

(No Model.)

5 Sheets—Sheet 1.

C. V. BOUGHTON.  
SIGNAL TELEGRAPH.

No. 509,290.

Patented Nov. 21, 1893.

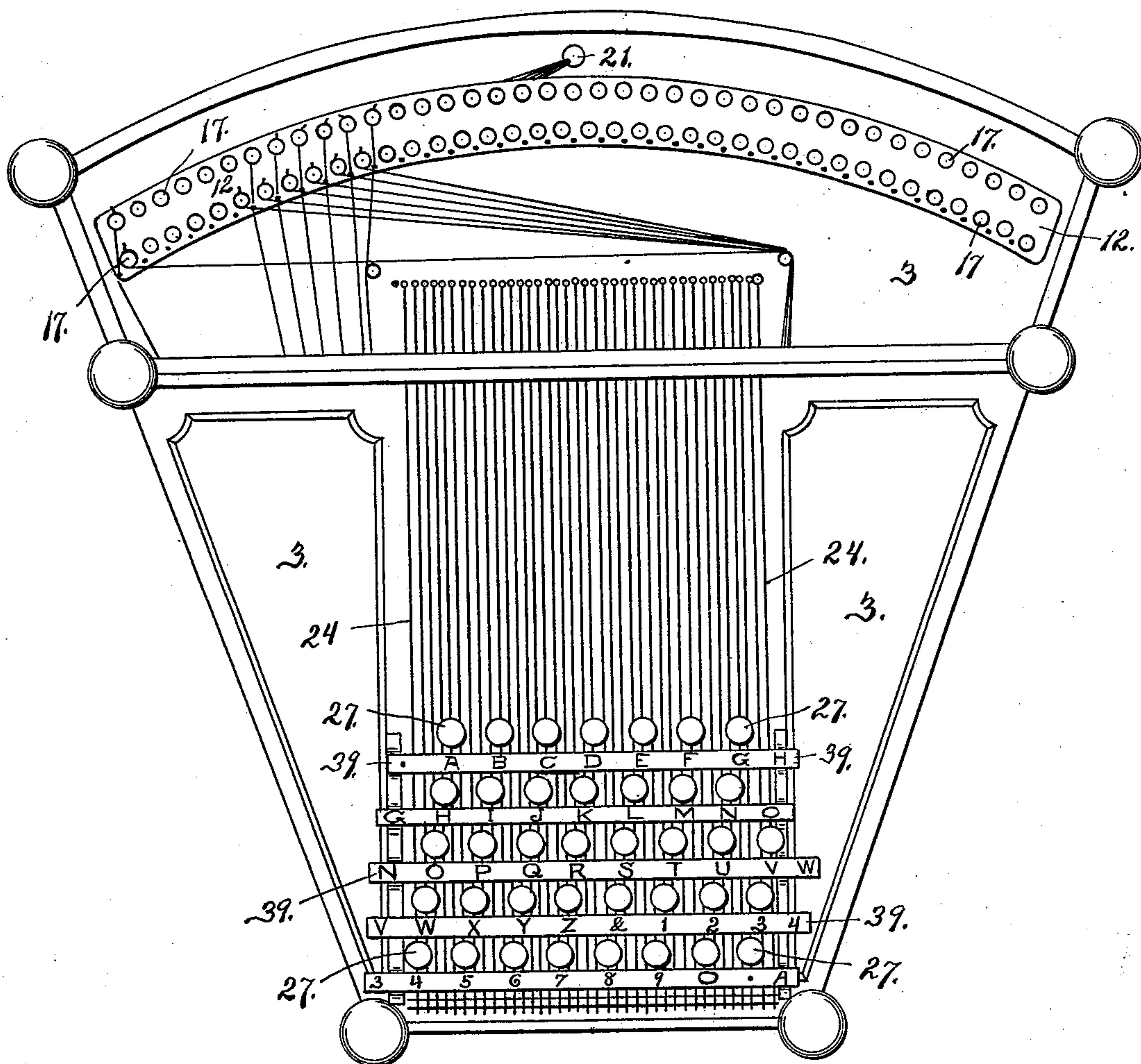


Fig. 1.

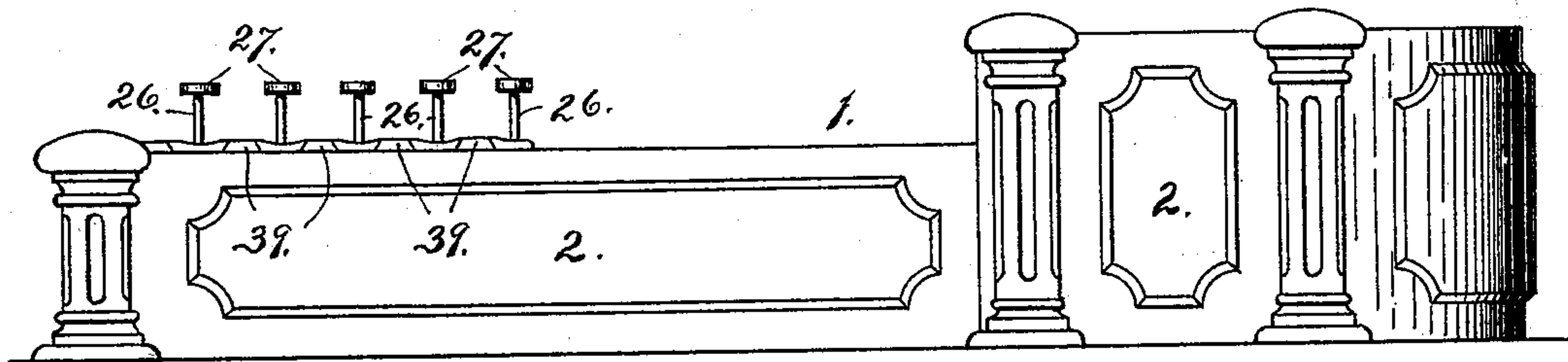


Fig. 2.

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By Miller and Hoddick.  
Attorneys.

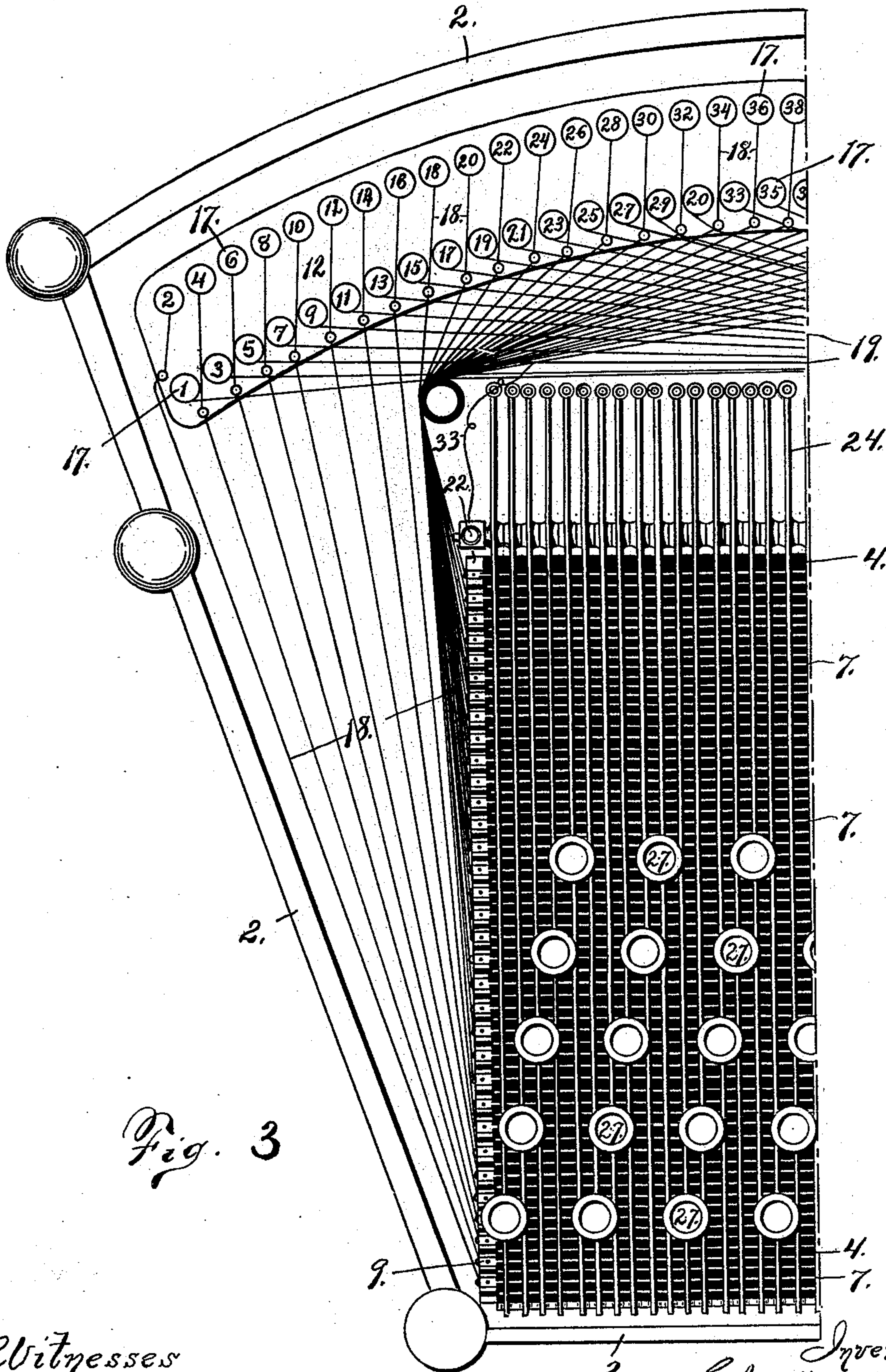
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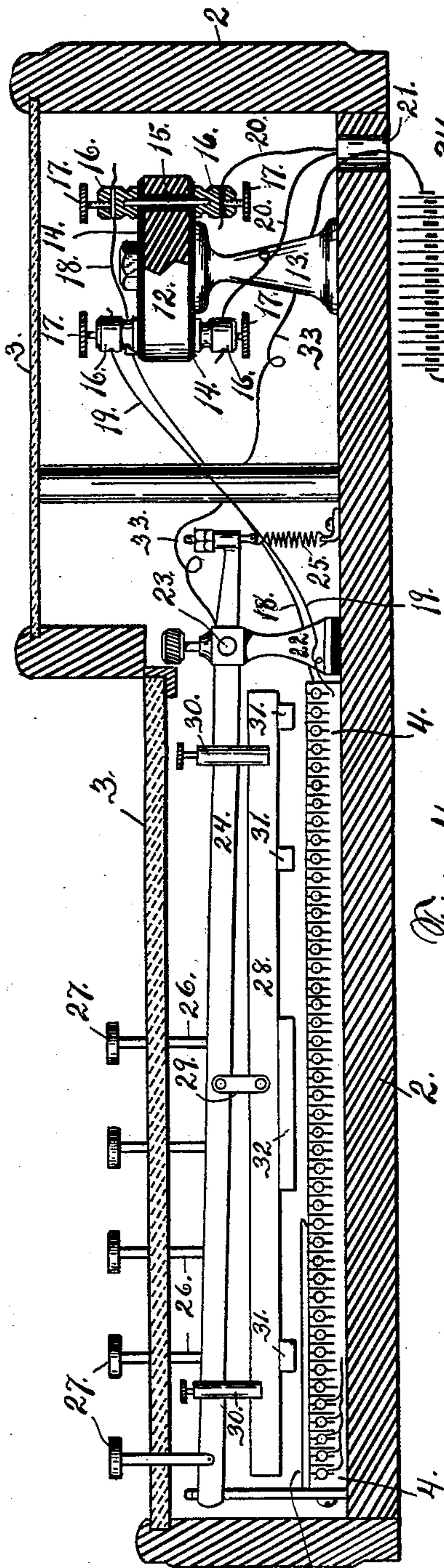


Fig. 4.

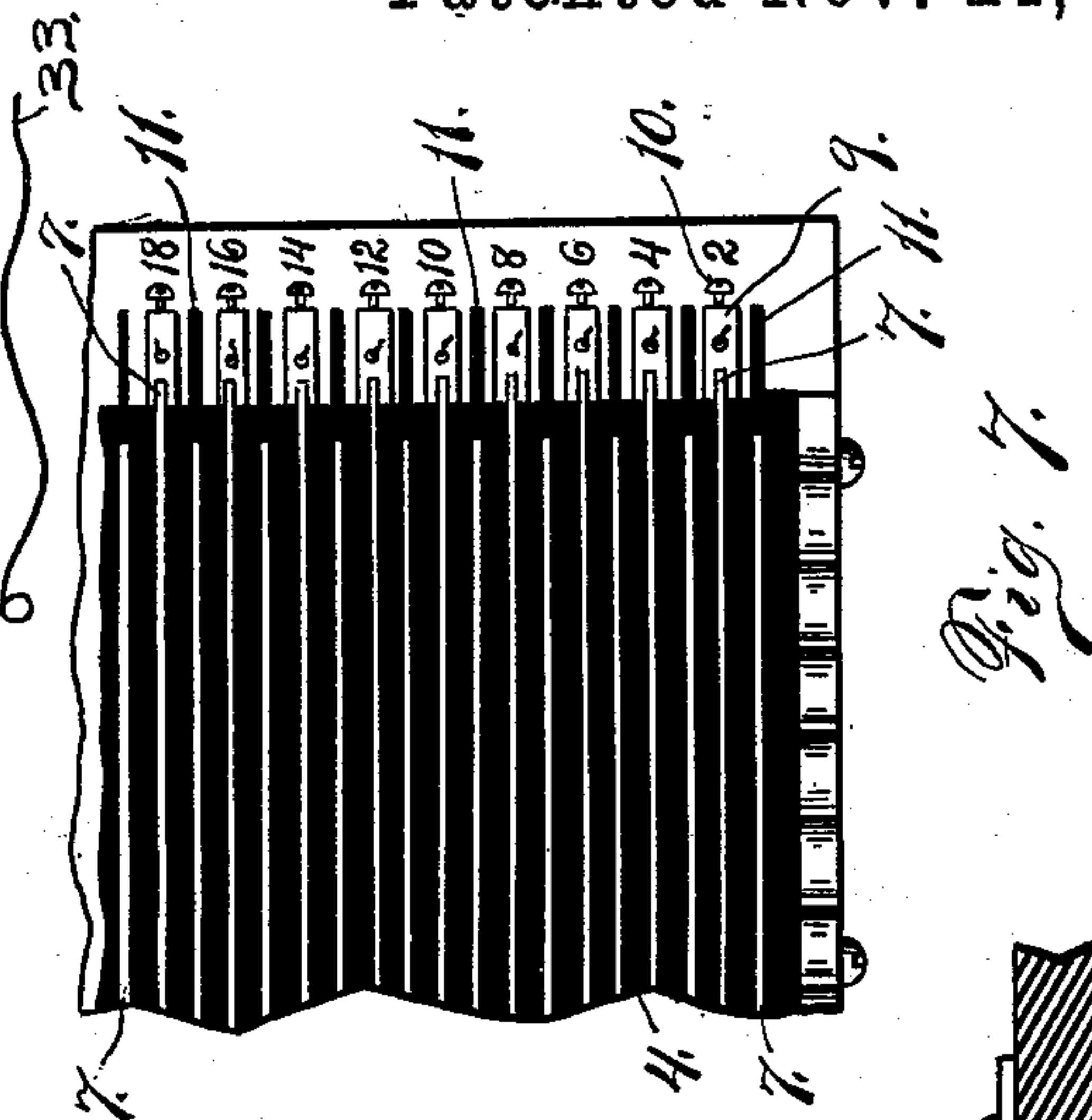


Fig. 7.

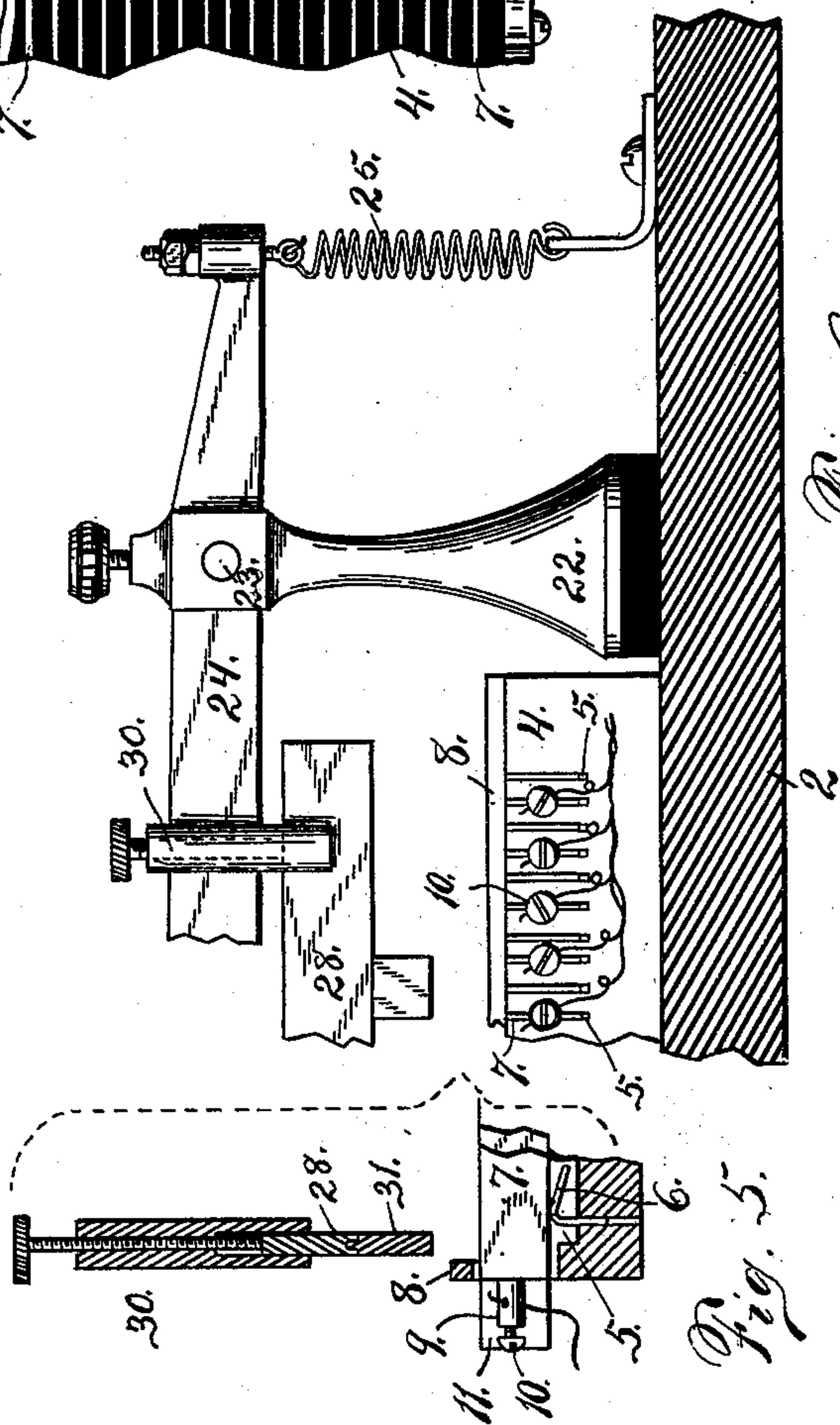


Fig. 6.

Fig. 5.

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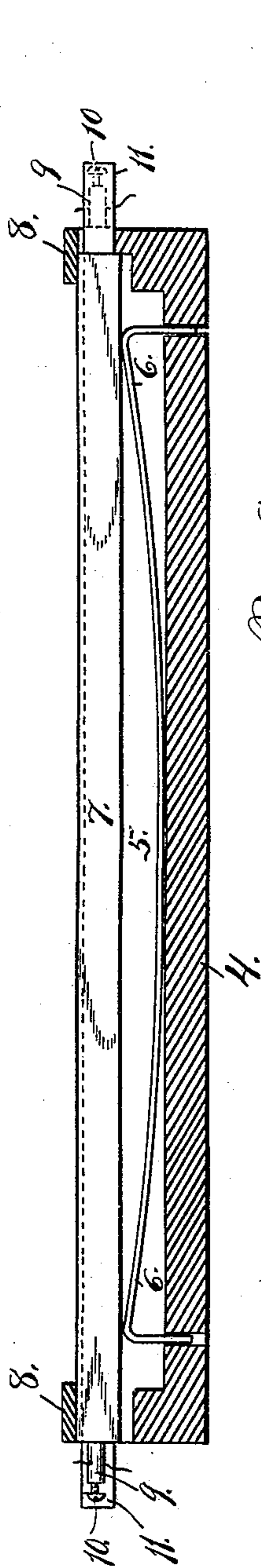


Fig. 8.

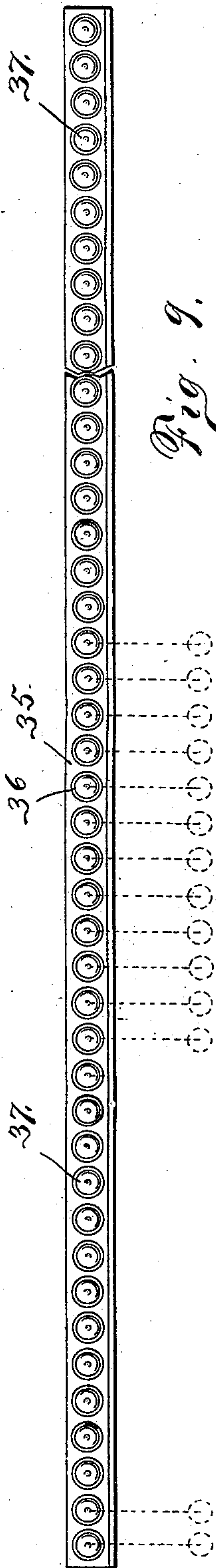


Fig. 9.

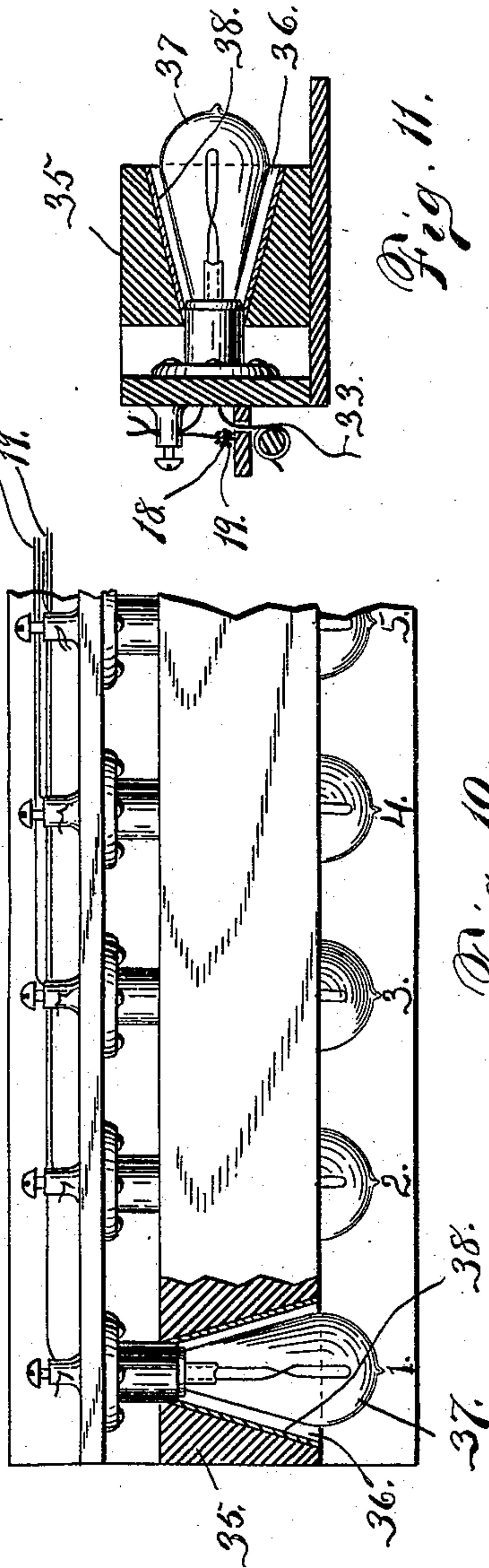


Fig. 10.

Fig. 11.

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(No Model.)

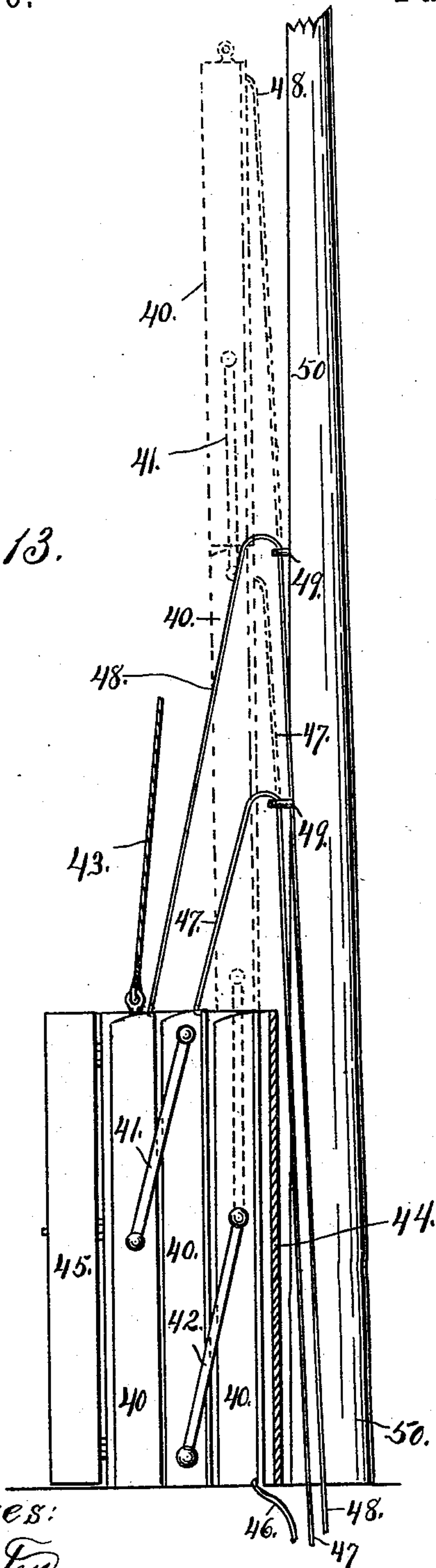
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C. V. BOUGHTON.  
SIGNAL TELEGRAPH.

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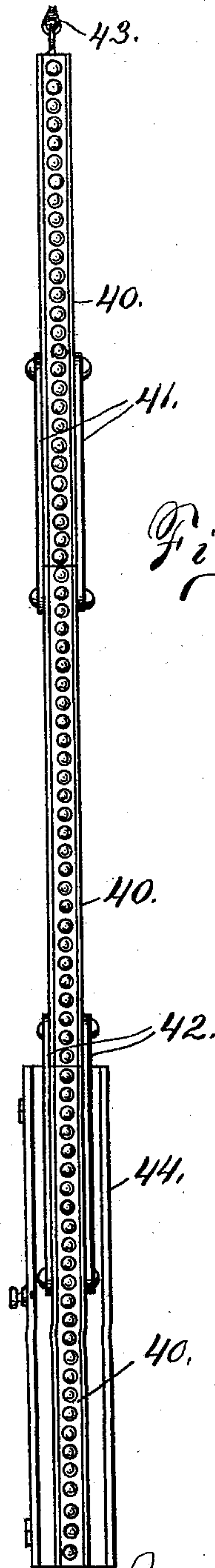
Patented Nov. 21, 1893.

*Fig. 13.*



*Witnesses:*  
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*Fig. 12*



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# UNITED STATES PATENT OFFICE.

CLAUDIUS V. BOUGHTON, OF BUFFALO, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE BOUGHTON TELEPHOTOS COMPANY, OF SAME PLACE.

## SIGNAL-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 509,290, dated November 21, 1893.

Application filed November 26, 1892. Serial No. 453,178. (No model.)

*To all whom it may concern:*

Be it known that I, CLAUDIUS V. BOUGHTON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Signal Telegraphy; 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates particularly to certain improvements in signal telegraphy for which Letters Patent No. 482,780 were granted to me on the 20th day of September, 1892. That invention consisted essentially of a number of electric lights arranged in a continuous line and a number of keys arranged upon a board, each key being marked with a letter of the alphabet and electrically connected with the necessary lights to form the dots and dashes called for by the letter of the key in operation.

My present invention consists first in the improved formation, arrangement and operation of the keys upon the board; second, in the improved connections of the keys with the lights so that absolute accuracy is assured and repairs readily effected; third, in other details of construction which will be more fully hereinafter described and claimed; fourth, in the improved construction of the standard.

In the drawings, Figure 1 is a top plan view of the key-board and connections. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged top plan view of one half of the key board with the cover of the casing removed. Fig. 4 is a side elevation in section taken through the key board. Figs. 5 and 6 are enlarged detached detail views of portions of the operative parts. Fig. 7 is an enlarged fragmentary portion of the bed-plate. Fig. 8 is a detached detail view of one of the spring metallic strips in the bed-plate. Fig. 9 is a front view of the standard carrying the

electric lights. Figs. 10 and 11 are enlarged detail views of the same. Fig. 12 shows the sectional standard extended and Fig. 13 represents the sectional standard collapsed as when not in use.

Referring to the drawings, 1 is the casing in which the operative parts are assembled, its side walls and base 2 constructed of wood and its top or cover 3 being of glass to give an unobstructed view of the parts within, or the cover 3 might be of wood also if desired. Upon the base 2 is secured a bed-plate 4 preferably of hard rubber. This bed-plate is filled with a series of narrow transverse recesses 5, see Figs. 5, 6 and 8. The first recess at the front is open at the left end and closed at the right end. The next recess is closed at the left end and open at the right and so on to the farther end of the bed-plate, every other recess opening to the left and the alternating ones to the right. In each recess 5 is laid a bow-spring 6 and upon each spring is placed a thin brass strip 7 which loosely fits the recess in which it is placed, a keeper 8 on each side of the bed-plate preventing the strips from springing out of place. The alternate projecting ends of these strips on both sides of the bed-plate 4 are fitted with apertured posts 9 and binding screws 10. Between these projecting ends and their posts 9 are strips 11 of hard-rubber for insulation.

Inside of the curved rear wall of the casing 2 extends the curved strip 12 mounted upon standards 13. This strip has a top and bottom covering of hard rubber (see Fig. 4) and a double row of metallic rods 15 passing through and surrounded with hard rubber, their ends projecting above and below the strip 12. Apertured posts 16 are secured to these projecting ends and provided with binding screws 17 forming four rows two above and two below the strip 12.

The projecting ends of the metal strips 7 upon the left side of the bed-plate 4 are successively connected through their binding posts, by the series of wires 18 to the rear top row of binding posts upon the strip 12, as clearly seen in Fig. 3 which are numbered 2, 4, 6, &c., and the lower top row of binding



posts upon the strip 12 are connected in a similar manner by the wires 19 with the binding posts upon the projecting ends of the remaining metal strips on the right side of the bed plate 4 and are numbered 1, 3, 5, &c. In this manner the upper binding posts on the strip 12 are connected in regular order to the row of metal strips in the bed plate each having a separate number, as in Fig. 3. The two lower rows of binding posts upon the strip 12 have wires 20 connected thereto which pass out through the opening 21 in the casing in the form of a cable and are separately connected to a series of electric lights as will be hereinafter explained.

22 are posts across which is secured a rod 23 upon which are pivoted a row of levers 24, the short ends to the rear being connected to the base 4 by the springs 25. The long ends extend forward to the front of the casing each being provided with an upright post 26 which extends up loosely through the cover and are provided at their upper ends with buttons 27, the whole forming spring pressed keys above the bed-plate. Suspended from each lever 24 is a contacting plate 28 having the central pivoted link 29 connecting the two parts 30. 30 are two adjusting devices at either end for fixing and holding the plate 28 in a level position as shown, so that the short projections 31 and long projection 32 will have uniform contact with the spring strips 7 in the bed plate 4, with which they come in contact in the operation of the apparatus.

One of the posts 22 is connected by the wire 33 with the electric lights, the source 34 of the electric current being interposed between the post and lights. In this manner the operative parts just described are all electrically charged and the circuit is completed by the contact of the projections upon the keys with the metal strips in the bed-plate.

In Figs. 9, 10 and 11 is shown a mast or standard 35 in which are secured in conical recesses 36 a series of electric lights 37 sufficient in number for the purpose. The inner surfaces of these recesses are covered with a polished metallic surface 38, so that each light may be focused to the maximum intensity. These lights are properly connected as before stated to the electric circuit and each light is separately connected through individual wires to its separate and distinct spring strip 7. Each light has a number corresponding to the post upon the strip 12, through which its individual wire passes to its separate and independent spring strip 7 in the bed plate. The signals produced upon the mast of lights are in what are known as dots and dashes, in this instance two contiguous lights constituting a dot and twelve contiguous lights a dash with spaces intervening of twelve blank lights as shown in Fig. 9, in which the letter A is represented, viz., a dot and a dash. Each key representing the letters of the alphabet has attached to it a contacting plate with long and short

projections representing the proper dashes and dots, and each projection when the key is depressed comes in contact with a sufficient number of spring strips 7 to complete the various circuits and illuminate the lamps connected with the several strips touched. When the pressure upon the key is removed the spring 25 raises it and the contact is broken extinguishing the lights. The contacting strip shown in Fig. 4 is attached to the key marked X and has one short, one long and two short projections which touch when depressed first two strips, then twelve then two and again two, leaving twelve strips untouched between each two projections, causing the lights connected with the touched strips to flash producing upon the mast a dot a dash and two dots with the necessary blank spaces between. The fact that the metal strips are each spring-pressed and that the contacting strip with its projections has been carefully leveled always insures a perfect and reliable contact. The improved system of connecting each spring strip with its separate lamp through individual marked posts and alternating the connecting wires on the two sides of the bed-plate necessarily avoids a confusion in the multiplicity of wires and enables the operator to quickly locate a faulty or broken wire.

In Fig. 1 is shown an adjustable index frame consisting of movable strips 39 upon which the letters of the alphabet are marked including also figures and a period. As they are placed in the drawings the keys opposite the several characters will produce upon the masts of lights the proper dashes and dots called for by each letter or figure, but if a cipher should be necessary it can quickly be effected by sliding the frame one space to the right or left. If to the right the former key A becomes a period, the former key B becomes A, &c., through the alphabet and numbers. The letter G at the right hand end of the top strip is thrown off, but an extra G on the strip below comes in place, and so on through the several strips. If to the left the letter A is thrown off at the top and its key becomes B and so on, the letter A being thrown on at the right hand end of the lower strip taking the former position of the period, the intervening end letters being provided for as before. These strips could be extended transversely so that each of the characters could be shifted past two, three or more keys thus forming additional ciphers as desired.

The standard carrying the lights is of necessity quite high and when not in use can be collapsed as shown in Figs. 12 and 13. The three separate parts 40 constituting the standard are joined together by the two pairs of links 41 and 42, the upper end of the top section being secured to the rope 43, by which the top and intermediate section can be raised against the mast or lowered as shown.

44 is a box or casing into which the upper sections pass and rest with the lower station-



any section a hinged door 45 in front closing and locking them within the casing. The electric wires connecting the lights with the key board pass from the cable into the lower end of the first section as at 46 the necessary wires 47 and 48 for the upper sections passing to the top of each of these sections and there entering so that when the sections rest in the casing 44, the connecting wires will hang from the staples 49 upon the mast 50.

I claim—

1. A signal telegraph consisting essentially of a number of electric lamps arranged in a continuous line, a bed-plate of non-conducting material, a series of spring-pressed metal strips, insulated from each other in such bed-plate and each electrically connected with a separate lamp and spring-pressed contacting plates operated by separate keys to complete the circuits through different groups of the spring-pressed metal strips to light the lamps necessary to produce the character desired.

2. A signal telegraph consisting essentially of a number of electric lamps arranged in a continuous line, a bed-plate of non-conducting material, a series of spring-pressed metal strips insulated from each other in such bed-plate and each electrically connected with a separate lamp and spring-pressed levers carrying adjustable contacting plates operated by separate keys to complete the circuits through different groups of the spring pressed metal strips, to light the lamps necessary to produce the character desired.

3. In a signal telegraph substantially as described the combination with contacting plates operated by separate keys of the metal strips insulated from each other in a non-conducting bed-plate and projecting alternately from opposite sides of the bed-plate the alternate projecting ends having wires secured thereto which are separately connected to

marked binding posts substantially as and for the purpose stated.

4. In a signal telegraph substantially as described, the combination with contacting plates operated by separate keys of the spring-pressed metal strips insulated from each other in a non-conducting bed-plate and projecting alternately from opposite sides of the bed-plate the alternate projecting ends on each side being separately connected to separate rows of marked binding posts substantially as and for the purpose stated.

5. In a signal telegraph the set of levers 24 pivoted upon a common rod 23 and the contacting plates 28 with projections and pivoted to each lever by the link 29, and adjusted by the leveling devices 30. 30, the whole being operated by the rods 26 and keys 27 substantially as shown and described.

6. In a signal telegraph the combination with contacting plates operated by separate keys of the bed-plate 4 having the spring-pressed insulated metal strips 7 projecting alternately from opposite sides of the bed plate the projecting ends of the left side being connected by the wires 18 with the outer row of marked binding posts on the plate 12 and the projecting ends of the right side being connected by the wires 19 with the inner row of marked binding posts on the same plate, corresponding rows of binding posts on the under side connecting each metal strip 7 to a separate lamp in the standard substantially as shown and described.

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

CLAUDIUS V. BOUGHTON.

Witnesses:

L. M. SANFORD,  
W. T. MILLER.