

(No Model.)

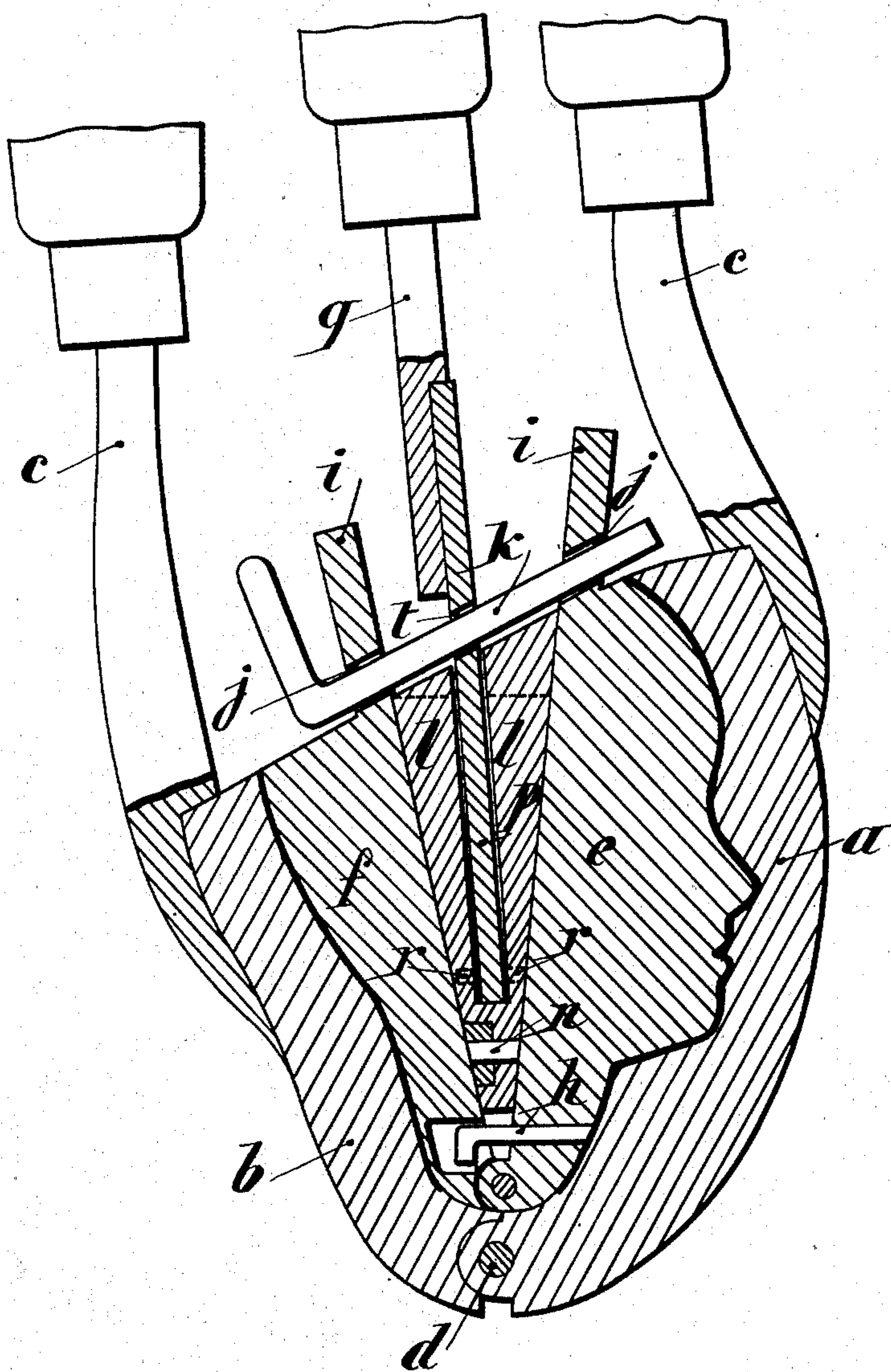
3 Sheets—Sheet 1.

L. A. J. VALLÉE & A. L. G. SCHULTZ.
APPARATUS FOR MOLDING THE HEADS OF DOLLS.

No. 500,682.

Patented July 4, 1893.

FIG. 1.



Witnesses:
L. M. Hachschlager,
Charles Russell.

Inventors:
Louis A. J. Vallée,
Adolphe L. G. Schultz
By Briesen & Knauth
their Attorneys.

(No Model.)

3 Sheets—Sheet 2.

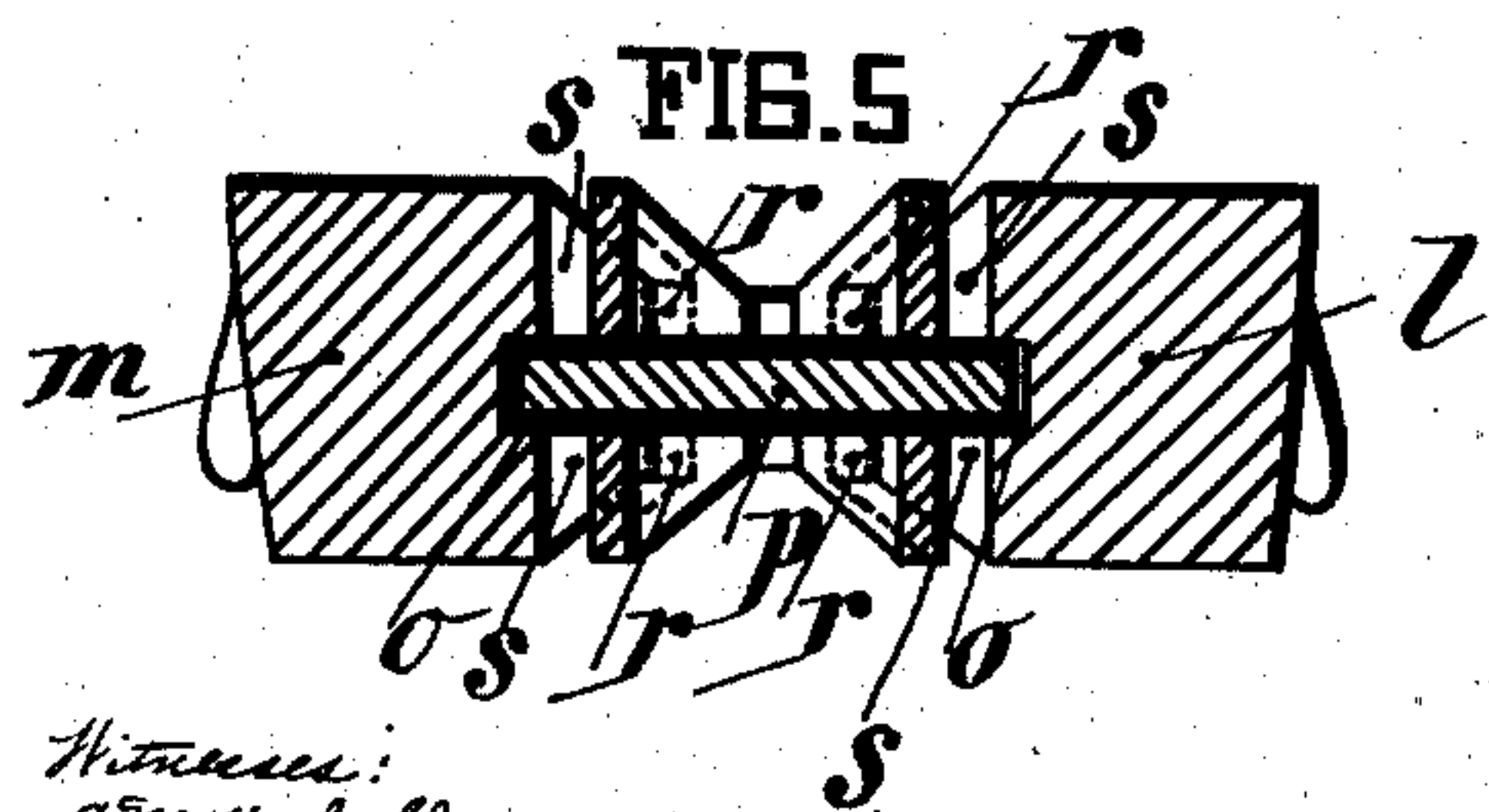
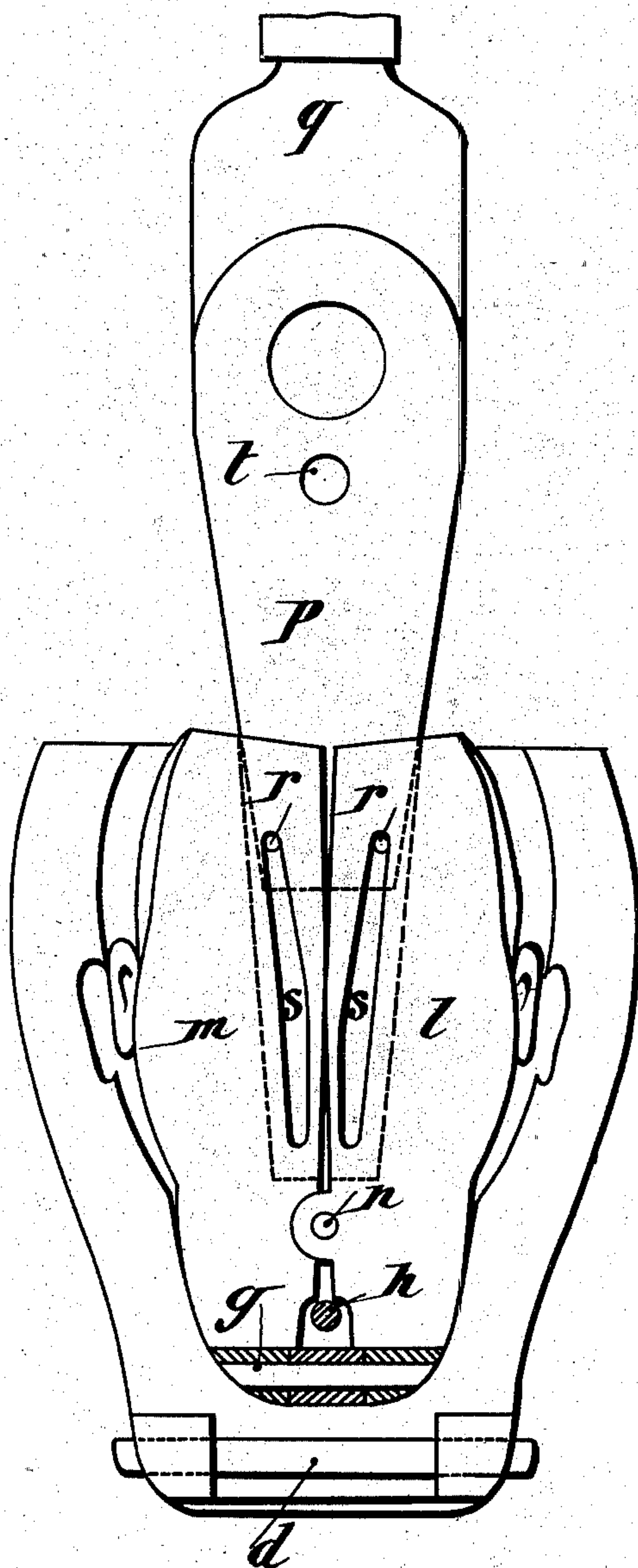
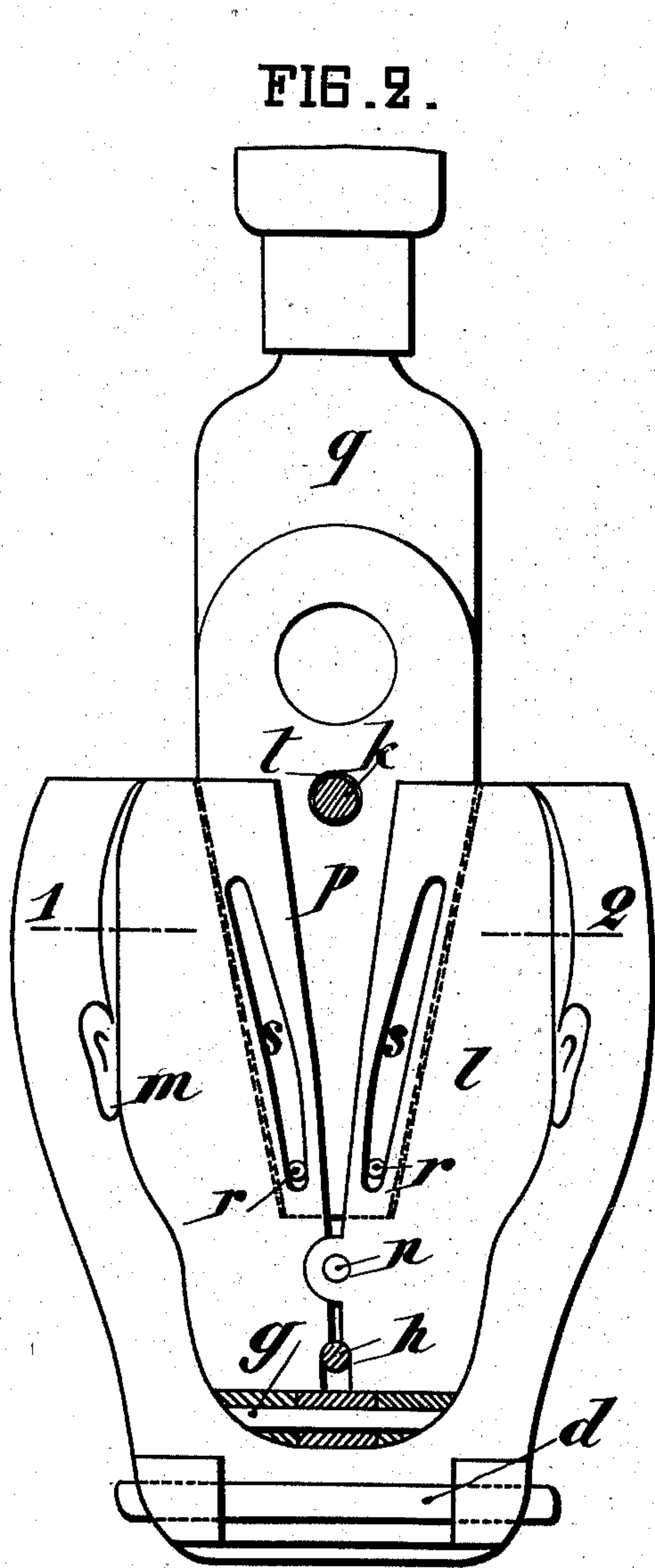
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FIG. 3.

FIG. 2.



Witnesses:
L. M. Hochstetler
Charles Russell.

Inventors
Louis A. Vallée
Adolphe L. G. Schultz
By Briesen & Knauth
their Attorneys

(No Model.)

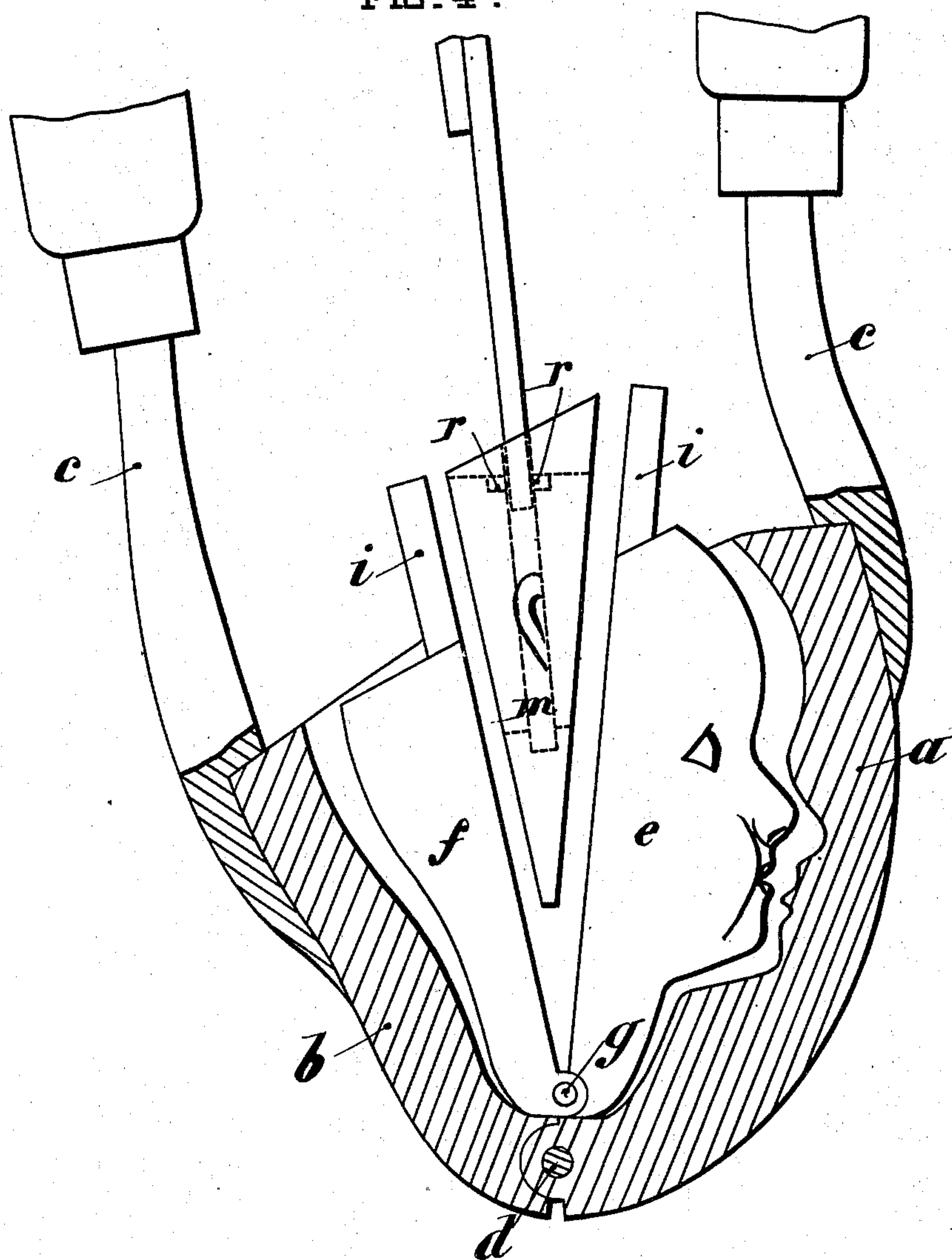
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FIG. 4.



Witnesses:
L. M. Frachschlager,
Charles G. Russell

Inventors
Louis A. Vallée,
Adolphe L. G. Schultz
By Briesen Knaut &
their Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS ALBERT JULES VALLÉE AND ADOLPHE LOUIS GUILLAUME SCHULTZ,
OF PARIS, FRANCE.

APPARATUS FOR MOLDING THE HEADS OF DOLLS.

SPECIFICATION forming part of Letters Patent No. 500,682, dated July 4, 1893.

Application filed March 29, 1893. Serial No. 468,161. (No model.)

To all whom it may concern:

Be it known that we, LOUIS ALBERT JULES VALLÉE and ADOLPHE LOUIS GUILLAUME SCHULTZ, of the city of Paris, France, have
5 invented certain new and useful Improvements in Apparatus for Molding the Heads of Dolls, of which the following is a full, clear, and exact description.

This invention relates to molding the heads
10 of dolls from a tube of any suitable material, preferably celluloid, by means of an expanding and contracting die and matrix.

Reference is to be had to the accompanying drawings, forming part of this specification,
15 in which—

Figure 1 represents a section of the entire apparatus. Figs. 2 and 3 are sectional elevations of the die and mold in two positions, the face halves of the die and matrix being re-
20 moved. Fig. 4 is a section of the matrix, the die being in elevation and the parts separated as in the operation of removing the molded article. Fig. 5 is a horizontal section, on line 1—2 Fig. 2, of the lateral segments of the die.

The matrix is made in halves *a b* hinged together at *d* and provided with handles *c*, the internal configuration of the halves *a b* of the matrix corresponding respectively to the face and back of the head to be molded.
30 The die is composed of a face portion *e*, a back portion *f* and two side portions *l m* intermediate of the face and back portions *e f*. The parts *e f* are hinged together at *g*, their inner faces being separable to an extent limited by a lug *h* fixed in the one part engaging in the other part, as shown in Fig. 1. They are provided with extensions *i* having apertures *j* to receive a locking pin *k*.

The intermediate portion of the die which
40 constitutes the main feature of the invention is made in two parts *l m* corresponding in configuration to the sides of the head, the two parts being hinged together by a pin *n* in a plane perpendicular to the plane of the hinge-pin *h* so that these parts are expansible laterally while they are wedge shaped by their front and rear faces being inclined toward each other so as to fit into the wedge-shaped space between the inner faces of the front and
50 rear parts *e f* of the die. The lateral expansion of the parts *l m* is effected by a wedge-

shaped key *p* whose edges are received in grooves *o* in the inner faces of the parts *l m*, the wedge *p* being attached by a shank *q* to a handle and being provided on each face with
55 studs *r* engaging in slots *s* in the parts *l m*, so that by forcing the key *p* inward the intermediate members of the die are expanded laterally, as in Fig. 2, and by withdrawing it they are contracted, as in Fig. 3. The wedge
60 has an aperture *t* for the locking pin *k*.

The operation of molding celluloid is as follows: The several parts of the die having been fitted together and secured in the expanded position by means of the locking-pin *k*, the
65 die is introduced into a tube of celluloid of the suitable diameter and length to form the head of the doll, it being essential, in order that the molding may be properly performed, that the die should not enter the tube too easily. The die, incased in celluloid, is then dipped for about one minute in boiling water, in order to soften the material, after which it is placed in the matrix *a b*, the locking pin *k*
75 is withdrawn and the two parts *a b* of the matrix closed together by the handles *c* and while so held the mold is again plunged in hot water for a few minutes and then suddenly dipped in cold water in order to harden and contract the molded material so that it may
80 be readily detached from the matrix. The key *p* is then withdrawn thereby contracting the two parts *l m* laterally as shown in Fig. 3 so as to enable them to be detached and withdrawn from the molded article. The removal
85 of the wedge shaped intermediate portion *l m* of the die allows of the face and back parts *e f* being brought together by means of the handles *i* and so disengaged in turn and removed from within the molded article. The matrix
90 is then opened and the molded article removed. It will be understood that any other suitable material may be similarly molded.

We claim—

1. The herein described apparatus for mold-
95 ing the heads of dolls in a single piece from a tube of celluloid or other material consisting in the combination with a two part hinged matrix of a four part die constructed of face and back parts hinged together, wedge shaped
100 intermediate lateral parts hinged together at right angles to the face and back parts, and

a wedge or key inserted between the lateral parts and adapted to force them outward laterally, substantially as specified.

2. In the herein described apparatus the
5 combination with a two part hinged matrix, of a four part die constructed of face and back parts hinged together, wedge shaped intermediate lateral parts hinged together at right angles to the front and back parts, and a
10 wedge shaped key fitting in grooves between the lateral parts, and engaging, by studs and slots, with said parts so as, by its insertion, to

expand and by its withdrawal to contract said intermediate lateral parts of the die, substantially as specified.

The foregoing specification of our improved apparatus for molding the heads of dolls
signed by us this 14th day of March, 1893.

LOUIS ALBERT JULES VALLÉE.

ADOLPHE LOUIS GUILLAUME SCHULTZ.

Witnesses:

ROBT. M. HOOPER,
ALBERT MOREAU.