

No. 697,002.

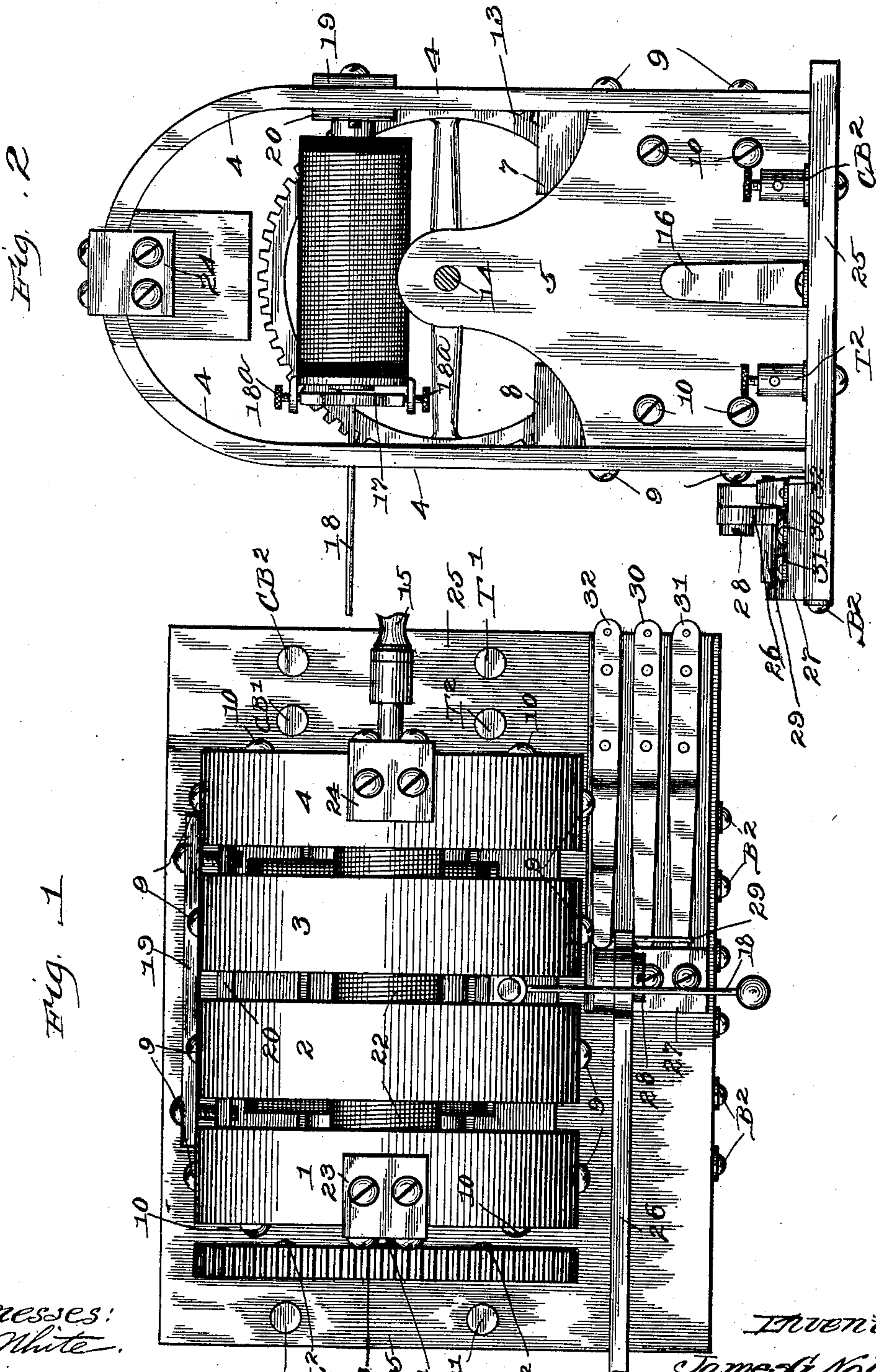
Patented Apr. 8, 1902.

J. G. NOLEN.  
COMBINATION TELEPHONE INSTRUMENT.

(Application filed Aug. 7, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:  
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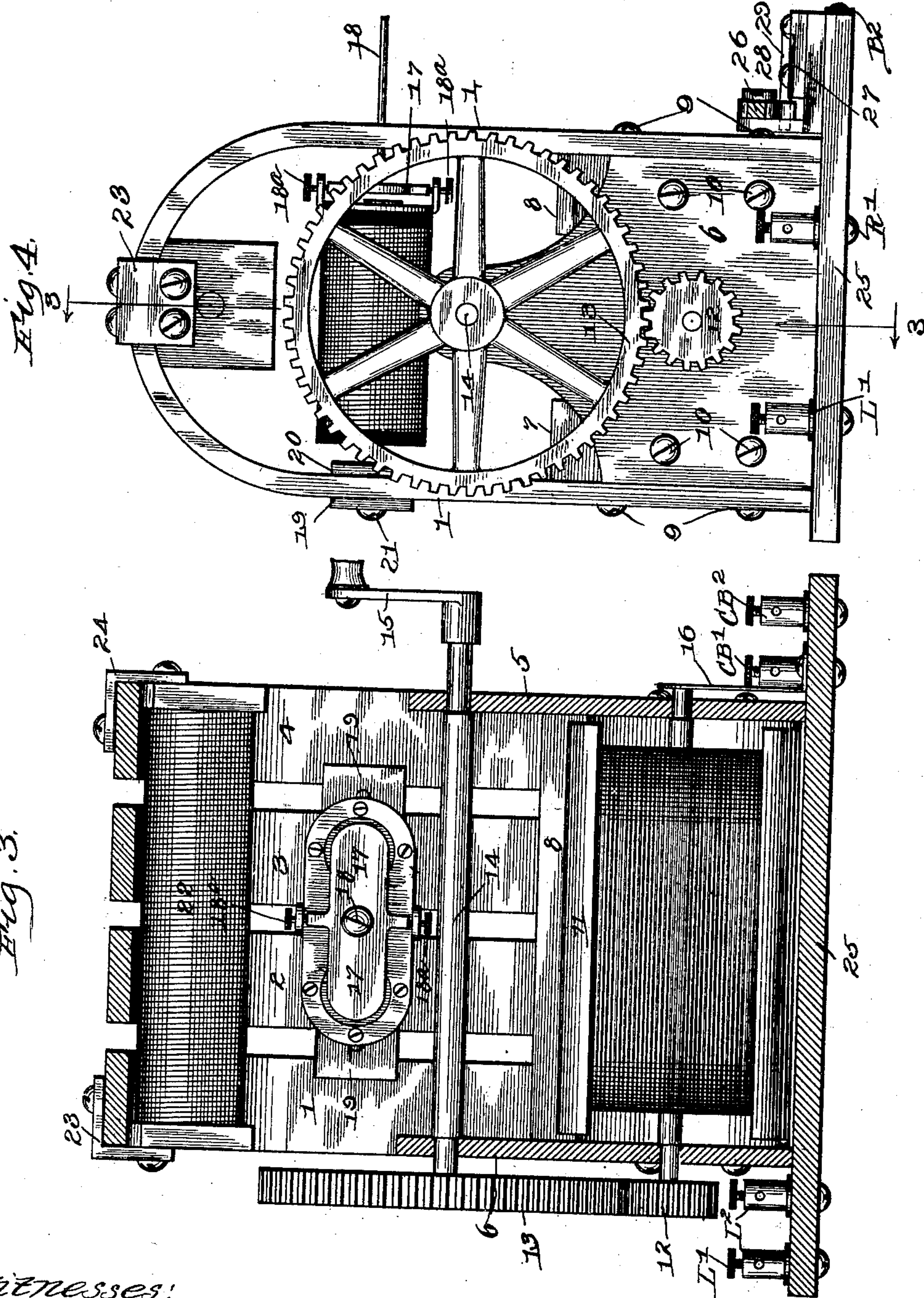
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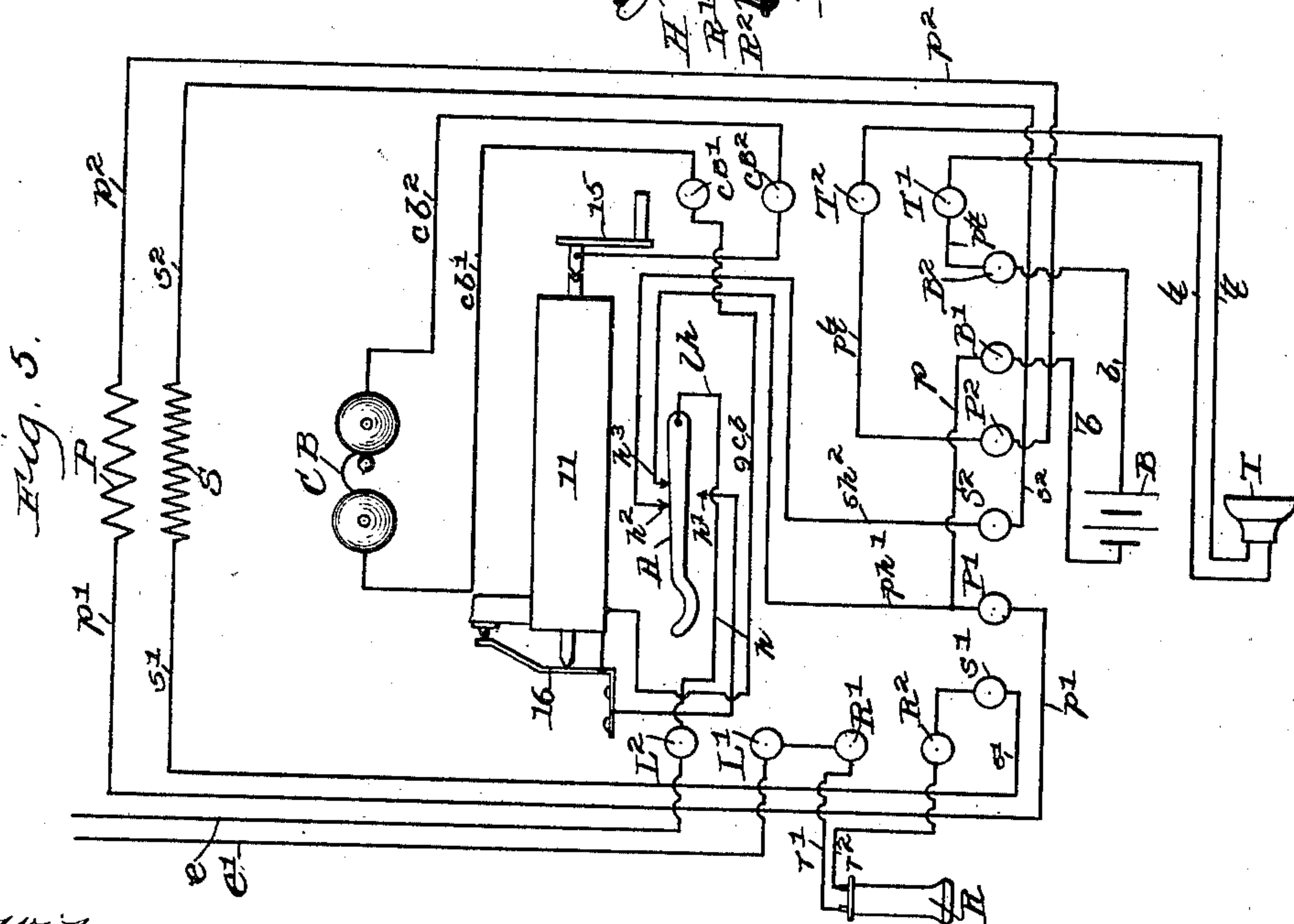
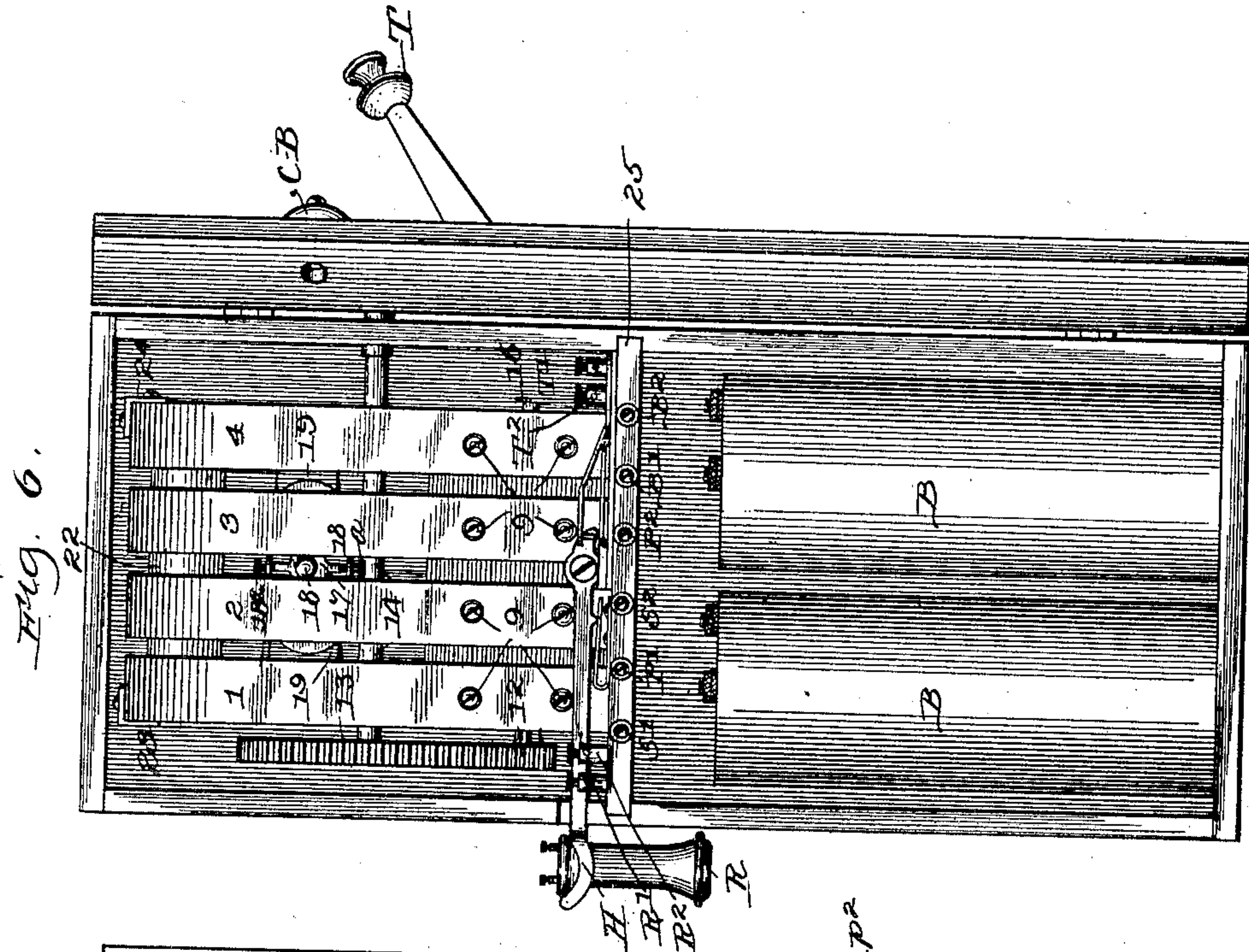
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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

JAMES G. NOLEN, OF CHICAGO, ILLINOIS.

## COMBINATION TELEPHONE INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 697,002, dated April 8, 1902.

Application filed August 7, 1901. Serial No. 71,218. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES G. NOLEN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Combination Telephone Instruments; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in combination telephone instruments in which a call-bell generator, a bell-ringer, an induction-coil or transformer, and the switch-hook are all combined and constructed in one integral self-contained unit.

The object of my invention is to improve the quality of each of the different instruments combined in the single unit by virtue of this construction and to so combine the associated instruments composing a telephone set in one construction as to avoid the necessity of making complicated electrical connections at the time when the instrument is placed in service, all of the connecting binding-posts being placed in accessible positions upon the insulated base upon which my instrument is mounted.

Another object of constructing the devices in the manner shown is to render all of the parts accessible for inspection and repairs.

Another object of my invention is to place the entire apparatus, consisting of the many assembled elements of a telephone set, as a single unit in a box or case in which the batteries are also contained, the base of the instrument comprising the division of the said box or case, providing thereby two compartments therein, one for containing the batteries and the other the combination telephone instrument aforesaid.

With these and other objects in view, which will be obvious to those skilled in the art from the description hereinafter, my invention consists in the features, details of construction, association, and combinations of elements, which will first be described in connection with the accompanying drawings and then particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of my instrument mounted upon its base and removed from the case. Fig. 2 is a side eleva-

tion of the same. Fig. 3 is a section through line 3 3 of Fig. 4. Fig. 4 is a side elevation viewing the instrument from the opposite side of that shown in Fig. 2. Fig. 5 is a diagram of connections, showing the various elements or instruments in diagrammatic relation. Fig. 6 shows an elevation of the box or case containing the instruments in place and the batteries contained in a lower compartment of the said case.

In all of the views the same numerals and letters indicate similar parts.

1, 2, 3, and 4 are permanent horseshoe-magnets.

5 and 6 are the housings which contain the bearings for the shaft and armature.

7 and 8 are the pole-piece extensions between which the armature of the generator revolves. 9 and 10 are the screws which hold the said pole-pieces in position with reference to the permanent magnets. 11 is the magneto-generator armature, designed to be revolved between the said pole-pieces by means of the gearing 12 and 13.

14 is the shaft upon which the gear-wheel 13 is mounted. 15 is a handle which projects through the side of the case and which is used as a means for revolving the said shaft and armature.

16 is the connection by which current is imparted to one terminal of the armature in the usual manner.

The automatic shunt-breaker or circuit-opener for admitting the generator into the main circuit is not shown in these drawings—that is, the usual shunt around the armature of the generator—the particular form of which is not essential in my present invention.

A polarized alternating-current call-bell, magnets, and armature are mounted between the legs of the steel permanent magnets, above the generator field-poles thereof, in such a manner as to tend to short-circuit the permanent field steel magnets 1, 2, 3, and 4.

The call-bell ringer is of the ordinary type, having a polarized armature 17, the bell-striker 18 being attached thereto and passing out through the tines of the permanent magnet and extending through the door of the case in which the instrument is contained into the proper position for striking the alarm-bells contained on the outside of the door.



The armature 17 is provided at 18 on the frame of the bell. The bell-magnet and armature are self-contained and are supported upon either one of the poles of the permanent field-magnets by means of a clamp composed of two plates 19 and 20 and the screws 21.

I support my induction-coil 22 by means of angle-brackets 23 and 24, which are fixed to the outer permanent magnets 1 and 4, as shown in Fig. 3, the induction-coil being located in the space above the call-bell ringer. The call-bell ringer is bodily susceptible of a vertical adjustment by means of the clamp composed of the bars 19 and 20. When it is lowered, it approaches the poles of the field-magnet and is more positively influenced by the permanent field-magnets 1, 2, 3, and 4. When it is raised, it is less positively influenced by the said magnets, so that by this means it may be adjusted to meet the various conditions.

25 is a base of insulating material, preferably of hard rubber or vulcanized fiber. Upon this base all of the binding-posts of the entire instrument and the hook 26 and its connections are mounted. The receiver-hook 26 is pivoted to a bracket 27 at the point 28. The short end of the lever carries a laterally-extending pin 29, which is designed to have electrical contact with the lower springs 30 and 31 when the hook end is up and the upper spring 32 when the receiver is on the hook.

The binding-posts  $R'$  and  $R^2$  are the terminals to which the two strands of the telephone-receiver cord are attached.

$L'$  and  $L^2$  are the line-terminals.

$B'$  and  $B^2$  are the battery-terminals.

$T'$  and  $T^2$  are the transmitter-terminals.

The secondary of the induction-coil is provided with terminals  $S'$  and  $S^2$ .

The primary of the induction-coil is pro-

vided with terminals  $P'$  and  $P^2$ , and the terminals of the call-bell are  $CB'$  and  $CB^2$ . By this arrangement any of the instruments contained in the associate combination may be disconnected without disturbing the position or connections of any other of the instruments in the combination.

The connections providing circuits for the various elements in my combination instrument are shown in diagram, Fig. 6, are plain to those skilled in the art, and for this reason will not require further explanation.

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

1. A self-contained, combination telephone instrument comprising a base, a generator mounted on said base, a call-bell and induction-coil mounted on said generator, a switch-hook mounted on said base, and terminal binding-screws on said base for each element of said combination, substantially as set forth.

2. A self-contained, combination telephone instrument, comprising a base of insulating material, a current-generator mounted thereon, a switch-hook mounted on an extension of said base, an induction-coil supported between the magnets of said generator, a call-bell ringer supported by said magnets between the poles thereof and said induction-coil and terminal binding-screws on said base for each element of said combination, substantially as set forth.

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

JAMES G. NOLEN.

In presence of—  
FORÉE BAIN,  
M. F. ALLEN.