

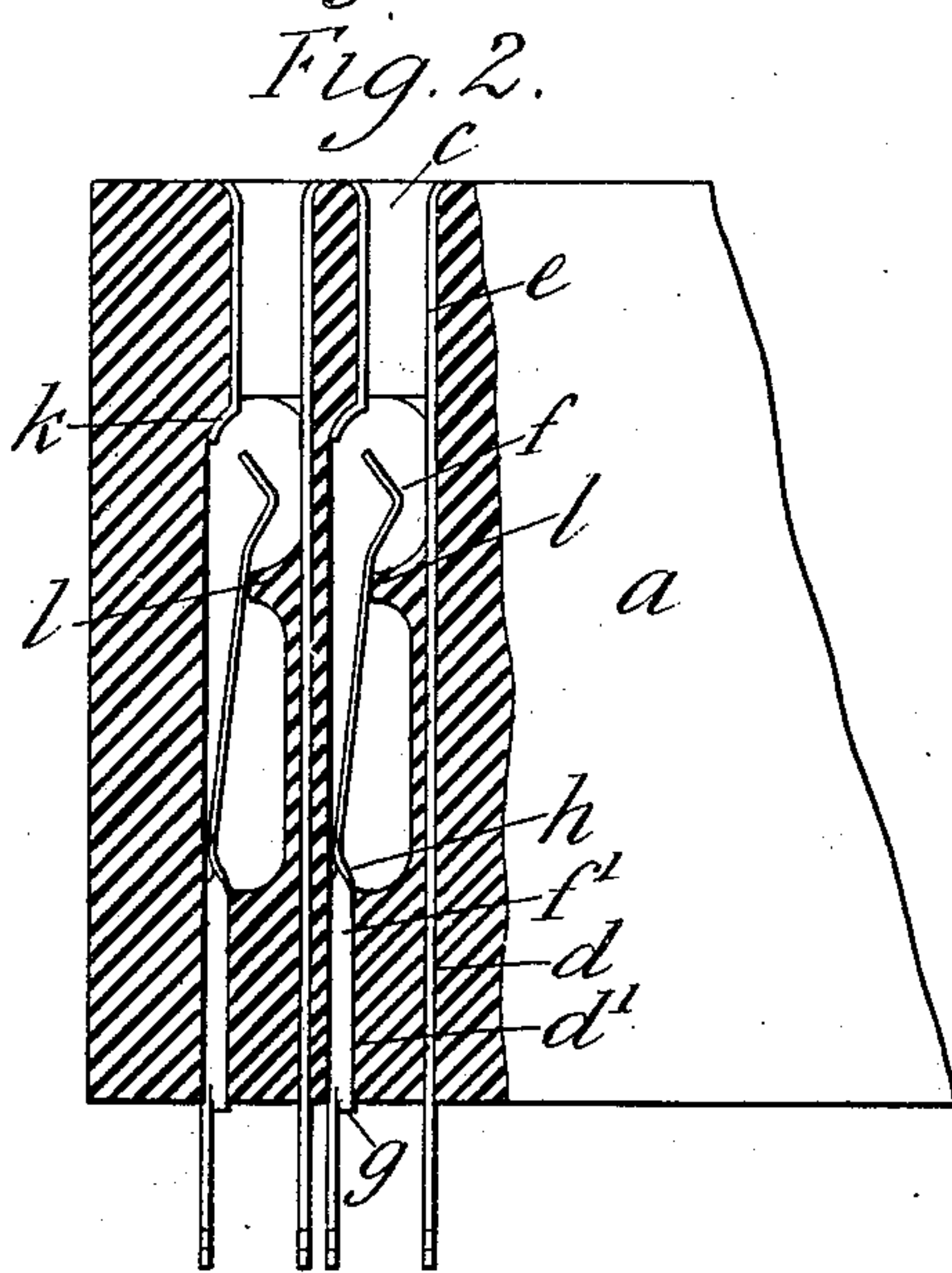
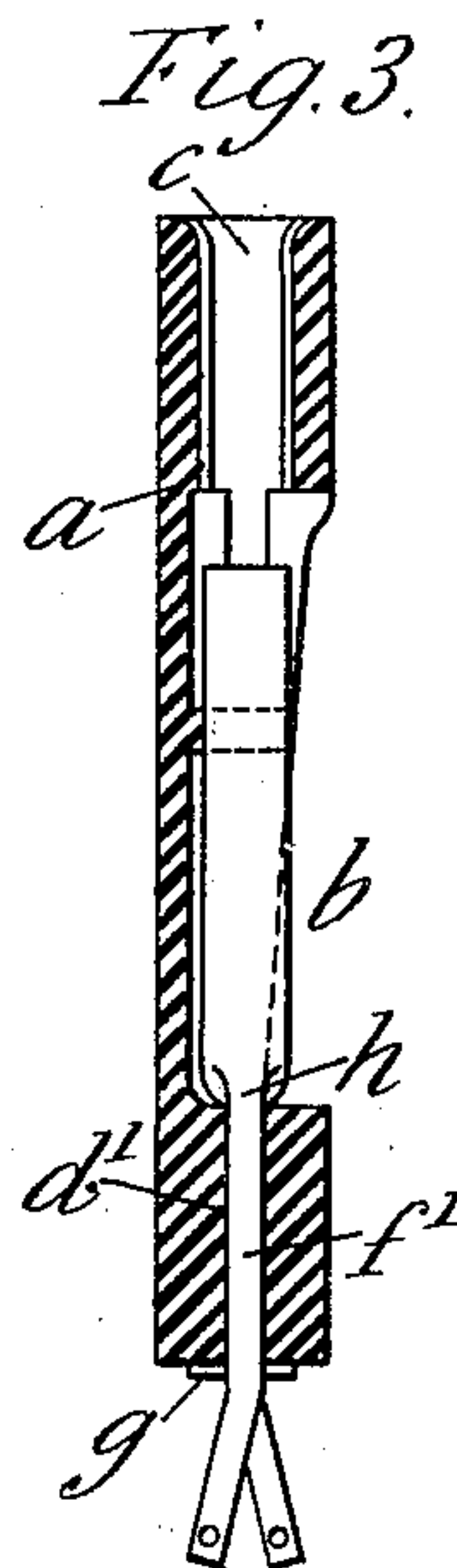
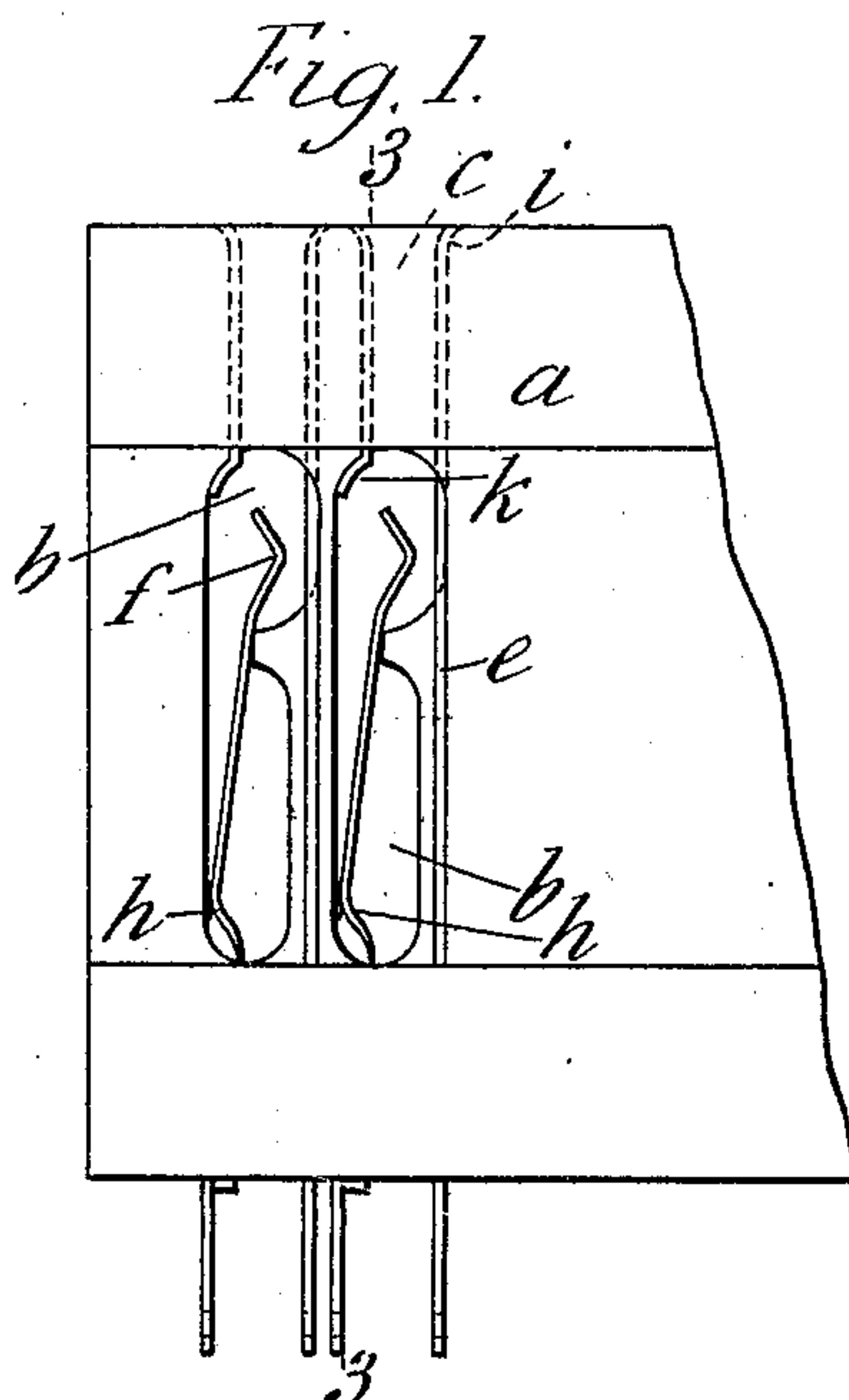
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G. GRABE.

SPRING JACK FOR TELEPHONE SWITCHBOARDS.

APPLICATION FILED NOV. 10, 1904. RENEWED JULY 1, 1908.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SPRING-JACK FOR TELEPHONE-SWITCHBOARDS.

No. 897,085.

Specification of Letters Patent.

Patented Aug. 25, 1908.

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To all whom it may concern:

Be it known that I, GEORG GRABE, a subject of the Emperor of Germany, residing at 84 Bingerstrasse, Wilmersdorf, near Berlin, in the German Empire, engineer, have invented certain new and useful Improvements in the Construction of Spring-Jacks for Telephone-Switchboards, of which the following is a specification.

Efforts to produce as cheaply as possible the spring jacks which are used in very large numbers for telephone installations, have led to constructions wherein screws and the like separate fixing devices are avoided and the spring contacts are fixed chiefly by forcing them into or clamping them in holes slots or the like in a strip of insulating material which is usually made in one piece. There is special difficulty, however, in procuring the necessary degree of stability in the strip which consists of yielding insulating material (vulcanite or the like), for these strips may easily be so much weakened by making holes in them for the springs that under the pressure of the latter they become distorted.

According to the present invention each separate spring and connections necessary to form a switch or spring jack are arranged in separate holes or cavities contained completely in the interior of the strip and therefore closed on every side in the longitudinal direction and are held in place by means of projections, bends or the like; thus the parts can only project from the mouth of the hole, not from the side thereof, and the stability of the strip is considerably greater while it is not distorted by the spring pressure. Moreover, the loosening of the springs which occurs with longitudinally open slots in consequence of the unavoidable bending of the strips, cannot occur in the construction according to this invention.

The new construction of the strip of spring jacks makes it possible to do without screws, pins or the like and thus completely solves the problem stated above, since it is possible to fasten all the contact springs, as well as the barrels or bush connections merely by introducing them into the slot and bending tongues to engage the strip, and this fastening is so secure that the parts cannot be shifted by repeated insertion of the plug nor can they fail to be properly adjusted in the beginning. Moreover, by a simple device such as a projection in the interior of the cavities

as effective, durable and safe a position as possible may be procured for the contact parts.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of a strip of spring-jacks, Fig. 2 a longitudinal section thereof and Fig. 3 a transverse section on line 3—3 of Fig. 1.

a is a strip of vulcanite formed with cavities *b* and perforations *c*, *d*, *d'*. The spring contacts *f* have tongues *g* at their lower ends and shoulders at the part *h*. The contact is fixed in the vulcanite strip by being pushed through the perforation *c* so that its lower part *f'* passes through the perforation *d'* until the shoulders *h* rest on the upper end of the last named perforation; the tongues *g* are then bent at right angles to fasten the spring in place. The bush spring *e* is also inserted through the perforation *c* with its lower part passing through the perforation *d*; its upper edge is then burred over as at *i* and a tongue *k* is turned back against the wall of the cavity *b*.

In the cavity *b* of the strip is a projection *l* against which the spring *f* abuts. A strong tension is thus imparted to the spring without bending it too far in the position of rest.

The invention is obviously not limited to double-spring-jacks, the underlying principle being applicable to the spring-jacks of all telephone systems with corresponding alterations.

Having thus described this invention and the best means I know of carrying the same into practical effect, I claim:—

1. A strip of spring-jacks for telephone switch boards, comprising a strip made of one piece of insulating material, a front part of the said strip wherein are perforations, a jack bush spring extending through each of the said perforations, a middle part of said strip wherein is an exposed lateral cavity a rear part to the said strip wherein are perforations, a spring stem extending through each of the last named perforations so as to be completely surrounded by the material of the strip, and bent portions to the said bushes and stems whereby they are held in place without screws, pins, or the like.

2. A strip of spring jacks for telephone switch boards, comprising a strip made of one piece of insulating material, a front part to the said strip wherein are perforations, a

jack bush spring extending through each of
the said perforations, a rear part to the said
strip wherein are perforations, a spring stem
extending through each of the last named
5 perforations so as to be completely sur-
rounded by the material of the strip, bent
portions of the said stems whereby they are
held in place, a thin middle part to the said
strip connecting the front part with the rear
10 part and strengthening webs to the said mid-
dle part.

3. A strip of spring jacks for telephone
switch boards, comprising a strip made of
one piece of insulating material, a front part
15 to the said strip wherein are perforations, a
jack bush spring extending through each of

the said perforations, a rear part to the said
strip wherein are perforations, spring stems
extending through each of the last named
perforations, projections in the middle part 20
of the said strip, springs extending through
perforations in the rear part of the said strip
and resting against the said projections, and
bent portions to the said springs for holding
them in place. 25

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

GEORG GRABE.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.