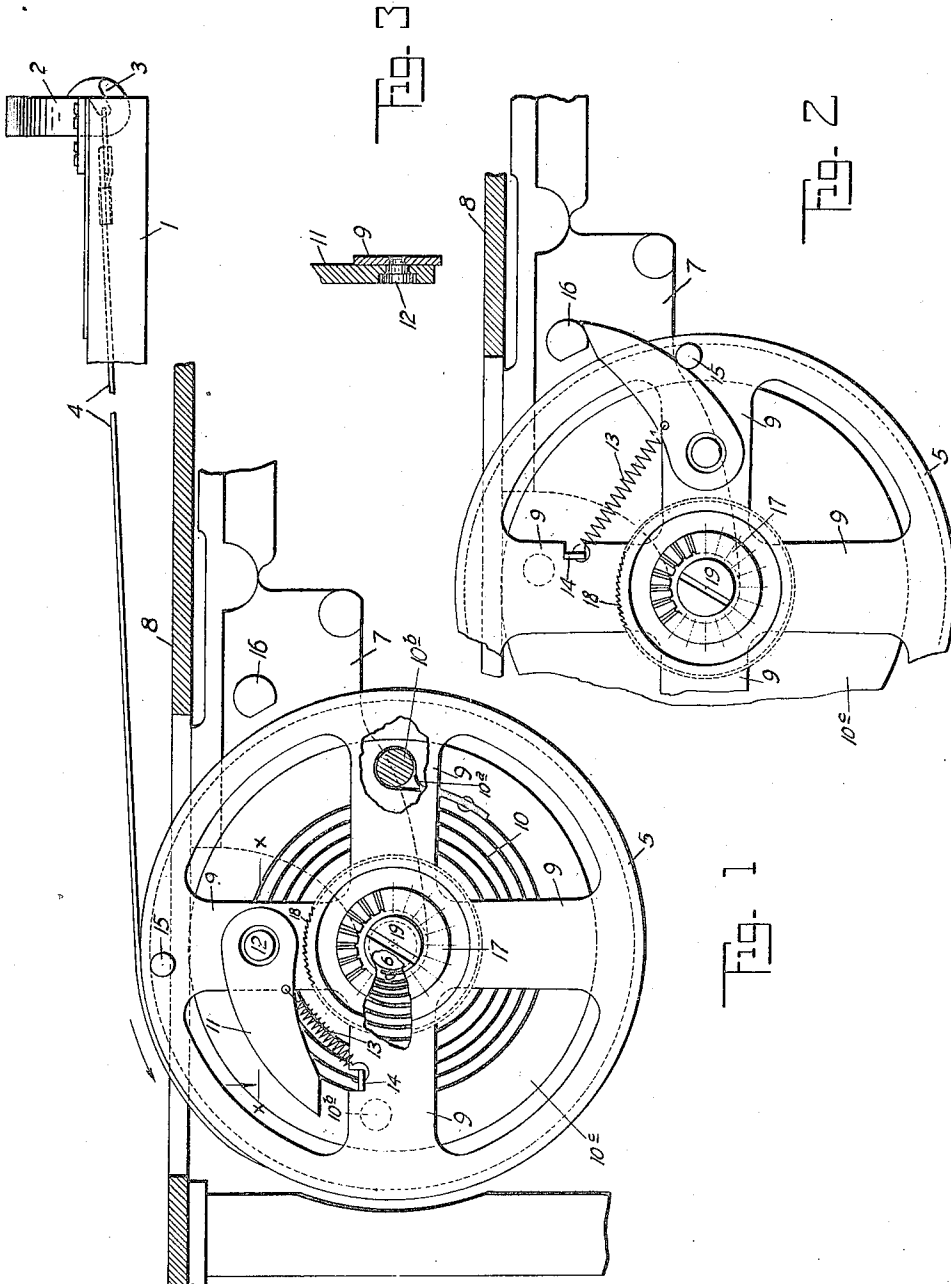


G. A. SEIB.
TYPEWRITING MACHINE.
APPLICATION FILED AUG. 30, 1919.

1,425,291.

Patented Aug. 8, 1922.



WITNESSES
E. M. Wells.
W. W. Pool

INVENTOR
George A. Seib
By James Felber
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE A. SEIB, OF ILION, NEW YORK, ASSIGNOR TO REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPEWRITING MACHINE.

1,425,291.

Specification of Letters Patent.

Patented Aug. 8, 1922.

Application filed August 30, 1919. Serial No. 320,938.

To all whom it may concern:

Be it known that I, GEORGE A. SEIB, citizen of the United States, and resident of Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

My present invention relates to the main-spring of typewriting machines, and has for its main object to provide a device for preventing the said spring from becoming disrupted or completely unwound due to the breaking or accidental release of the carriage strap or band.

To the above and other ends which will hereinafter appear, my invention consists in the features of construction, combinations of devices, and arrangements of parts hereinafter described and particularly pointed out in the claims.

In carrying out the invention in the present instance, I provide what may be termed a swinging stop or inertia pawl which is normally controlled by a light spring so that in ordinary step-by-step movements or runs of the carriage said pawl will be held inoperative. Sometimes the main spring becomes accidentally disconnected from the carriage, either through the breakage of the usual strap or because said strap escapes from the control of the operator or repairman when the strap disconnection or re-connection operation is taking place, or for some other reason. In such case the main spring drum attains a speed much greater than its speed under ordinary operations, the result being that the inertia pawl will fly outward, overcoming the resistance of its light spring, this outward movement being limited by a stop on the spring drum. When the pawl reaches this limit of outward movement its path is obstructed by a stationary stop which will arrest it and the spring drum automatically, and will hold the parts in arrested position until the operator or repairman again assumes control, when a slight pull on the spring drum strap towards the right will release or separate the pawl or movable stop from the stationary stop and allow it to be restored by the light spring to normal inoperative position.

My invention will be described and explained in detail in connection with the accompanying drawings wherein

Figure 1 is a fragmentary front elevation of the spring drum of a No. 10 Remington typewriting machine and its associate parts, with my invention applied thereto.

Figure 2 is a view corresponding to Figure 1 but showing the inertia pawl in operative position.

Figure 3 is a sectional detail view, the section being taken on a plane indicated by the dotted line $x-x$ in Figure 1 and looking in the direction of the arrow at said line.

Indicated at 1 in Fig. 1 is the rear bar of a No. 10 Remington carriage, to the right-hand end of which is screwed a rearwardly curved and downwardly extending arm terminating in a hook 3 which is engaged by the outer end of the usual band or strap 4, said strap being connected to a spring drum or wheel 5 mounted on a shaft 6 supported in a bracket 7 secured to the top plate 8. The wheel or rotary element 5 is cut out, providing arms or spoke portions 9, and houses a coiled main or carriage spring 10, one end of which is secured to the wheel and the other end to the shaft or axle of the wheel. Where the spring is connected to the wheel it is formed into a loop 10^a that is slipped over a post or stud 10^b secured to the wheel arm 9, and there is a cover plate 10^c for the spring that is secured to said post and also to another one diametrically opposite; all as common in the Remington machine. This propelling spring tends constantly through its action on the band or strap 4 to draw the carriage leftward over the top plate, leftward movements of the carriage being controlled by escapement mechanism and tabulating mechanism of the usual or any suitable character.

When for any purpose it is desired to disconnect the carriage from the spring drum the strap or flexible connection 4 is disconnected from the hook 3 and preferably anchored to a stationary part. Sometimes, however, the strap slips from the fingers or it occasionally may break, the result being that control of the spring drum is lost so that it runs down very rapidly, sometimes resulting in a breakage of the parts, and in any event a loss of tension in the main spring 10. Besides the tape or band is liable to become tangled up in the mechanism. The principal object of my present invention is to avoid this breakage, entanglement and running down of the spring, and I accom-

plish this object by providing an automatically acting stop mechanism comprising preferably a movable stop or pawl on the spring drum and a relatively stationary stop, which automatically coast to arrest the drum before it can turn very far after control of it has been lost. The movable stop aforesaid, which may be termed an inertia pawl or centrifugally-operating stop, is designated in the drawings by the numeral 11, being pivoted to the forward face of one of the arms 9 by means of a shouldered pin or rivet 12 and out of the plane of the rim of the wheel. The pawl is adapted to turn freely on the pin which is tightly riveted to said arm 9. A light coiled spring 13 is connected to the pawl at one end, the other end of said spring being anchored to a lug 14 struck up from the adjacent arm 9. Normally the pull of the spring 13 is substantially in a line between its anchorage 14 and the center of rotation of the pawl 11, so that the pawl is thereby maintained in a substantially uniform normal position without being in contact with any stop. As a result of the construction a rapid rotation of the spring drum, such as it would be subjected to under the abnormal conditions noted, would tend to throw the free end of the stop or pawl outward. The outward swing of the pawl under such conditions is limited preferably by a stop pin 15. When the pawl is in contact with the stop pin its free end projects beyond the periphery of the spring drum and into the path of a relatively stationary stop in the form of a pin 16 projecting forward from the face of the bracket 7.

From what has been said it is not thought necessary to explain the operation of the mechanism at length. The normal position of the parts is shown in Fig. 1 and it is apparent that at the ordinary speed of rotation of the spring drum the stop pawl will not be substantially affected but will remain in or close to its normal position, so that during such rotations the stop pawl will pass the stop pin 16 without touching it. With the spring drum in the position shown in Fig. 1, however, if it be suddenly released by disconnecting the strap 4 from the carriage and freeing the strap, said spring drum will start to turn rapidly, causing the pawl to fly outward against the pull of the spring 13 until arrested by the stop 15, bringing the free end of the pawl beyond the periphery of the drum and so that it will contact with the stop 16 as shown in Fig. 2; thus arresting the drum and connected parts. It is plain that a slight rightward pull applied to the band 4 when the parts are in the Fig. 2 position will retract the drum and move the pawl or swinging stop far enough downward to permit its point to escape from engagement with the stationary stop 16. Thereupon the spring 13 will act to restore

the swinging stop pawl 11 to its normal position within the periphery of the spring drum. The lug 14 will prevent excess inward movement of the stop pawl.

The said spring wheel as customary carries a cup-like structure comprising a bevel gear 17 and also a ratchet wheel 18, which structure is secured to the wheel shaft by a screw 19. These devices relate more particularly to the ribbon feeding mechanism.

Various changes may be made without departing from my invention.

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

1. In a typewriting machine, the combination of a carriage, a propelling spring therefor, a rotatory element flexibly connected with said carriage, said element being turned in one direction by said spring and in the opposite direction by said carriage, a centrifugally-operating stop carried by said element, and two other stops cooperating to intercept and hold rigid said centrifugally-operating stop to cause the arrest of said rotatory element and prevent undue unwinding of said spring when said rotatory element is disconnected from said carriage.

2. The combination of a drum, a driving spring therefor, a centrifugally-operating stop-pawl mounted thereon and normally lying within the periphery of said drum but when actuated adapted to project beyond said periphery, a stop on said drum for limiting the outward throw of said stop-pawl, and an exteriorly arranged stationary stop to engage the projecting portion of said pawl when thrown out by centrifugal force.

3. In a typewriting machine, the combination of a spring drum, a stop pivotally mounted on said drum, a second stop on said drum, a relatively stationary stop, and a spring normally maintaining said pivoted stop out of position for co-operation with said stationary stop, said pivoted stop automatically throwing to operative position against said second stop during abnormally rapid movements of said drum.

4. In a typewriting machine, the combination of a spring drum, a stop movably mounted on said drum, a second stop on said drum, a relatively stationary stop, and spring means normally maintaining said movable stop out of position for co-operation with said stationary stop, said movable stop being automatically thrown into operative position in contact with said second stop and against the pull of said spring means under abnormally rapid rotation of said spring drum.

5. In a typewriting machine, the combination with a spring drum, a stop pawl pivoted thereon, a coiled spring connected to said pawl stop and maintaining it in a normal position, a stop on said spring drum for

limiting movement of said stop pawl in opposition to said spring, and a relatively stationary stop with which said stop pawl is adapted to co-operate.

of the main spring when said spring drum is disconnected from said carriage and allowed freely to rotate.

Signed at Ilion, in the county of Herki- 15
mer and State of New York this 20th day
of August A. D. 1919.

GEORGE A. SEIB.

Witnesses:

LINNIE F. BURNETT,
MARGARET M. PIERCE.

5 6. In a typewriting machine, the combina-
tion of a carriage spring drum, a swinging
stop mounted thereon, a second stop on said
spring drum, and a relatively stationary
stop, the swinging stop co-operating with
10 both said other stops to lock said spring
drum against rotation under the operation