ATTACHMENT FOR TYPE WRITERS.
APPLICATION FILED OCT. 6, 1905.



Witnesses

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HENRY B. FEBIGER, OF PHILADELPHIA, PENNSYLVANIA.

ATTACHMENT FOR TYPE-WRITERS.

No. 855,052.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed October 6, 1905. Serial No. 281,627.

To all whom it may concern:

Be it known that I, HENRY B. FEBIGER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Attachment for Type-Writers, of which the following is a specification.

My invention consists of a new and useful attachment for typewriters and consists of means for preventing movement of the carriage, even after the escapement of the dogs has taken place, until the type has printed.

It further consists of novel details of construction, all as will be hereinafter fully set forth.

Figure 1 represents a partial elevation and partial sectional view of a portion of the typewriter showing the attachment in position. Fig. 2 represents a plan view of my device showing the escapement. Fig. 3 represents a plan view of a bail employed. Figs. 4 and 5 represent views of a portion of my attachment on an enlarged scale, showing the parts in different positions. Fig. 6 represents a side elevation of the escapement dogs.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates the frame of a typewriter having the usual top plate 2 and the usual key levers 3, the same being in suitable connection with the keys 4.

5 designates the universal bar which is mounted in the frame of the typewriter as usual and which is connected by means of the escapement rods 6 with the arms 7 which latter are connected or form part of the escapement bar 8, the latter carrying in the present instance, the escapement dogs 9 and 10 one of which is the movable dog and both of which are adapted to engage, at the proper time, with the teeth of the rack 11.

12 designates a spring which is connected to each of the type bar levers 3 and with a suitable portion of the frame of the machine for holding the same in horizontal position. The rack 11 is carried by the carriage 13 which is moved in the usual manner and having the usual platen 14 thereon and provided with the roller bearings 15 which move on the ordinary track on the frame of the machine.

It will be seen that the parts thus far described are those usual to a typewriter, the key levers being adapted to actuate the type in the usual manner when any of the keys 4

are depressed and at the same time actuate the escapement dogs 9 and 10 in such a way that the rack is released and the carriage 13 moved in the proper direction. I have found, it is possible, in this construction, that the carriage may be moved before the type has printed and before the type bar has completed its full stroke, and in order to insure the proper movement of the carriage and to prevent improper movement, I have provided the attachment which prevents this movement, even after the escapement of the dogs has taken place until the proper time, that is to say by means of my invention I am enabled to lock the carriage against movement when the machine is improperly operated and permit movement thereof when said machine is properly operated, and it will be understood that an effective depression of the type bar levers will properly control the attachment in order to permit movement of the carriage.

While I have shown the attachment as applied to a typewriter solely, it will be understood that the same is especially adapted for use where adding machines are employed in conjunction with the typewriter but as the operation of the parts will be the same under all circumstances, for simplicity of explanation and understanding, I have shown the attachment as applied to a typewriter.

Suitably connected with the frame 1 of the machine, I provide a bail 16 which may be swinging or otherwise, the same having suitable openings 17 therein, through which pass screws 18 with which the key lever 3 co-act when depressed, it being noted that these screws form an adjustable feature and can be applied to only such key levers as it is desired leaving the balance of the levers independent of this movement. Connected with the bail 16 is a connecting rod 19 which is suitably secured to the bell crank lever 20 the same being mounted upon the shaft 21 which is suitably mounted in the recess 22 of an auxiliary frame 23, the latter being suitably secured to the top plate 2 of the machine by any suitable means.

24 designates a pawl which is pivotally connected with the upper arm of the bell crank lever 20 the end of said pawl engaging with the teeth on a spur wheel 25, the latter being secured to or forming part of the carriage stop 26 which is adapted to rotate and is mounted upon the pin 27 which is carried or mounted in the arm 28 of the auxiliary

frame 23, the said pin being supported by an arm 28 on its opposite side also carried by said auxiliary frame, it being noted that the said carriage stop is provided with suitable openings or passages 29, adjacent its periphery, said openings being so formed as to pass the teeth of the rack 11 as best understood from Fig. 4, while the wings 30 of said carriage stop being so formed as to pass between the teeth of the rack, as best understood from Figs. 2 and 5 and prevent movement of said rack as will be further explained.

31 designates a carriage stop spring lock which is carried by a spring 32 suitably mounted on the arm 28 and which spring lock is adapted to engage with the teeth of the spur wheel 25, to prevent improper movement thereof, while permitting rotation when properly actuated by the push pawl 24, the latter being held in suitable engagement with the wheel 25 by means of the spring 33.

34 designates a spring suitably connected to a stationary portion of the frame 1 of the machine and with one arm of the bell crank lever 20 in order to hold the same in proper position and to return the parts to their normal position after a key has been struck.

The operation is as follows: When one of the keys 4 is depressed the same lowers the key lever 3 which contacts with the universal bar 5 and lowers the escapement rods 6. This actuates the arms 7 which are connected with the bar 8, which carries the escapement. Before the escapement rods are lowered the upper or movable dog 9 is in engagement with one of the teeth of the rack 11 but as the connecting rods are lowered the movable dog 9 is raised and freed from engagement with the teeth of the said rack 11 and brings the lower or rigid dog 10 in engagement therewith, in order to hold the rack and with it the carriage, it being understood of course, that the upper dog as soon as raised, is forced over, laterally in the usual manner, ready for engagement with the next succeeding tooth, so that when the key is released the rigid dog 10 is lowered and the movable dog 9 engages with the next tooth, the carriage having been moved the required distance and the carriage is held in its proper place for the next printing, it being understood that as the movement of the carriage and the escapement just described is of the ordinary form used in typewriters, a further description, therefore, at this time is deemed unnecessary.

It will be understood that the escapement takes place at a certain point in the movement of the key lever. As the key 4 is depressed, although it may not have completed its full stroke, the escapement can work, and the carriage will be moved to the left without any impression of the type being made, and in order to positively prevent this, my attachment, the operation of which will be now described, is employed.

As one of the keys, 4, which is in suitable connection with the attachment, is depressed, the key lever 3 contacts with the swinging bail depressing the same and lowering the connecting rod 19, which being in suitable connection with one of the arms of the bell crank lever 20, actuates the same causing the upper arm to move inwardly and the push pawl 24 to be moved in the direction indicated by the arrow at *a*, Fig. 5, which rotates the spur wheel 25 and the carriage stop 26, the parts being so arranged that the push pawl rotates the spur wheel and with it the carriage stop 26 to such a position that the next succeeding opening 29, of the carriage stop, is in proper position with respect to the rack 11, to permit passage thereof when the key 4 has been depressed to its full extent and the type made its impression. It being understood that at the same time the escapement is operated to actuate the carriage. Should the key 4 be only partly depressed, that is to the point where the escapement takes place, the pawl rotates the stop 26 sufficiently to place one of the wings 30 between the teeth of the rack 11 so that although the escapement may have taken place the movement of the carriage 13 is prevented until the key 4 has been depressed the full amount to properly place an opening in line with the rack and the type has made its impression. It will be seen from this that if the keys are properly struck that the escapement and the carriage stop are jointly actuated provided the key is one of those which it is desired should actuate the carriage stop and the operation of the machine is not changed in any manner, but should the key be only partly depressed, for any reason, into the position so that the escapement can occur, although the type is not printed, it will be seen that the carriage stop does not permit movement of the carriage until the proper time. As stated above, while I have shown the attachment in conjunction with the typewriter, of usual construction, attention is directed to the fact as already stated, that this carriage stop attachment is particularly adapted to typewriters which have an adding machine attachment, since in machines of this character the numeral keys actuate the disks of the adding machine and as it is absolutely essential that the adding machine should be perfect and infallible it is necessary that no improper escapement and consequent movement of the carriage can occur. It will be readily appreciated that the addition of a column of figures would be entirely thrown out and would be incorrect, should the said escapement improperly occur. As stated previously any number of keys may be caused to work with the escapement by simply inserting a sufficient number of screws 18, as in the case of the adding machine

where it is not desired to have the letters connected, a sufficient number of screws are inserted in the swinging bail which will contact with the type bar levers of the numeral keys.

It will be seen that of course any proper escapement may be employed in conjunction with my attachment and although I have described the dog escapement the rotary escapement may be employed if desired.

It will be evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a typewriter, a carriage, an escapement adapted to release the carriage step by step and independent means, operated by the partial depression of a key, for preventing improper movement of the carriage by such partial depression.

2. In a typewriter, a carriage, an escapement adapted to release the carriage step by step, and a carriage stop or lock, operated by the partial depression of a key, adapted to prevent movement of the carriage by such partial depression of the key at each step of the carriage until the type has printed.

3. In a typewriter, printing keys, a carriage, an escapement adapted to release the carriage step by step, a carriage stop operated by a partial depression of a printing key to lock the carriage, and means actuating the same, by such partial depression, whereby improper movement of the carriage is prevented during its entire passage across the machine.

4. In a typewriter, a carriage, an escapement, and a carriage stop or lock operated by the partial depression of a key, whereby the carriage is halted, by such partial depression after each escapement has taken place, until the type has printed.

5. In a typewriter, a carriage, an escapement adapted to release the carriage step by step and a carriage stop or lock operated by the partial depression of a key and adapted to hold the carriage by such partial depression at each step of the carriage until the type has printed.

6. In a typewriter, a carriage, an escapement and separate means operated by a partial depression of a key, for preventing improper movement of the carriage when actuated by such partial depression, until each type bar key lever, when actuated, has reached the bottom of its stroke.

7. In a typewriter, a carriage, an escapement therefor, means for actuating said escapement, a bail operated by the type bar

levers and a carriage stop in suitable connection with said bail and adapted to be actuated by the partial depression of a key to lock the carriage by such partial depression at each step of the carriage until the type has printed.

8. In a typewriter, a carriage, an escapement therefor adapted to release the carriage step by step, means for actuating said escapement, a bail, means for operating said bail and said actuating means, a carriage stop adapted to lock the carriage at each step thereof against improper manipulation of the operator, a push pawl for actuating said carriage stop and a connection between said pawl and said bail.

9. In a typewriter, a carriage, an escapement therefor, adapted to release the carriage step by step, means for actuating said escapement, a bail adapted to be actuated with the escapement by the movement of the type bar lever, a pawl in suitable connection with said bail, a carriage stop adapted to lock the carriage, on a partial depression of a key lever at each step of the carriage, and to be actuated by said pawl and means for preventing improper return of said stop.

10. In a typewriter, a carriage, a rack thereon, an escapement therefor, means for actuating said escapement, a bail suitably supported and actuated with said escapement, a pawl in suitable connection with said bail, a carriage stop having openings therein and adapted to pass the rack on said carriage and means on said stop adapted to engage with the teeth of said rack and prevent improper movement thereof.

11. In a typewriter, the combination of a key lever, a rack, an escapement, a carriage, means for bringing said carriage step by step across the printing point, a stop that prevents the movement of the carriage at each step thereof until an effective depression of the key lever is made and means for actuating said stop.

12. In a typewriter, a carriage, a key lever, an escapement, a stop independent of said escapement normally permitting movement of the carriage for locking said carriage until an effective depression of the key lever has been made and means whereby said escapement and said stop are simultaneously actuated by the movement of the key lever.

13. In a typewriter, a carriage, an escapement mechanism therefor to permit a step by step movement of the carriage and independent locking means for the carriage normally in unlocking position and adapted to prevent the movement thereof until the operating keys are sufficiently depressed to cause an effective movement of the printing devices.

14. In a typewriter, a carriage, an escapement mechanism therefor and independent locking means operated step by step with the carriage to prevent movement thereof until

the operating keys are sufficiently depressed to cause effective movement of the printing devices and permit movement thereof when the operating keys are sufficiently depressed to cause an effective movement of the printing devices.

15. In a typewriter, a printing key lever, an escapement suitably actuated and separate means normally in unlocking position and acutated by said lever for locking the carriage until an effective depression of the printing key lever has been made.

16. In a typewriter, printing key levers, an escapement adapted to release the carriage step by step and independent means

normally in unlocking position and actuated by said levers for locking the carriage against movement until an effective depression of a key lever has been made.

17. In a typewriter, a carriage, an escapement mechanism therefor, a type bar key lever and independent locking means for the carriage to prevent movement thereof until the type bar key lever is sufficiently depressed to cause an effective movement of the printing devices.

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Witnesses:

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