

E. A. REINKE.
MOUNTING FOR RELAYS OR THE LIKE.
APPLICATION FILED MAY 10, 1915.

1,151,497.

Patented Aug. 24, 1915.

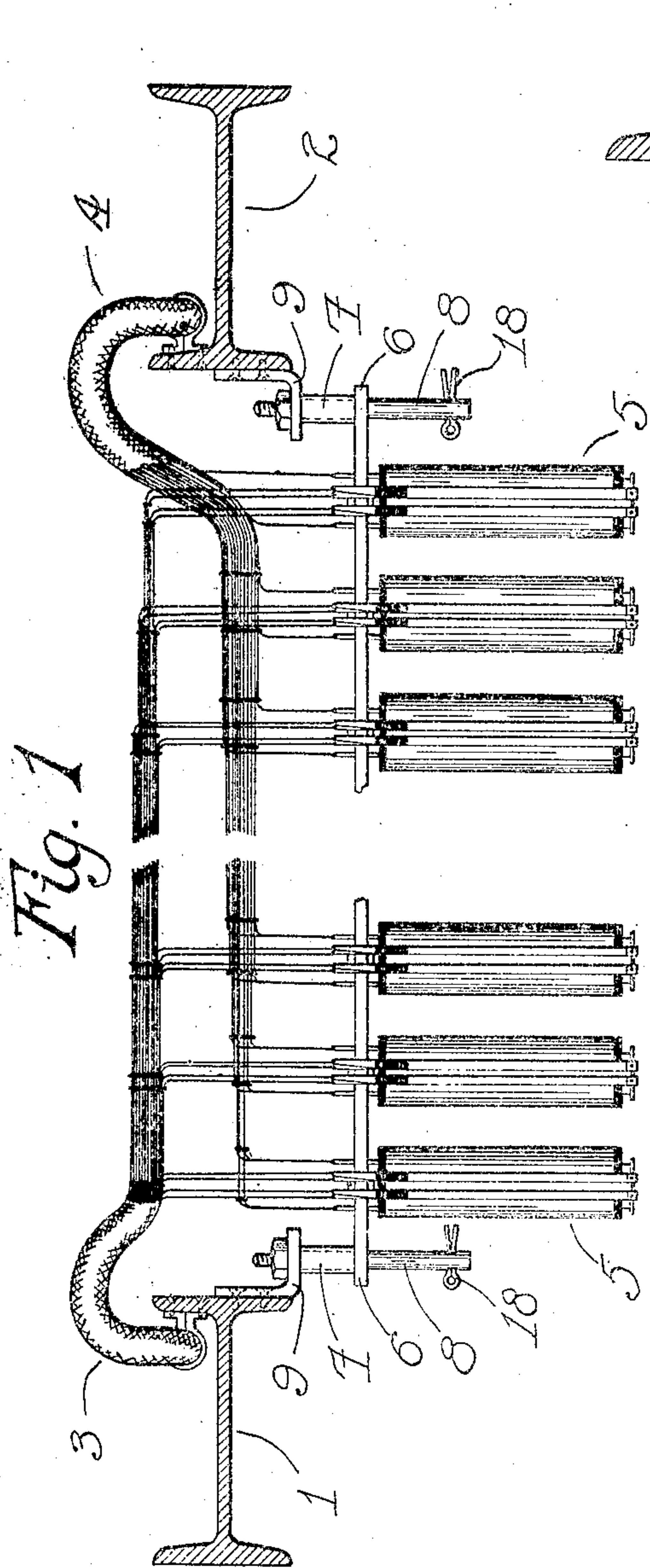


Fig. 1

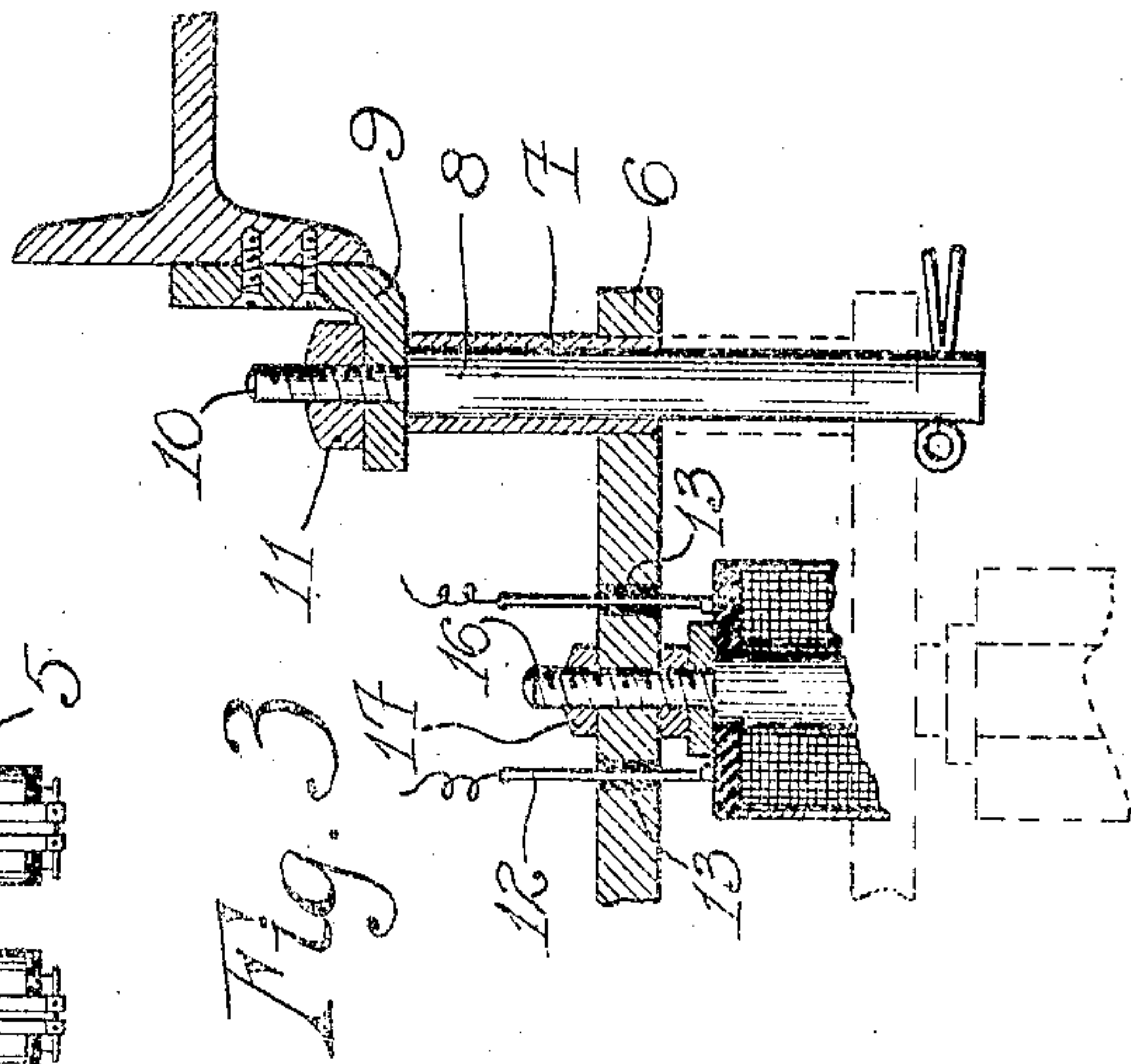


Fig. 3

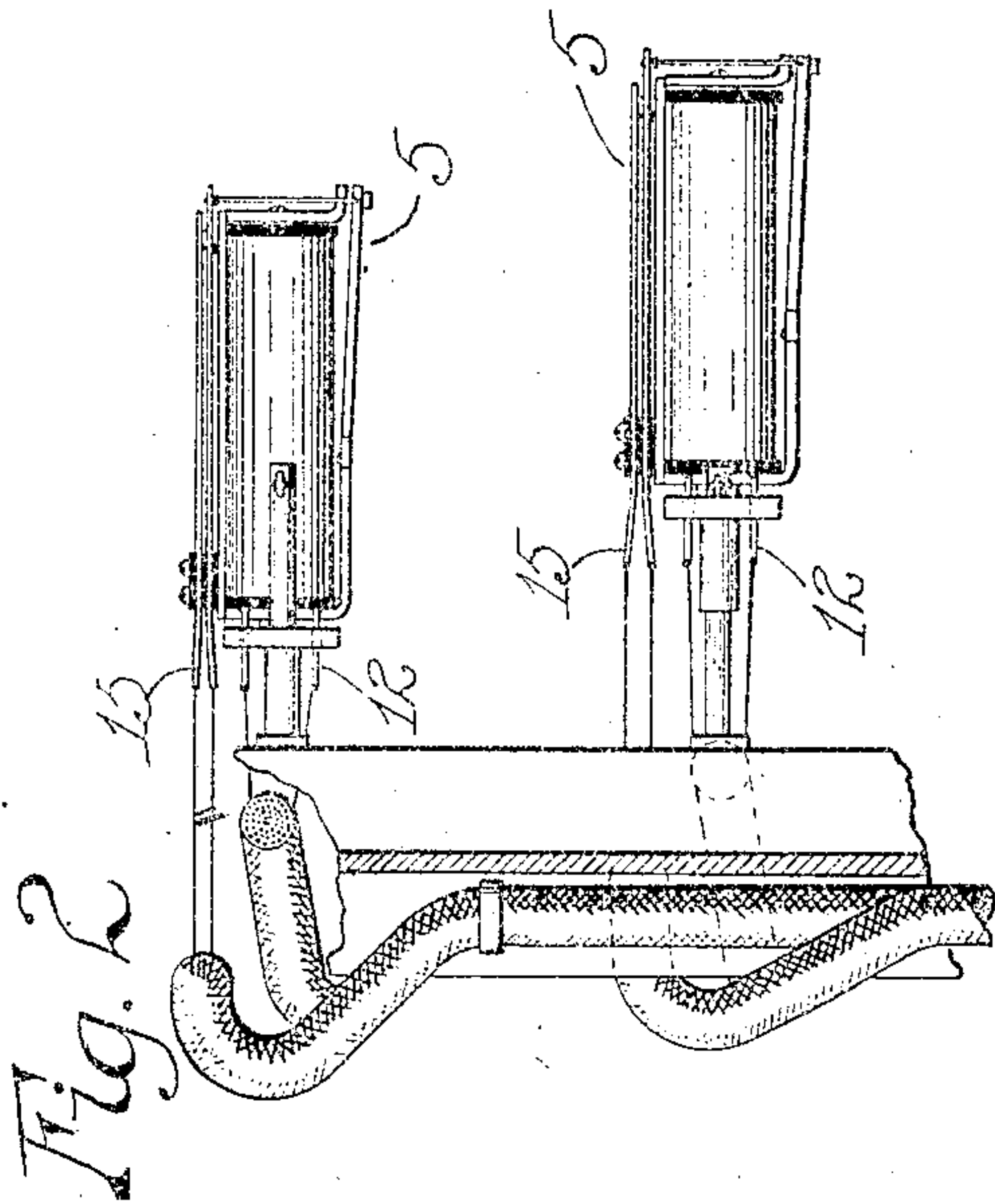


Fig. 2

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UNITED STATES PATENT OFFICE.

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MOUNTING FOR RELAYS OR THE LIKE.

1,151,497.

Specification of Letters Patent.

Patented Aug. 24, 1915.

Application filed May 10, 1915. Serial No. 27,193.

To all whom it may concern:

Be it known that I, EUGENE A. REINKE, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Mountings for Relays or the like, 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.

The present invention relates to mounting for relays or the like. Where a large number of similar individual pieces of apparatus, such as telephone relays are to be mounted and housed, it is imperative that these units be arranged in such position that inspection and repairs can readily be accomplished without danger of getting other units or pieces of apparatus out of order. The inaccessibility of relays as heretofore mounted on relay racks or boards renders them not only difficult of inspection but renders adjacent units liable to damage during the repair of any particular unit. This inaccessibility also has a tendency to cause neglect of inspection and even of repair.

The object of the present invention is to provide improved mounting means for relays or the like so as to render accessible any desired unit or units from a board or rack, and to allow closer mounting of the units.

In the accompanying drawings I have illustrated one embodiment of my invention. It is understood, however, that the present invention is not limited to mounting solely for relays but may be applied to other forms of apparatus, such as heat coils, lightning arresters, resistance coils, or any similar or analogous articles or uses.

Figure 1 is a plan view of a bank of relays, provided with my improved mounting means. Fig. 2 is a side elevation of a pair of relay banks, and Fig. 3 is a fragmentary detail view illustrating the manner in which the movement of the cross bar or mounting bar is secured.

It is customary to provide frames in which the relays or similar apparatus are mounted. I have shown a frame as consisting of adjacent I-beams 1 and 2 and it is to be understood that these beams may be arranged vertically or may be arranged horizontally. Cables 3 and 4 containing

wires which are connected to the relays 5 are disposed in the hollow space between the flanges of the beams or bars 1 and 2. Instead of employing an I-beam, channel bars or other structural shapes may be employed.

The relays 5 which may be of any preferred form, but which in the present drawing are of the type disclosed in my co-pending application Serial No. 27,192 filed May 10, 1915, are mounted upon a cross bar 6 having the sleeves 7 secured thereto. The sleeves 7 are slidably mounted upon guide rods 8 supported from the beams 1 and 2 by means of the angle brackets 9. The guide rod 8 (see Fig. 3) is preferably secured to the angle brackets 9 by means of a shoulder and a stud 10 passing through one part of the bracket and secured thereto by means of a nut 11. The sleeve 7 is rigidly secured to the cross bar 6 as by threading or expansion therein and serves to hold the cross bar 6 in proper relation to prevent tilting of the bank of relays. As shown in the present illustration the cable 4 has its wires connected to the windings of the relays 5 by means of the terminals 12 which are secured to the rear insulating heads of the windings and pass through insulating bushings 13 in the cross bar 6. The cable 2 is fanned-out in the well known manner, but is provided with a goose-neck bend as shown in Figs. 1 and 2 so as to allow bodily movement, without imposing any particular strain upon the individual wires leading to the terminals 12. In a similar manner the cable 3 which is fanned-out to make connection with the terminals 15 leading to the contact springs of the relays is provided with a goose-neck so as to allow a movement of the strip of relays. In this manner the pull upon the cross bar 6 is equalized from both cables and there is no tendency whatsoever to bind the sleeves 7 upon the guide 8. Each individual relay is secured to one of the cross bars 6 by means of a stud 16 and a nut 17 which secure the cores of the relays to the bar 6 in a permanent manner.

When it is desired to inspect or repair any particular relay, the bank in which it is mounted may be drawn bodily forward as shown in the dotted line in Fig. 3 without imposing any detrimental strain upon the connection or upon any of the wires. The outer ends of the rod 8 are provided with

cotterpins 18 to prevent the cross bar 6 from being moved too far. It is evident that if the cross bar 6 is to be removed from the guides 8 that the same may be accomplished 5 when the cotterpins 18 are withdrawn. If the connections at the rear are to be inspected or repaired the rows immediately above and below the particular row are pushed forward leaving the particular row 10 in accessible condition. It can be seen that this mounting not only furnishes greater facilities for inspection and repair but it also allows the relays to be mounted closer to each other than has heretofore been possible; thus effecting a great saving of valuable space. 15

It is to be understood that this invention applies not only to the mounting of relays in the particular manner shown, but that the 20 construction may be such that instead of having the relays pull forward out of the bank they may be pulled backward out of the bank for the purpose of inspection, repair and replacement.

I do not intend to be limited to the precise details of construction illustrated, as it is obvious that modifications will at once be apparent to those skilled in the art. Such 25 modifications I consider to come within the scope of my invention. 30

What I claim as new and desire to secure by Letters Patent is the following:

1. In combination, a pair of supporting beams, guides mounted on said beams, a 35 cross bar mounted upon said guides and having a limited motion thereupon and means for mounting a plurality of similar units on said cross bar.

2. A frame comprising substantially parallel supporting beams, brackets having 40 guides, said brackets being attached to said beams and having the guides extending in

parallel relation to each other, a cross bar slidably mounted on said guides, relays 45 mounted on said cross bar and cables adjacent said beams, said cables being connected to said relays and having limited movement to allow bodily movement of the cross bar and relays.

3. In combination, a pair of substantially 50 parallel supporting beams, brackets mounted on said beams, rods mounted on said brackets, said rods being substantially parallel to each other, a cross bar having a sleeve slidably mounted on each rod, said cross bar 55 having a limited range of movement between said brackets and the ends of said rods.

4. A frame comprising a pair of beams, brackets secured to said beams, parallel 60 guides mounted on said brackets, a cross bar having slides mounted on said guides, relays secured to said cross bar, cables for said relays, said cables supported adjacent the beams and having loops for allowing limited 65 bodily movement of said bar on said guides.

5. A frame comprising a pair of channel beams, a bracket on each beam, a guide on 70 each bracket, a slide mounted on each guide, a cross bar connected to said slide, relays mounted on said cross bar, cables for said relays, said cables being supported in said channel beams and having loops for allowing 75 bodily movement of said cross bar.

6. A pair of beams, a pair of parallel 75 guides, one on each beam, a cross bar slidable on said guides, relays mounted on said cross bar and a cable connected to said relays.

In witness whereof, I hereunto subscribe my name this 1st day of May A. D. 1915. 80

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Witnesses:

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