To all whom it may concern:

Be it known that we, HAROLD L. HEDRICK and HENRY C. CHANTLER, citizens of the United States of America, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Attachments for Typewriters, of which the following is a specification.

Our invention relates to an attachment for typewriters. It contemplates the provision of a device which may be applied to a typewriter of normal form without modification thereof.

We have provided a combination of mechanism embodying a single motor which is preferably operable continuously, together with a means for carrying through the depression of a key when such depression is once initiated as well as a means for effecting the return of the carriage and the customary line spacing operation at proper intervals. In our apparatus both the key depression mechanism and the carriage return are operated manually, devices being provided to manually couple either one or the other with the motor at any desired instant. The device which directly operates the keys of the typewriter after depression is once initiated preferably takes the form of a corrugated roller geared and belted to the motor while the device which operates the carriage return desirably takes the form of a friction cord or cable that cooperates with a friction wheel upon the manual depression of a key provided for this purpose to effect connection with the continuously operating motor.

An important feature of this invention consists in the automatic carriage return and line spacing mechanism per se. We have provided an extremely simple structure fitting in with the normal operation of the other parts of our apparatus whereby the depression of a key provided therefor will result in the application of retracting power to a cord that is so connected to the carriage of the typewriter that it will bring about the return of such carriage and the line spacing action whenever the retraction of said cord is effected. The preferred embodiment of our invention is shown in the accompanying drawings wherein similar characters of reference designate corresponding parts and wherein—

Figure 1 is a front elevation of a typewriter with our apparatus applied thereto.

Fig. 2 is a detail view in front elevation of the key mechanism that we use for manually bringing about the operation of the 60 carriage return mechanism.

Fig. 3 is an end elevation of the structure shown in Fig. 2.

Fig. 4 is a detail, partially in section, of the line spacing element of the carriage return mechanism.

Fig. 5 is a partial detail of the friction clutch utilized by us.

Fig. 6 is a section taken on line 6—6 of Fig. 3.

In the drawings, our mechanism is shown as comprising a motor 1 driving a pulley 2 which is connected by a belt to an enlarged pulley 3 that drives a shaft 4. At its forward end this shaft is provided with a worm 5 for cooperation with a worm wheel 6 upon a counter-shaft 7. This counter-shaft 7 is connected to and drives a corrugated roller 8 which in turn cooperates with any one of depending attachments 9 upon the key board of the typewriter. It will be understood that this corrugated roller preferably operates continuously since the motor 1 is running continuously and whenever the depression of a key is initiated the corrugated roller 8 operates upon the depending rack member 9 to carry through the depression. This operation is fully set forth in our application filed September 5, 1919, Serial No. 921,772.

In the rear of the worm 5 upon the shaft 4 we have provided a wheel 10 which is desirably grooved as at 11 (see Fig. 6) and the surface of which groove is preferably roughened. This wheel 10 because of its permanent connection by means of the pulley 3 and belt to the pulley 2 of the motor 1 is driven continuously.

The mechanism which cooperates with the wheel 10 to bring about the return of the carriage and to effect line spacing at the same time is illustrated in Figs. 1, 4, 5 and 6. It comprises a yoke member 12 (see Fig. 4) having a split collar at its upper end as at 13, which split collar embraces the shank of the line spacing lever and is held thereon by means of a cotter pin 14 in conjunction with
a relatively wide finger-hold of this line spacing lever. The lower end of the member 12 is provided with a support at 15 and with an integral extension 16 having an eyelet as at 17. Connected to this eyelet 17 is a cord 18 which preferably passes to the right, down over pulley 19 and around and under a pulley 20. Connected to the cord 18 at its lower end is a supplemental cord or cable 21 passing through stop guides 22, which guides are spaced and disposed upon either side of and immediately below the wheel 10. The guides 22 are supported upon an arm 23 which is pivoted as at 24 upon a standard 25 and which carries a wheel 26 disposed immediately below the wheel 10 and likewise grooved as at 27.

The free end of the arm 23 is normally held downwardly by means of a coil spring 28 and when in lowered position, the cord 21 is out of contact with the grooved periphery of the wheel 10, as illustrated in Figs. 1 and 6.

A means for lifting the free end of the arm 23 against the tension of the coil spring 28 is provided in the form of a cord or cable 29 which passes over a pulley 30 and is connected to a cable 31 having a housing 32 and provided with a turn buckle 33 so that its length may be adjusted to vary the operation as desired. The upper end of this cord or cable 31 is connected as shown in Fig. 2 to the work arm of a lever 34 which carries upon its opposite end a key button 35 desirably of substantially semicircular form. This lever 34 is carried upon clamp members 36 and 37 which may be attached to the base of the typewriter in a manner that will be readily understood.

In the operation of our carriage return mechanism, the arm 35 is depressed when the carriage reaches the end of the line with the result that the cord 21 will be carried upwardly by means of the roller 26 to the dotted line position shown in Fig. 5. When this occurs, the continuously rotated wheel 10 takes a friction grip upon the cord and retracts it with ample force to bring about line spacing and by further retraction of the cord 18 to return the carriage.

The mechanism of our device is simple and readily understood. Furthermore, it is attachable or detachable without in any way marring or changing the construction of the typewriter. Furthermore, it is of cheap construction and the motor utilized is given full use. It will be noted that the cord 21 is enlarged at its end to prevent accidental drawing through the guides 22, although the length of this cord is such as to preclude this under normal circumstances.

Having thus described our invention, what we claim is:

1. An attachment for typewriters comprising a friction drive wheel, a cord attached to the line spacer at one end of the typewriter carriage for returning such carriage when retracted, and means for moving said cord into contact with said friction wheel.

2. An attachment for typewriters comprising a friction drive wheel, a cord attached to one end of the typewriter carriage for returning such carriage and line-spacing when retracted, and means for moving said cord into contact with said friction wheel.

3. An attachment for typewriters comprising a friction drive wheel, a cord attached to one end of the typewriter carriage for returning such carriage and line-spacing when retracted, a movable wheel over which said cord is designed to pass, a means for moving said wheel to bring said cord into frictional relation to said friction drive wheel.

4. An attachment for typewriters comprising a friction drive wheel, a cord attached to one end of the typewriter for returning said carriage when retracted, a wheel over which said cord passes, and means for moving said wheel so as to force said cord against said friction drive wheel.

5. An attachment for typewriters comprising a friction drive wheel, a cord attached to one end of the typewriter carriage for returning such carriage when retracted, a support for said cord which normally holds the cord out of contact with said friction drive wheel, and a key operated mechanism for moving said support to bring said cord into operative relation to said friction drive wheel.

In testimony whereof we hereby affix our signatures.

HAROLD L. HEDRICK.
HENRY C. CHANTLER.