No. 725,215. PATENTED APR. 14, 1903.

C. E. BUNKER.

TELEGRAPH KEY.

APPLICATION FILED AUG. 31, 1901.

NO MODEL.

Fig. 1.

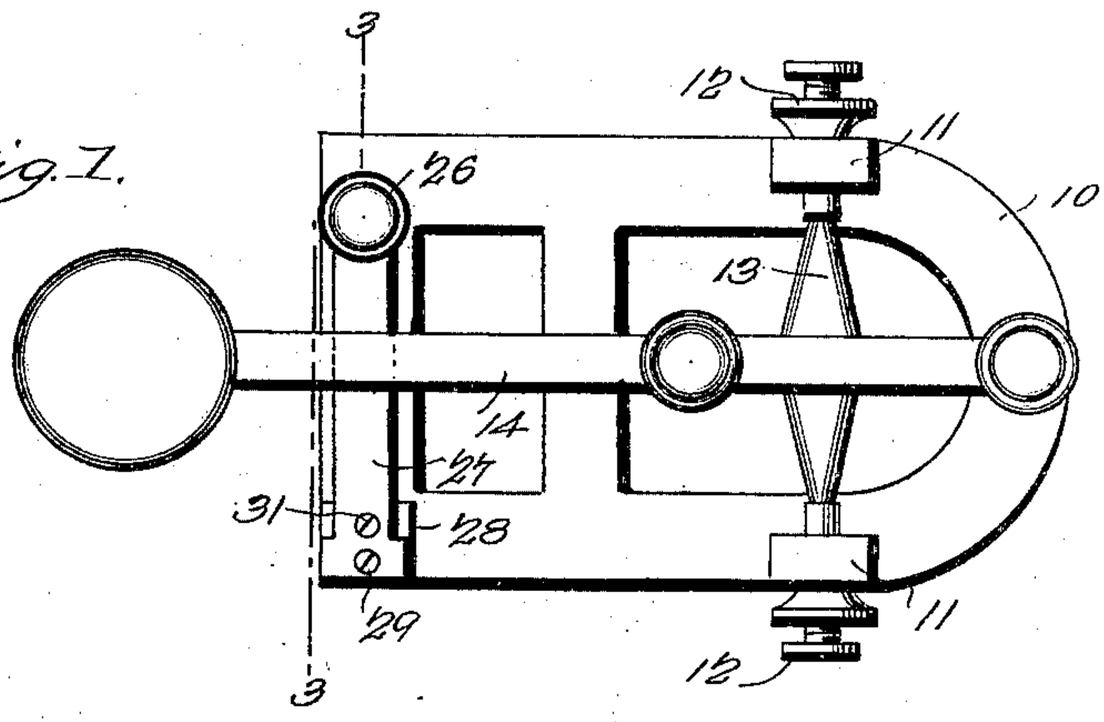


Fig. 2.

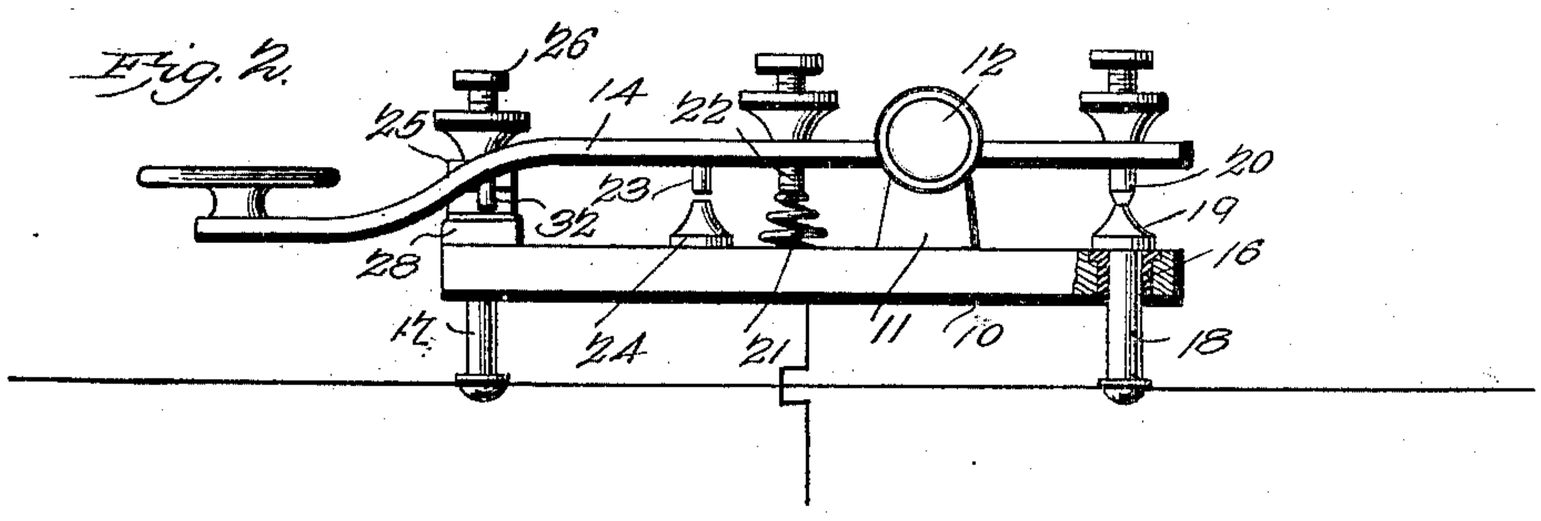


Fig. 3.

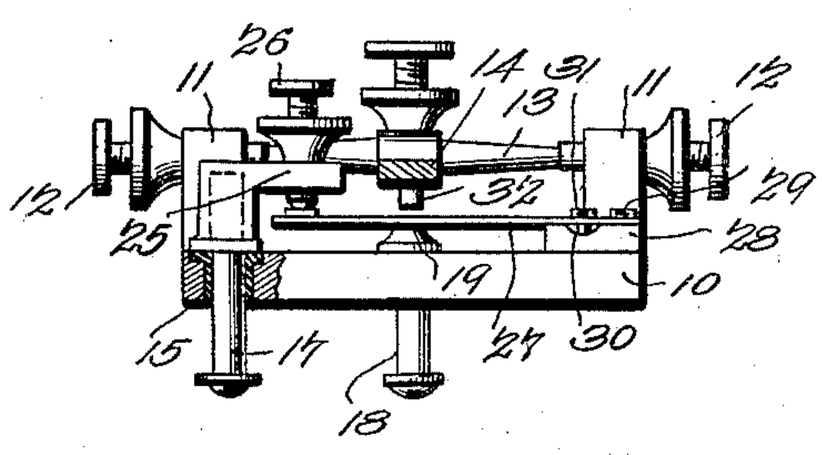
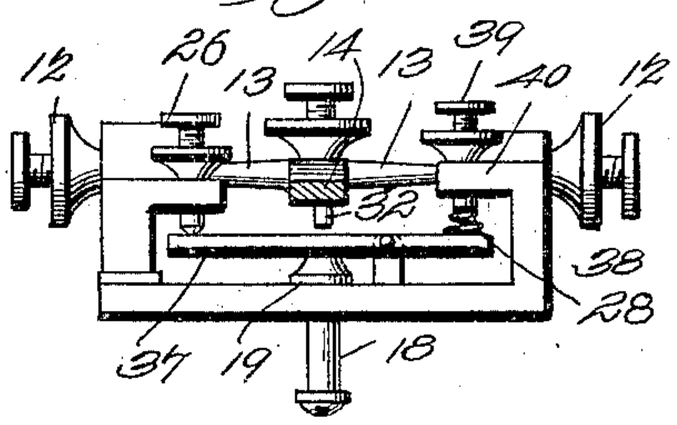


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

CAREY E. BUNKER, OF OREGON, MISSOURI.

TELEGRAPH-KEY.

SPECIFICATION forming part of Letters Patent No. 725,215, dated April 14, 1903.

Application filed August 31, 1901. Serial No. 74,021. (No model.)

To all whom it may concern:

Be it known that I, CAREY E. BUNKER, a citizen of the United States, residing at Oregon, in the county of Holt and State of Missouri, have invented a new and useful Telegraph-Key, of which the following is a specification.

This invention relates to certain improvements in telegraph instruments, and has for its principal object to provide a construction of key adapted for use in connection with a closed-circuit system, the construction of the key being such as to insure the breaking of the circuit at each downward movement of the key-lever without regard to the "stroke" of the operator.

Further objects and advantages of the invention having reference to specific details will be understood from the following description.

In the accompanying drawings, Figure 1 is a top plan view of a key constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse sectional elevation of the key on the line 3 3, Fig. 1. Fig. 4 is a view similar to Fig. 3 and illustrating a modification.

The present invention is designed more especially for use in connection with closed-circuit telegraphic systems of that class in which the key automatically closes the circuit at the end of each operation, auxiliary switches being dispensed with.

Referring to the drawings, 10 represents a metallic base or frame having at each of its sides standards 11 for the support of suitable bearing-screws 12, forming bearings for the oppositely-disposed trunnions 13 of a key-lever 14.

Through suitable insulated bushings 15 and 16 extend binding-posts 17 and 18, the posts being connected to the main-line wire, in which is situated the usual relay or relays, base 10 being connected to the other line-wire and the circuit between the wires being normally closed through various parts of the key and carrying-frame. The upper end of the post 18 is provided with a contact 19, normally in engagement with a contact 20 at the rear end of the key-lever, the key-lever being held in position shown in Fig. 2 by means of a spiral spring 21, extending between the upper surface of the base and an adjusting-screw 22, carried by the key-lever. The downward movement of the key-lever is limited by the projecting pin 23 and the stop 24, carried by the base, in the path of said pin.

The upper end of the post 17 is connected to a standard insulated from base 10 and having a laterally-projecting arm 25, through which passes a contact-screw 26, the lower end of which is normally in engagement with the free end of a spring-plate 27, carried by and electrically connected to a block 28, the latter being secured to or forming part of the frame 10. The spring-plate 27 is firmly secured in place by a screw 29 and passes over a depression 30, formed in the upper surface of the block 28, a screw 31 passing through an opening in the plate at this point and extending into the block 28 at the bottom of the depression. By turning this screw the spring may be adjusted to some extent and good contact be insured between its free end and the contact-screw 26.

The key-lever is provided at a point above the spring-plate 27 with a depending pin 32, which when the key-lever is depressed will come into contact with the spring and force its free end from contact with the screw 26, and thus break the circuit at this point, in addition to breaking, by reason of raising, the contact-screw 20 at its rear end from the contact-block therebelow.

In Fig. 4 of the drawings instead of the spring-plate 27 there is employed a lever 37, one end of which is held yieldably engaged with the contact-screw by means of a spring 28 bearing upon its opposite end and adjusted by a screw 39, carried by an arm 40, forming part of the frame 10. This lever lies beneath and in close relation to the key-lever, so that when the latter is depressed the lever 37 will be depressed to move it from the contact-screw 26.

In the operation of the device when the key is depressed the rear contacts 19 and 20 are first separated, and when the key is fully depressed stops 23 and 24 are brought into contact. Before the key is fully depressed the pin 32 depresses spring 27 or lever 37 and breaks the contact with the screw 26. The contacts 26 and 27 will be separated a distance governed by the adjustment of the screw 26.

In some instances the contacts 19 and 20 may be dispensed with and used merely as stops to regulate the stroke of the key, the line-circuit being suitably connected at any convenient point on the frame, or the front contact may be dispensed with and the circuit broken only between contacts 19 and 20. The front contacts are best adapted for the work; but in case of accident the rear contacts may be used to preserve the continuity of the circuit.

It will be understood that in practice other modifications of the invention may be made and that any suitable proportions and materials may be used for the various parts without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim is—

1. In a device of the class described, a self-closing key having two contacts normally holding the line closed and movable on the depression of the key to successively break contact, without breaking the circuit until both are separated.

2. In a device of the class specified, a key having a frame portion electrically connected to one end of a line-wire, and the circuit being normally closed through the frame and key by a plurality of spaced contacts insulated from the frame and both electrically connected to the opposite end of the line-wire, the full movement of the key successively breaking contacts without breaking the circuit until both contacts are separated.

3. The combination in a telegraph instrument, of a key comprising a frame, a back-stop and key-lever pivoted to the frame and adapted to engage the back-stop to close the circuit, a secondary movable circuit-breaker arranged under the key and normally closing the circuit to the frame, said secondary contact being movable to circuit-breaking position after the key-lever is disengaged from the back-stop, the full movement of the key successively breaking contacts without breaking circuits until both contacts are separated.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CAREY E. BUNKER.

Witnesses:

J. C. FITTS,

CHAS. J. BUNKER.