

(No Model.)

G. W. WHITE.
TELEGRAPHIC SOUNDER.

No. 421,214.

Patented Feb. 11, 1890.

Fig. 1.

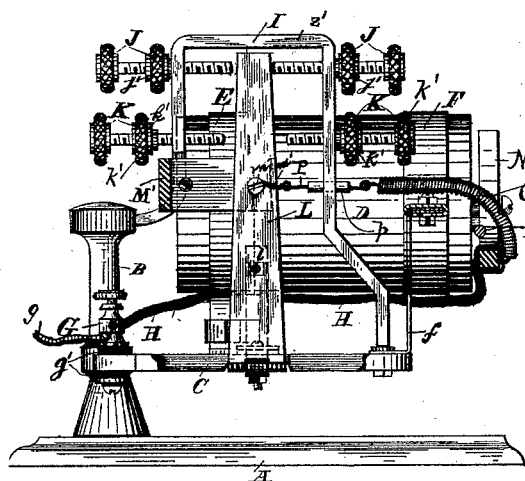


Fig. 2.

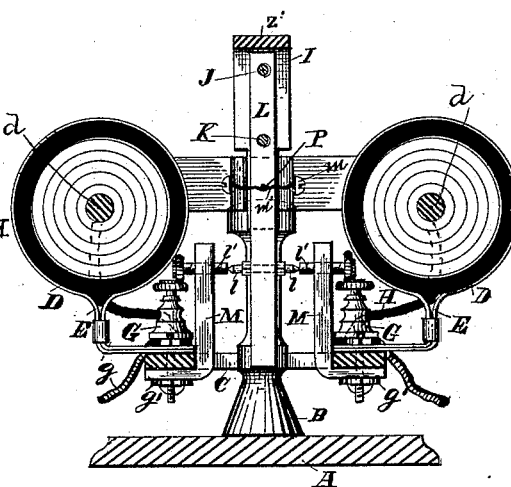


Fig. 3.

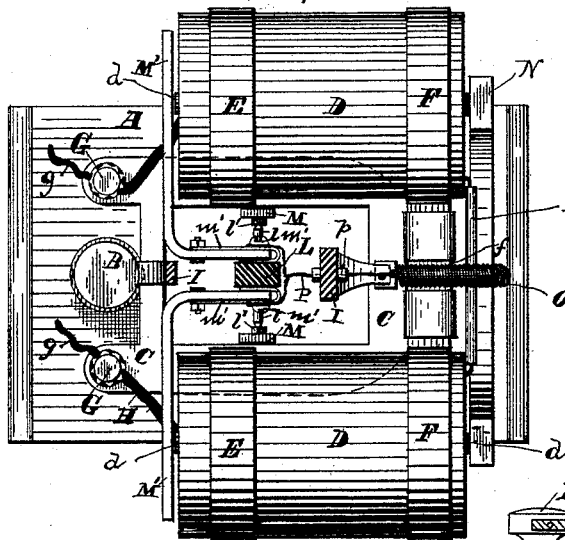
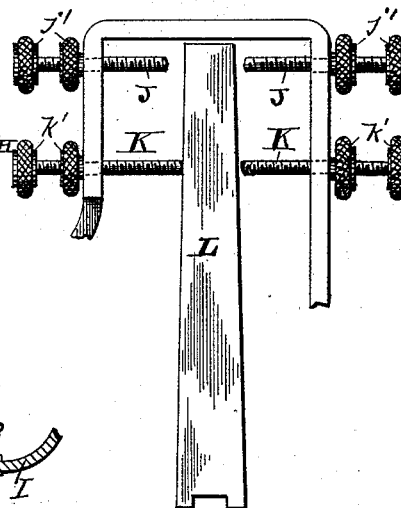
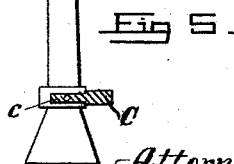


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON WHITE, OF HUNTSVILLE, ALABAMA.

TELEGRAPHIC SOUNDER.

SPECIFICATION forming part of Letters Patent No. 421,214, dated February 11, 1890.

Application filed September 24, 1889. Serial No. 324,892. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON WHITE, of Huntsville, in the county of Madison and State of Alabama, have invented certain new and useful Improvements in Telegraphic Sounders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side elevation of my improved sounder, one of the electro-magnets and its connected parts being removed to more clearly show the sounding devices. Fig. 2 is a transverse vertical sectional view of the same. Fig. 3 is a plan view of the sounder, the upper portion of the sounder-bar and frame being broken away to more clearly show the mounting thereof; and Fig. 4 is a detail view of the sounding devices. Fig. 5 is a detail view showing the attachment of the frames to the supporting-post.

This invention relates to improvements in sounders for electric telegraphs, the object being to provide a device which may be adjustable in such manner as to produce any one of three different sounds, as desired; and it consists in the construction and novel combination of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

Referring to the drawings by letters, in which similar letters of reference designate corresponding parts, A designates the supporting-base of the device, preferably of a non-conducting material—such as wood—and B designates a supporting-post secured to and rising from said base at a proper point. This base can be omitted and the post, which supports the entire frame of the device, screwed or secured to a desk or wherever it is desired to place the sounder.

C is a horizontal U-shaped bar having its legs connected near their ends by a transverse piece, which has a central offset *c* secured by proper means to the supporting-post a suitable distance above the base.

D D are similar horizontal electro-magnets having cores *d* situated a suitable distance apart and supported upon and above bar C

at their front ends by stay-straps E, the upper ends of which surround the corresponding coils, while their lower ends are attached by screws or otherwise to the corresponding legs of the U-shaped bar. The rear ends of the coils are connected by a transverse strap F, the respective ends of which surround the adjacent coils, and the center of which is connected by a vertical support *f* to the bend of the U-shaped bar.

G G are binding-posts of ordinary construction, to which are attached the line-wires *g g*, and which are seated upon the ends of the legs of bar C, having insulating-washers *g' g'* surrounding their stems both above and below said legs. The insulated wire H extends from one of said binding-posts to the rear of the adjacent electro-magnet, of which it forms the coil, crosses from the rear end of said magnet to the opposite magnet, forming the coil thereof, and from the rear of the latter magnet extends to the adjacent binding-post, so that the circuit is complete.

I is a vertical frame having its front leg secured to the top or head of the supporting-post and its rear leg secured to the middle of the bar C. The upper part of said frame is rectangular and its side bars are provided with two sets of opposite threaded openings, in the upper set of which engage the headed or thumb screws J, while similar screws K engage in the lower set of openings. Both sets of screws are engaged by jam-nuts *k'* and *j'*, respectively, by means of which nuts, when the points of the screws have been properly adjusted, they can be locked and set.

L is a vibratory sounder-bar mounted on a short transverse bar *l*, that has its ends journaled in uprights M M, secured to and rising from the legs of bar C. If desired, the ends of shaft *l* may be conical and may have bearings in conical recesses in the ends of adjustable screws *l'*, engaging threaded openings in uprights M M. The arm of the sounder-bar below shaft *l* extends to about bar C, between the legs of which it lies and serves to counterbalance its upper end, which extends nearly to the top of frame I and stands between the points of the pairs of screws J K, so that when said screws are set properly the said upper end as it vibrates

will strike those on opposite sides alternately.

The armature is composed of two opposite pieces $M' M'$, each secured to the upper end of the sounder-bar, below screws $J K$, by means of straps and screws m' , as shown, and projecting, respectively, on each side of the front leg of frame I , and thence bending laterally in opposite directions in front of the ends of the cores $d d$ on each side. It is evident that any alternate closing and breaking of the main current received by wire g will cause the armature to alternately approach and fall away from the electro-magnets, and will consequently vibrate the sounder-bar to which the armature is attached. This vibration will cause the upper part of the sounder-bar to alternately strike the points of the screws on opposite sides, and as these screws are adjustable, as described, they may be set so that the said arm will alternately strike only the points of the screws J , or only screws K , or one or both of each set of screws. The different adjustments of said screws and their position on frame I give different tones or sounds when their points are struck by the sounder-bar. When the points of the upper pair of screws J only are struck, the sound is loud, quick, and short; when the points of both pairs of screws are struck, the sound is softer and longer extended, and when the points of only the lower screws K are struck the sound is low and not quick. These results arise from the position of the screws in relation to the pivoted point of the sounder and their position on frame I . These different adjustments of the sounder are useful where a number of instruments are employed in the same room, as each operator can tell his own instrument; also, for distinguishing between dot and dash pauses and for office calls.

N is a downwardly-curved bar connected at its ends to the rear ends of cores d outside the coils, and having the rear end of a coiled spring O secured to its central portion. The said spring curves up over the transverse strap F , and its front end is connected by a wire P with the rear edge of the sounder-bar, the said wire passing through a perforated insulating-block p in an opening in the rear leg of frame I . The spring partially balances or cushions the weight of the armature when the sounder-bar and armature are falling away from the magnets and prevents too much jar. It can be placed in other positions for this purpose, if desired.

If desired, the sounder-bar may be provided with a spring for separating the armature from the cores quickly; but the weight of the armature is usually sufficient to separate them when the current is stopped.

Having thus described my invention, I claim—

1. The combination, in a telegraphic sounder, of the electro-magnets having their coils connected and the line-wires having said magnets in circuit, with the two sets of screws mounted in a metallic curved frame arranged between the magnets and adjustable inward and outward, the vibratory sounder-bar having its upper arm standing between the points of said screws, and the armature secured to said sounder-bar, substantially as described.

2. In a telegraphic sounder, the combination of the magnets in the main circuit, two sets of adjustable screws, the vibratory sounder-bar having its upper portion standing between the points of the members of each set of screws, the armature connected to said sounder-bar at one side, and the coiled spring having its inner end connected with the opposite side of the sounder-bar by a wire and its outer end secured to the central portion of a bar connecting the rear ends of the cores of the magnets, substantially as specified.

3. The herein-described telegraphic sounder, supported upon a single post B and comprising the U -shaped bar C , the two electro-magnets supported upon said bar, the binding-posts mounted upon the ends of the legs of said bar and connecting with the magnets, the vertical frame I , with its front leg attached to the post B and its rear leg attached to the bar C , the two sets of screws $J K$, having jam-nuts $j' k'$, the sounder-bar mounted on shaft l , which is journaled on uprights rising from bar C , the armature secured to the sounder-bar, the bar N , connecting the rear ends of the cores of the magnets, and the coiled spring O , having its rear end attached to said bar and its front end connected to the sounder-bar, all substantially in the manner and for the purpose specified.

4. The combination, in a telegraphic sounder, of the post B , the horizontal bar C , supported thereon, the frame I , the adjustable screws $J K$ thereon, the electro-magnets $D D$ on opposite sides of said frame, the vertical sounder-bar L , mounted on adjusting supporting-screws $l' l'$, and having its upper portion vibrating between the points of screws J and K , and the armature secured to said sounder-bar and projecting in front of the magnet-cores, the binding-posts, and line and magnet wires, all constructed substantially as specified.

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

GEORGE WASHINGTON WHITE.

Witnesses:

A. J. BENTLEY,
ED. BAYLOR STEWART.