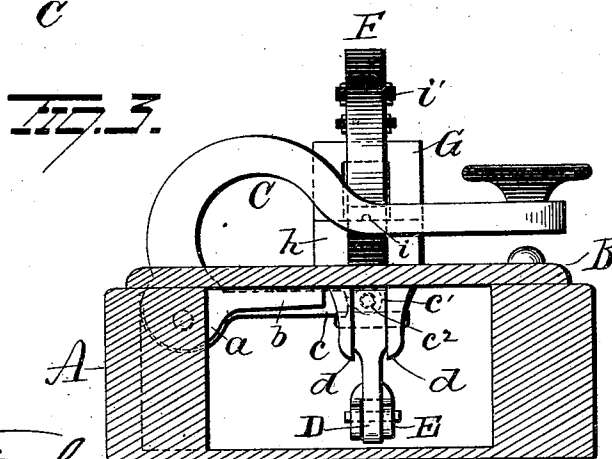
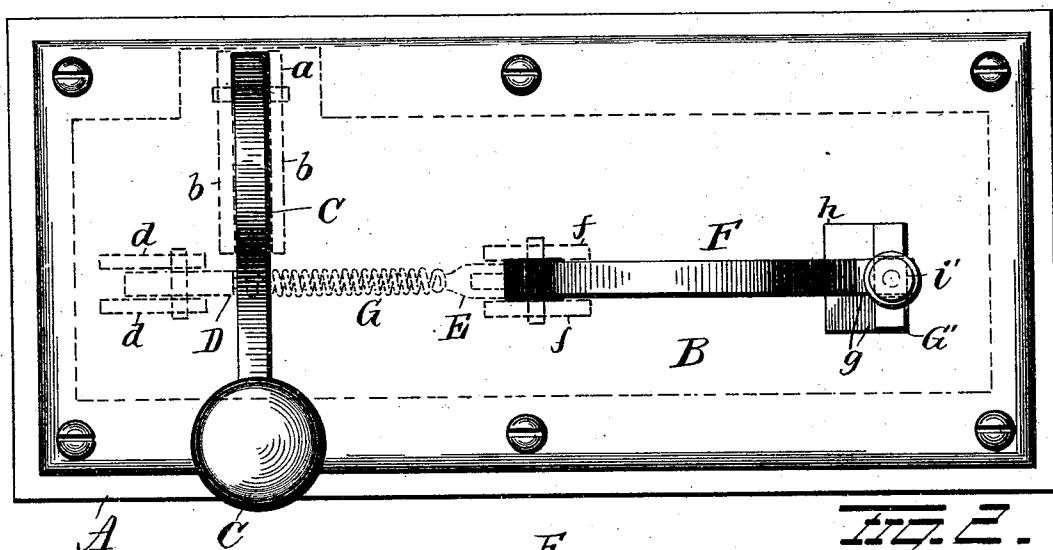
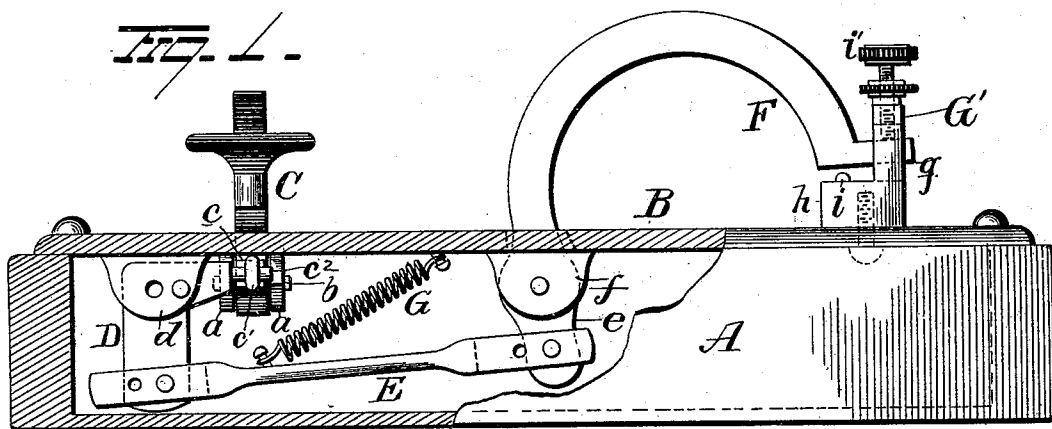


(No Model.)

B. F. BUTLER.
MECHANICAL TELEGRAPH INSTRUMENT.

No. 479,782.

Patented Aug. 2, 1892.



Witnesses
E. Nottingham
Harry B. Ames.

Inventor
B. F. Butler.
B. F. Aspinwall.
Attorney

UNITED STATES PATENT OFFICE.

BENJAMIN F. BUTLER, OF LOGANSFORT, INDIANA.

MECHANICAL TELEGRAPH-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 479,782, dated August 2, 1892.

Application filed May 16, 1892. Serial No. 433,172. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. BUTLER, a citizen of Logansport, in the county of Cass and State of Indiana, have invented certain new and useful Improvements in Mechanical Telegraph-Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in mechanical telegraph-instruments, its object being to produce a simple and efficient device by means of which students may learn the art of telegraphy without the employment of magnets, batteries, or electricity in any way.

A further object is to produce a mechanical telegraph-instrument which shall comprise a small number of parts capable of being moved from one place to another, as desired, and which shall perform all the mechanical functions of a telegraph-instrument.

A further object is to produce a mechanical or learner's telegraph-instrument which shall be cheap to manufacture and which shall be effectual in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation partly in section. Fig. 2 is a plan view of the base-plate of the instrument, showing the arrangement of the connections between the key and sounder. Fig. 3 is a sectional view.

A represents the base, which is preferably made hollow or in the form of a box, on the top of which the base-plate B of the instrument is secured in any suitable manner. In proximity to one end the base-plate B is provided on its under side with preferably integral lugs *a*, and between these lugs an opening is made for the accommodation of the key C. The key C projects over the base-plate, and its forward end is pivotally connected between the lugs *a*. From the lugs *a* flanges *b* extend toward the center of the base-plate, and between these flanges an arm *c* projects from the end of the key C. By providing the

flanges *b* the key will be guided in its movements and lateral motion thereof will be effectually prevented. The free end of the arm *c* is provided with an eye or loop *c'*, adapted to loosely embrace a pin *c²* in the end of one arm of a bell-crank lever D. The bell-crank lever D is pivotally connected between lugs *d*, preferably integral with the under face of the base-plate. In order to regulate the leverage of the key, the lugs *d* may be provided with a series of perforations, whereby the pivotal connection of said lever with the lugs *d* may be changed, as desired. The other arm of the bell-crank lever depends from its connection with the lugs *d* and is pivotally connected at its lower end with one end of a rod or bar E. The rod or bar E projects toward the opposite end of the base-plate and is connected at its other end to an arm *e* of the sounder F.

The sounder F projects through an opening in the base-plate and is pivotally connected between lugs *f*, preferably made integral with the under face of the base-plate. A series of perforations may be provided at each end of the rod or bar E, whereby the leverage of the instrument may be regulated. A spring G is attached at one end to the rod or bar E and at the other end to the base-plate. The sounder is provided at its free end with an outwardly-projecting arm *g*, which passes through a hollow post *G'*, by which said sounder may be prevented from lateral motion. The inwardly-projecting base *h* of the post *G'* is provided with a stud or pin *i* to receive the downstroke of the sounder. The upstroke of the sounder is received by an adjustable screw *i'*, passing through the top of the hollow post *G'*. By means of this screw the play of the sounder may be easily and quickly regulated.

By the use of this instrument a student can practice the art of telegraphy as readily as with telegraphic instruments constructed and arranged to be used on telegraph-lines. No battery and wires are necessary. The instrument is movable and may be operated in any position and can be easily and quickly put together. The leverage can be readily and quickly adjusted, as desired, and the base, being hollow, increases the sound of the instrument.

The instrument is very cheap, simple, and effectual in the performance of its functions. The instrument may be made of wood, rubber, and metal, as found to be most convenient and useful.

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

1. The combination, with a base-plate, of a
10 key pivotally connected therewith, a sounder pivotally connected with said base-plate, a rod or bar pivotally connected with said sounder, a bell-crank lever pivotally connected with the other end of said rod or bar, and
15 means for connecting said bell-crank lever with the key, and a single spring for retaining the key and sounder in their normal positions, substantially as set forth.

2. The combination, with a base-plate, of a
20 key pivotally connected therewith, a sounder pivotally connected with said base-plate, a bell-crank lever, a rod or bar connecting one arm of said bell-crank lever with the sounder, an arm connecting the other arm of the bell-
25 crank lever with a key, and a spring for maintaining the key and sounder in their normal positions, substantially as set forth.

3. The combination, with a base-plate, of
30 lugs on the under face thereof, a key pivoted between said lugs, flanges on the under face of the base-plate adjacent to said lugs, an arm projecting from the key and guided between said flanges, a sounder, and means for connecting said arm with the sounder, where-

by the operation of the key will operate the
35 sounder, substantially as set forth.

4. The combination, with a base-plate, of a key pivotally connected therewith, a sounder also pivotally connected with the base-plate,
40 lugs on the under face of the base-plate and provided with a series of transverse perforations for the reception of a pivot-pin, a bell-crank lever pivoted between said lugs, an arm on the key and connected with one arm of said bell-crank lever, and a rod or bar pro-
45 vided in each end with a series of perforations for the reception of pivot-pins, one end of said rod or bar being connected with the other arm of said bell-crank lever and the other end of said rod or bar being connected
50 with an arm of the sounder, substantially as set forth.

5. The combination, with a base-plate, of a key pivotally connected thereto, an arm projecting from said key, a bell-crank lever, a
55 pin in the end of one arm of said bell-crank lever, a loop or eye on the arm of the key adapted to embrace said pin, a sounder, and devices connecting said sounder with the other arm of the bell-crank lever, substantially as
60 set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

BENJAMIN F. BUTLER.

Witnesses:

JOHN HAWKINS,
HENRY F. JAX.