

No. 842,410.

PATENTED JAN. 29, 1907.

M. V. MEHREN.
TELEPHONE SWITCHBOARD.
APPLICATION FILED JUNE 2, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

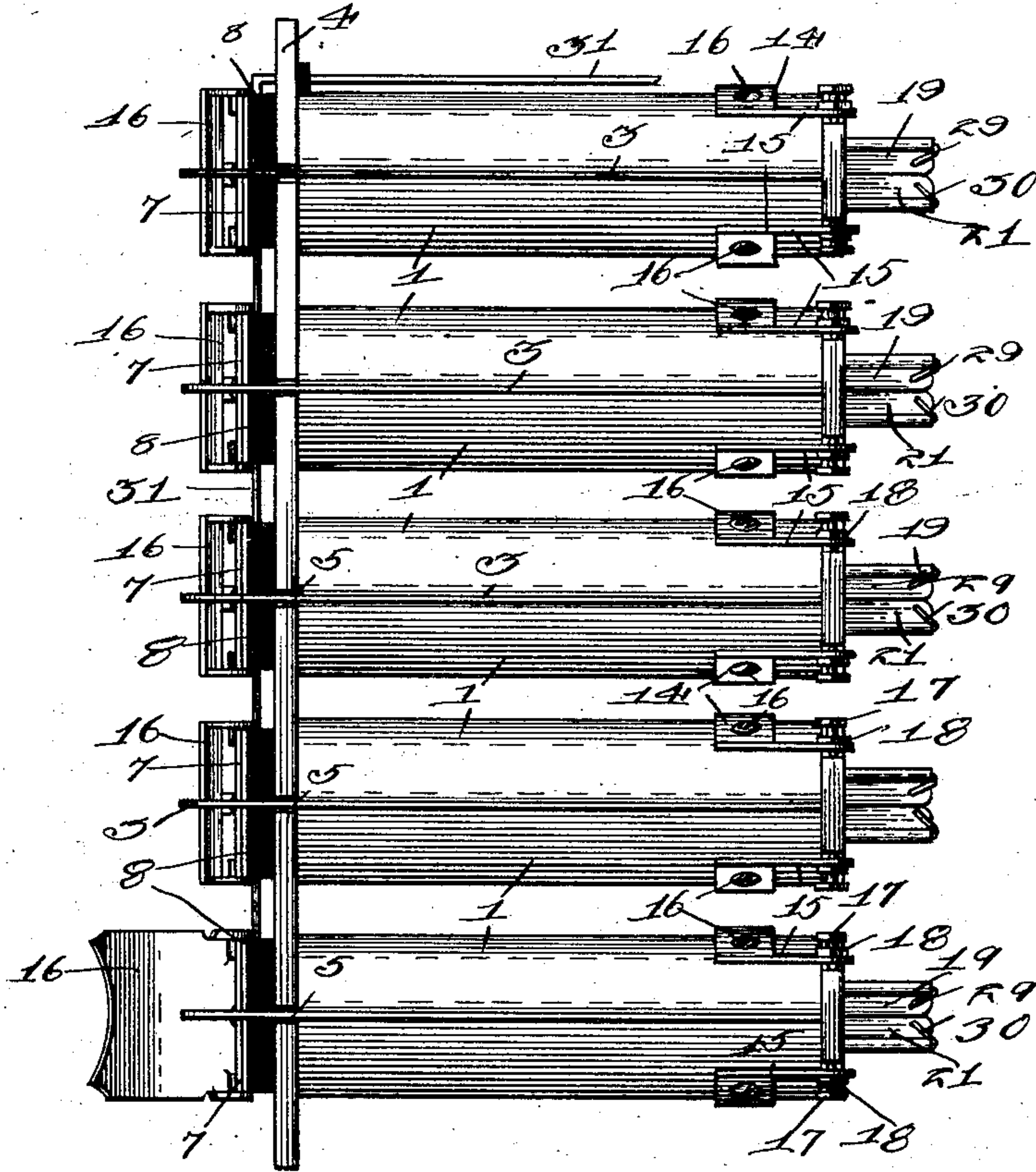
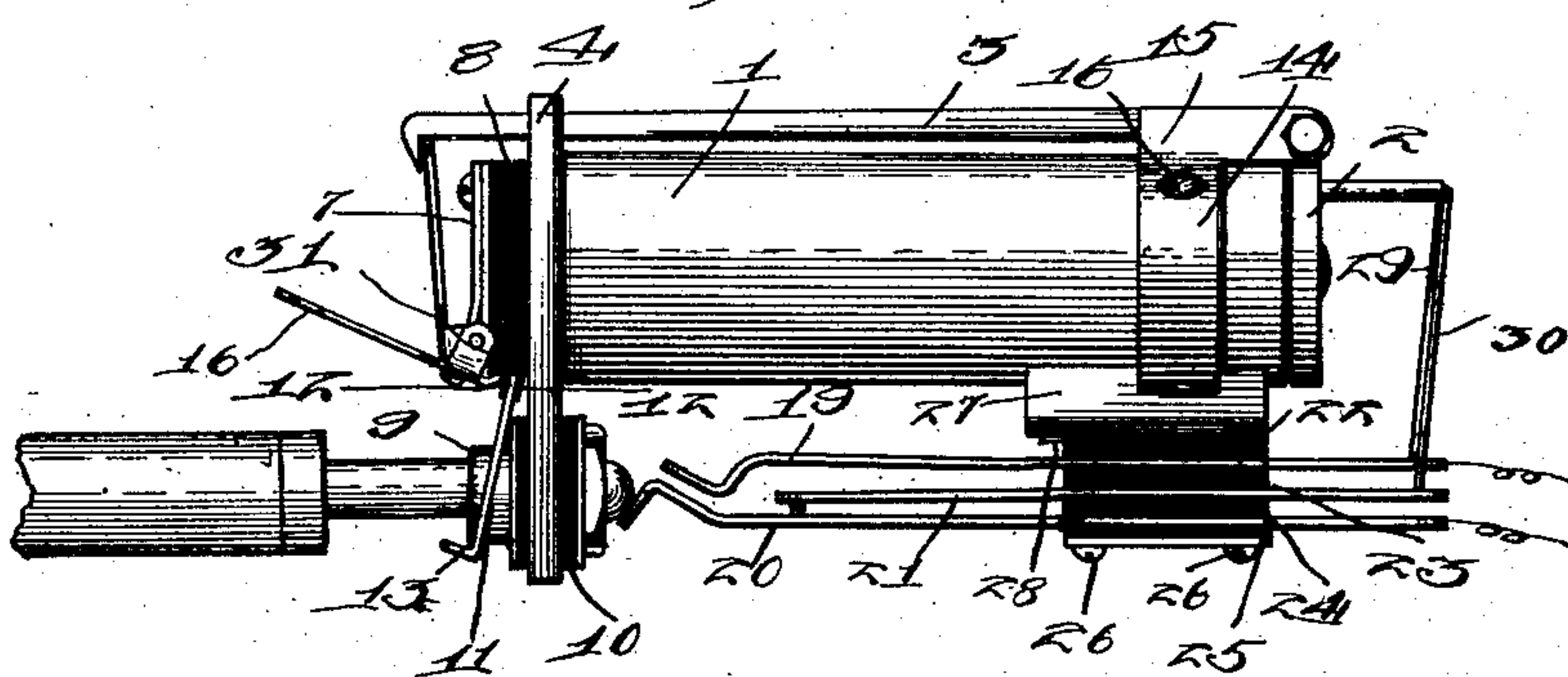


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3

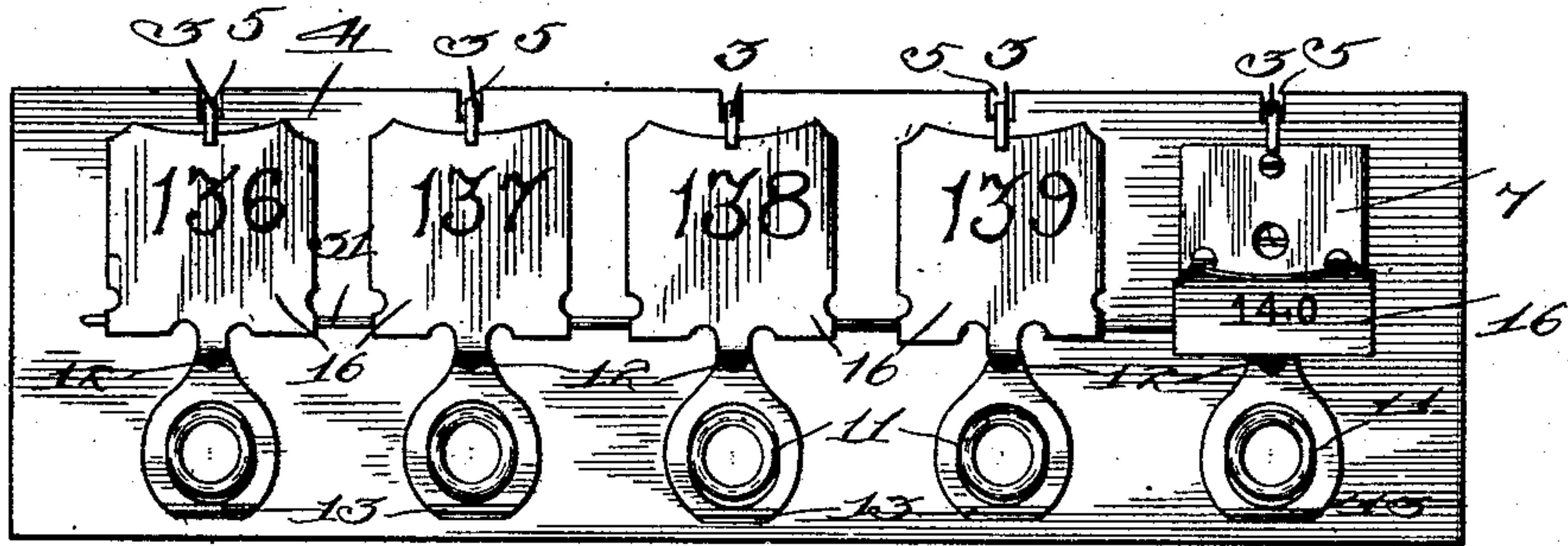


Fig. 4

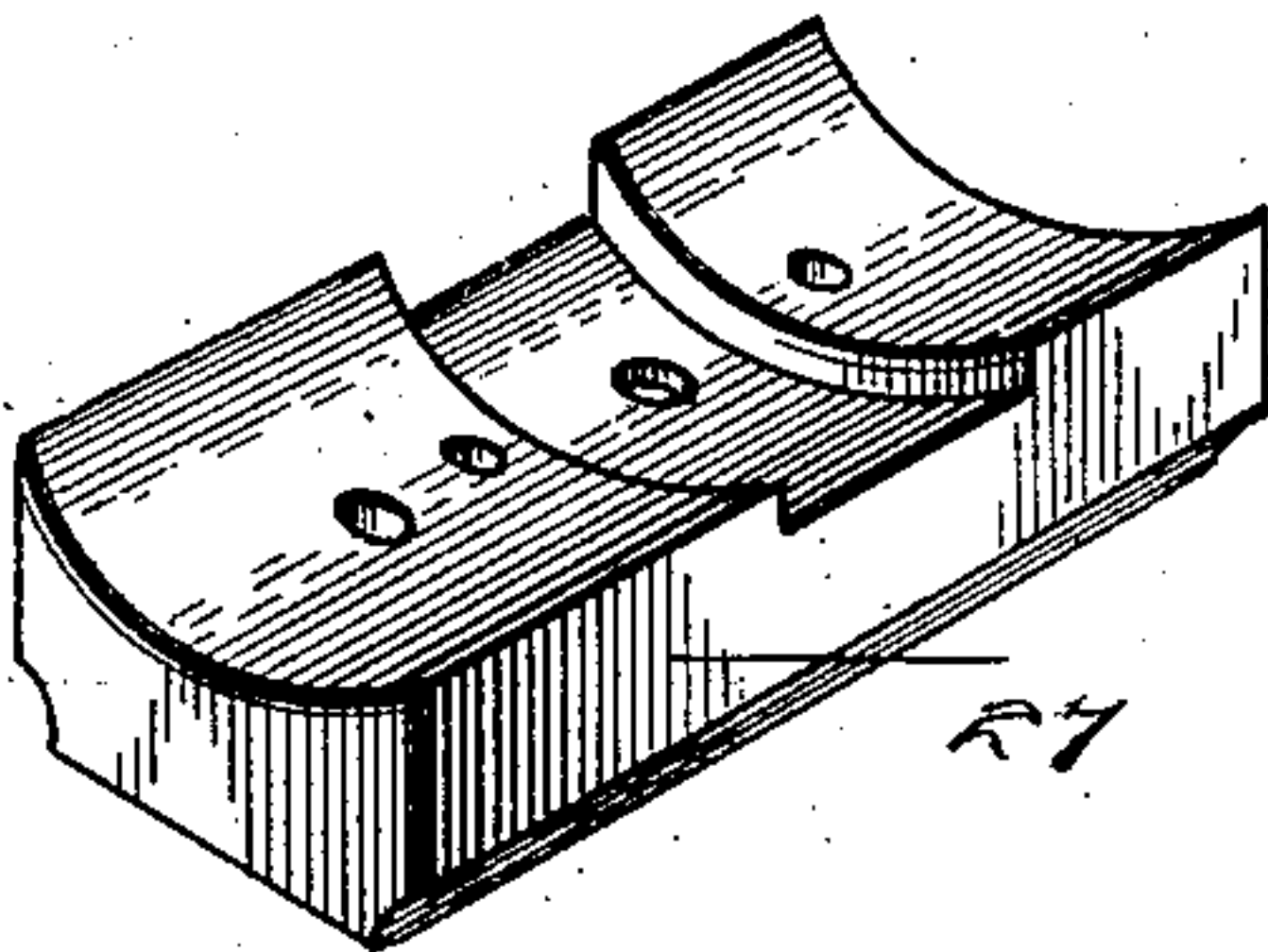


Fig. 5

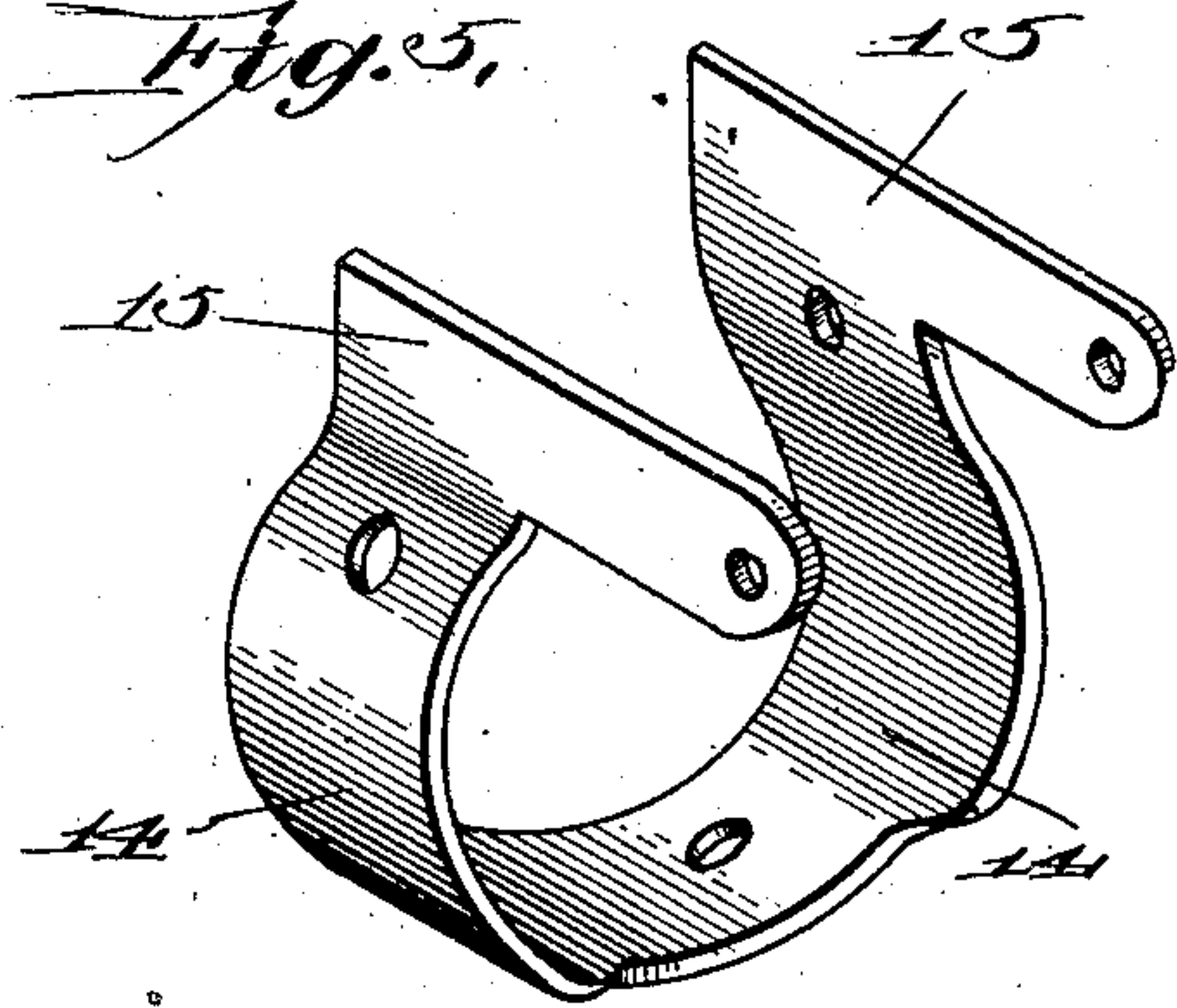
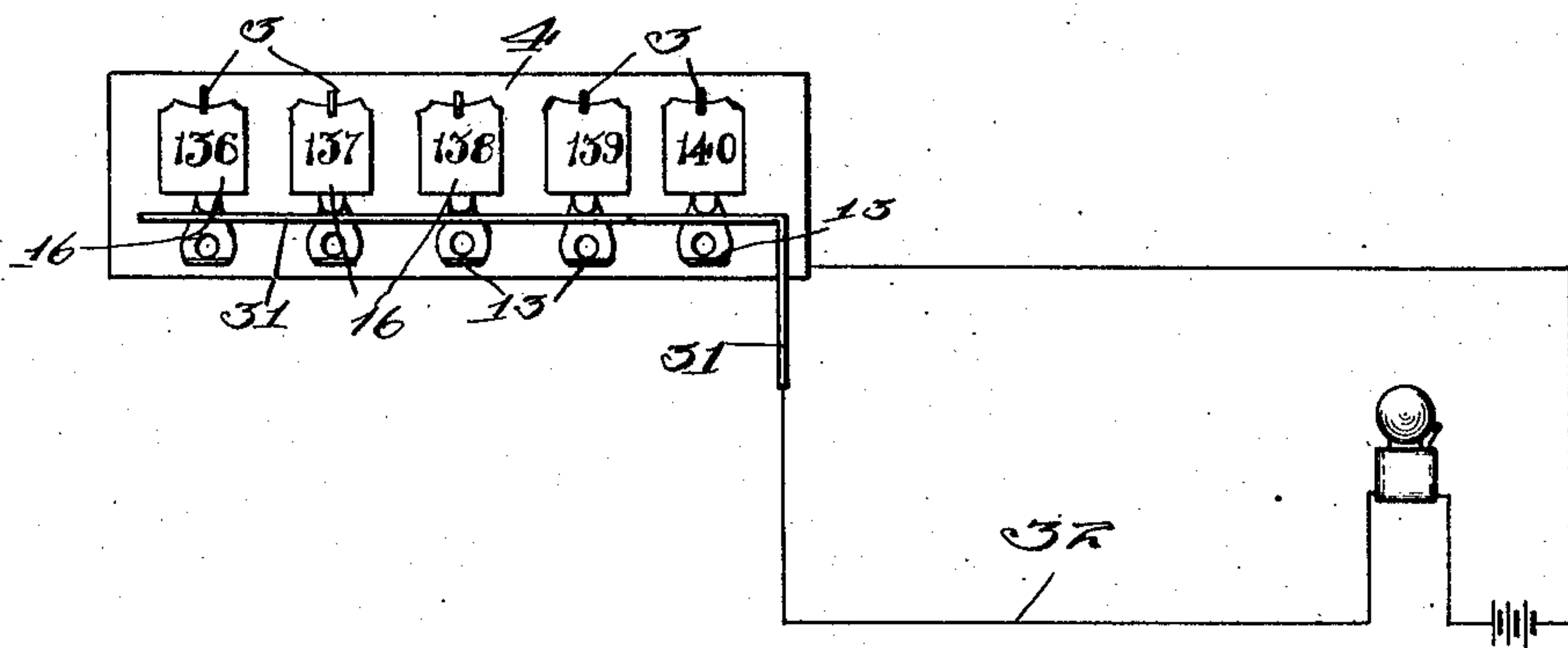


Fig. 6



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UNITED STATES PATENT OFFICE.

MARTIN V. MEHREN, OF GENOA, ILLINOIS, ASSIGNOR TO EUREKA ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE-SWITCHBOARD.

No. 842,410.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed June 2, 1904. Serial No. 210,845.

To all whom it may concern:

Be it known that I, MARTIN V. MEHREN, a citizen of the United States, residing at Genoa, in the county of Dekalb and State of Illinois, have invented a certain new and useful Improvement in Telephone-Switchboards, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to telephone-switchboards, and especially to a construction of combined jack and annunciator therefor.

Prominent objects of the invention are to provide a simple, practical, and durable construction of switchboard, especially so far as the same relates to the jack and annunciator portion; to cheapen and lighten the construction without interfering with or modifying the efficiency of the board; to economize space without cramping the annunciators and jacks; to improve and simplify the construction by which the jack and annunciator are combined and the sets of combined jacks and annunciators mounted in banks, and to secure the foregoing and other desirable results in a simple, practical, and expeditious manner.

In the accompanying drawings, Figure 1 is a plan view of a series or bank of combined jacks and annunciators embodying my invention. Fig. 2 is a side elevation of one of the same. Fig. 3 is a front elevation of such bank or set. Figs. 4 and 5 are views of details of construction; and Fig. 6 is a view of the bank of my annunciators and jacks, showing the circuit arrangement for producing an alarm upon the falling of one of the drops.

In the drawings, referring particularly to Figs. 1 and 3, I have shown a bank of five combined annunciators and jacks arranged side by side. The annunciators 1 1 are of any suitable form or construction and are provided with armatures 2 2, hung at their rear ends and provided with latches 3 3, which extend forwardly and project out in front of the front end of the annunciators. The annunciators 1 1 are secured to a metal plate 4, which extends in front of the same and is provided with a series of notches or channels 5 5 to accommodate the latches 3 3. The drops 16 16 are hung in front of the annunciators 1 1, being conveniently pivoted

near their lower ends, so that they can be supported in a substantially vertical position by the latches 3 3, but can swing downwardly and forwardly when released by the same. As a convenient arrangement the drops are pivoted to metal plates 7 7, which are secured in front of the plate 4, with intervening blocks 8 8 of insulation between them and said plate. Jack-sockets 9 9 are arranged below the drops 16 16 and secured to the plate 4 by means of insulation-bushings 10 10, which serve to insulate such sockets from said plate. Drop-restoring devices 11 11, desirably in the form of ring-shaped levers pivoted to the jack-sockets 9 9, are arranged below the drops and have their upper ends extending upwardly and provided with insulation-pads 12 12, the lower ends of said levers being bent downwardly or forwardly, as at 13.

The annunciators 1 1 are provided with hangers 14 14, conveniently made in the form of straps surrounding the lower portions of said annunciators and constructed with rearwardly-extending ends 15 15. These straps are secured to the annunciators by screws 16 16. Their rearwardly-extending ends 15 15 serve as bearings or supports for the latches 3 3, for which purpose screws 17 17 are passed through the ends 15 15 and provided with lock-nuts 18 18. The hangers 14 14 are desirably of non-magnetic material, such as brass. Upper and lower line-springs 19 and 20, respectively, and an annunciator-strip 21 are hung below the annunciators 1 1 and in the rear of the jack-sockets 9 9. They are separated and insulated by insulation-strips 22, 23, 24, and 25, all of which are secured by screws 26 26 to brass blocks 27, which are in turn secured to the annunciators by screws 28 28. The upper line-strips 19 19 are connected with one end of the annunciator-windings by conductors 29 29, and the annunciator-strips 21 are connected with the other ends of the annunciator-windings by conductors 30 30. The line wires or conductors are understood to be connected with the line-strips 19 and 20,

A conductor or wire 31 extends in front of the plate 4 through the blocks 8 8 of insulation and is passed through said plate 4 at one end and extended back along the end annunciator, as shown in Fig. 1. This conductor is

for the night-bell circuit and is so located that when any one of the drops falls its lower end will swing upwardly and strike, and therefore make electrical connection with said wire or conductor. One side of the night-bell circuit 32 is connected with said conductor 31, and the other side is connected with the plate 4, so that upon the falling of any drop connection will be made so as to close the night-bell circuit, and thereby sound an alarm in the usual way.

In the operation of the device when one of the annunciators 1 is energized its armature 2 is attracted so that the latch rises and releases its drop 16, which thereupon falls. The operator in plugging in causes the shank of the plug to strike the projecting end 13 of the lever 11, thereby causing the drop 6 to be restored to its original position, where it is caught by the latch 3. The plug on being inserted also passes between the line-springs 19 and 20, thereby causing the spring 19 to make connection with the plug-tip and the spring 20 to make connection with the metallic shank and the spring 20 to separate from the annunciator-strip 21. In this way the two sides of the cord circuit are connected with the subscriber's line and at the same time the annunciator 1 is cut out of circuit.

In another application filed of even date herewith I have claimed the construction herein shown so far as it relates particularly to the drop-restoring mechanism, and in the present application I will claim the construction so far as it relates to the mounting and arrangement of the combined drops and annunciators and line-springs.

It will be understood that changes and modifications can be made without departing from the spirit of my invention.

What I claim is—

1. In a combined jack and annunciator, the combination with the jack-socket, of a vertically-disposed lever hung below the drop and pivoted between its ends at the mouth of said socket, and arranged to have its upper end act upon the drop and its lower end acted upon by the plug, substantially as described.

2. In a combined jack and annunciator, the combination of a jack-socket and drop, and a drop-restoring lever made in the form of a ring encircling the jack and pivoted thereto, substantially as described.

3. In a combined jack and annunciator, the combination of a jack-socket and drop, and a drop-restoring lever made in the form of a ring encircling the jack and pivoted thereto, one end of said lever being bent outwardly to form a projection to be struck by the plug on insertion, substantially as described.

4. In a combined jack and annunciator, the combination with the annunciator, of a drop in front of the annunciator, an armature in the rear thereof, a latch secured to the armature and extending to the front of the annunciator and normally engaging the drop, a plug-socket below the front of the annunciator, jack-springs in the rear thereof, and a pivoted lever in the form of a ring encircling and pivotally secured to the jack-socket below the drop, for automatically restoring the same on the insertion of the plug, substantially as described.

In witness whereof I hereunto subscribe my name this 5th day of May, A. D. 1904.

MARTIN V. MEHREN.

Witnesses:

HOWARD W. FOOTE,

WM. M. ADAMS,