

No. 627,799.

Patented June 27, 1899.

J. H. BUNNELL.  
TELEGRAPHIC SOUNDER.

(Application filed Aug. 31, 1898.)

(No Model.)

Fig. 1.

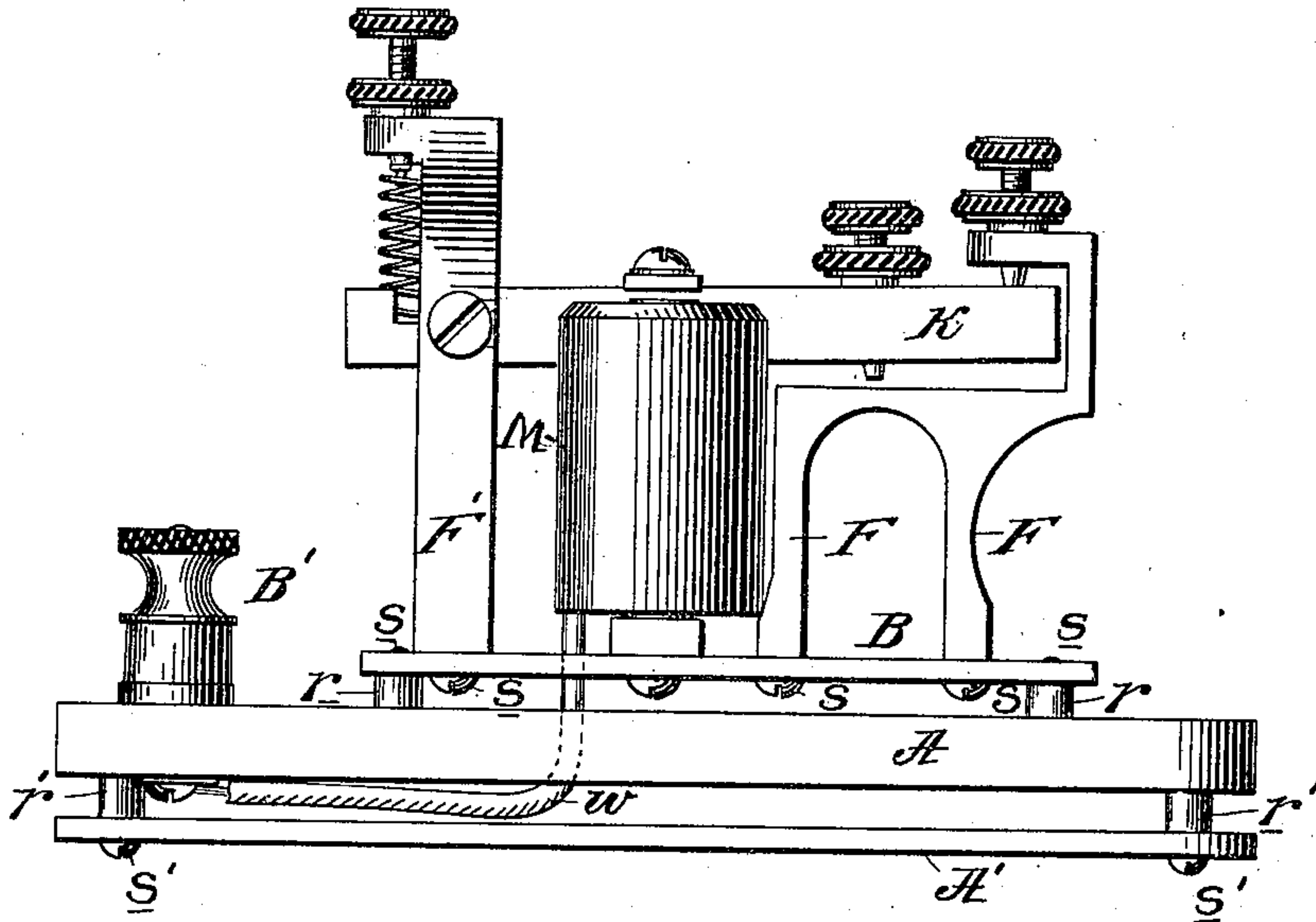
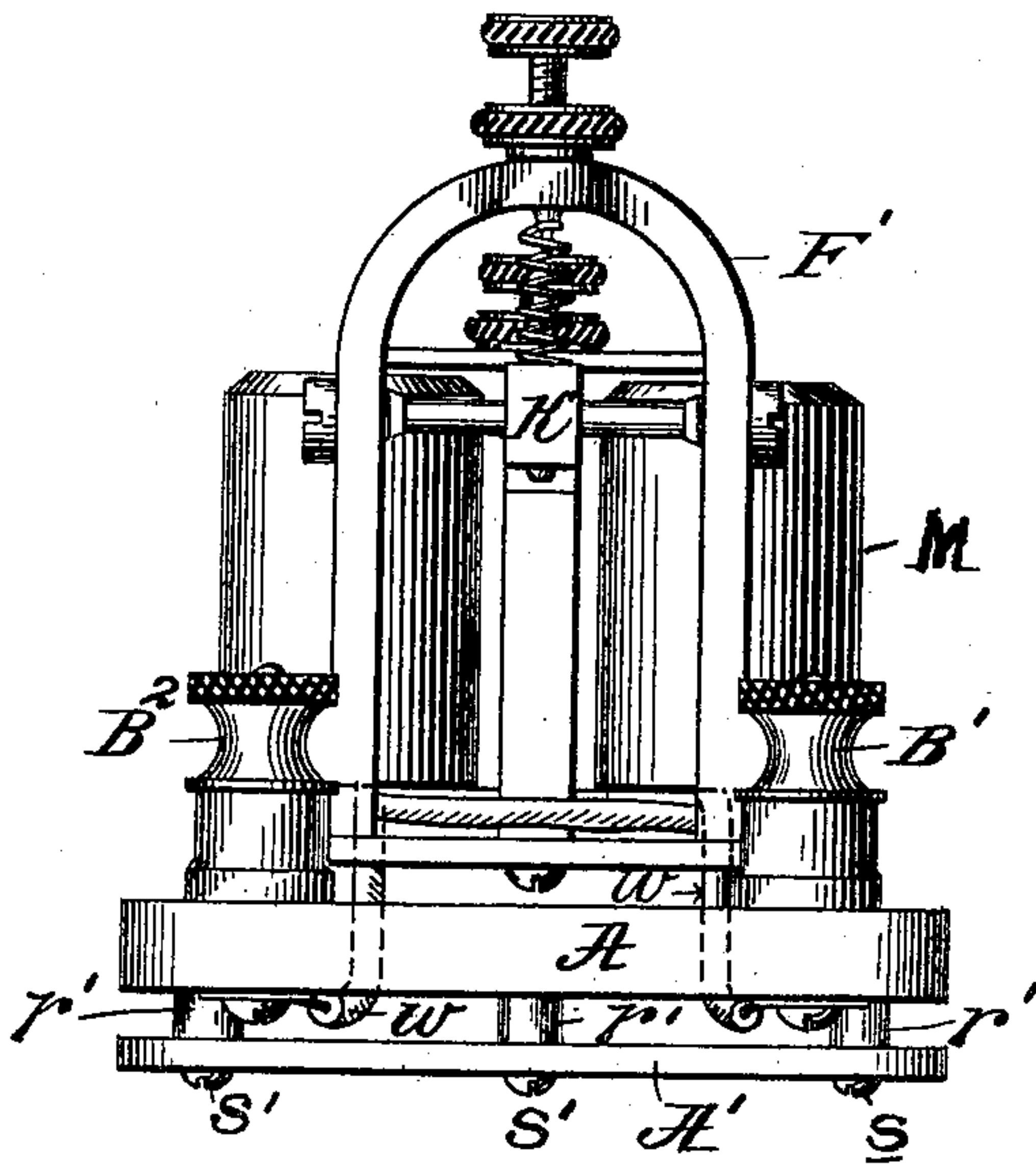


Fig. 2.



Witnesses  
Edward C. Howard.  
M. F. Keating

Inventor  
J. H. Bunnell  
By his Attorney  
Charles J. Kuntz.



# UNITED STATES PATENT OFFICE.

JESSE H. BUNNELL, OF NEW YORK, N. Y.

## TELEGRAPHIC SOUNDER.

SPECIFICATION forming part of Letters Patent No. 627,799, dated June 27, 1899.

Application filed August 31, 1898. Serial No. 689,934. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE H. BUNNELL, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have made a new and useful Improvement in Telegraphic Sounders, of which the following is a specification.

My invention is directed to improvements upon an invention disclosed in a prior patent granted to me on the 7th day of May, 1895, and numbered 538,816; and its objects are, first, to provide means for obtaining better sonorous results than is possible with the invention disclosed in the aforesaid patent, and, second, to provide means for effectually protecting a thin wooden base like that disclosed in my prior invention in such manner as to prevent damage thereto during shipment and also to give to the entire structure such strength and stability as will make it possible to construct the wooden base or diaphragm of very thin sonorous material, such as wood.

My invention will be understood by referring to the accompanying drawings, in which—  
Figure 1 is a full-sized side elevational view illustrating the same, and Fig. 2 an end elevational view of the instrument as seen looking at Fig. 1 from the left toward the right hand side of the drawings.

Referring now to the drawings in detail, B represents a metallic resonator base or plate for the instrument proper, said base or plate being supported at a plurality of points, in the present instance shown as three, by metallic washers *r r r* and screws *s s s*, extending downward into a second resonator base or plate A, preferably of wood and sufficiently thin to give the best sonorous or resonating effects. I find in practice that such base or plate A should be about three-eighths of an inch in thickness, although the thickness may vary according to the resonating nature of the wood or material from which it is constructed. This second base or plate A is in turn supported at a plurality of points, preferably at three, as before, by metallic washers *r' r' r'* and screws *s' s' s'*, the latter extending upwardly through a protecting base or plate A' into the base or plate A, said base or plate A' being preferably of aluminium and of the thickness shown.

F F represent the anvil of the sounder, se-

cured to the upper resonator base or plate B by screws *s s*, extending upwardly there-through, said anvil being provided with the usual limiting or adjusting screw.

M represents the electromagnet, secured directly to the upper resonator base or plate B by a screw at a point near its middle and provided with the usual insulated conductors *ww*, running to binding-posts B' B<sup>2</sup>, secured at one end to the second resonator base or plate A.

F' represents the armature-yoke, secured by screws directly to one end of the upper resonator base or plate B and provided with trunnion-screws for pivotally supporting the armature-lever K in the manner shown, the usual adjusting-screw being provided at one end of the armature and a retractile spring and adjusting-screw at the opposite end thereof. The anvil F F, electromagnet M, armature-lever K, wires *ww*, and binding-posts B' B<sup>2</sup>, together with the adjustable parts shown, constitute the operative parts well known in existing forms of telegraphic sounders.

In my prior patent, No. 538,816, granted May 7, 1895, I have described and claimed a resonator base or plate supported at a plurality of points within its outer edges and not in contact with the main base of the instrument at any point or points, excepting those required for the supports, the edges of the resonator-plate being free to respond to vibrations communicated by the anvil, seated or supported within the area inclosed by the supporting-points.

I have discovered that increased sonorous or resonating effects may be obtained by supplying additional resonator bases or plates and that the best effects are to be had by constructing at least one of said bases or plates of thin sonorous or resonating wood, the base or plate A in the present instance being, as before described, of this nature. It is also an essential element in the present improvement that the edges of all of the bases or plates B, A, and A' shall be free or unsupported, except at such points of support as will give the best results, in this instance three points of support for each base or resonator-plate, as *r r r r' r' r'*, said plates being secured together by screws *s s s s' s' s'*, as described. The third base or plate A' being of metal also



acts as a protecting medium to the thin wooden plate A, thereby making it possible to construct said intervening plate of much thinner material than would be possible where wood alone was used.

I do not limit myself to any definite number of interconnected sonorous or resonator bases or plates less than three, this feature of my invention being an improvement upon the invention disclosed in my prior patent to the extent that increased sonorous or resonating effects are had by the addition of further resonator bases or plates so interconnected or related that the intermediate base or plate may be of thin resonating material, such as wood, and the interconnections such that the edges of all of the bases or plates may vibrate freely under the action of the anvil supported directly by the upper base or plate.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A telegraph-sounder having a compound base made of three or more interconnected plates, one of said plates being of wood and rigidly held between the others, and in such manner that the edges of all of them shall be free to vibrate the lower plate of the set being of metal and constituting a means for protecting the others, substantially as described.

2. A telegraph-sounder consisting of an electromagnet, an anvil, and armature-yoke

rigidly secured to a resonator base or plate, the armature-yoke being provided with means for pivotally supporting the armature-lever over the magnet and the anvil; in combination with two additional bases or plates, all of said bases or plates being so interconnected that their edges are free to vibrate under the action of the anvil and the armature-lever the lower plate of the set being of metal and adapted to afford protection to the other plates, substantially as described.

3. A telegraph-sounder having three or more base-plates interconnected with each other at independent points of support, so that their edges are all free to vibrate, one of said base-plates being of wood and the upper one supporting directly the sounder-magnet, the anvil and the yoke of the armature-lever; in combination with limiting and adjusting screws for regulating the effects of the instrument the lower plate of the set being of metal and acting as a protecting medium to the thin intermediate wooden plate or plates, substantially as described.

In testimony whereof I have hereunto subscribed my name this 24th day of August, 1898.

JESSE H. BUNNELL.

Witnesses:

C. J. KINTNER,  
M. F. KEATING.