R. F. DOWNEY.

COPY HOLDER LINE INDICATOR.

APPLICATION FILED DEC. 26, 1912.

1,101,529. Patented June 30, 1914.

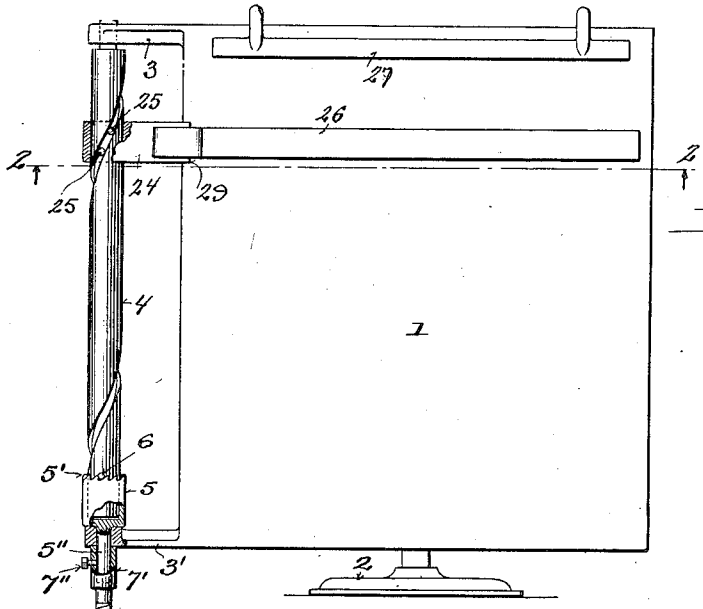


Fig. 1.

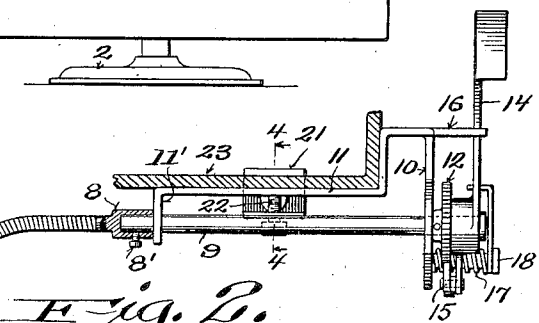


Fig. 2.

Fig. 4.

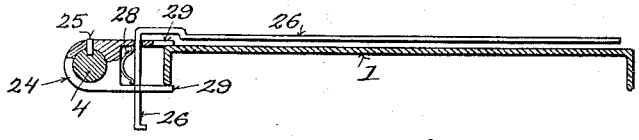
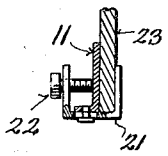
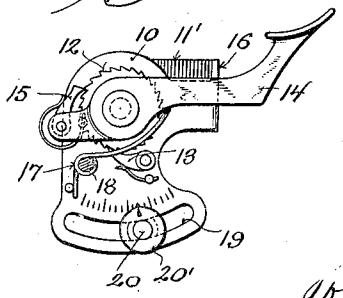


Fig. 5.





Witnesses:
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UNITED STATES PATENT OFFICE.

RICHARD F. DOWNEY, OF MILWAUKEE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO DROP-A-LINE INDICATOR CO., OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

COPY-HOLDER LINE-INDICATOR.

1,101,529. Specification of Letters Patent. Patented June 30, 1914.

Application filed December 26, 1912. Serial No. 738,519.

To all whom it may concern:

Be it known that I, RICHARD F. DOWNEY, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Copy-Holder Line-Indicators; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its primary object to provide a simple, economical and accurate line indicator to be utilized in connection with a copy-holder.

Specific objects of my invention are to provide a portable head carrying key-actuated mechanism for the line-spacer to be attached with the frame of a typewriter or other conveniently positioned fixed support; to provide a worm-driven indicator in connection with a copy-holder; to provide a flexible drive shaft connection between the worm drive and head spindle that is controlled by the actuating key, whereby the copy-holder may be conveniently shifted to any position to accommodate the operator, the mechanism at the same time being under control of the fixed key-actuated mechanism, and to provide a clutch mechanism between the spindle and flexible shaft, whereby the disengagement thereof is effected incidental to shift of the indicator to its starting point after a step by step line indicating feed movement.

With the above and other objects in view the invention consists in certain peculiarities of construction and combination of parts as set forth hereinafter with reference to the accompanying drawings and subsequently claimed.

In the drawings Figure 1 represents a face view of a copy-holder carrying a worm-driven indicator finger embodying the features of my invention and also showing a portable head in plan, the same carrying a key-actuated mechanism and connected by a flexible shaft to the driving worm of the indicator, parts being broken away and parts in section to more clearly illustrate certain structural features; Fig. 2, a cross-section of the copy-holder illustrating the indicator finger and its worm-drive connection; Fig. 3, a side elevation of the spindle carrying head and key-controlled actuating mechanism for the spindle, and Fig. 4, a detailed cross-section of the head, the section being indicated by line 4—4 of Fig. 1, illustrating the method of detachably connecting said head to the frame of a typewriter or other suitable fixed support.

Referring by characters to the drawings, 1 represents a portable copy-holder having a suitable supporting base 2, one edge of the holder being provided with transversely extended apertured ears 3, 3′, which constitute supports for a longitudinally disposed worm-shaft 4. The lower apertured ear 3′ has journaled therein a clutch sleeve 5, into which sleeve the lower end of the worm-shaft is loosely mounted, said sleeve constituting a journal for this end of the shaft. The upper edge of this sleeve is provided with a series of ratchet-teeth 5′ that are adapted to engage a pin 6 which extends from the worm-shaft, the said pin and ratchet teeth constituting a clutch connection at this point, the shank portion 5″ of the sleeve which is mounted in the apertured ear 3′ being extended beyond said ear for coupling connection to a flexible shaft 7. The said flexible shaft, as shown, is provided with a ferrule 7′, which is fitted over the shank 5″ of the sleeve and held into engagement by a set-screw 7″, it being understood that any suitable coupling connection may be substituted for that shown. The opposite end of the flexible shaft is provided with a similar ferrule 8, which ferrule engages the end of a spindle 9 to which it is secured by a set-screw 8′ the said coupling connection being similar to that described in connection with the worm-shaft clutch sleeve 5. The forward end of the spindle 9 is journaled in and extends through a face-plate 10 that constitutes part of a head, which head is also provided with a strut 11 that extends rearwardly from the face-plate, paralleling the spindle, the strut terminating with an apertured arm 11′ into which the rear end of said spindle is journaled. Fast upon the projecting end of the spindle 9 and adjacent to the face-plate 10 of the head is a ratchet-wheel 12, the same being held against back-lash by a stop-pawl 13. Loosely mounted upon the spindle 9 in advance of the ratchet-wheel is an oscillatory actuating key 14, which key carries a pawl 15 that engages the ratchet-wheel. The actuating key 14 is normally held against a

stop 16, that projects from the face-plate, by a coiled spring 17 that is wound upon a stud 18 having one end secured to the face-plate and the opposite end in engagement with said key, whereby the latter is under spring-control. The face-plate is also provided with a circular slot 19, into which slot is adjustably mounted a stop-pin 20, the same being held in its adjusted position by a head 20′ that is in screw-threaded engagement with a threaded shank of said stop-pin, the same being arranged to limit feed stroke of the key by engagement therewith.

As best shown in Fig. 4 of the drawings, the strut 11 of the head has secured thereto, by a slot and pin connection, a gripping-jaw 21, one arm of which carries a thumb-screw 22, the end of which is adapted to engage the strut 11 to thus draw the opposite arm of the gripping-jaw into frictional engagement with a fixed frame-piece 23, the same constituting the base of a typewriter mechanism not shown. The said frame-piece is thus securely clamped between the arm and strut of the head by a resulting draw, incidental to movement in one direction of the thumb-screw. By this construction it is apparent that the portable head can be attached to the typewriter frame, it being manifest that the copy-holder can be moved in various positions without disconnecting the driving mechanism therefrom, within limits of the flexible shaft connection.

Mounted upon the worm-shaft is a hub 24, which hub is provided with one or more pins 25 that extend into the spiral groove of the worm-shaft. The hub carries an indicator finger 26 which extends transversely of the holder 1, being provided with a right-angled foot-piece 26′ that is in slidable engagement with slots in said hub. By this connection the indicator finger 26 can be raised or lowered to compensate for the thickness of the pad of copy that is adjusted to the holder, the said pad being held in its adjusted position by a spring-controlled clamp-bar 27. The foot-piece of the indicator-bar is held in its adjustment by a leaf-spring 28, which leaf-spring is fitted against one wall of the hub and engages said foot. The hub is also provided with spanner arms 29 that engage the upper and lower edges of the copy-holder plate, whereby said hub is held against rotation incidental to movement of the worm-shaft.

From the foregoing description it is apparent that when the key 14 is actuated, its pawl and ratchet connection with the spindle will cause partial rotation thereof, which partial rotation is transmitted to the worm-shaft through the flexible shaft 7 and the worm-shaft will thus cause the hub portion of the indicator, together with the indicator finger, to travel a predetermined distance over the face of the copy indicating a line. This step by step movement of the indicator finger may be adjusted within predetermined limits by setting the adjustable stop-bolt and its head 20, which set may be gaged by suitable indicator marks that are arranged adjacent to the circular slot 19 of the head face-plate.

After the indicator finger has completed its movement from the top to the bottom of a sheet of copy, which movement is only limited by the length of the worm-shaft, the said indicator finger can readily be reset by manually shifting the same. This shift will cause idle rotation of the worm-shaft in a reverse direction from that of its drive, the said idle rotation being effected by a disengagement of the clutch engagement between the lower end of the shaft and the clutch-sleeve 5, and hence there will be no movement imparted to the actuating mechanism and flexible shaft in this operation.

I claim:

1. The combination of a copy-holder having upper and lower ears, a one-way clutch member loosely mounted in the lower ear, a worm-shaft having one end mounted in the upper ear and its lower end revolubly supported upon the clutch member, clutch means carried by the lower end of said worm-shaft for engagement with the clutch member, an indicator finger in operative connection with the worm-shaft, the same being adapted to travel over the face of the copy holder, a shiftable head, a key-actuated spindle carried thereby, and a flexible shaft connecting the spindle and clutch member.

2. The combination with a copy-holder having upper and lower ears, a clutch sleeve loosely mounted in the lower ear, a worm-shaft having one end mounted in the upper ear and its lower end socketed within the clutch sleeve whereby it is supported, clutching means carried by the lower end of said worm-shaft for engagement with the clutch sleeve, an indicator finger in operative connection with the worm-shaft, the same being adapted to travel over the face of the copy-holder, a shiftable head, a key-actuated spindle carried by the head, and a flexible shaft connecting the spindle and clutch sleeve.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

RICHARD F. DOWNEY.

Witnesses:
GEO. W. YOUNG,
M. E. DOWNEY.