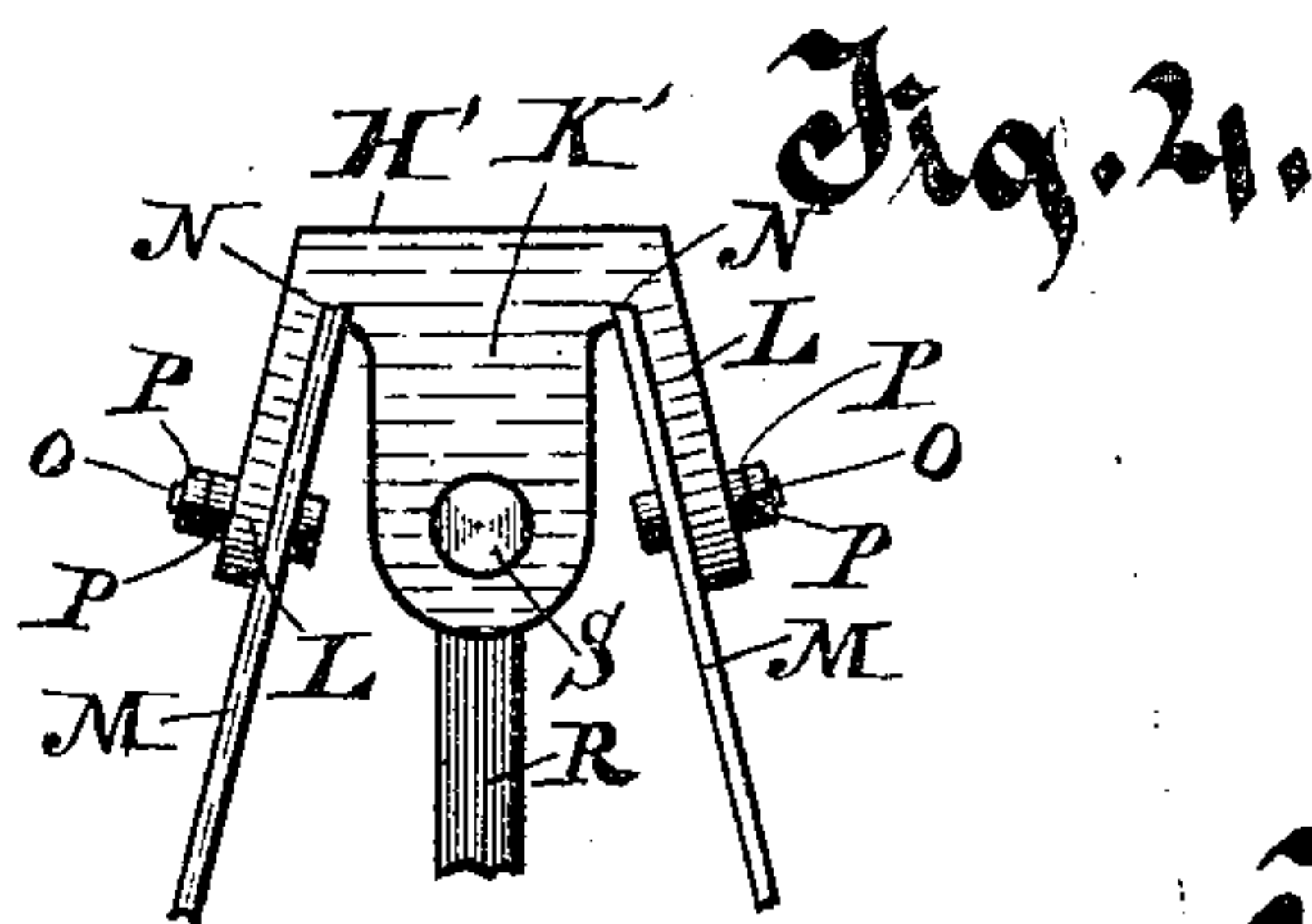
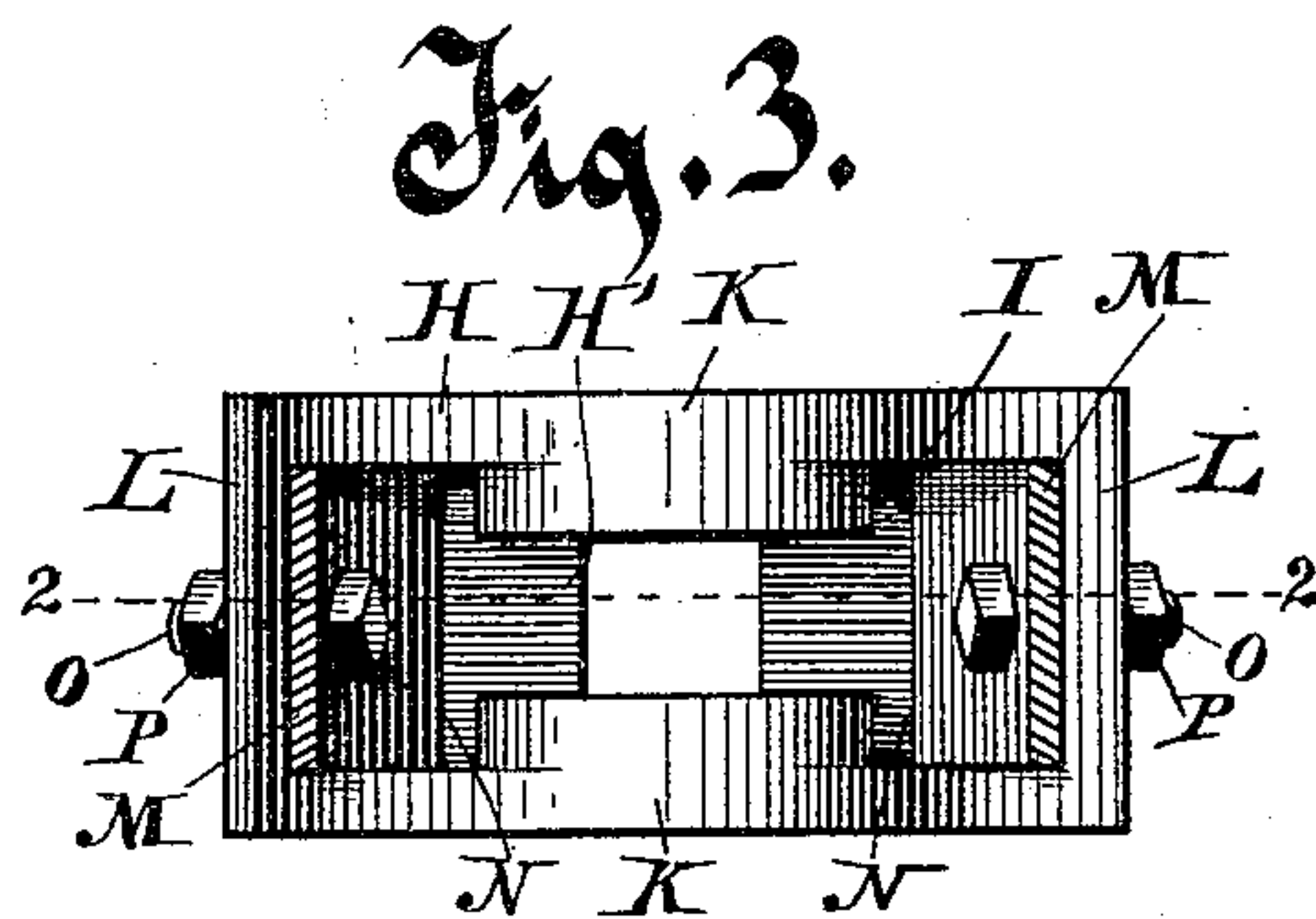
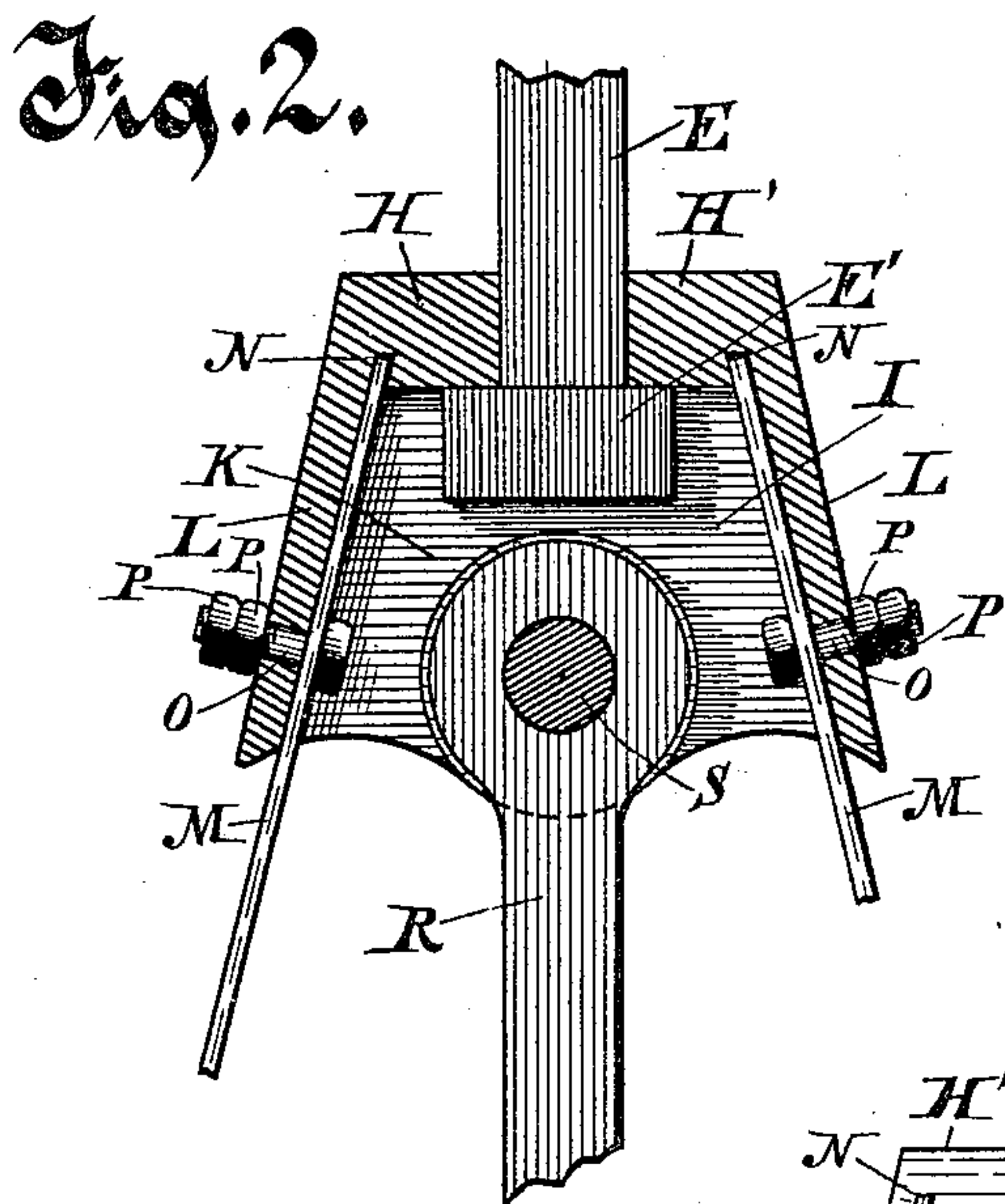
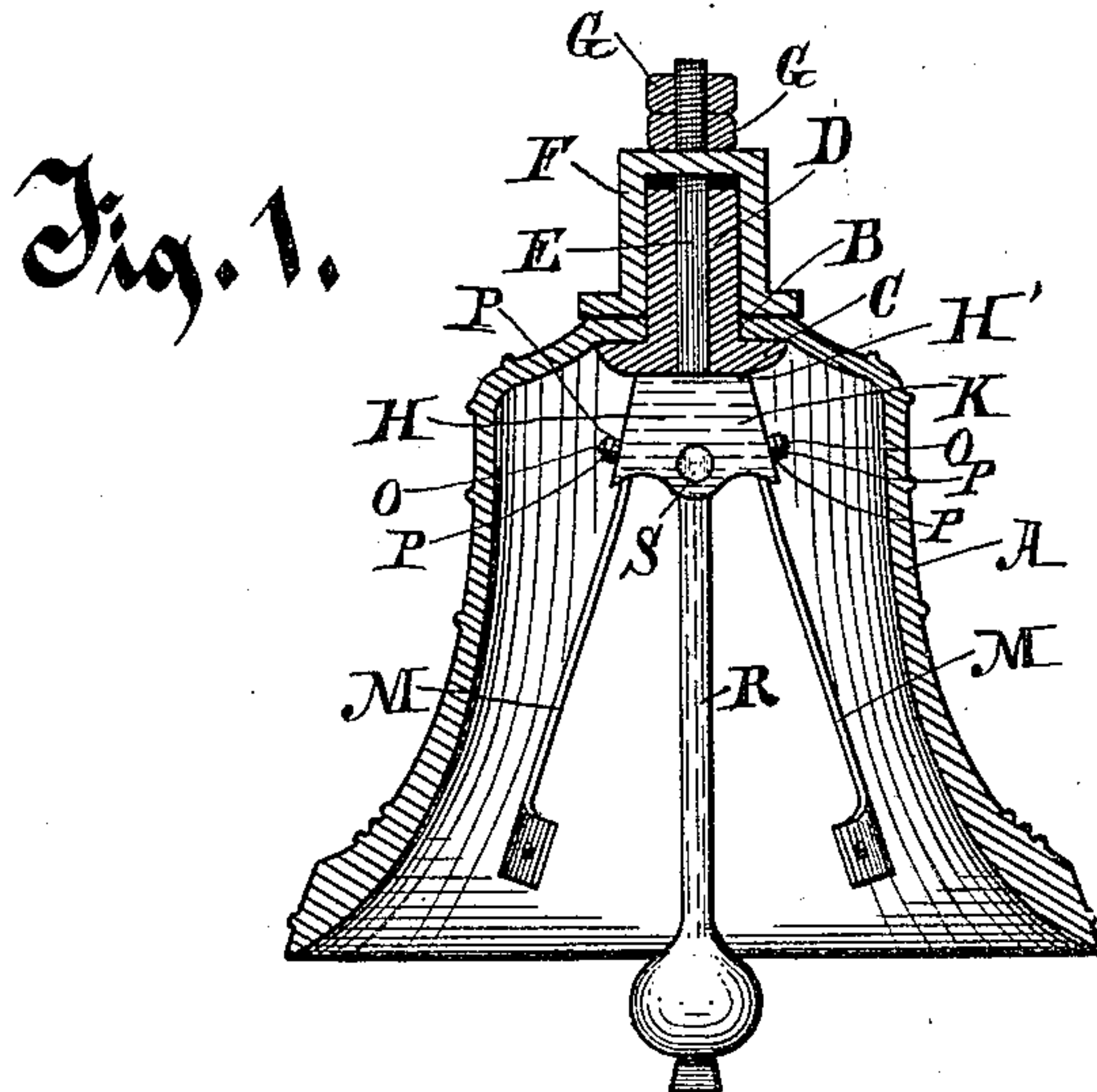


(No Model.)

G. G. CAMPBELL.
BELL SPRING AND CLAPPER HOLDER.

No. 460,555.

Patented Oct. 6, 1891.



Witnesses.

W. H. Keeney.
Anna Faust.

Inventor.

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UNITED STATES PATENT OFFICE.

GEORGE GARDINER CAMPBELL, OF MILWAUKEE, WISCONSIN.

BELL SPRING AND CLAPPER HOLDER.

SPECIFICATION forming part of Letters Patent No. 460,555, dated October 6, 1891.

Application filed November 16, 1889. Serial No. 330,520. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GARDINER CAMPBELL, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Bell Spring and Clapper Holders; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the construction of that class of church-bells in which clapper-springs are used it is desirable to have a spring and clapper holder combined and so formed that springs may be readily inserted in it and held securely in place, which holder should be so shaped as to be conveniently manufactured without the necessity for considerable or expensive labor in finishing it. It is also desirable to use springs having no considerable angle, which springs must be securely fastened to the holder.

The object of my invention is to provide a spring and clapper holder of such form and construction as to be readily cast in metal, to be convenient for attachment to the bell and for securing the springs thereto, while it is strong and durable and supports the springs and clapper satisfactorily.

In the drawings, Figure 1 is a vertical central section of a bell having my improved device therein. Fig. 2 is a vertical section of my improved device on line 2 2 of Fig. 3. Fig. 3 is a view from the under side of my improved spring and clapper holder. Fig. 4 is a slightly-modified form of the device shown in Fig. 2.

The bell A is provided with an aperture B through its crown. A crown-plate C, bearing against the inner side of the crown of the bell, is provided with a projection D, which passes through the aperture B. The crown-plate C is provided with an aperture through it and through the projection D, through which aperture a supporting-bolt E passes, which bolt also extends through the yoke F and is provided with nuts G G, which turn thereon by a screw-thread against the upper surface of the yoke F. The head E' of the bolt E bears against the under surface of the spring and clapper holder H. The bolt itself passes

through an aperture therefor in the holder, and the upper surface of the holder bears against the crown-plate C.

The spring and clapper holder H is constructed of cast metal and is formed with a recess I in its under side, about which are the downwardly-extending perpendicular side walls K K and the outwardly-inclined end walls L L, which terminate above in the horizontal plate H', forming the top of the holder, which bears against the crown-plate C and through which the bolt E passes, as before stated. Against the downwardly and outwardly inclined end walls L L are placed the upper ends of the springs M M, the upper extremities of which are let into shallow sockets N N therefor in the body of the holder H. Below these sockets the springs bear outwardly for a considerable distance against the walls L L, and headed bolts O through the springs M and adjoining walls L at a distance below the sockets N, provided with nuts P P, clamp the springs securely and rigidly in position against the walls and in the sockets.

Heretofore springs have been placed in a head and imperfectly and unsatisfactorily secured there by turning a set-screw against the outer surface of each spring, thereby holding the spring against the outward thrust of the clapper by the bearing-point of the set-screw only, in which position the spring was apt to break off or from which it was quite certain to escape under the repeated assaults of the clapper outwardly. In my device the springs M M are by the bolts O secured in the clapper-holder and are held to and bear firmly against the walls L L from their upper extremities to the lower edges of the walls a considerable distance, and the upper ends of the springs, being inserted in sockets N N, are held against tilting inwardly away from the sides L L, whereby they are made effectually to sustain without injury or change of position the severe and repeated assaults outwardly of the clapper against their lower ends. The stem R of the clapper is inserted between the side walls K K, and a bolt S is inserted through the walls and through the stem of the clapper, whereby the clapper is supported pivotally in the holder.

In the modified form of holder shown in Fig. 4 the side walls K' are cut away be-

yond the part that directly supports the clapper, and in this respect only differs from the form shown in the other figures.

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

In a bell, the combination, with a bell spring and clapper holder having a top plate, vertical side walls between and to which the clapper is pivoted, end walls flaring outwardly
10 downwardly, and sockets in the top plate at the upper extremities and along the inner surfaces of the side walls, of clapper-springs the upper ends of which are inserted in the sockets in the top plate and therefrom down-
15 wardly bear outwardly for considerable dis-

tance against the inner surfaces of the end walls of the holder, and bolts at a distance below the sockets passing through the springs and the end walls of the holder, whereby the springs are adapted to resist the outward as-
20 sault of the clapper on their lower ends and are secure against being loosened from their seats by such assault, substantially as described.

In testimony whereof I affix my signature
25 in presence of two witnesses.

GEORGE GARDINER CAMPBELL.

Witnesses:

C. T. BENEDICT,
ANNA FAUST.