

(No Model.)

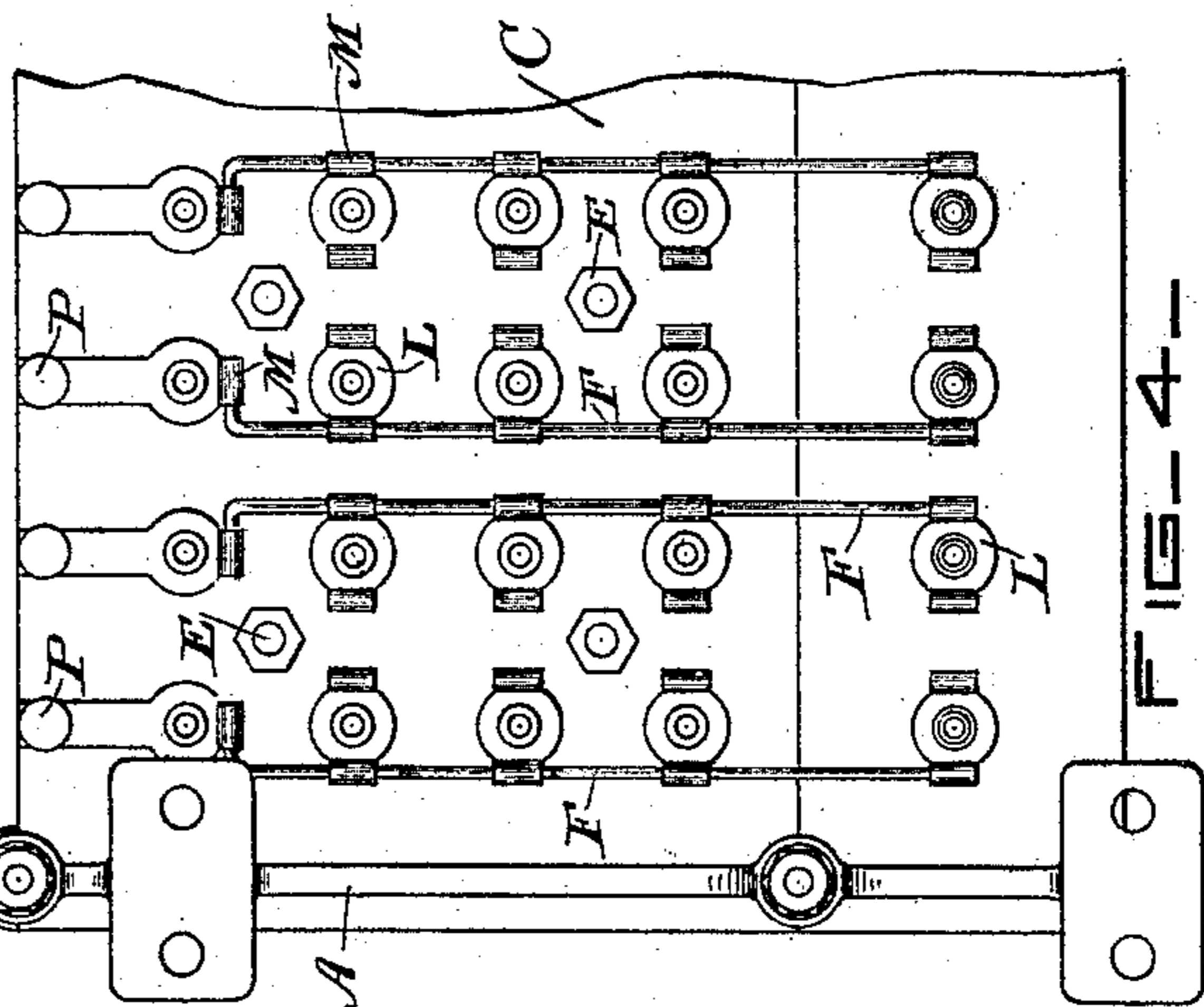
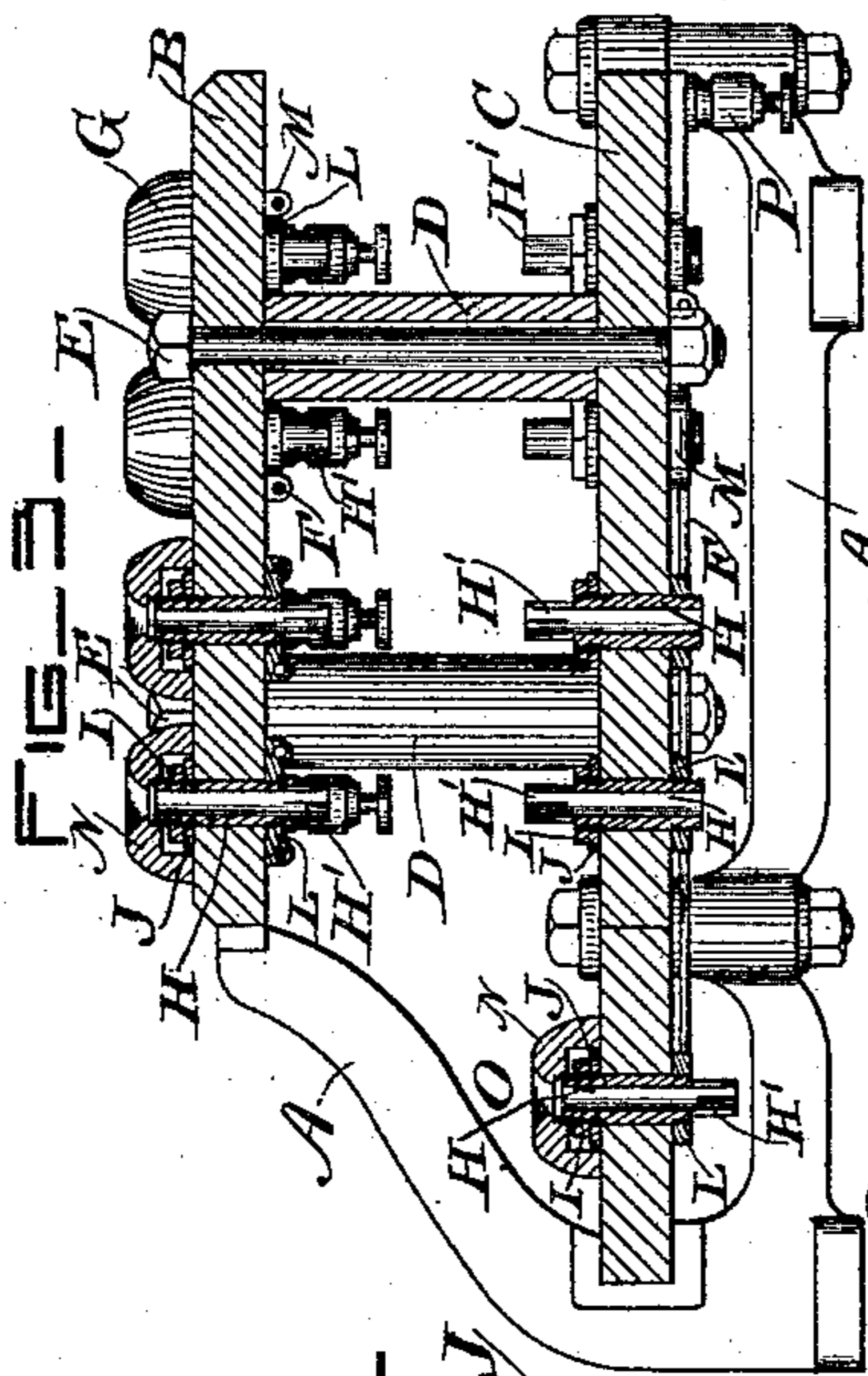
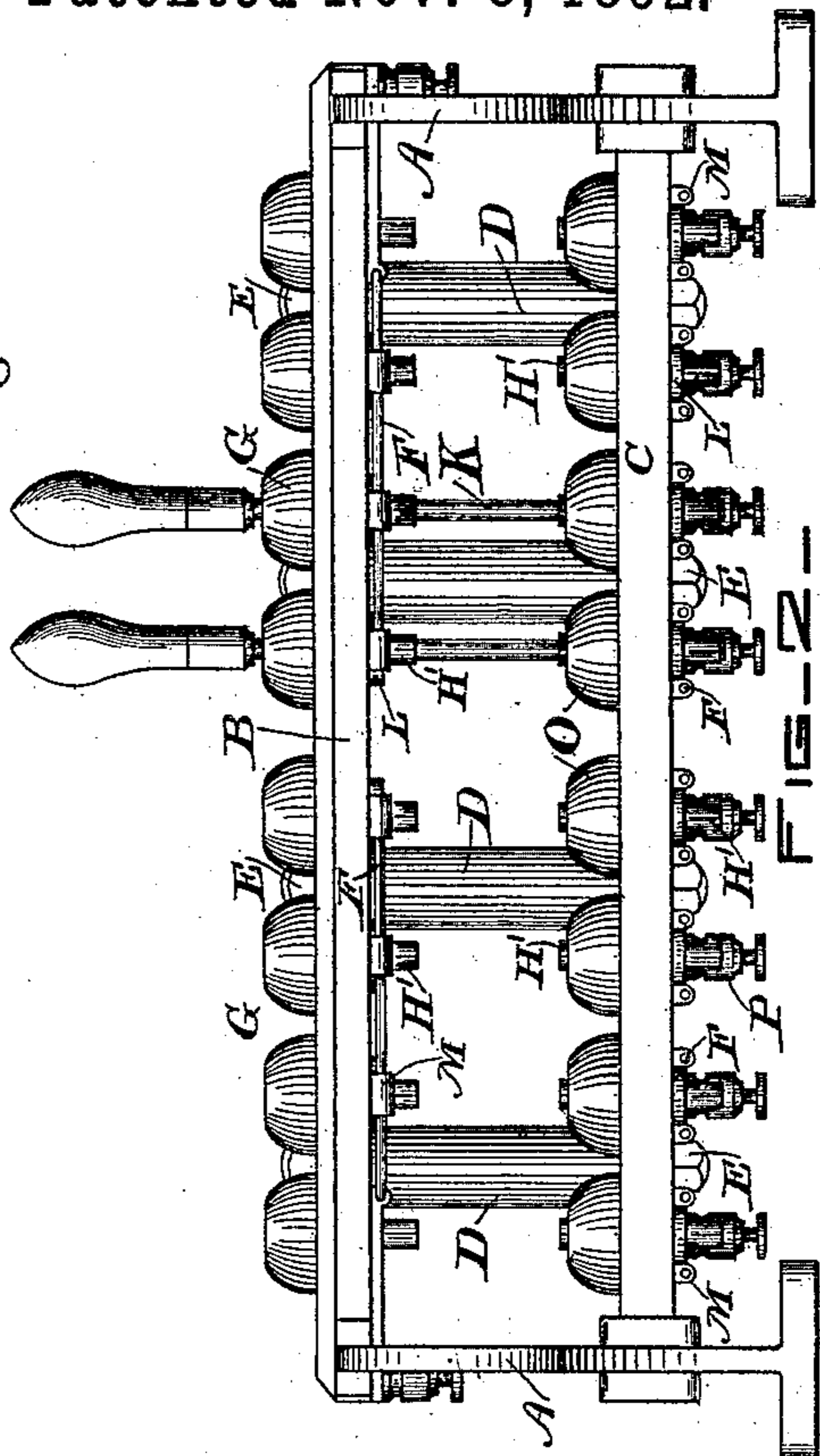
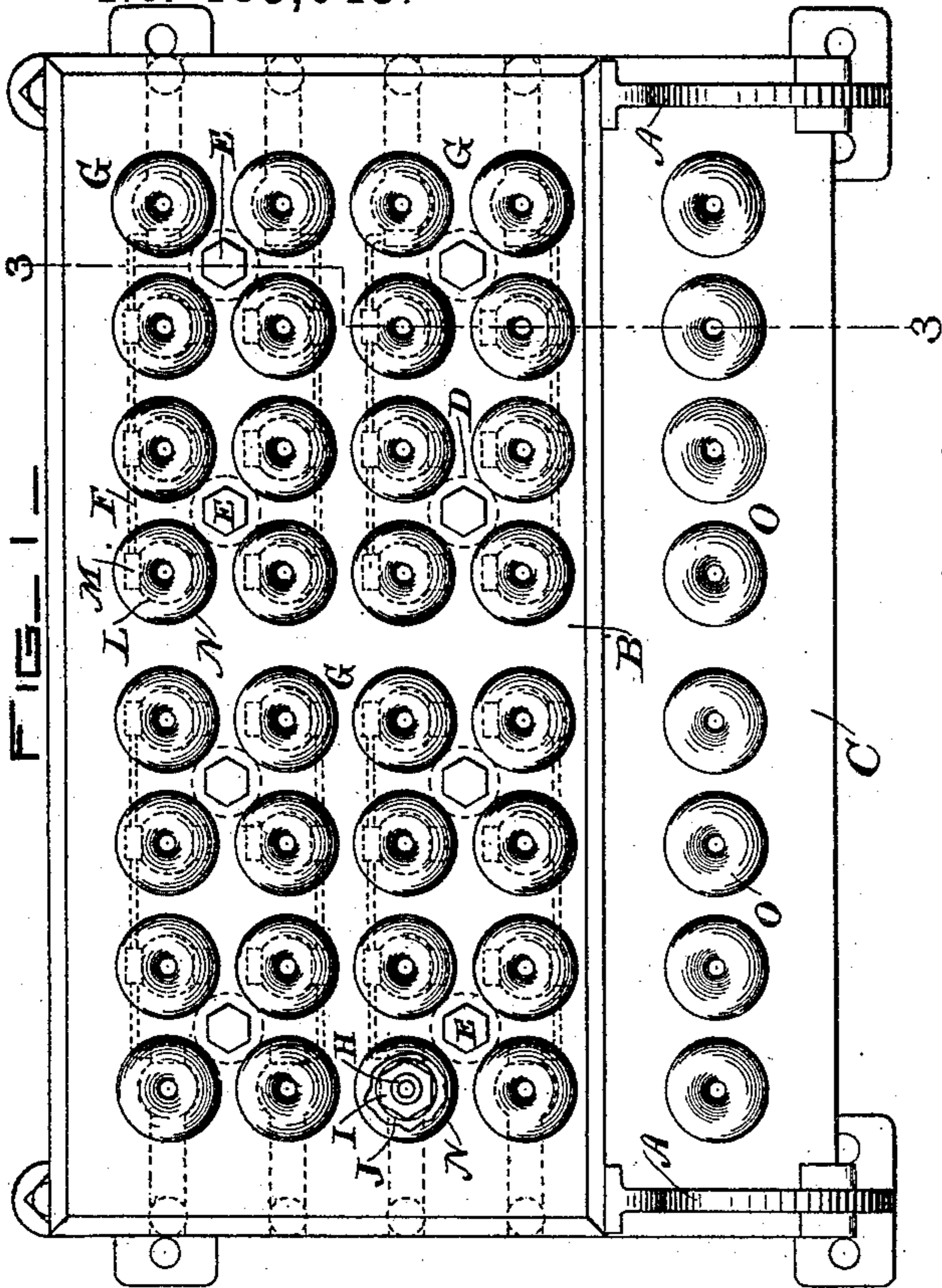
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SWITCHBOARD FOR ELECTRIC LIGHT CIRCUITS.

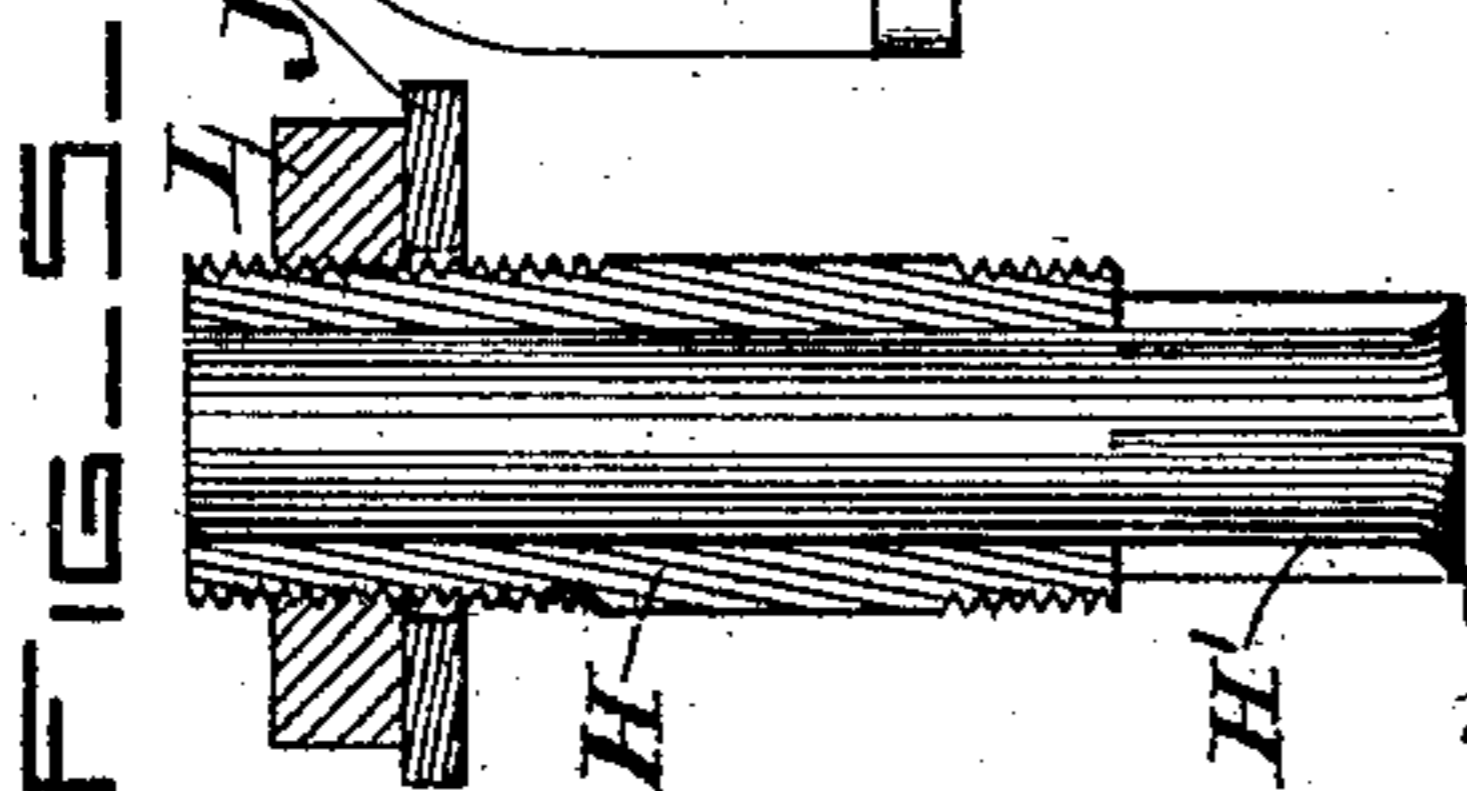
No. 485,643.

Patented Nov. 8, 1892.



ATTEST

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# UNITED STATES PATENT OFFICE.

JOHN J. MOORE AND CATHARINE M. HENRY, ADMINISTRATRIX OF DORWIN A. HENRY, DECEASED, OF NEW YORK, N. Y., ASSIGNORS TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

## SWITCHBOARD FOR ELECTRIC-LIGHT CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 485,643, dated November 8, 1892.

Application filed April 9, 1890. Serial No. 347,174. (No model.)

*To all whom it may concern:*

Be it known that JOHN J. MOORE, a citizen of the United States, residing at New York city, in the county and State of New York, and DORWIN A. HENRY, deceased, late a citizen of the United States, who resided at New York city, in the county and State of New York, invented certain new and useful Improvements in Switchboards for Electric-Light Circuits, of which the following is a specification.

The invention relates especially to switchboards for electric-arc-light circuits; but it may also be advantageously employed in other electric-light systems.

The invention consists in providing two sets of wires or strips placed at right angles to each other, one set being connected to the several dynamos at a station and the other set being connected to the several circuits extending therefrom throughout the district to be supplied. Each set is provided with contact devices placed opposite to similar devices in the other set, whereby a connection can be readily established between any conducting strip or wire of one set and any strip or wire of the other set.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the switchboard. Fig. 2 is an end elevation thereof. Fig. 3 is a transverse section on the line 3 3, Fig. 1. Fig. 4 is a view from beneath, and Fig. 5 is a detail of a connecting tube or socket.

Referring to the drawings, A is a cast-iron frame in which are supported two plates B and C, of slate or similar non-combustible insulating material. The lower plate C is bolted to the lower horizontal arms of the frame A, while the plate B is held at its front edge by the front brackets of the frame, but is mainly supported by a series of porcelain columns D, which rest upon the lower plate C, through which are passed long bolts E.

On the under side of each plate are a series of conducting-wires F, (shown more clearly in Fig. 4,) but which may be replaced by strips or bars of a size sufficient to carry the current. The two sets of wires F upon the

respective plates B and C run at right angles to each other. In the instance shown the wires on the lower plate C extend from front to back of the switchboard, while those upon the upper plate B extend from side to side. Each wire of each set is provided with a series of connection-sockets placed directly opposite corresponding sockets upon the other set, whereby a plug can be passed through one of the upper sockets connecting with a wire of one set and then extend through a corresponding socket connected to a corresponding wire in the lower set. These sockets are marked G and will be described in detail, especial reference being made to Figs. 3, 4, and 5, each being a duplicate of the rest. They consist first of a tube H, passed through a corresponding hole in the plate B or C, and provided at its end with a tapering slitted portion H', adapted to grip closely a rod or plug K when it is passed therethrough.

As will be seen in Fig. 3, the slit part H' of the lower set of tubes is at the upper end, while in the upper set of tubes it is at the lower end. The tube H is passed through a hole in one of the plates, and on the upper side of the plate it is surrounded by a washer J, and a nut I, while on the lower side it is provided with a nut L, which has two oppositely-placed loops M, through which the wires F will be passed, and thereby connected to the socket.

Over nut I and washer J is placed an insulating button or cap N, so that when a plug K is inserted it can never by any accident come in contact with the wrong wire and cause a short circuit.

In the form of switchboard shown the plate C is somewhat wider than the plate B, and it is provided with an extra set of contact-sockets O.

It will be seen by reference to Fig. 4 that each wire F is provided with a socket at the point where it crosses a similar wire in the other set and that it is provided at one end with a binding-post P, with which connection can be made. By this means any one wire or strip can be connected with any wire or strip of the other set, and when one set is connected

with a series of dynamos and the other set is connected with a series of line-circuits any dynamo can be connected with any circuit, and by means of a flexible conductor 5 connecting two plugs dynamos can be connected in series, or the circuits can be connected in series and any combination desired can be made at will. The upper or front set of wires is intended for connection with the 10 several dynamos and the lower or rear set with the circuits. The extra row of sockets is in order that any two circuits may be plugged in series by means of a flexible conductor.

15 We are aware it has been proposed to protect the sockets in a switchboard by sinking them below the surface of the insulating material of which the board is composed, and we make no claim to such a construction. 20 Protection in our device is afforded by the caps N, which are separate from the plate B.

What we claim as new, and desire to secure by Letters Patent, is—

1. In an electric-light switchboard comprising two plates of insulating material supported at a distance apart, a set of wires or bars on each plate, the set on one plate crossing the set on the other plate at an angle, and connection-sockets inserted in each plate 30 at the crossing-points, substantially as described.

2. An electric-light switchboard having a metallic frame supporting at a distance apart two plates of slate or similar non-combustible insulating material, and a set of wires or bars on each plate, crossing each other at an angle and provided with connection-sockets at the crossing-points. 35

3. An electric-light switchboard having two 40 plates of slate or similar non-combustible insulating material with separating-pillars of porcelain or similar material, and a set of terminals for each plate with connection-sockets adapted to be connected by plugs reaching from one plate to another.

4. An electric-light switchboard having two sets of wires or bars crossing each other at an angle and provided with connection-sockets at the crossing-points, having insulating-caps 50 whereby false connections are avoided.

5. In an electric-light switchboard, the combination, with two plates of slate or similar

insulating material, of a set of wires or bars for each plate and connection-sockets on said wires at the crossing-points, the said sockets 55 on the upper plate having insulating-caps.

6. In an electric-light switchboard, the combination, with two parallel separated plates, of a set of contact-sockets on each plate, each socket consisting of a tube extending through 60 the plate and adapted to receive a contact-plate, and a series of insulating-caps for the contact-sockets of the upper plate.

7. In an electric-light switchboard, the combination, with a plate having a series of contact-sockets, of a separate insulating-cap for each for preventing false connections. 65

8. In an electric-light switchboard, the combination, with a plate of insulating material, of a connection-socket composed of a tube inserted in a hole in said plate, the inner end of the tube being split and the outer end having a cap of insulating material, substantially as described. 70

9. The combination, in an electric-light switchboard, of two plates of slate or similar non-combustible insulating material, separating-posts of porcelain or similar substance, a series of wires or rods on each plate, provided with connecting-sockets adapted to be connected by means of plugs, the said sockets on the upper plate being provided with insulation to prevent false contacts upon the insertion of the plugs. 80

10. In an electric-light switchboard, the combination, with two plates of slate or similar insulating material separated a distance apart, of corresponding sets of wires or bars having connection-sockets and a supplementary set of contact-sockets upon one of said 90 plates, substantially as described.

In witness whereof we, JOHN J. MOORE and CATHARINE M. HENRY, administratrix of the estate of DORWIN A. HENRY, have hereunto set our hands and seals, this 4th day of April, 95 1890, in the presence of two subscribing witnesses.

JOHN J. MOORE. [L. S.]  
CATHARINE M. HENRY, [L. S.]  
*Administratrix, &c.*

Witnesses:

J. F. CROWELL,  
ROBT. MAITLAND.