Patented Sept. 6, 1949

2,481,091

UNITED STATES PATENT OFFICE

2,481,091

TELEGRAPHIC INSTRUMENT

Lawrence L. Dow, Washington, D. C., assignor to The Dow-Key Company, Winnipeg, Manitoba, Canada

Application December 14, 1948, Serial No. 65,247

1 Claim. (Cl. 178—101)

1

This invention relates to an improved telegraph key having the novel capacity for use as a semi-automatic telegraph key at any angle suitable for, and selected by, the operator, and thus enable him to assume a more relaxed arm position and by so doing derive the benefits thereof.

Operators, long associated with the art, are subject to numerous muscular conditions in the operating arm due to the continued tension brought about by the cramped position necessary for operation of the fixed position, horizontally operated semi-automatic key. These muscular conditions are caused by contortion and improper use of the flexor and reflex muscles of the operating arm. Maximum coordination and strength, because of the manner in which the arm muscles are rigged, is only obtained when the larger biceps are used in conjunction with the forearm muscles. The arm, in order to have control in the horizontal plane, sets reflex muscles against the weaker forearm flexor muscles, and control, with very limited strength, is obtained by muscular tension. It is this continued strain which finally so tires the reflex or flexor muscles, that one, usually the latter, becomes incompetent and complete loss of control results. Furthermore, the correct angle for relaxed operating motion with maximum control, is individual to each operator.

By my invention the operating position may be changed by rotating the entire keying assembly to any angle about an axis parallel with the base which the operator may select and thus increase the efficiency of the operator and remove the hazards which result from continuous muscular fatigue.

My invention is described in the following specification with reference to the following drawings.

Figure 1 represents a top perspective view of my invention; Fig. 2 is an end view in perspective; Fig. 3 is a top view illustrating the vibrating section of my invention; Fig. 4 is a detailed top assembly view of the journal bearing and associate arms; Fig. 5 is a front view of the rear locking ring and associate screws; Fig. 6 is a front view of the bridge bearing member and associate journal lock screw; Fig. 7 is a front view of the conventional U spring.

The illustrated instrument is herein described with reference to the drawings and numbers thereon.

With particular reference to Fig. 2 and Fig. 3, operating lever 11, to which handles 10 and 12 are secured, is operated as a second class lever actuated by the thumb and forefinger of the right hand. Coupling 7, being secured to said lever 11, is free to rotate about pivot pin 6 which serves as the fulcrum for said lever 11 and lever 21. Travel of the said lever 11 is limited by the adjustable contact 15. When pressure is applied to handle 12, said lever 11 moves away from lever 21 overcoming dash tension spring 14 causing dash contact 16, which is secured to said lever 11, to make contact with adjustable contact 15. Return force for bringing said lever 11 to a position of rest against lever 21 is furnished by dash tension spring 14.

2

When pressure is applied to handle 10, lever 11 actuates said lever 21 as a first class lever about their common fulcrum pivot pin 6. This pressure overcomes adjustable dot tension spring 22. Said lever 21, moving away from bumper screws 25 and 34, travels to a limit defined by the adjustment of bumper screw 23. This causes oscillation of the vibratable spring 27, said oscillations being transferred through dot spring holder 26 to the fixed dot spring 28, it being fastened thereto. Fixed dot spring 28, describing an oscillating arc, moves against adjustable contact screw 29 at the limit of its described arc.

To one versed in the art, the manner of keying a signal or sounder by means of a semi-automatic key will be understandable.

The novel feature of rotation is herein described with particular reference to Fig. 2 and Fig. 4. Journal bearing 20, having a front ring flange, supports two arms 30 and 33, opposite to each other on the flange diameter and parallel to the base 35. The said arms are secured to the said journal bearing flange as shown in Fig. 4. To the rear flange of journal bearing 20, said flange being the same diameter as the journal bearing surface, is secured a rear lock ring 18 which is secured to the said journal bearing 20 by the set screws 44 Fig. 5. Arm 17, supporting adjustable dash contact 15, is caused to rotate with the assembled journal bearing 20 by being secured as shown in Fig. 4 to the rear lock ring 18.

Pivot pin 6, which supports, and is the fulcrum for operating levers 11 and 21, is secured to the inside surface of journal bearing 20 and the assembled parts constitute a rotatable mechanism, the said journal bearing being completed by said rear lock ring and the said rotatable mechanism being supported above the base 35 by the bridge bearing 40.

In this manner the complete keying mech-