Sept. 14, 1926. 1,599,822

A. G. F. KUROWSKI

TYPEWRITING MACHINE

Filed Oct. 28, 1921 2 Sheets-Sheet 1

Fig. 1.

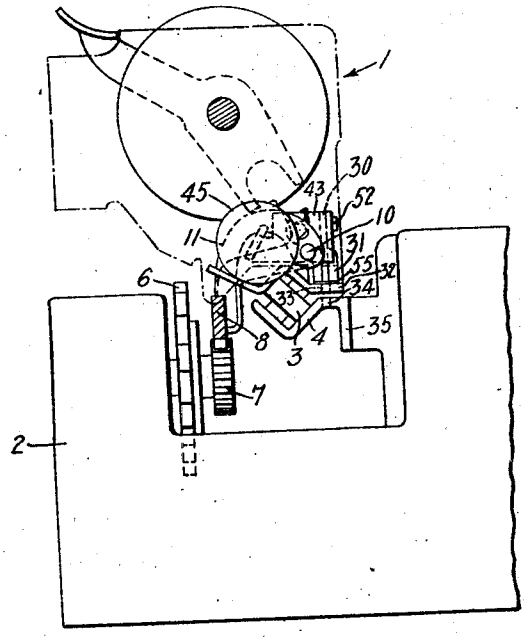
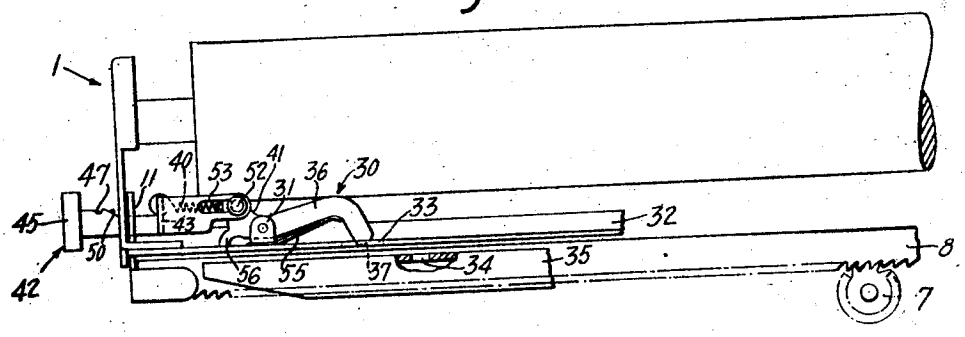


Fig. 2.



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Fig. 3.

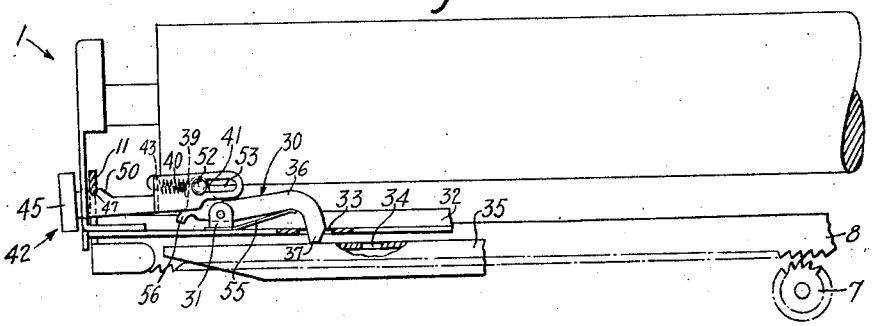


Fig. 4.

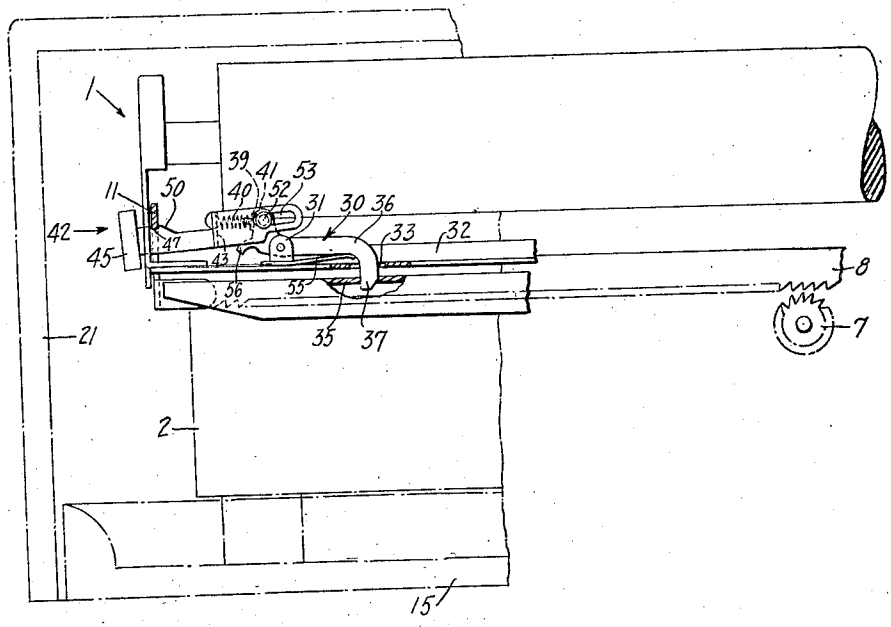
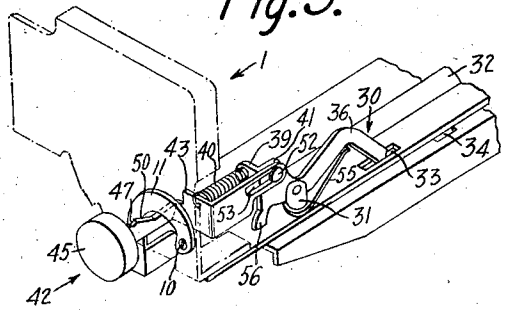


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALFRED G. F. KUROWSKI, OF BROOKLYN, NEW YORK, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed October 28, 1921. Serial No. 511,181.

This invention relates to means whereby a typewriter-carriage may be quickly centered and locked in centered position, and means whereby the carriage-rack may be raised out of engagement with the escapement-pinion to prevent injury to the escapement-mechanism when the machine is to be carried. The invention is illustrated as applied to an Underwood standard portable typewriter.

A case is usually provided for this compact type of machine to enable it to be carried safely, and said case fits the main frame of the machine rather closely. It is essential, therefore, that the carriage, which travels to the right and left, be centrally positioned with respect to the main frame, in order not to project unduly to either side thereof and obstruct the closing of the cover.

The present invention provides a simple and efficacious device to enable the operator to locate the carriage readily in central position, and to lock the carriage there. The device renders effective means for releasing the carriage-rack from the escapement-pinion at the same time that it renders effective the carriage-locking means.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is an end view of a portion of an Underwood standard portable typewriter, with the device forming the subject of this invention applied thereto, the device being in ineffective position.

Figure 2 is a front view of the device as shown in Figure 1, but with parts of the machine omitted.

Figure 3 is a view similar to Figure 2, but with the device set, the carriage being out of central position.

Figure 4 is a view similar to Figure 3, but the carriage being in central position and the device in its locking position.

Figure 5 is a perspective view of the device and the portion of the machine to which it is applied, the parts being in the ineffective position shown in Figures 1 and 2.

The machine, to which the invention is shown as applied, comprises a carriage 1, mounted for letter-feeding movement upon a fixed frame 2, by front rollers 3 and rear rollers (not shown) operating upon a front rail 4 and a rear rail (not shown). The carriage is fed along by escapement mechanism, of which escapement-wheel 6 and pinion 7 are shown, said pinion normally meshing with a rack 8. Said rack is pivotally mounted on the carriage by arms 11 fixed to said rack and pivoted to said carriage at 10, the rocking of said arms 11 upwardly serving to disengage the rack from the pinion. The means for supporting and lifting said rack may be similar to the corresponding means disclosed in the patent to Alfred G. F. Kurowski, No. 1,448,547, dated March 13, 1923.

The machine normally rests upon a base 15, to which it may be attached by any suitable means. Said base may serve also as a base for a carrying case which comprises, in addition to said base, a cover 21 which fits the sides of the machine closely.

When the cover is to be applied, it is necessary to position the carriage in substantially central position in order that the sides thereof shall not project outwardly to either side and interfere with the closing of the cover. This invention provides means whereby the operator may readily center the carriage. Such means comprises a lever 30, pivotally mounted on a bracket 31, fixed to a front bar 32 of the carriage. Said front bar 32 is provided with an opening 33, which, when the carriage is in centered position, registers with an opening 34 in a front bar 35 which connects the rail 4 with the usual shift-frame. One arm 36 of the lever 30 is provided with a nose portion 37, which, when the arm 36 is swung downwardly to the set position of the lever, extends through slot 33 and abuts against the top of the front bar 35 (Figure 3). When the carriage is slid to the right or left, the nose portion 37 will slide on front bar 35, but, when the carriage reaches the central position 37, the nose portion will move into and extend through slot 34 in the front bar and lock the carriage against movement. It is, therefore, not necessary for the operator to judge, or use a scale to determine, the central position of the carriage, since, by merely swinging lever 30 to effective position and moving the carriage to the right or left, until lever 30 locks the carriage against movement, the central position is mechanically determined. The lever 30 not only determines the central position of the

carriage, but firmly locks the carriage against transverse movement, which is highly desirable when the machine is being carried.

To control lever 30 in this manner, it is necessary to provide resilient means for urging nose portion 37 downwardly, so that it may ride on bar 35 and snap into opening 34 when the central position is reached. Said means preferably takes the form of a spring 40 (Figure 5), connected at one end to an ear 39 on an upwardly projecting second arm 41 of lever 30, said spring being compressed by a bearing surface 43 on a member 42, to which its other end is connected. The member 42 extends outside of the carriage-frame, in which it is slidably mounted, and is operable by means of a knob or finger-piece 45, fixed to its outer end. By pushing member 42 inwardly, spring 40 is placed under compression and lever 30 is rotated to move nose portion 37 downwardly to effective position. Member 42 may be held in inward or effective position by a notch 47 therein engaging the adjacent arm 11 for supporting the carriage-rack. To guide member 42 in its movement, it may be provided with a pivotal lost-motion connection with lever 30, said connection comprising a pin 52 on said lever operating in a slot 53 in member 42, so that, when said spring is compressed, pin 52 will move from one end of the slot to the other, here shown from right to left, and, when the spring is released, pin 52 will move in the opposite direction, that is, from the left to the right end of the slot. To render the device ineffective, it is only necessary to swing the adjacent arm 11 upwardly out of notch 47 and spring 40 will move said member 42 outwardly until the compression of the spring is relaxed, thus enabling a light leaf-spring 55 to raise nose portion 37 to ineffective position. The upward movement of said portion may be limited by a stop-arm 56 on lever 30 engaging the front bar 32 of the carriage. It will be understood that by forcing the button 45 either to right or left, the nose of cam 50 will lift the carriage-rack arm 11. The button 45 remains permanently in Figure 4 position so long as the machine is out of use, but by pulling it to the left from Figure 4 position, the parts are released and restored to normal positions at Figure 2. So long as the parts are in the positions at Figure 4, the locking member 37 is mechanically detained in effective relation to the carriage.

When the machine is to be carried, it is desirable to release the carriage-rack from the escapement-pinion to prevent injury to the escapement-mechanism. The release of the rack may be accomplished by member 42, the cam 50 being provided on said member so that, as it is pushed inwardly to urge nose portion 37 downwardly, said cam engages beneath one carriage-rack-supporting arm 11, which is suitably shaped for the purpose, and swings said arm about pivot 10 to raise rack 8 out of engagement with pinion 7. The notch 47 is preferably located on a raised portion just beyond cam 50, so that said rack will be held out of engagement with the escapement-pinion as long as portion 37 is in effective position, and thus the carriage may be easily moved to the right or left until portion 37 lodges in opening 34 in the main frame to lock the carriage in position.

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:

1. In a typewriting machine, the combination with a frame, a carriage thereon, a rack on said carriage, and an escapement device normally engaging said rack, of means for locking the carriage in central position against either advance or return movement, comprising a shiftable locking member on said carriage normally in ineffective position, means on the frame for engaging the shiftable member when the carriage is in central position, means settable to yieldingly urge said shiftable member to effective position, so that upon movement of the carriage to central position the shiftable locking member will co-operate with the engaging means on the frame and lock the carriage in central position, and means operable by said settable means for effecting disengagement between the rack and the escapement device, and releasable means for mechanically detaining said locking member in effective position.

2. In combination with a typewriting machine having a main frame, a carriage on said frame, an escapement-pinion and a rack carried by said carriage and engaging said pinion, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, and means for moving said lever to effective position in any position of the carriage, said means comprising a spring fixed at one end to said lever and means fixed to the other end of the spring for compressing said spring and rotating said lever, said lever engaging said frame to lock said carriage against either advance or return movement, said first-named means comprising means for disengaging said rack from said pinion when said lever is moved to effective position.

3. In combination with a typewriting machine having a main frame, a carriage on said frame, an escapement-pinion, a carriage-rack and supporting arms for said rack pivoted on said carriage, a device for deter-

mining the central position of the carriage and locking the carriage in said position against advance and return movements, said device comprising a lever carried by said carriage, means settable, in any position of the carriage, to urge said lever to effective position, means for restraining said lever and permitting it to lock said carriage only in the centered position thereof, said locking means including a member mounted on said carriage for reciprocation in the direction of carriage movement, and a cam on said member and engaging one of said rack-supporting arms, when said member is actuated to move said lever to effective position, to disengage said rack from said pinion.

4. In combination with a typewriting machine having a main frame, a carriage on said frame, an escapement-pinion, a carriage-rack and supporting arms for said rack pivoted on said carriage, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to effective position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means including a link mounted on said carriage and movable inwardly to move said lever to effective position, and a cam on said link and engaging one of said rack-supporting arms, when said link is moved inwardly, to disengage said rack from said pinion.

5. In a typewriting machine, the combination with a frame and a carriage thereon, of a carriage-centering device comprising a lever on the carriage and having a latching projection, means on the frame to co-operate with said projection when the carriage is in central position to lock the carriage against lateral movement in either direction, means on the carriage settable for yieldingly urging said lever to effective locking position, so that when the carriage is moved to central position the projection will engage the co-operating means on the frame to lock the carriage against lateral movement, and means for holding said lever against movement to effective position until the carriage reaches said central position.

6. In combination with a typewriting machine having a main frame, a carriage on said frame, an escapement-pinion, a carriage-rack and supporting arms for said rack pivoted on said carriage, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to effective position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means including a link mounted on said carriage and movable inwardly to move said lever to effective position, a cam on said link and engaging one of said rack-supporting arms, when said link is moved inwardly, to disengage said rack from said pinion, and means for holding said link in inward position, said last-named means comprising a notch in said link, said notch engaging one of said arms in the inward position of said link.

7. In a typewriting machine, the combination with a frame, a carriage thereon, a rack on said carriage, and an escapement device normally engaging said rack, of means for locking the carriage in central position comprising a shiftable locking member on said carriage and normally in ineffective position, means on the frame for engaging the shiftable member when the carriage is in central position, means settable for disengaging the rack and the escapement device and yieldingly urging said shiftable member to effective position, so that, upon movement of the carriage to central position, it will be locked in such position, and means for holding the shiftable locking member against movement to effective position until the carriage reaches said central position.

8. In a typewriting machine, the combination with a traveling carriage, a rack on said carriage, and an escapement device normally in engagement with said rack of a device for locking said carriage against traveling movement including a shiftable latch member and a bar relatively movable in accordance with the movement of the carriage, said bar having a recess to receive the latch member when the carriage is in central position, a finger-piece, and means settable by said finger-piece for disengaging the rack and escapement device and for yieldingly urging said latch member against said bar, so that, upon movement of the carriage to central position, the latch member will enter said recess.

9. In combination with a typewriting machine having a main frame and a carriage on said frame, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to effective position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means comprising a link mounted on said carriage, a resilient connection between said link and lever, said link being movable inwardly to move said lever to effective position and outwardly to move said lever to ineffective position, and means for guiding the movement of said link, said last-named means comprising a pin on said lever, said link having a slot in which said pin operates.

10. In combination with a typewriting machine having a main frame and a carriage on said frame, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to effective position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means comprising a link mounted on said carriage, and a spring fixed at one end to said lever and at the other end to said link, said link being movable inwardly to compress said spring and move said lever to effective position, said link being movable outwardly to relax the compression of said spring and permit said lever to be moved.

11. In combination with a typewriting machine having a main frame and a carriage on said frame, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to effective position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means comprising a link mounted on said carriage, a spring fixed at one end to said lever and at the other end to said link, said link being movable inwardly to compress said spring and move said lever to effective position, said link being movable outwardly to relax the compression of said spring, and a spring engaging said lever to raise it to ineffective position when said link is drawn outwardly.

12. In a typewriting machine, the combination with a traveling carriage and escapement mechanism therefor, of carriage-centering-and-locking means, and means for releasing said carriage from the escapement mechanism and putting said carriage-centering-and-locking means under stress to lock said carriage against advance and return movements when it is centered.

13. In combination with a typewriting machine having a main frame and a carriage on said frame, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to locking position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means comprising a link mounted on said carriage, a spring fixed at one end to said lever and at the other end to said link, said link being movable inwardly to compress said spring and move said lever to effective position, said link being movable outwardly to relax the compression of said spring, a spring engaging said lever to raise it to ineffective position when said link is drawn outwardly, and means for limiting the movement of said lever to ineffective position, said last-named means comprising an arm fixed to said lever and engaging said carriage.

14. In a typewriting machine, the combination with a traveling carriage, of means for centering the carriage and locking it in such position comprising a lever on the carriage provided with a locking portion, a spring urging said lever to hold the locking portion in ineffective position, a link having a lost-motion connection with said lever, and a second spring connecting said link with said lever and being of such strength as, when stressed by said link, to overcome the first spring and urge said lever to effective position.

15. In combination with a typewriting machine having a main frame and a carriage on said frame, a device for determining the central position of the carriage and locking the carriage in said position, said device comprising a lever carried by said carriage, means for moving said lever to locking position in any position of the carriage, said lever engaging said frame to lock said carriage only in the centered position thereof, said means comprising a link mounted on said carriage, connections between said link and lever, said link being movable inwardly to move said lever to effective position and outwardly to move said lever to ineffective position, and means for holding said link in inward position, said last-named means comprising a notch in said link, said notch engaging a portion of said carriage when said link is in inward position.

16. In a typewriting machine, the combination with a traveling carriage, a rack shiftable thereon, and an escapement device normally engaging said rack, of a carrier-centering-and-locking device having a portion to hold the rack out of engagement with the escapement device, and a carriage-stop portion, said carriage-centering-and-locking device being shiftable to place its rack-holding portion in effective position and to cause its carriage-stopping portion to check the carriage when it reaches its central position and lock it against advance and return movements.

17. In a typewriter having a frame element, a carriage element, and escapement mechanism for the carriage, one of the carriage and frame elements being provided with a locking lever, a detent-portion of the other element being engageable by the lever at a predetermined position of the carriage, a returning spring between the lever and its support impelling the lever away from effective position, a single manually operable

member carried by the same element as the lever, and a spring connecting said manually operable member with said lever, said manually operable member and said lever being relatively movable to vary the tension of their connecting spring, whereby such spring can be caused to overcome the tension of said returning spring and to set the lever to detent-engaging position and to cause it to engage when the carriage reaches a predetermined position.

18. In a typewriter having a frame element, a carriage element, and escapement mechanism for the carriage, one of the carriage and frame elements being provided with a locking lever, a detent-portion of the other element being engageable by the lever at a predetermined position of the carriage, a returning spring between the lever and its support impelling the lever away from effective position, a single manually operable member carried by the same element as the lever, and a spring connecting said manually operable member with said lever, said manually operable member and said lever being relatively movable to vary the tension of their connecting spring, whereby such spring can be caused to overcome the tension of said returning spring and to set the lever to detent-engaging position and to cause it to engage when the carriage reaches a predetermined position, said escapement mechanism including a shiftable member arranged to directly engage said manually operable member, whereby the advance of the latter to further tension said connecting spring will move the escapement member out of effective position.

19. In a typewriter having a frame element, a carriage element, and escapement mechanism for the carriage, one of the carriage and frame elements being provided with a locking lever, a detent-portion of the other element being engageable by the lever at a predetermined position of the carriage, a returning spring between the lever and its support impelling the lever away from effective position, a single manually operable member carried by the same element as the lever, and a spring connecting said manually operable member with said lever, said manually operable member and said lever being relatively movable to vary the tension of their connecting spring, whereby such spring can be caused to overcome the tension of said returning spring and to set the lever to detent-engaging position and to cause it to engage when the carriage reaches a predetermined position, said escapement mechanism including a rack with transverse end arms on which it is pivoted to swing to and from the co-operating escapement member, said rack arranged to be directly engaged by said manually operable member, whereby the latter shifts the rack out of effective position.

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