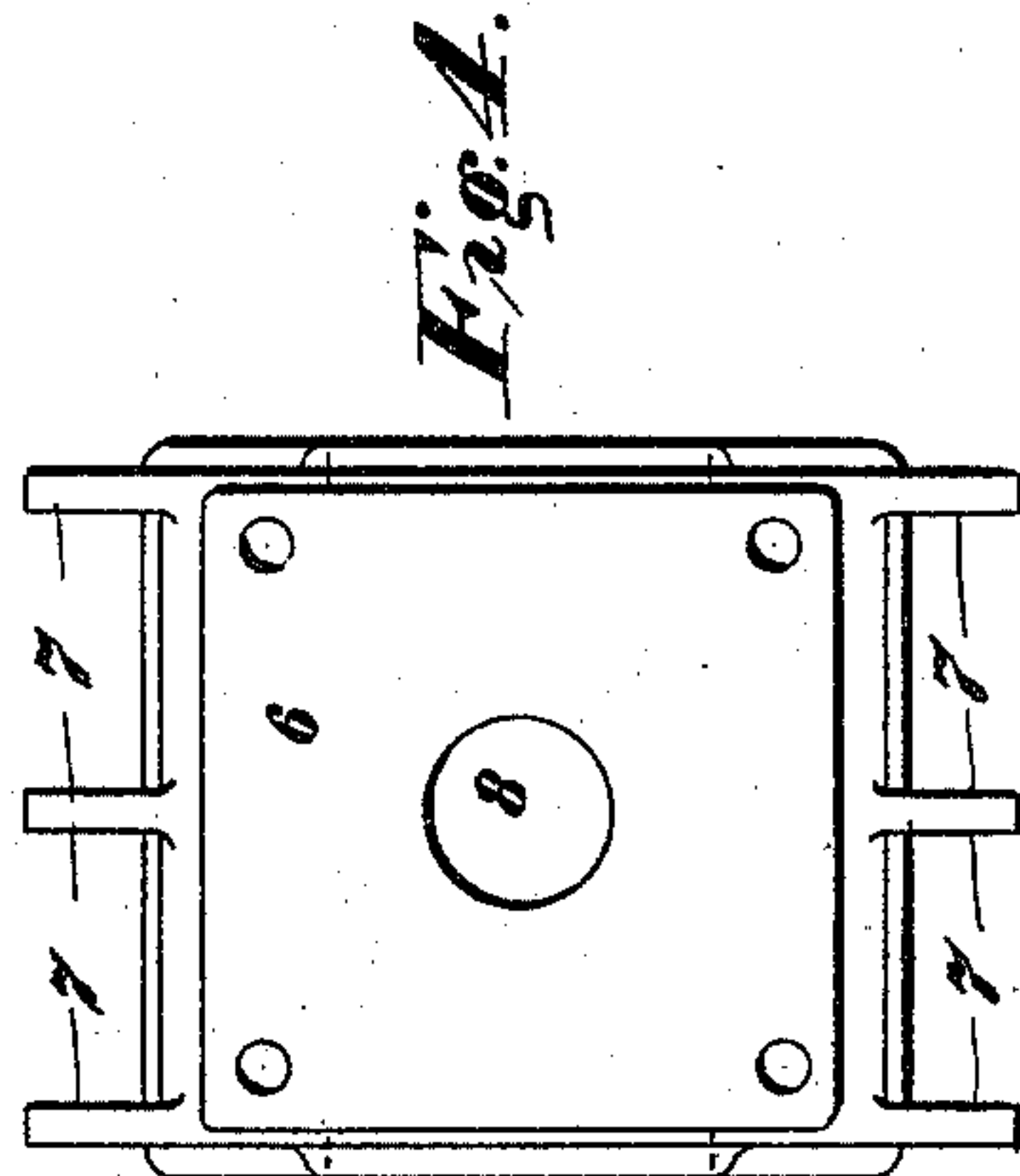
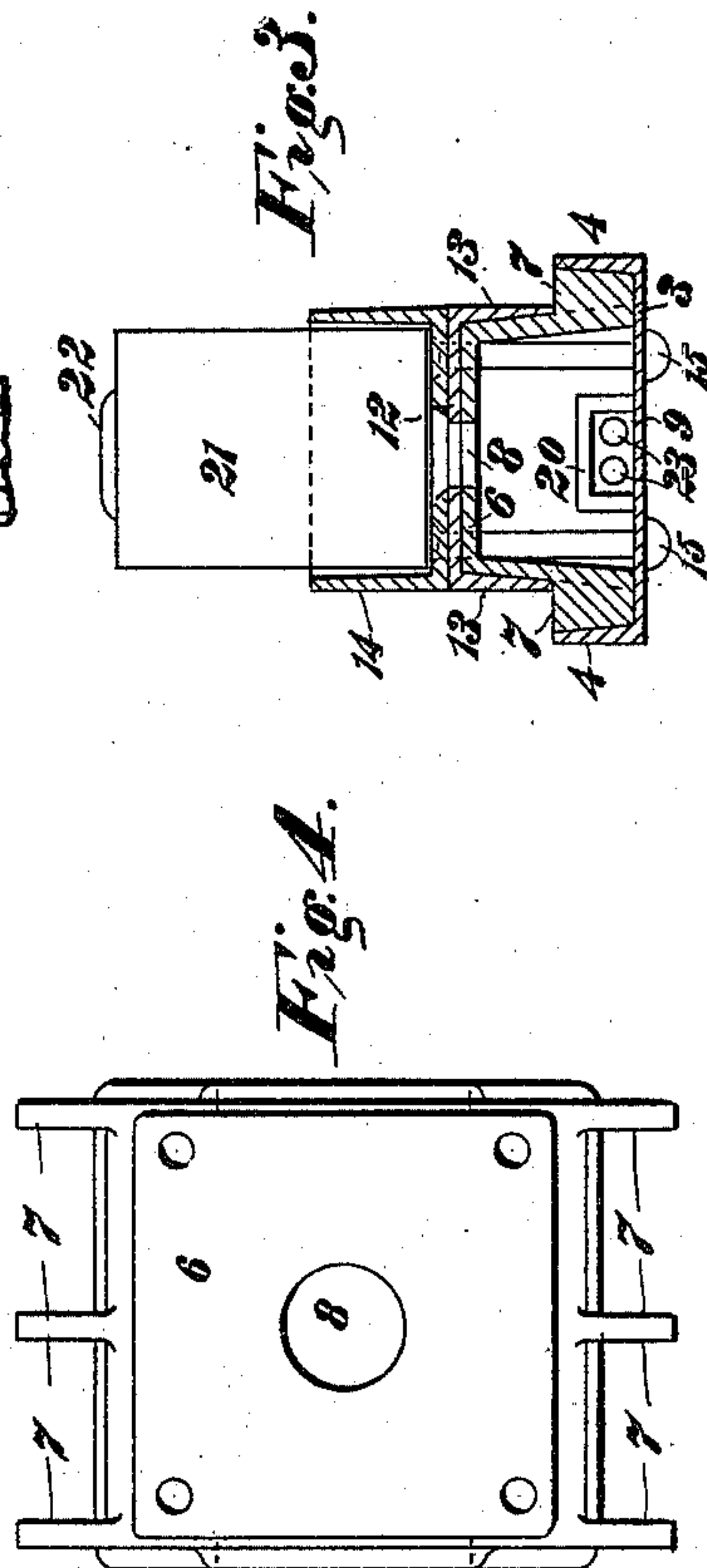
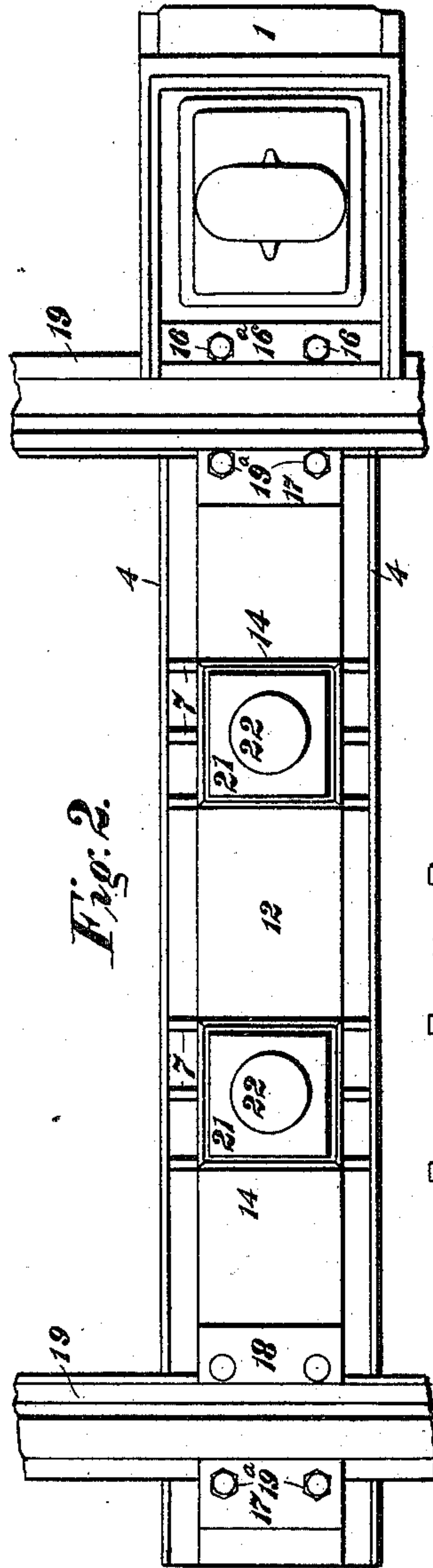
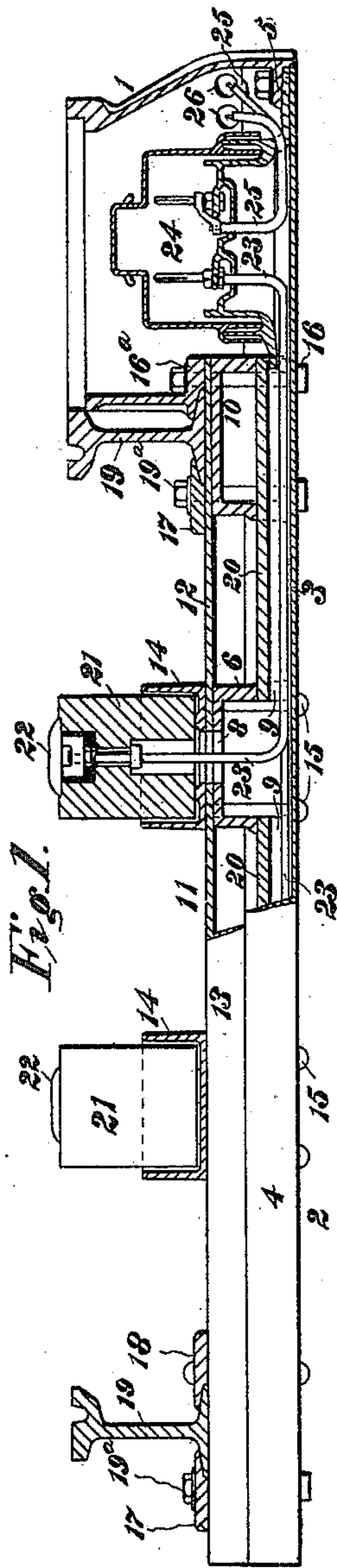


(No Model.)

G. WESTINGHOUSE.
ELECTRIC RAILWAY CONSTRUCTION.

No. 573,066.

Patented Dec. 15, 1896.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE WESTINGHOUSE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
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ELECTRIC-RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 573,066, dated December 15, 1896.

Application filed June 8, 1896. Serial No. 594,653. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WESTINGHOUSE, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electric-Railway Construction, (Case No. 704,) of which the following is a specification.

My invention relates to electric railways, and more particularly to that class of railways in which the current is supplied to the traveling contacts and motors through insulated stationary contacts located in the roadway, which are normally "dead," but which are connected in the supply-circuit as the car passes over them.

The object of my invention is to provide a simple, compact, and rigid structure which shall embody one set of stationary contacts, a switch, branch conductors, and supporting and protecting devices for such parts, all combined to form a single article of manufacture, the parts of which may be assembled at the factory and thus placed upon the market or supplied directly for installation as a single structure. A less number of parts than is above enumerated may constitute the article of manufacture, but the structure should in all cases embody at least a supporting and protecting frame for the switch, the conductors, and the stationary contacts.

In the accompanying drawings, Figure 1 is a view, partially in side elevation and partially in section, of a structure constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical section taken on line *xx* of Fig. 1, the contact-pin and its supporting-block being, however, shown in side elevation. Fig. 4 is a detail plan view of one of the supporting-chairs.

Reference being now had to the drawings in detail, 1 is a switch-box, and 2 is a supporting channel-beam comprising a bottom plate 3 and side plates or flanges 4 integral therewith. One end of the supporting-beam

3 extends under the switch-box to form a bottom therefor and is bolted to a lug 5 thereon, as is clearly indicated in Fig. 1. Supporting-chairs 6 in the form of open-bottom boxes provided at each side with lateral supporting-flanges 7 are seated upon the plate 3 between the flanges 4, the dimensions of the flanges 7 being such that the chairs 6 will closely fit the interior of the supporting-beam 2. Each of these chairs is provided with a top opening 8 and with end openings 9, the purpose of which will be hereinafter stated.

Two supporting-chairs 10 are located in the beam 2, near its ends, in such position as to be beneath the track-rails when the structure is in operative position.

A strengthening channel-beam 11, comprising a top plate 12 and side plates or flanges 13, is placed over the tops of the chairs 6 and 10. The flanges 13 closely fit the sides of the chairs 6 and 10, and their lower edges rest upon the lateral flanges 7. This strengthening-beam, although desirable in many cases, is not essential and may be omitted.

Resting upon the upper plate 12 of the beam 11 are open-top boxes 14, the bottoms of which are provided with openings which register with the openings through the tops of the chairs 6 and with corresponding openings in the plate 12. The beams 2 and 11, the chairs 6, and the boxes 14 are rigidly fastened together by means of bolts or rivets 15. The number of chairs 6 employed in the structure will depend upon the number of stationary contacts in a set. Two are shown in the drawings, but if the structure is intended for use in connection with a system having a complete metallic circuit, or in a three-phase alternating-current system, three of these chairs and corresponding boxes will obviously be necessary. The beams, the supporting-chairs, the boxes 14, and the switch-box are preferably constructed of cast-iron, and some of the parts shown and described as riveted or bolted together may be cast integral or constructed

of pressed steel, if desired. These parts, in connection with the conduit-sections, hereinafter described, constitute a supporting and protecting frame for the conducting and insulating parts of the system. The two beams, the switch-box, and the corresponding chair 10 are rigidly fastened together by means of bolts 16, which pass through a flange 16^a on the switch-box and through the other devices just referred to. Clamping-blocks 17 and 18 are provided for the purpose of attaching the structure to the bases of the track-rails 19. The flange 16^a of the switch-box 1 is extended and beveled to constitute one of such clamping devices, and the block 18 may be permanently riveted to the structure. The blocks 17 are, however, removably fastened to the structure by means of bolts 19^a and are not applied until the structure is placed in position underneath the track-rails.

20 is a conduit formed in two sections, the top and side walls of which are preferably constructed of wood. One of these conduit-sections connects the two chairs 6 by means of the openings 9 in their adjacent ends, and the other connects the switch-box with the adjacent chair 6 and extends through the chair 10 by means of the end openings therein. The space between the channel-beams 2 and 11 and around the chairs 6 and 10 and the conduit-sections 20 may be filled in with cement, concrete, or any other suitable material.

Suitable insulating-blocks 21 for the contact-pins 22 are located in the boxes 14 and should be fastened therein by any suitable cement or otherwise, if desired. The branch conductors 23 extend from these pins 22 through the blocks 21 and the openings in the box 14, plate 12, and the top of the chair 6, through the conduit 20, to a switch 24. This switch is of substantially the same construction as that described and claimed in Patent No. 560,452, granted to me May 19, 1896, and need not, therefore, be further described except to say that the base of the switch-pan is provided with a supporting-flange, which is preferably clamped between the flange 5 and the bottom of the switch-box.

The main supply-conductors 25 are led into the switch-box through openings 26 in its side, as indicated in Fig. 1, and are removably fastened to the switch, so that they may be readily inserted after the structure above described is placed in position.

The cover of the switch-box is not shown in the drawings, but this may be of any suitable construction such as is ordinarily employed in such relations.

It will be readily understood from the foregoing description and the drawings that the entire structure except the main conductors and the clamping-blocks 17 may be assembled to form a single complete article of manufacture in the factory where the several

parts are made and shipped in this condition ready for placing in position where it is to be used. The entire device may then be placed in position, the projecting lips of the parts 16 and 18 being slipped over the corresponding bases of the track-rails, and the blocks 17 may then be placed in position and the entire structure rigidly clamped to the track-rails by means of the bolts 19^a.

While I have shown and described a specific form and arrangement of parts and specific materials employed in the construction of such parts, I desire it to be understood that such materials and details of construction may be varied without departing from the spirit and scope of my invention.

I claim as my invention—

1. A structure for surface-contact electric railways, comprising a switch-box, a beam provided with contact-supporting devices and extending laterally from said switch-box beneath both track-rails, and means for clamping both the switch-box and the beam to the track-rails.

2. A structure for surface-contact electric railways comprising a switch-box, a beam bolted thereto and extending laterally therefrom beneath both track-rails, contact-carrying blocks and chairs therefor, means for fastening the chairs to the beam, and means for clamping the structure to the track-rails.

3. A structure for surface-contact electric railways comprising a switch-box, a beam bolted thereto and extending laterally therefrom, chairs supported on said beam, and conduits connecting said chairs with each other and with the switch-box.

4. A structure for surface-contact electric railways comprising a switch-box, a supporting-beam extending laterally therefrom, chairs located on said beam, a strengthening-beam on said chairs, boxes located on said strengthening-beam above said chairs, means for clamping said beams, boxes and chairs together and means for clamping the structure to the track-rails.

5. In a structure for surface-contact electric railways, a plurality of contact-pins, insulating-blocks therefor, a supporting and protecting frame comprising chairs, strengthening and supporting beams, retaining-boxes for said blocks and a switch-box all bolted together, a switch in said box and conductors extending from said switch to said contact-pins.

6. A structure for electric railways comprising two parallel beams, chairs located between said beams, a switch-box bolted to said beams and one of said chairs, a switch in said box, contact-pins, conductors connecting said pins and said switch, conduit-sections for said conductors, insulating-blocks for said pins, retaining-boxes for said blocks, and means for clamping said structure to the track-rails.

7. A structure for electric railways, comprising two beams spaced apart and having

a closed conduit therein, a switch-box and
switch, contact-pins, and conductors extend-
ing therefrom through the conduit to said
switch, insulating-supports for said pins and
5 means for clamping the structure to the track-
rails.

In testimony whereof I have hereunto sub-

scribed my name this 4th day of June, A. D.
1896.

GEO. WESTINGHOUSE.

Witnesses:

WESLEY G. CARR,
HUBERT C. TENER.