G. F. HANDLEY.

CARRIAGE FEED MECHANISM.

APPLICATION FILED AUG. 7, 1914.

1,212,939. Patented Jan. 16, 1917.

Fig. 4.

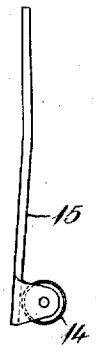


Fig. 5.

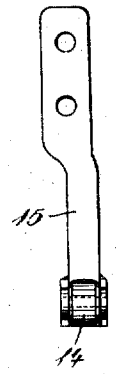


Fig. 2.

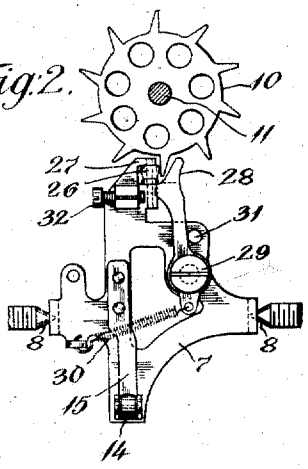


Fig. 3.

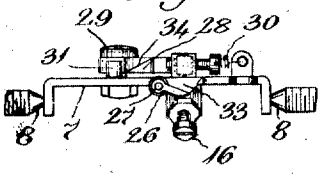


Fig. 6.

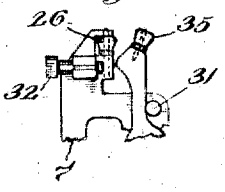
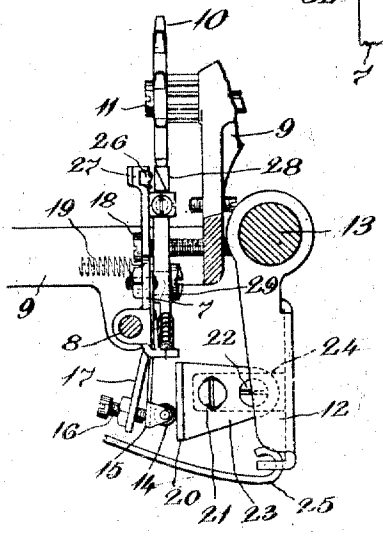


Fig. 1.



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GEORGE F. HANDLEY, OF GLENDALE, LONG ISLAND, NEW YORK, ASSIGNOR TO ROYAL TYPEWRITER COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CARRIAGE-FEED MECHANISM.

1,212,939. Specification of Letters Patent. Patented Jan. 16, 1917.

Application filed August 7, 1914. Serial No. 855,590.

To all whom it may concern:

Be it known that I, GEORGE F. HANDLEY, a citizen of the United States of America, residing in Glendale, Long Island, county of Queens, and State of New York, have invented a certain new and useful Improvement in Carriage-Feed Mechanism, of which the following is a specification.

This invention relates to the carriage feed mechanism of typewriting machines and has for its object to so far as possible eliminate all friction of the rubbing contacting surfaces and parts of the escapement device.

The invention includes the use of anti-friction rollers in places where rubbing parts and surfaces have heretofore been used; and, while the improvements of this invention are adapted to be applied to all escapement devices of the character shown in the accompanying drawing, (to which reference will now be made) they are illustrated as applied to the escapement rocker and universal bar of the Royal typewriting machine.

Figure 1 is a side elevation of an escapement wheel, dog-carrying rocker and universal bar showing some parts in section; Fig. 2, a rear elevation of the same with the universal bar removed; Fig. 3, a plan view of the rocker and dogs carried thereby. Fig. 4, a side elevation of the anti-friction roller for contact with the trip plate of the universal bar and the spring by which it is connected to the rocker plate. Fig. 5, a rear elevation of the same; and: Fig. 6 illustrates the escapement dogs, the limber or feed dog being provided with a roller not shown in the other views of the drawings.

The rocker plate 7 is held between center bearings 8, 8, in the frame 9. The escapement wheel 10 rotates on a stud 11 extending from frame 9 and the universal bar 12 rocks on shaft 13 held in the main frame, as in the Royal typewriting machine.

Heretofore the lower extension of the rocker plate 7 has been provided with a screw bearing against the trip plate of the universal bar to cause the rocker to move each time the universal bar is moved; and, during said movements, a rubbing action occurs between the end of the screw and the trip plate since the center 8 of the rocker and center 13 of rocking motion of the universal bar are in angular positions relative to the plane of the trip plate. The wearing of these parts, though slight, in the course of time disturbs the adjustment. A roller 14 preferably barrel-shaped, is provided and is located between the rocker plate and the trip plate to avoid the objections due to the aforesaid construction. To provide for proper adjustment of this roller 14, it is preferably carried in ears formed on the end of a spring 15 secured at its upper part to the rocker 7 and an adjusting screw provided with a lock nut 16 passes through the lower extension 17 of the rocker plate and abuts against the spring 15, said extension being bent forward to accommodate the roller and spring. The spring is also similarly bent to cause it to bear against the screw.

18 designates a screw against the headed end of which the rocker plate 7 is held by the action of a spring 19 to hold the dogs in normal position relative to the escapement wheel 10, as shown in Fig. 1. This view also shows the universal bar partly moved forward with its trip plate 20 about to act on the roller 14. The trip plate 20 is connected to the universal bar 12 in such manner that its working face may be angularly adjusted, thus providing for perfect adjustment of all working parts especially when case shift printing is done. A suitable means for thus setting the trip plate 20 is shown consisting of screws 21 and 22 which connect a side extension 23 of the plate to a forwardly extending bracket 24 of the universal bar,—the forward screw 21 passing through a slot in the extension 23 and thus permitting the trip plate to be rocked on screw 22, said screws being tightly driven when the proper adjustment is made. Similar devices are employed at the opposite end of the universal bar.

25 indicates a key rod or link attached to the universal bar and which may be operated in the usual way.

A roller 26 constitutes the rigid or detent dog, being held on a vertical pin carried in a bracket 27 at the upper end of the rocker plate. The feed or limber dog 28 rocks on the screw stud 29 on the rocker plate and is by a spring 30 held against a pin 31 when the plate 7 is rocked and moves the dog 28 out of action and the dog 26 into action with escapement wheel 10, as shown in Fig. 2. When the limber dog is moved into active

position and the escapement wheel acts thereon against the tension of spring 30 its movement is arrested by the adjustable stop 32. The bracket 27 is bent at an angle providing an inclined clearance surface 33 and the back of the limber dog 28 is also inclined as at 34, (see Fig. 3). By this construction, the relation of these angular surfaces to the toothed escapement wheel is such that maximum speed of operation of moving parts may be attained.

To avoid friction of the parts and insure ease of operation to the fullest extent, it is found advisable to apply to the upper part of the feed or limber dog 28 a roller 35, similar to the roller 26, but fitted to rotate on a stud end extension, as shown in Fig. 6. Both of these rollers 26 and 35 are egg or pear shaped so as to act freely and fairly on the teeth of the escapement wheel 10.

It is evident that it is not absolutely essential that the escapement trip roller 14 be carried on the rocker plate 7 to perform its functions. It may be carried on the universal bar and act on a trip surface on the rocker plate; and this, with other changes of mechanical construction retaining substantially the functions of structures as here shown and described, would come within the limitations of the skilled mechanic.

I claim:

1. An escapement rocker plate for typewriting machines provided with a spring-supported contact roller adapted to engage the universal bar of the machine and provided also with an adjusting screw operating on the spring to vary the position of the roller relatively to the rocker plate.

2. The combination with the universal bar of a typewriting machine, of an escapement rocker plate, a spring secured thereto, a roller carried by the outer end of the spring and adapted to make contact with the universal bar, and an adjusting screw carried by the plate and bearing on the spring in rear of the roller for varying the position of the roller between the rocker plate and universal bar.

3. A carriage feed mechanism for typewriters comprising an escapement rocker plate, a universal bar adapted to be actuated by all of the type keys, a spring secured to the rocker plate, a roller carried at the end of the spring arranged to contact with the universal bar and an adjusting screw passing through the rocker plate and bearing against the spring for varying the distance between the roller and rocker plate.

4. A carriage feed mechanism for typewriters, comprising a vertically arranged escapement rocker plate having a rearwardly bent portion at its lower end, a spring attached to the rocker plate and carrying an anti-friction roller, and a universal bar provided with a contact plate engaged by said rocker.

In testimony whereof, I have hereunto subscribed my name.

GEORGE F. HANDLEY.

Witnesses:
E. A. Hess,
H. C. Jagau.