

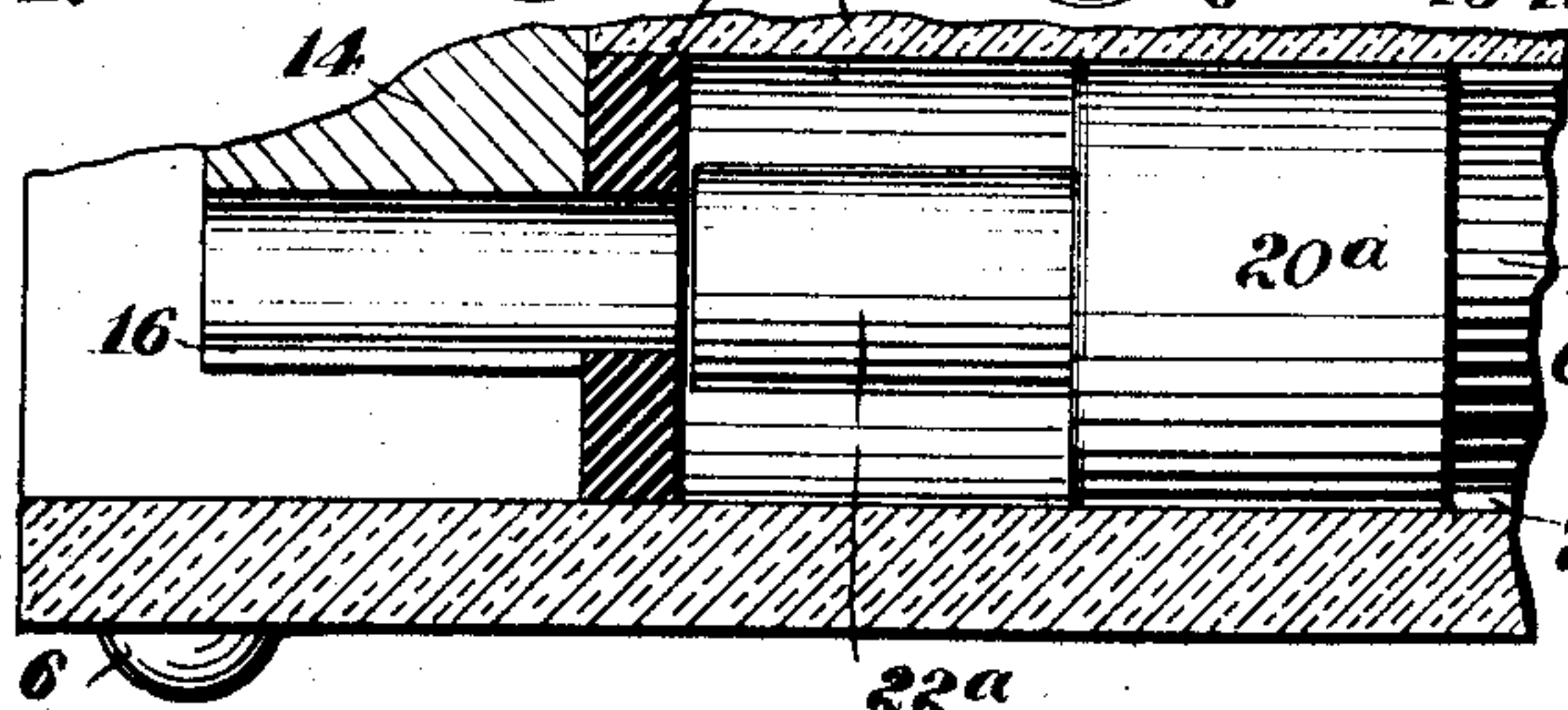
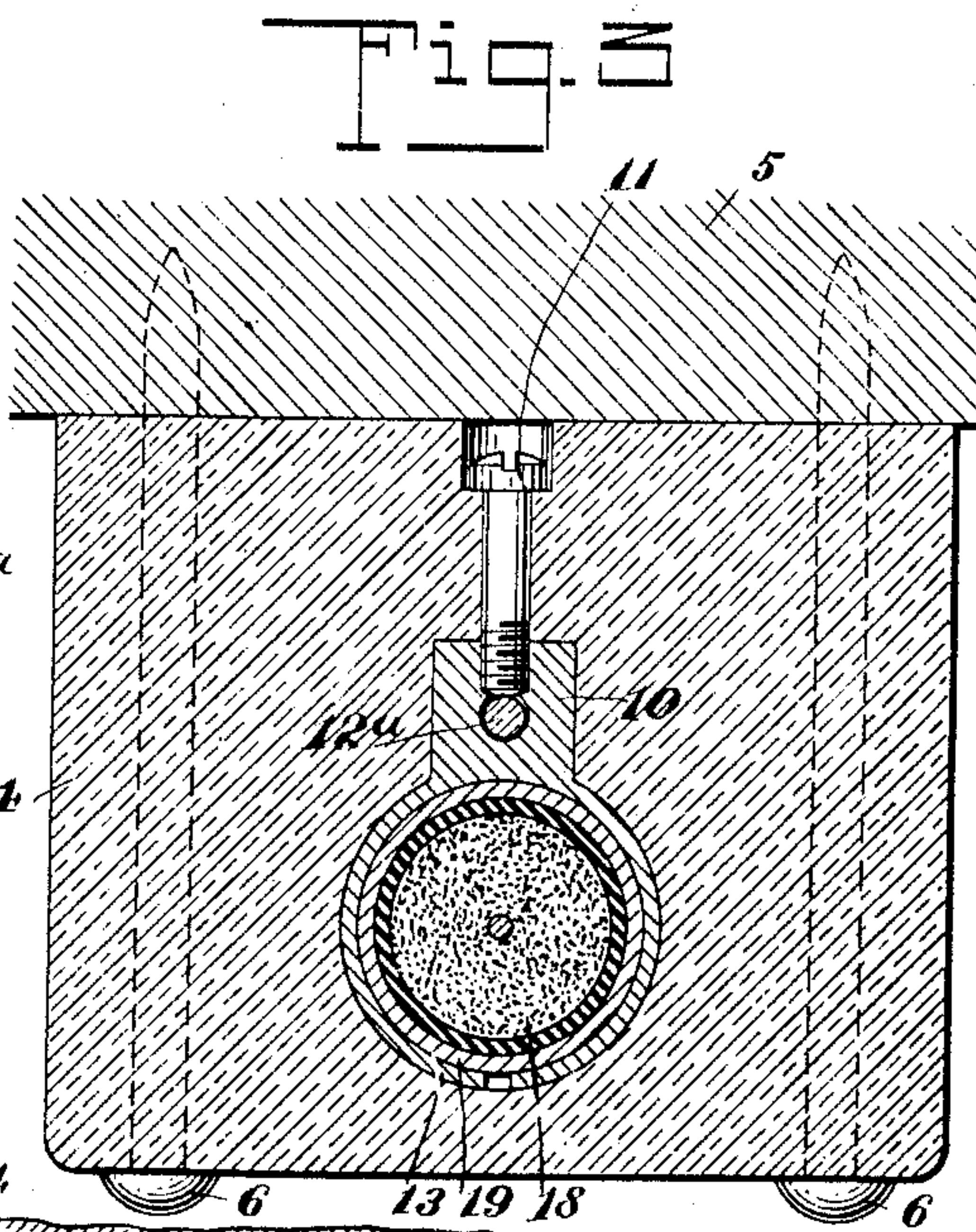
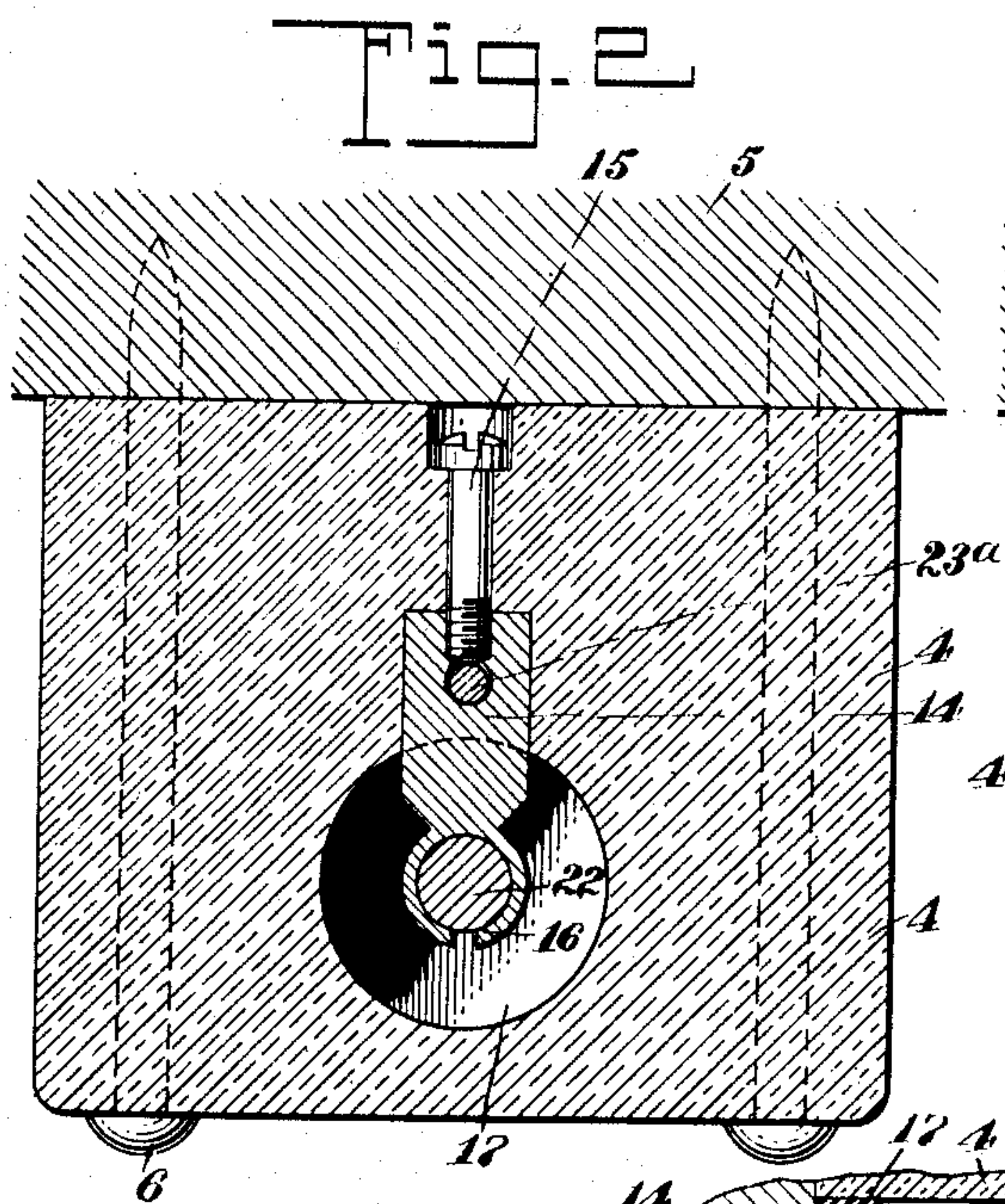
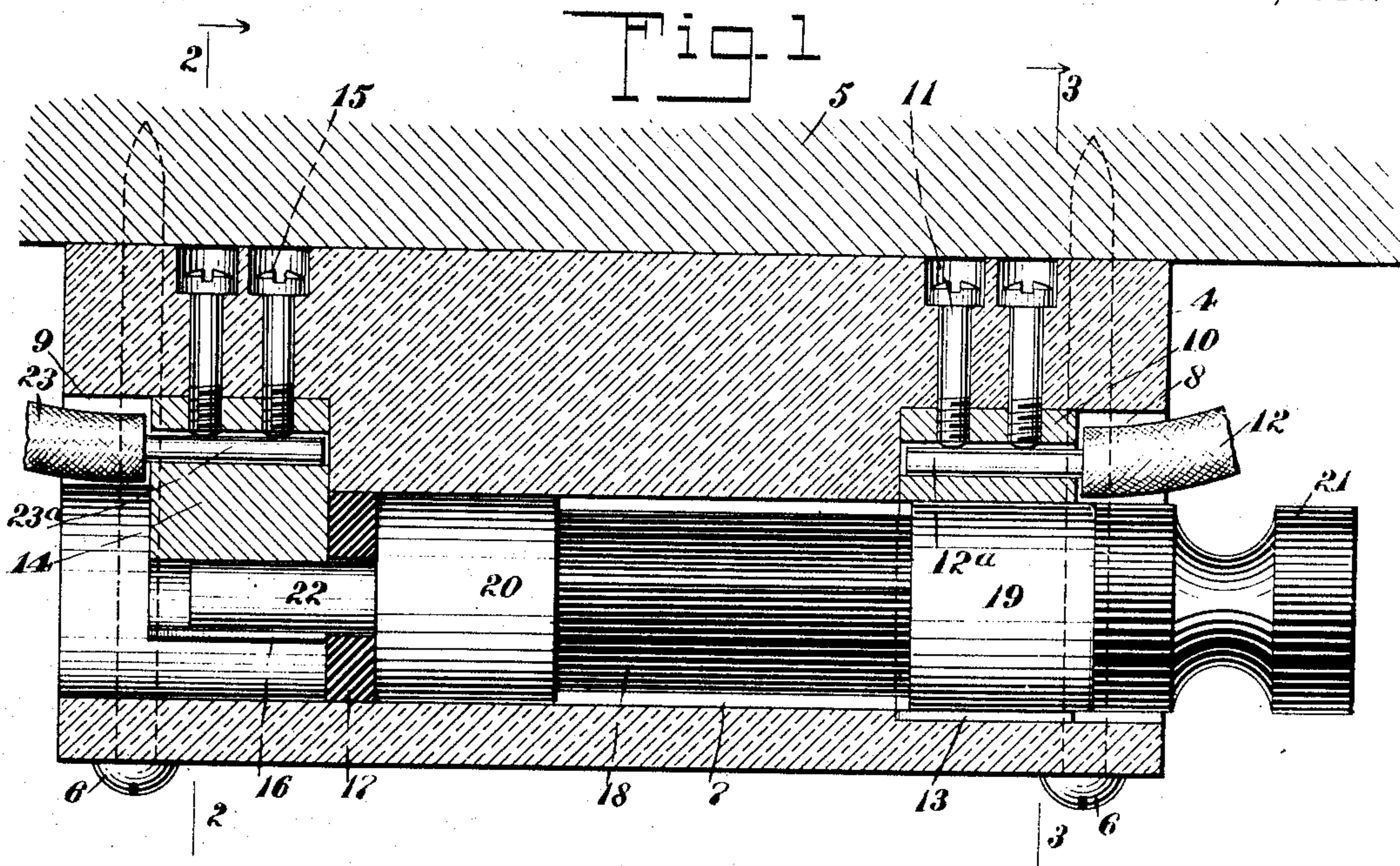
A. A. MOFFITT & G. E. ANDREWS.

ELECTRICAL FUSE BLOCK.

APPLICATION FILED JULY 23, 1909.

946,251.

Patented Jan. 11, 1910.



WITNESSES

J. A. Brophy
Walton Harrison

INVENTORS
Andrew A. Moffitt
George E. Andrews

BY *Munn & Co*

ATTORNEYS

UNITED STATES PATENT OFFICE.

ANDREW ALEXANDER MOFFITT AND GEORGE EARL ANDREWS, OF PROVIDENCE,
RHODE ISLAND.

ELECTRICAL-FUSE BLOCK.

946,251.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed July 23, 1909. - Serial No. 509,221.

To all whom it may concern:

Be it known that we, ANDREW A. MOFFITT and GEORGE E. ANDREWS, citizens of the United States, and residents of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Electrical-Fuse Block, of which the following is a full, clear, and exact description.

Our invention relates to fuse blocks and fuses to be used in connection therewith, our more particular purpose being to so adjust the fuses relatively to the fuse block, as to prevent the insertion in a particular block of a fuse built for greater amperage than one intended to be inserted in said block.

More particularly stated, our invention comprehends a fuse block so constructed that the insertion of a fuse of too great amperage is impossible, owing to the fact that the fuse to be kept out of the block is a misfit, being suitable for some other block.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a central longitudinal section through our improved block and the fuse used in connection with it, the parts being in their normal position and the fuse ready for electric action. Fig. 2 is a vertical section through the fuse block, approximately on the line 2-2 of Fig. 1, looking in the direction of the arrow, and showing the clip forming a part of the block and engaging a boss mounted upon the fuse, said boss being of proper size to fit into said clip; Fig. 3 is a vertical section, approximately on the line 3-3 of Fig. 1, looking in the direction of the arrow, and showing another clip for holding the fuse; and Fig. 4 is a fragmentary vertical section showing a fuse block, being of greater amperage than is intended for said block.

The application for which this invention is more particularly designed is upon the structures generally known as cartridge fuses. The principal object which it has in view is to prevent the introduction, between the fuse terminals of the line, of a fuse having a larger ampere capacity than is designed for the line. Heretofore where fuses

such as the screw plug, ordinary cartridge or the open wire type have been used, it has been customary in making temporary installations, requiring a larger capacity than is supplied by the block used in the original installation, to remove the original fuse and substitute therefor one of larger, and in many instances, of a dangerously large carrying capacity. This has resulted in permitting a load to be introduced on the wires, which has taxed, and in many instances, broken down the insulation by heat, resulting often in producing a dangerous fire.

By means of the present invention it becomes impossible to supply the line with a fuse of a larger ampere capacity than that designed. And, if it be desired to vary the shapes of the selective terminals with which the fuses are provided, it may be so arranged that the exact fuse must be used in all fuse blocks constructed in accordance with the present invention.

Mounted upon a wall, or other support, is a base 4 of porcelain or similar material, secured in position by screws 6. The base 4 is provided with a compartment 7 having generally a cylindrical form. The base 4 is further provided with recesses 8, 9 which merge into the compartment 7 and are located at the ends of the base. Mounted within the recess 8 is a lug 10 secured in position by screws 11 which serve as binding posts and are adapted to grip a wire 12, as indicated in Fig. 1, a portion 12^a of this wire being bare for facilitating this object.

Integral with the lug 10 and depending therefrom are metallic springs 13 of arcuate form, these springs and the lug together constituting a clip. At the opposite end of the base a lug 14 is mounted within the recess 9 and is engaged by screws 15 corresponding to the screws 11. The lug 14 is provided with metal springs 16 of arcuate form, these springs being somewhat similar to the springs 13 but having a more abrupt curvature, thus approximating a cylinder of comparatively small diameter.

At 17 is an annular support made of insulating material and mounted rigidly within the compartment 7. A fuse 18 is provided with cylindrical contact members 19, 20 and with a knob 21, the latter serving as a handle. The fuse is also provided with a

boss 22 serving as a gage, and also, to some extent, as a limiting stop. That is to say, for each pair of contact springs 16 the fuses to match the same are each provided with a boss 22 of proper diameter to fit into the springs 16.

At 18^a (see Fig. 4) is shown a fuse provided with an annular contact member 20^a, and also with a boss 22^a, the diameter of this boss being greater than that of the boss 22 shown in Fig. 1, but other parts of the fuse being exactly like those shown in said figure.

As indicated in Fig. 4, when the fuse provided with the boss 22^a is partially inserted into the compartment 7, the boss 22^a is unable to extend through the annular shoulder 17, or intermediate the contact springs 16. Hence, the fuse 18^a can not be inserted so as to have any electrical effect whatever, because no metallic portion of this fuse can be brought into engagement with the springs 16.

From the above description, it will readily be seen how the invention operates in practice. Suppose, for instance, that the base shown in Fig. 1 is intended for use in connection with currents of, say, five amperes, and that the fuse 18 is a five ampere fuse. In this event the diameter of the boss 22 is so apportioned that this boss can fit into the springs 16. The operator, then, by grasping the handle 21 can insert the fuse endwise, so that the boss 22 extends through the support 17 and engages the springs 16, as indicated in Fig. 1, the fuse being now properly inserted and ready for action. Suppose, however, that the operator, through ignorance or by accident, attempts to insert the fuse 18^a (Fig. 4), this fuse being able to carry, say, ten amperes. The boss 22^a, in this fuse of greater amperage, is made of greater diameter, as indicated in Fig. 4. Hence, the boss 22^a lodges against the support 17 and is unable to extend there-through into engagement with the contact springs 16. Moreover, the support 17, being of insulating material, prevents any possibility of the boss 22^a even touching any metallic member which might otherwise complete a circuit momentarily.

In practice, while a considerable variety of fuses may be employed, they are all alike as to external appearance, with the exception that the boss 22 in one fuse has a greater diameter than in another. Similarly if there be a number of bases 4 they may be all alike in general appearance, with the exception that in one the contact springs 16 have such curvature as would correspond to a circle of smaller diameter than would be the case with the corresponding springs in another base.

The operation of our device is as follows:

The fuse block as a whole is used a good deal like any other fuse block, so long as the

proper fuses are employed with it. The operator grasps one of the fuses by the handle 21 and inserts the fuse endwise into the compartment 7. If the fuse is easily inserted, so that the handle 21 takes up the position indicated in Fig. 1, the fuse is simply left in position. If it happens, however, that the boss 22 of this fuse is too small for the particular springs 16, no electric circuit is completed, and the fuse should be withdrawn and replaced by another. If, on the contrary, the fuse sought to be inserted does not move into its proper position as indicated by the extent to which the handle 21 protrudes, the operator is thereby apprised that the fuse he is attempting to insert is one of too great amperage. Moreover, the operator can tell by the sense of feeling, whether the fuse he is attempting to fit into position is the one intended for the particular block. If the boss 22 does not touch the support 17 or the springs 16 as is always the case when the fuse is of too small amperage, the operator detects this fact by the ease with which the fuse is inserted into position, or by the fact that the fuse does not move far enough into the compartment to make a proper fit.

By aid of the device above described, the possibility of using a fuse of improper amperage, and particularly of amperage too great, is effectively avoided, and the safety of electrical apparatus thereby enhanced to that extent. It will also be noted that in the fuses above described the contact members 19, 20 are of the usual cylindrical form, and that they adapt the fuse for insertion in an ordinary fuse block, as well as in the fuse block above described.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In an electrical fuse block, the combination with a plurality of contact clips, of a separating member having a perforation of designed shape and size to compel the use of fuses designed to fit said perforations, said member being interposed between said clips.

2. In an electrical fuse block, the combination with a plurality of contact clips, of a wall having a perforation of designed shape and size, and a cartridge fuse having an extended member formed and disposed to require insertion within said perforation to permit electrical contact of the fuse terminals with the said clips.

3. In an electrical fuse block, the combination of a base provided with an end opening compartment, suitable clips disposed within said compartment adapted to receive the electrical terminals, a partition extended across said compartment between said clips having a passage of designed size, a fuse adapted to be inserted within said compartment and having an extended contact adapted-

ed to pass through said passage and a suitable contact to form electrical connection at the entrance end of said compartment, and provided with an insulated handle extended from the outer end of said fuse
5 whereby the same may be inserted and withdrawn from said compartment.

In testimony whereof we have signed our

names to this specification in the presence of two subscribing witnesses.

ANDREW ALEXANDER MOFFITT.
GEORGE EARL ANDREWS.

Witnesses:

ARTHUR P. JOHNSON,
RHODES U. ELDRED.