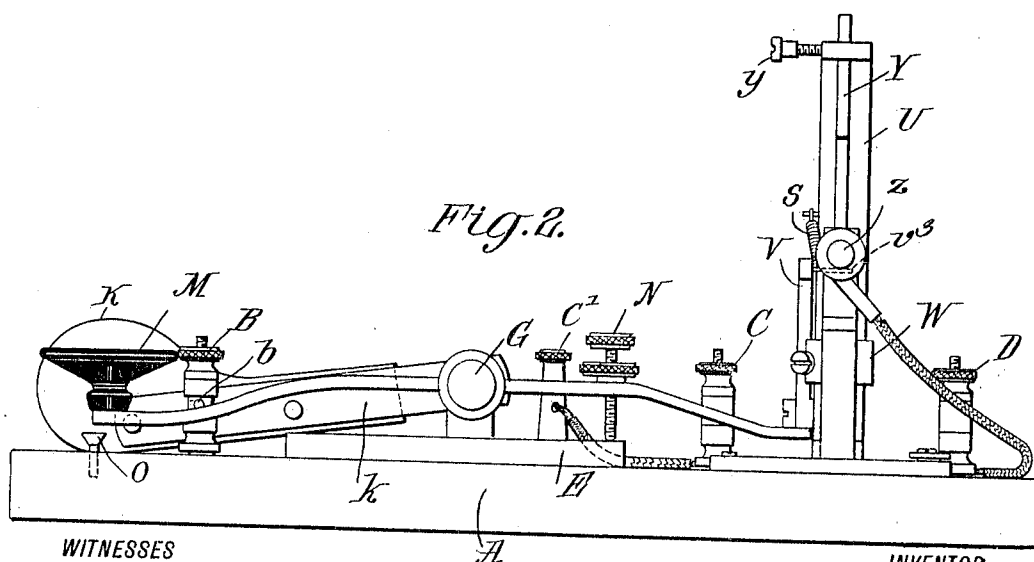
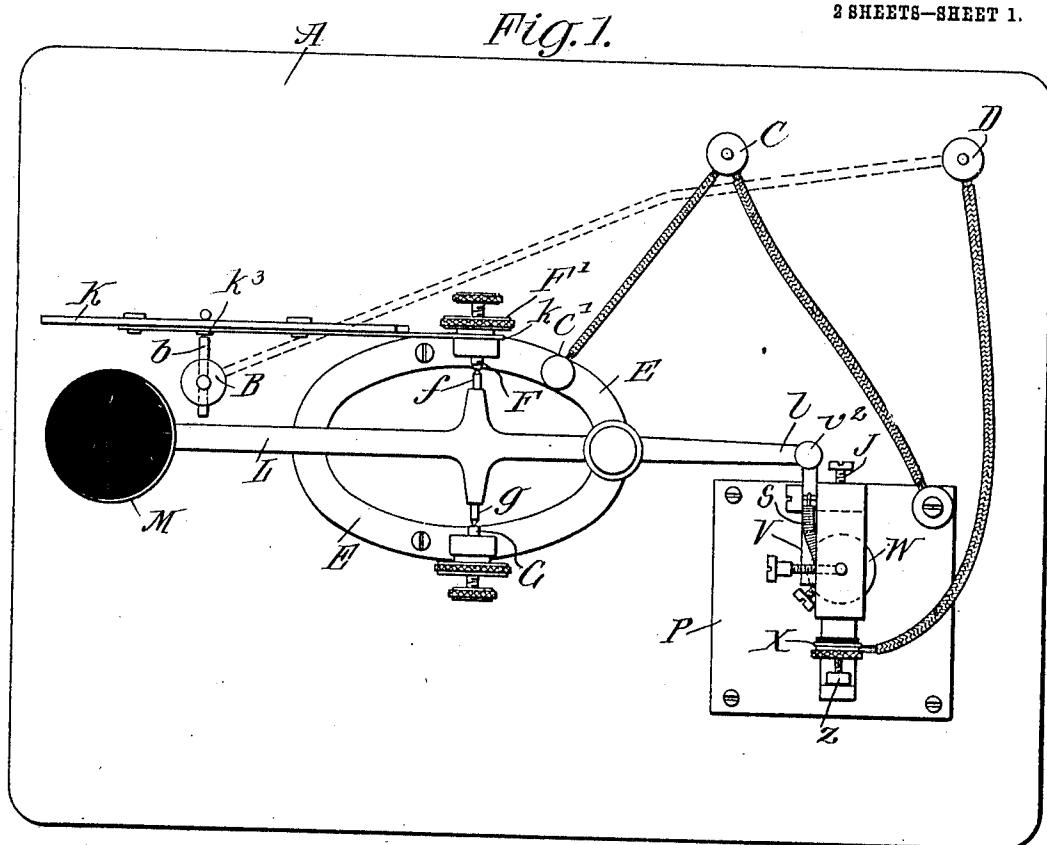


W. McL. JACKSON.
TELEGRAPH INSTRUMENT.
APPLICATION FILED MAY 27, 1909.

954,298.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

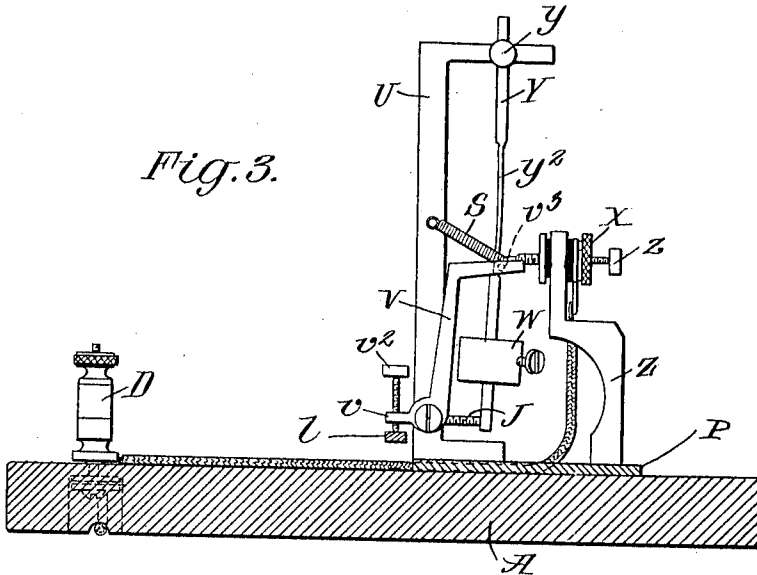


Fig. 4.

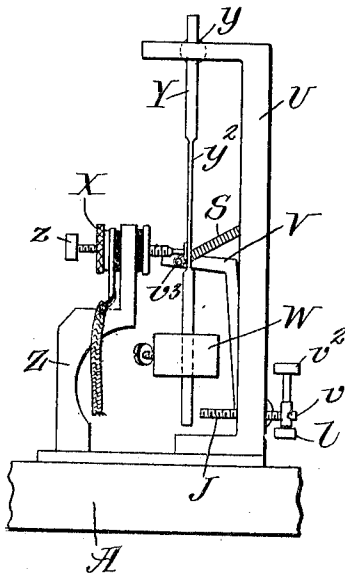
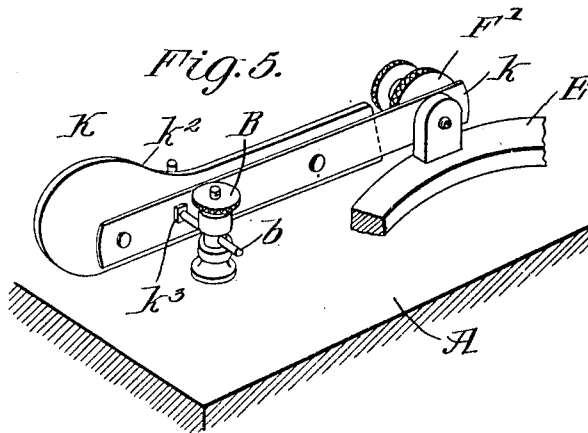


Fig. 5.



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UNITED STATES PATENT OFFICE.

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TELEGRAPH INSTRUMENT.

954,298.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed May 27, 1909. Serial No. 498,628.

To all whom it may concern:

Be it known that I, WILLIAM McLEAN JACKSON, a citizen of the United States, and a resident of Gastonia, in the county of Gaston and State of North Carolina, have made certain new and useful Improvements in Telegraph Instruments, of which the following is a specification.

My invention relates to devices for facilitating the transmission of messages by means of telegraph instruments, and it consists in the constructions, combinations and arrangements herein described and claimed.

The main object of my invention is to provide means whereby the "dots" which are used in the ordinary Morse telegraph code may be made by the single pressure of a key, thereby doing away with the staccato movement of the finger of the operator. The long continued use of this movement causes the finger and hand of the operator to become fatigued and often results in telegraphers' paralysis.

A further object of my invention is to provide means for automatically producing a series of "dots" by a single pressure of the key and for producing "dashes" by the pressure of another key while the first key is still depressed with the finger resting easily on it.

Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings in which similar reference characters indicate like parts in the several views and in which—

Figure 1 shows a plan view of a telegraph transmitter constructed according to my invention. Fig. 2 is a side view thereof. Fig. 3 is a detail view of the vibrator looking from the front of the instrument. Fig. 4 is a detail view of the vibrator looking from the rear of the instrument and Fig. 5 is a perspective view of the auxiliary key.

In carrying out my invention I provide a main base A bearing thereon the binding posts B, C, and D. Carried by the main base is a key base E upon which are the adjustable pivoted bearings F and G for the pivots *f* and *g* of the lever L. The key base also is provided with the binding post C'. The lever L is provided with an insulated finger button M and constitutes with the latter a key for sending "dots." The key is

provided with an adjustable contact member N which is designed to limit the movement of the key in one direction while the stop O limits the movement in the other.

The construction of the vibratory member and its operating lever is most clearly shown in Figs. 3 and 4. It consists of a metallic base P having secured thereto a U-shaped standard U. Pivotaly secured to the latter is a Z-shaped bell-crank lever V whose laterally extending portion *v* carries a thumb-screw *v*² arranged to be engaged by the end *l* of the lever L. The upper end of the Z-shaped bell-crank lever V has a laterally extending arm or pin *v*³ best shown in dotted lines in Fig. 2. Toward the lower part of the upright support U is an adjustable stop member J. The vibratory member consists preferably of a cylindrical weight W on the end of a rod Y which passes through an opening in the upper part of the support U being adjustably secured thereto by means of the set-screw *y*. The rod Y has a reduced central portion *y*² which constitutes a spring member and which is of sufficient resiliency to allow the cylinder W to vibrate back and forth. Secured to the base P is a second upright Z which is provided with the adjustable member *z* and the binding member X.

The construction of the auxiliary key K is clearly shown in Fig. 5. It consists of a piece of spring metal *k* which is clamped by means of the binding screw F¹ to the base E. Secured to the outer side of the strip *k* is the thumb piece *k*². The metal strip *k* is provided with a contact *k*³ arranged to engage the contact *b* of the binding post B.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

The binding posts C and D are the main binding posts to which the line wires extend. The binding post D is connected to the binding post X and also to the binding post B while the binding post C is connected with the plate P and with the binding post C' on the base E. It will be observed that when the button M is depressed the rear end of the lever L will press upwardly on the Z-shaped bell-crank lever V whose arm *v*³ normally presses the rod Y against the stop J through the action of the spring S on the standard U.

The normal position of the vibrating device is shown in Fig. 3 and in Fig. 4 the

rod Y which has been released by the pressure of the key M swings over and makes contact with the screw z. This is slightly beyond the vertical line of suspension of the rod Y which therefore vibrates back and forth and makes and breaks the circuit at the point of contact. Since the base P is connected with one of the main binding posts C and the contact member z is in direct connection with the binding post D, the current will be made and broken to produce the "dots". Now if a "dash" is wanted the operator presses the key K in a side-wise direction with his thumb. The circuit is made and broken as the thumb moves back and forth and since the binding post D is connected to the binding post B and the binding post C to binding post C', the circuit will be made and broken.

Let us assume that the operator wishes to send the word "fix". He first presses the button M thereby releasing the vibrator which begins to vibrate. As soon as the first connection is made which is indicated by a click of the sounder (each of these instruments being associated with a sounder in the ordinary manner) he presses the auxiliary key K with his thumb and holds it for the usual length of time *i. e.* for a length of time equal to that of three "dots". He then releases the auxiliary key and permits the vibrator which has been vibrating during this time to make one more contact thus completing the letter "f". After an interval he presses the button M permitting the vibrator to make two "dots" sending the letter "i". For the letter "x" the button M is depressed and held while the vibrator is making six contacts. After the first contact, however, the key K is moved laterally and held for an interval of three "dots" after which it is released, and the vibrator allowed to make two dots before the button M is finally released.

It will be observed that the movements required with this device are much less than those required in the ordinary telegraphic sender.

I am aware that similar devices have been provided for the purpose of doing away with the numerous movements for the sending of messages. I desire to call particular attention, however, to the fact that the auxiliary key which makes the "dashes" is worked by lateral pressure and as clearly explained in the examples given, it is worked in connection with the key for sending "dots". Moreover in sending a "dash" while the vibrator is operating the finger operating the button M rests directly thereon and the hand does not have to be held suspended while the auxiliary key is manipulated except with certain letters which begin with a "dash". The provision of a supporting means for the hand while the

auxiliary lever is being pressed greatly relieves the fatigue which may ensue when the auxiliary levers have to be depressed with the hand suspended.

I claim:—

1. In a telegraphic transmitter, a key arranged to be moved up and down, a support, a pendulum secured to said support, a contact, a lever arranged to be operated by said key for setting the pendulum in motion, means for holding the lever in engagement with the key and an auxiliary key in a shunt circuit with said pendulum.

2. In a telegraphic transmitter, a key arranged to be moved up and down, a support, a pendulum secured to said support, means for adjusting the length of the pendulum, a lever arranged to be operated by said key for setting the pendulum in motion, a spring for holding the lever in engagement with the key and an auxiliary key in a shunt circuit with said pendulum.

3. In a telegraphic transmitter, a key pivotally mounted for movement up and down, a support, a pendulum adjustably secured to said support, a contact arranged to be engaged by said pendulum, a lever pivotally mounted on said support for setting the pendulum in motion, a spring attached to the upper end of said lever and to the support for keeping the lever in engagement with the key and an auxiliary key in a shunt circuit with said pendulum.

4. In a telegraphic transmitter, a key arranged to be moved up and down, a support, a bell-crank lever and a vibrator secured to said support, an arm on said bell-crank lever arranged to hold the vibrator normally out of a central position, a contact arranged to be engaged by said vibrator when the latter is released, a spring secured to said bell-crank lever and adapted to hold the latter in engagement with the key and an auxiliary key having electrical connection with said vibrator and said contact and arranged to be moved in a lateral direction for sending dashes.

5. In a telegraphic transmitter, a base, a lever pivoted on said base for upward and downward movement, a spring secured to said base, a thumb piece secured to said spring, the faces of said thumb piece and said spring being disposed in vertical planes, a contact arranged at one side of the spring adapted to be engaged by the latter when the spring is moved laterally through pressure on the thumb piece and a vibrating device arranged to be actuated by the first named key, said vibrating device being in shunt with said spring.

WILLIAM MCLEAN JACKSON.

Witnesses:

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