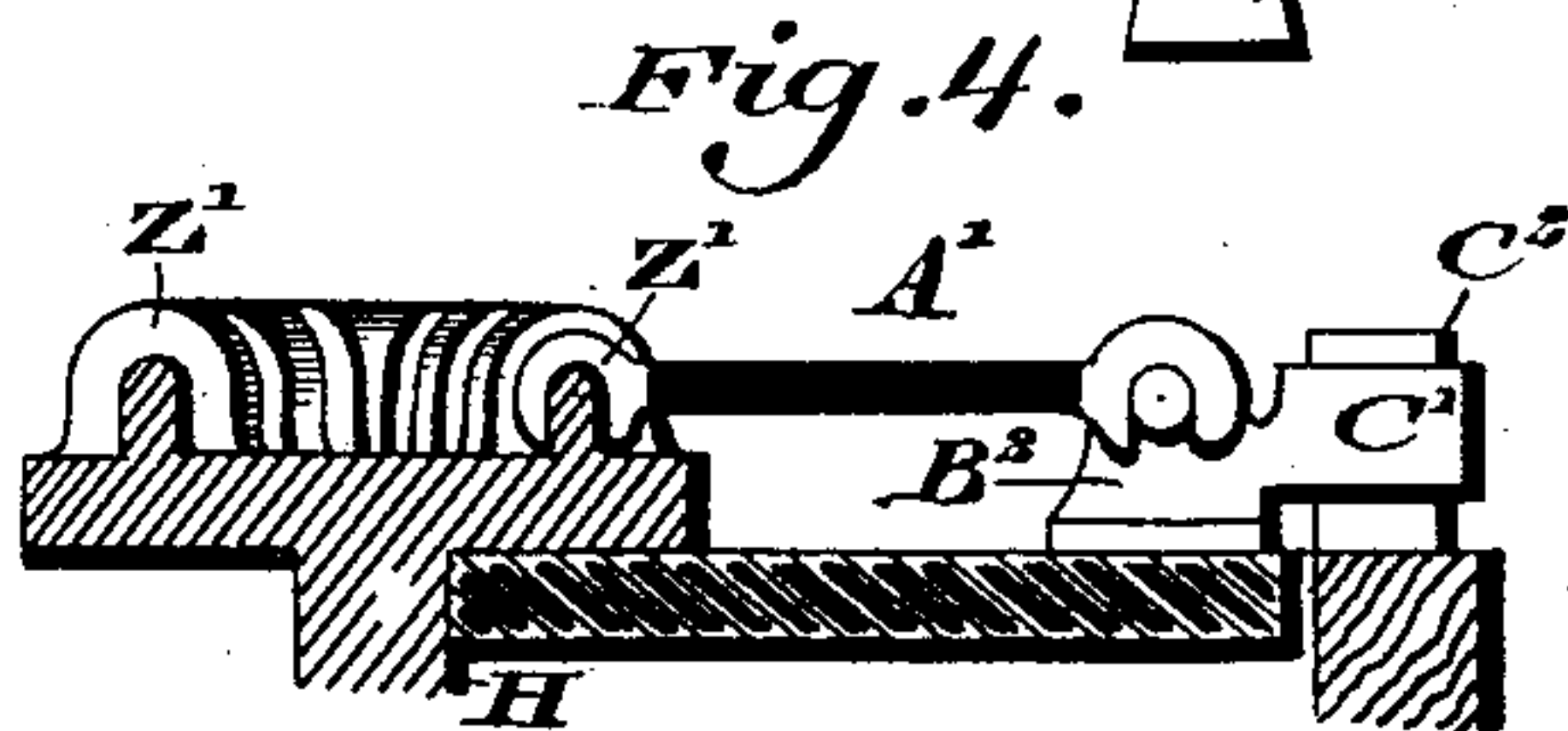
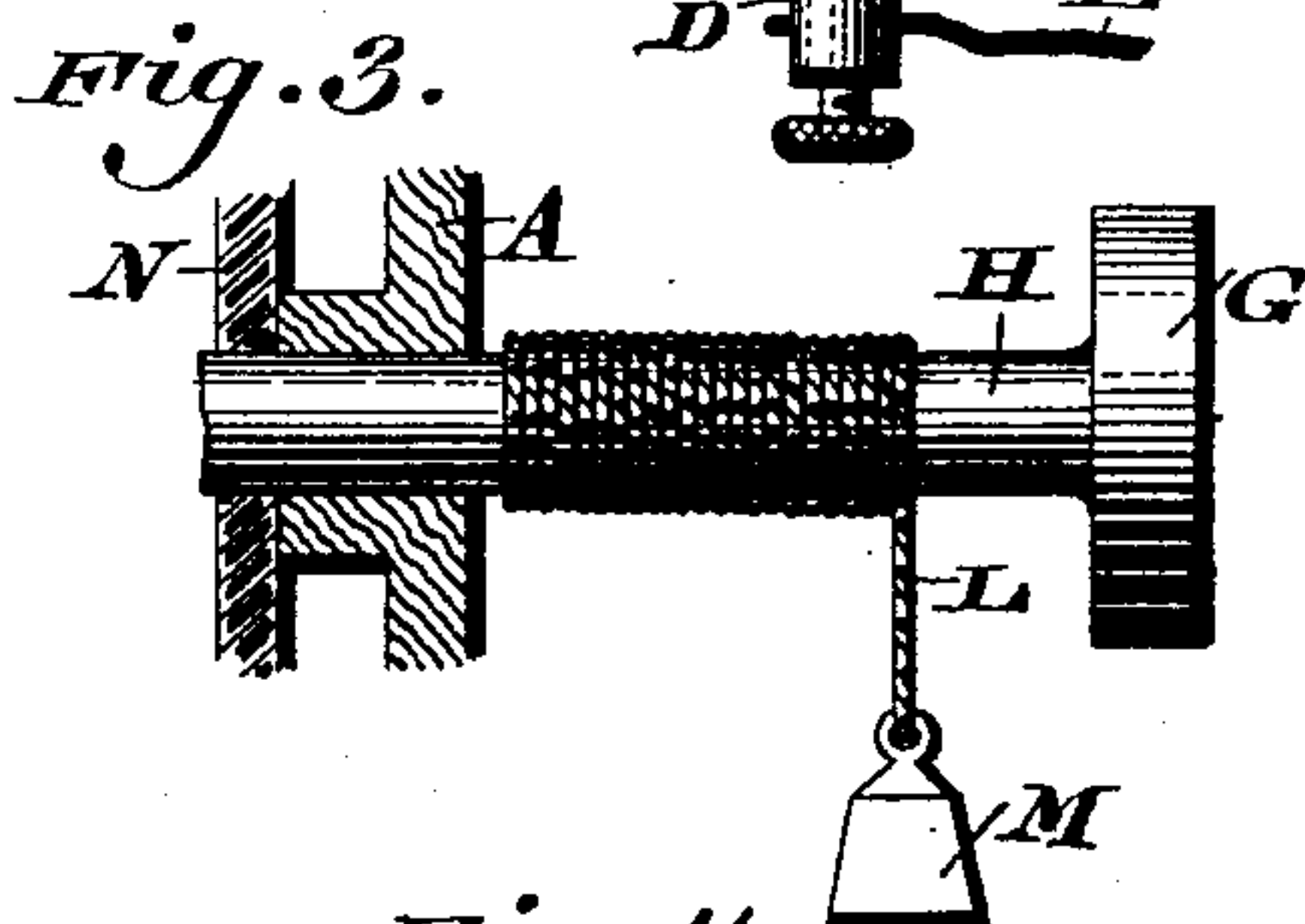
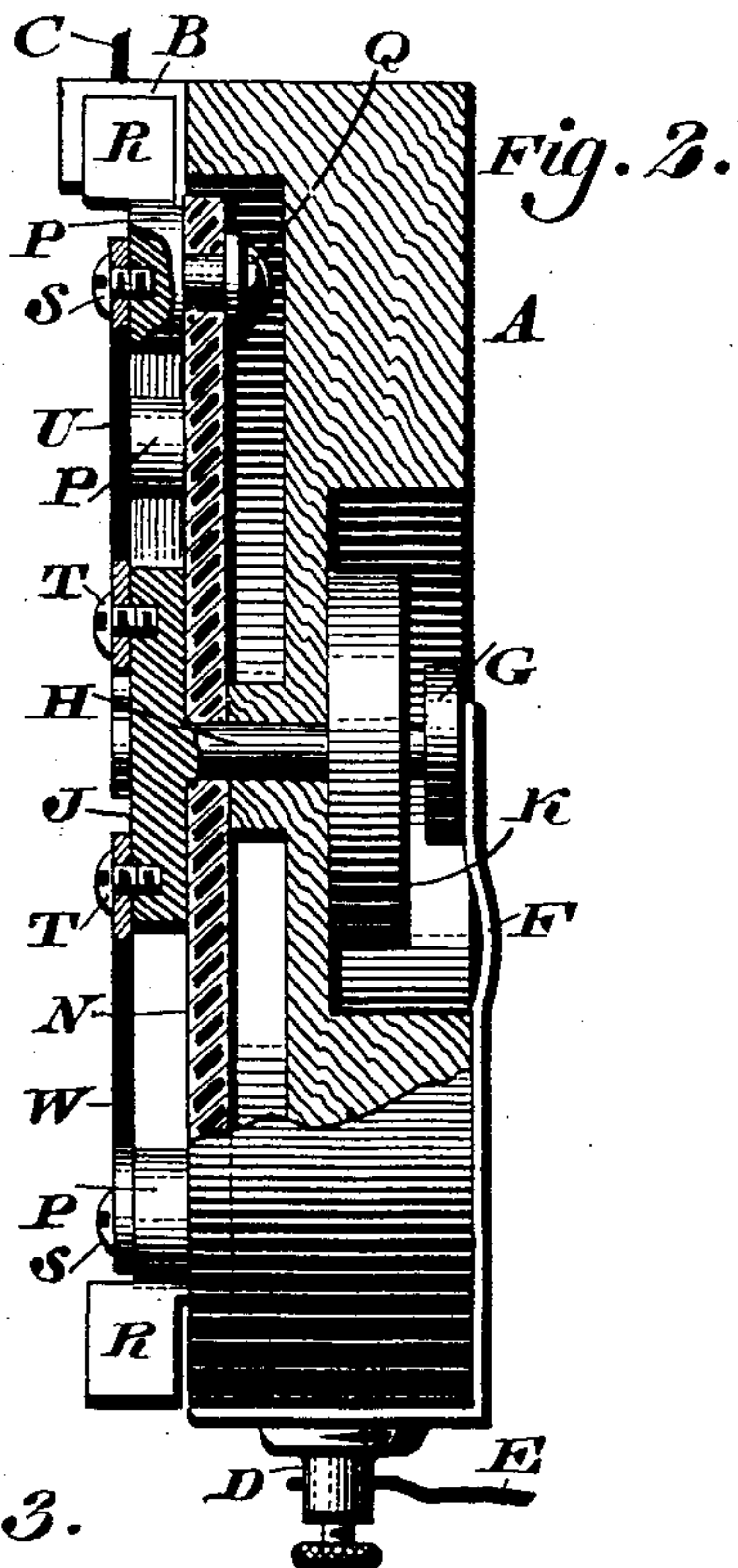
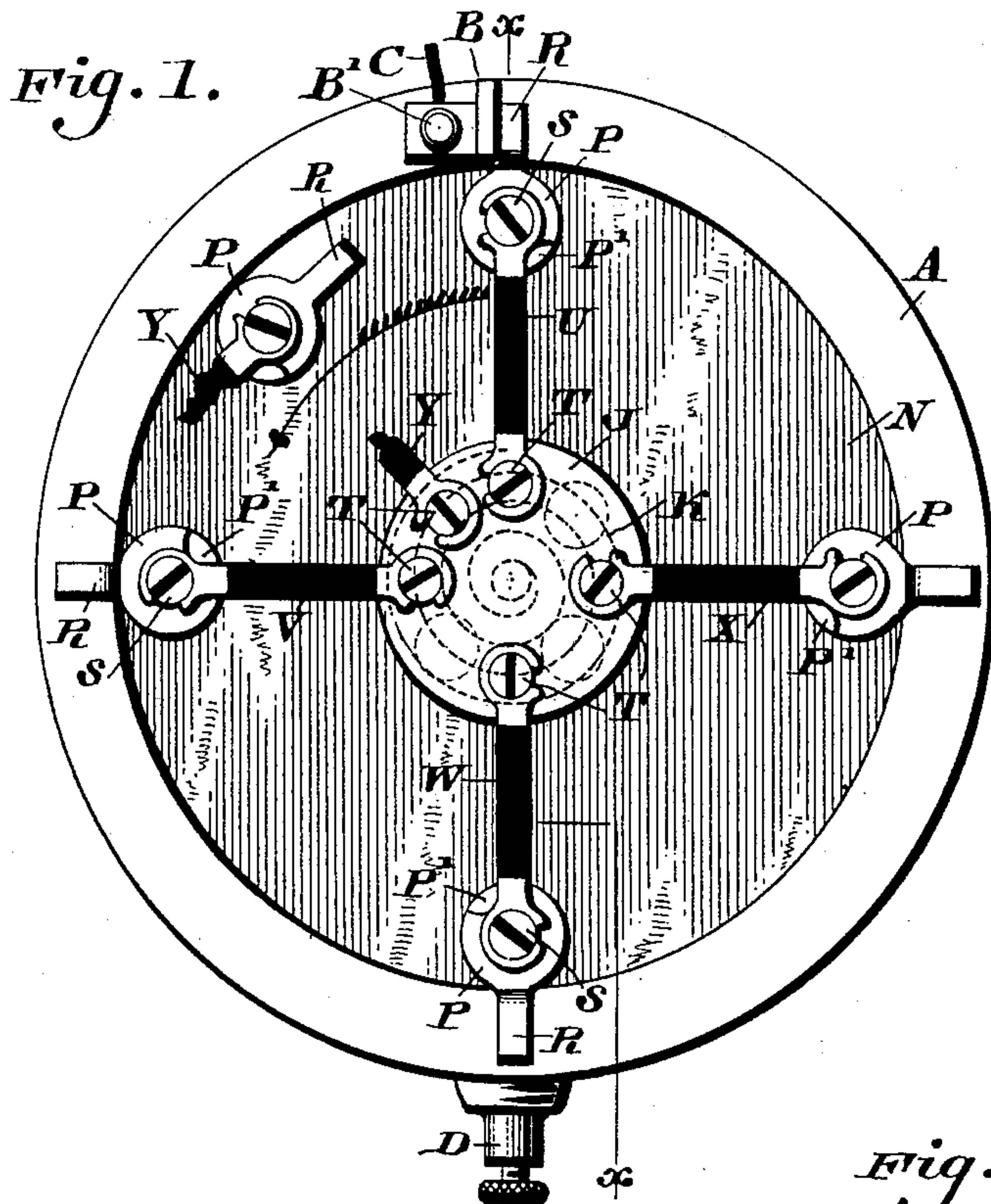


(No Model.)

H. C. REAGAN, Jr.  
AUTOMATIC FUSE.

No. 560,819.

Patented May 26, 1896.



WITNESSES

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# UNITED STATES PATENT OFFICE.

HARRY C. REAGAN, JR., OF PHILADELPHIA, PENNSYLVANIA.

## AUTOMATIC FUSE.

SPECIFICATION forming part of Letters Patent No. 560,819, dated May 26, 1896.

Application filed September 6, 1895. Serial No. 561,621. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY C. REAGAN, JR., a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Automatic Fuses, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel construction of automatic fuse, in which only one fuse is in circuit at a time, although as many circuits and contacts may be employed as desired, provision being made for never leaving a circuit unprotected or open, and means being employed for adding a new fuse without the circuit being open for any considerable period, the movement of the principal operative parts of the device being dependent upon the blowing of a fuse.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a plan view of an automatic fuse embodying my invention. Fig. 2 represents a partial sectional view of the same on line *xx*, Fig. 1. Fig. 3 represents a partial sectional view showing another form of mechanism for actuating the fuse. Fig. 4 represents a sectional view of another manner of constructing a portion of the fuse.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a supporting bed, block, or disk, which is preferably constructed of wood or other non-conducting material, the same having attached to one portion thereof the contact B, which is provided with a suitable binding-post B', to which the conductor C is attached.

D designates another binding-post attached to another portion of said disk A, to which the conductor E is attached.

F designates a spring or strip which has one end in contact with the binding-post D, while its other end is in contact with the contact-plate G, which is mounted upon the axis II, to which is secured the plate J, which is of brass or other suitable conducting material.

K designates a coil-spring, which is attached to said axis II in such a way that said spring may be wound up somewhat after the manner of a clock-spring, although, if desired, a cord L, having an end attached to said axis

II, so as to be wound thereon, as shown in Fig. 4, may be employed, the other end of said cord having a weight M attached thereto, it being evident that the function of said spring K or cord and weight are the same—viz., to tend to rotate the axis II and whatever may be attached thereto.

N designates a disk, of porcelain or other non-conductible material, which is mounted upon the axis II, so as to freely rotate thereupon, said disk N having the heads P mounted upon the studs or pins Q or similar devices, whereby said heads are enabled to rotate on said disk, their rotation in one direction being limited by means of the shoulders P', which contact with the fuse when the latter is in position, the location of which shoulders with respect to said heads being evident from Fig. 1. R designates an arm attached to each of said heads P, each of said arms being adapted to contact successively with the contact B, as is evident from Fig. 1. S designates screws attached to said heads P and adapted to assist in holding the fuses in position.

T designates other screws attached to the central plate J, the relative position of the above screws being evident from Fig. 1. U, V, W, and X designate fuses which have portions thereof common to said heads P and the screws T.

Y designates a fuse similar to the others, the same, however, having been blown, as will be hereinafter explained.

In the construction seen in Fig. 4 the disk Z is substituted for the disk J and is provided with an annular ridge Z', which is recessed at intervals for the reception of the ends of the fuses A', whose other ends are adapted to engage the heads B<sup>2</sup>, which have the arms C', adapted to engage the contacts C<sup>2</sup>, as seen in said Fig. 4.

The operation is as follows: When the parts are in the position seen in Fig. 1, the circuit being closed at its normal load, the course of the current would be through the conductor C, the contact B, arm R, head P, fuse U, plate J, and thence through the axis or shaft II to the plate G, spring F, the binding-post D, and conductor E, it being evident that there is only one fuse in the circuit at a time, although I may employ as many circuits and



contacts upon one disk as I may desire. Now if from any cause the current should increase above the carrying capacity of the fuse U, it being remembered that the tendency of the disk N is always to rotate by reason of the tension due to the spring K or the cord and weight, it will be seen that the fuse U would melt, and that the instant this takes place the disk will revolve, in the present case toward the left, as indicated by the arrow in Fig. 1, and would thereby cause the arm R, abutting against the contact B, and the head P to revolve, and so clear said contact, and thus permit the next adjacent arm of the next head P to move into contact with the contact B, the fuse which is blown out then appearing as indicated at Y, which operation it will be seen may occur as many times as there are fuses upon the disk.

It will be apparent from the foregoing that the circuit is never left unprotected or open for any considerable period and that new fuses may be added as desired without the circuit being open, and it will further be seen that the rotation or movement of the disk A or dog R', hereinafter referred to, is dependent upon the blowing of a fuse, since each of the latter holds its head in the desired position relative to the contact B prior to the blowing of said fuse.

The operation of the device seen in Fig. 3 has already been described.

The operation of the construction seen in Fig. 4 is substantially the same as in Figs. 1 and 2, as is evident.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic fuse, a main disk, means for imparting rotation thereto, a support for said disk, a contact on said support, a plate, heads mounted on said disk, and having arms adapted to engage the contact on said sup-

port, fuses attached to said heads and to said plate, whereby said heads are normally held in their proper position until blown, substantially as described.

2. In an automatic fuse, a movable plate and disk, a support therefor, a contact on said support, heads mounted on said plate and disk, and fuses intermediate said heads, and acting to hold the same in normal position, and release them when a fuse is blown, in combination with means for imparting motion to said disk, substantially as described.

3. A disk movably supported, rotatable heads mounted upon said disk means for rotating the latter, arms extending from said heads, a substantially centrally-located plate, fuses intermediate the latter and said heads, and an outer support having a contact thereon adapted to be engaged by said arms, substantially as described.

4. A supporting-block having a contact-stop thereon, a non-conducting disk, an axis or shaft upon which said disk is mounted, a conducting-plate attached to said axis, movable heads mounted upon said non-conducting disk, a central conductor secured to said axis and fuses common to said heads and central conductor, substantially as described.

5. In an automatic fuse, the block A, the axis H mounted thereon, the binding-post D, the conductor F common to said post and axis, the non-combustible disk N, the conductor J mounted on said axis, the heads and arms rotatably mounted on said disk N, fuses common to said heads and conductor J, the contact B, and means for rotating said axis, in combination with an electrical circuit, in which the above parts are situated.

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