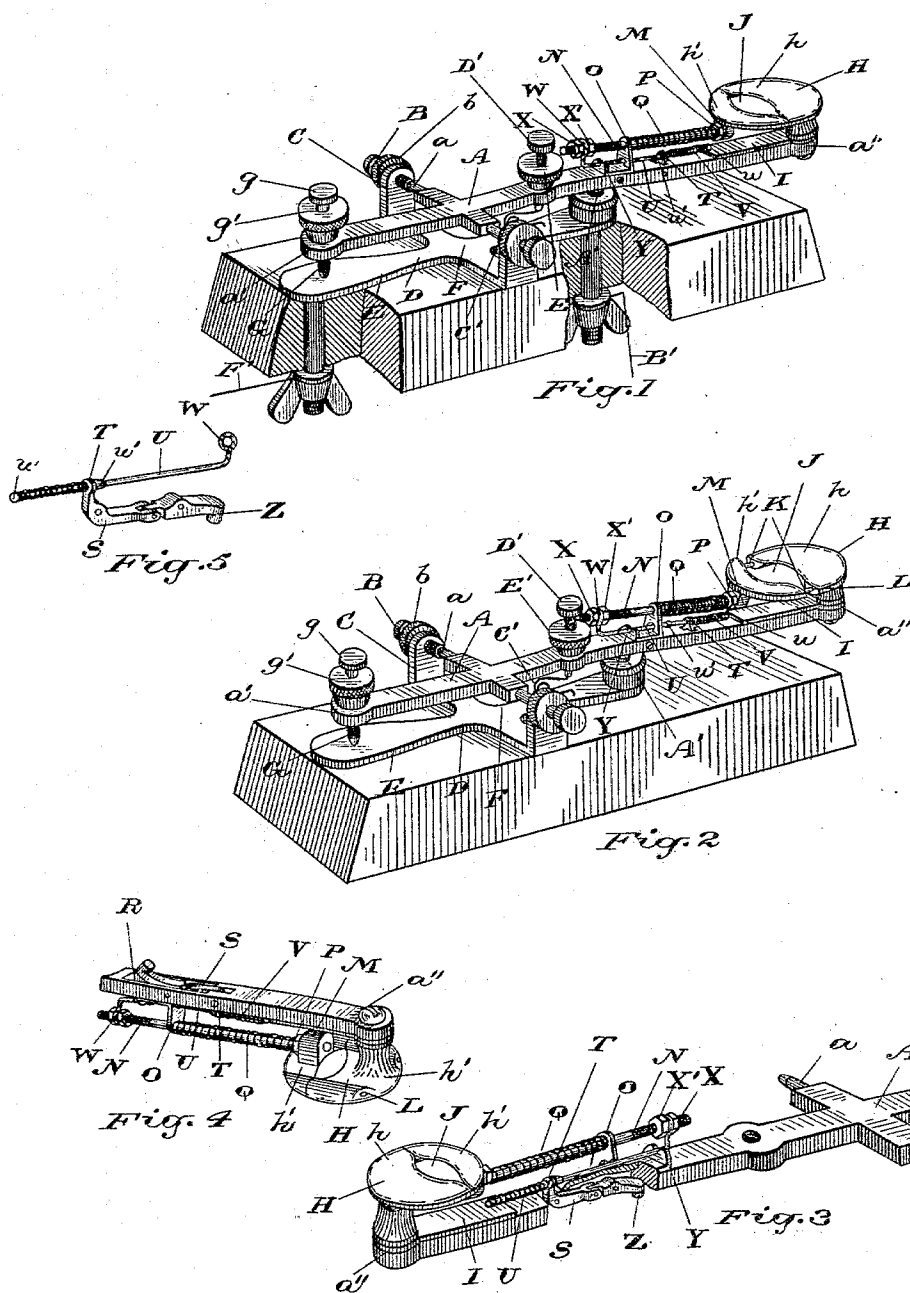


(No Model.)

J. A. COLEMAN.
AUTOMATIC CLOSING TELEGRAPHIC KEY.

No. 553,106.

Patented Jan. 14, 1896.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. COLEMAN, OF PERRY STATION, CANADA.

AUTOMATIC-CLOSING TELEGRAPHIC KEY.

SPECIFICATION forming part of Letters Patent No. 553,106, dated January 14, 1896.

Application filed November 13, 1895. Serial No. 568,806. (No model.)

To all whom it may concern:

Be it known that I, JAMES ARTHUR COLEMAN, of Perry Station, in the county of Welland and Province of Ontario, Canada, have invented certain new and useful Improvements in Automatic-Closing Telegraphic Keys; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in automatic-closing telegraphic keys; and the invention relates to an attachment whereby the telegraphic key will of itself immediately close the circuit after the operator has removed his fingers from the finger-button, and thus prevent trouble arising through neglect or oversight to close the circuit on the cessation of the use of the instrument; and the invention consists essentially of the device hereinafter more fully set forth and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing the telegraphic key with the circuit closed. Fig. 2 is a similar view showing the circuit open. Fig. 3 is an enlarged perspective view of the key-lever from the upper side. Fig. 4 is a view from the under side. Fig. 5 is a view of the closing contact-point and its operating-lever.

Like letters of reference refer to like parts throughout the specification and drawings.

It might here be stated that the essential feature of the invention is to dispense with the side switch commonly used in connection with telegraphic keys and to provide a device whereby the circuit is automatically and instantaneously closed immediately on the cessation of the use of the key. The key-lever A and the trunnions *a*, on which it oscillates, are formed entire from a single piece of metal. The key-lever A with its trunnions is substantially in the form of a Latin cross. The trunnions *a* are journaled in the set-screws B, which constitute the bearing-screws. The bearing-screws B are supported by the upright lugs C of the base or frame D. The bearing-screws B are locked in their set position by lock-nuts *b*. The base or frame D is substantially cross-shaped, and the lugs C, arms E, and body F are formed integrally. The end *a'* of the key-lever A is provided with

an adjustable stop G to limit the upward movement of the key-lever. The adjustable stop G consists of a set-screw *g*, fitted through the end *a'*, and a lock-nut *g'* to hold the set-screw in any set position. The end *a''*, opposite the end *a'*, is fitted with an insulated button H. The button H consists of two sections *h h'*. The section *h* is immovably secured to the key-lever contiguous to the end *a'* of the said key-lever, while the section *h'* is movably secured to the section *h*, and is interposed between the section *h* and the trunnion *a*. That portion of the key-lever A immediately below the button H is insulated by a vulcanite or other non-conducting plate I, in order that the finger of the operator during the use of the instrument will not enter the circuit of the current.

Formed through the button H is an opening J, through which is inserted the operating-finger of the person using or operating the instrument. One half of this opening J is formed in each of the sections *h h'*. The section *h'* is movably connected to the section *h* in the following manner: Projecting from each side of the adjacent meeting edge of the section *h'* is a dowel-pin K, each of which is adapted to enter a corresponding socket L in the section *h*. Projecting downwardly from the middle of the under side of the section *h'* is a lug M, and connected to the lug M is one end of a screw-threaded pin N, which is slidably supported at or about its middle by a lug O, extending upwardly from the key-lever A. Mounted on the pin N adjacent to the lug M is a nut P, and coiled on the pin N between the nut P and the lug O is a spring Q. The object of the nut P is for the purpose of regulating the tension of the spring Q to increase or reduce its strength, as the case may be.

Formed in the under side of the key-lever A, between the button and the trunnions, is a longitudinal groove R, and pivoted within the groove R is a jointed lever S. That end of the jointed lever S next the button H is provided with a lug T, which projects through a longitudinal slot in the key-lever A. The upper end of the lug T is fitted with an eye through which passes a sliding pin U. The sliding pin U passes through the lug O below the pin N. That end of the pin U con-

tiguous to the lug T is enlarged or fitted with
 a head *u*, and coiled on the pin U between
 the head *u* and lug T is a spring V. The end
 of the pin U opposite the head *u* is bent up-
 5 wardly and is fitted with an eye W, through
 which passes the end of the pin N. Mounted
 on the pin N, on one side of the eye W, is a
 nut X, and mounted on the pin N, on the op-
 posite side of the eye W, is a nut X'. The
 10 pin U, it might here be stated, is provided
 with a shoulder *u'* between the lugs T O,
 which normally bears against the lug T to
 press the lug toward the button. The pin U,
 contiguous to the eye W, is held by a suitable
 15 guide Y, connected to the key-lever A. Con-
 nected to the end of the lever S opposite the
 lug T is a contact-point Z. The contact-
 point Z, when the circuit is closed, rests on a
 contact-point A', connected with the line-
 20 wire B'. Located below the key-lever A, be-
 tween the contact-point A' and the trunnions,
 is a spring C', and to increase the resilient
 force of the spring C' the key-lever A is pro-
 vided with an adjustable set-screw D', fitted
 25 with a lock-nut E'. By adjusting the set-
 screw D' the force of the spring C' can be in-
 creased or diminished as required. By screw-
 ing the nuts X X' toward the lug O the pin
 N is drawn toward the trunnions, and the
 30 movement of the pin toward the trunnions
 moves the button-section *h'* away from the
 section *h*, increasing the size of the hole J be-
 tween the sections.

It might here be stated that the nut X bears
 35 against the eye W of the pin U and is the
 means by which the pin N is drawn toward
 the trunnions.

It might be stated that the pressure of the
 shoulder *u'* against the lug T prevents any
 40 opposite corresponding movement on the part
 of the pin U. Thus the eye W in this case
 accomplishes the same result as it would if
 it were rigidly fastened to the key-lever.

In screwing the nuts X X' away from the
 45 lug O the pin N is moved in the opposite di-
 rection, moving the button-section *h'* to the
 button-section *h*, diminishing the size of the
 opening J. The object of increasing or di-
 minishing the size of the opening J is to regu-
 50 late it, in order that it can be adapted to fin-
 gers of different sizes.

The operation of the device is as follows:
 The finger of the operator is inserted into
 the opening J, and the key-section *h'*, by the
 55 insertion of the finger, is moved away from
 the section *h*. The insulated plate I protects
 the finger from the circuit of the current. The
 movement of the section *h'* from the section
h moves with it toward the trunnions the pin
 60 N, and this movement of the pin N carries
 with it the pin U. The movement of the pin
 U toward the trunnions causes the spring V
 to move in the same direction the lug T of the
 jointed lever, and this movement of the lug
 65 T causes the jointed lever to bend and raise
 the contact-point Z into the groove R in the
 key-lever A, and entirely clear of the contact-

point A'. These several parts remain in this
 position while the finger remains inserted in
 the opening J. The circuit of the current is
 70 then broken through the instrument. By the
 removal of the finger from the opening J the
 spring Q returns the button-section *h'* and
 the other coacting parts to their normal po-
 sition, lowering the contact-point Z on the
 75 contact-point A'. The current then circuits
 through the line-wire F', connected to the end
 of the frame D opposite the contact-point A,
 through the adjustable stop G, through the
 key-lever, through the contact-points Z A. 80
 to the line-wire B'.

The advantage of using a device of this
 kind is that under no possibility, while the
 attachment is in good working order, can the
 operator, through oversight or negligence, 85
 leave the line open after he has ceased using
 the instrument.

Having thus fully described my invention,
 what I claim as new, and desire to secure by
 Letters Patent, is— 90

1. In a telegraphic key the combination of
 the key-lever, a button comprised of two sec-
 tions, one section connected to the key-lever,
 and the other section movably secured to the
 stationary section, a jointed lever pivotally 95
 connected to the key-lever, a contact point
 carried by the jointed lever and a connection
 between the jointed lever and the movable
 button section, substantially as specified.

2. In a telegraphic key the combination of 100
 the key-lever, a button comprised of two sec-
 tions, one section connected to the key-lever,
 and the other movably connected to the sta-
 tionary section, a pin projecting from the mov-
 able section in the same plane as the key-le- 105
 ver, a jointed lever pivotally connected to the
 key-lever, a contact point carried by the
 jointed lever, a connection between the pin
 and the jointed lever, whereby the contact
 point is moved by the movement of the mov- 110
 able section, substantially as specified.

3. In a telegraphic key, the combination
 with the transmitting contact point of a key-
 lever, a button, comprised of two sections, one 115
 of the sections connected to the key-lever, the
 other section movably connected to the sta-
 tionary section, a pin, one end of which is con-
 nected to the movable button section, a lug
 supporting the middle of the pin, a spring
 coiled on the pin and bearing against the lug 120
 and the movable button section, a jointed le-
 ver pivotally connected to the key-lever, a
 contact point carried by the jointed lever nor-
 mally engaging with the transmitting contact
 point, and a connection between the mov- 125
 able section and the jointed lever, whereby
 the circuit is made or broken through the con-
 tact points, substantially as specified.

4. In a telegraphic instrument, the combi-
 nation of the transmitting contact point, a 130
 key-lever, a finger button comprised of two
 sections, one of which is connected to the key-
 lever, and the other movably connected to the
 stationary section, a pin in the same plane as

the key-lever, one end of the pin connected to the movable button section, a lug connected to the key-lever, supporting the middle of the pin, a set nut located on the pin between the lug and the movable section, a spring coiled on the pin between the lug and the nut, a jointed lever pivotally connected to the key-lever, a contact point carried by the jointed lever, normally engaging the transmitting contact point, and a connection between the pin and the jointed lever, whereby the jointed lever is operated by the movement of the movable button section, substantially as specified.

5. In a telegraphic key, the combination of the transmitting contact point, the key-lever, a finger button comprised of two sections, one section connected to the key-lever, and the other section movably connected to the stationary section, a pin, one end of which is connected to the movable section, a jointed lever pivotally connected to the key-lever, a

contact point carried by the jointed lever, normally engaging with the transmitting contact point, a lug connected to that end of the jointed lever next the finger button, the said lug projecting through the key-lever, a pin passing through the said lug, an enlarged head for that end of the pin next the finger button, a spring coiled on the pin between the head and the lug, the opposite end of the pin provided with an eye through which passes the pin connected to the movable section of the finger button, and a nut on the said pin, on each side of the said eye, to adjust the position of the button sections substantially as specified.

Welland, October 18, 1895.

J. A. COLEMAN.

In presence of—

CLOE RAMEY,
JOHN STAUNTON.