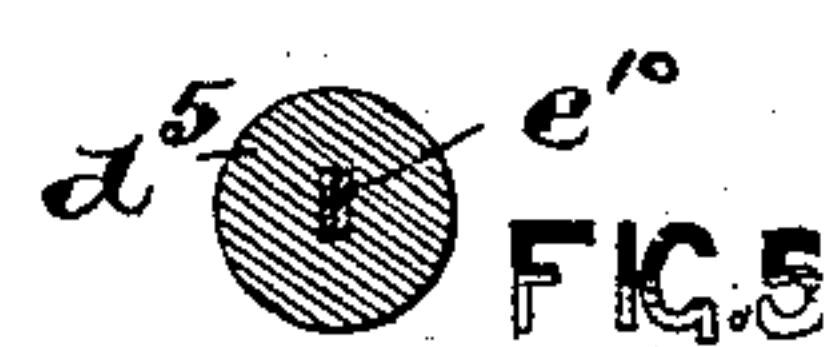
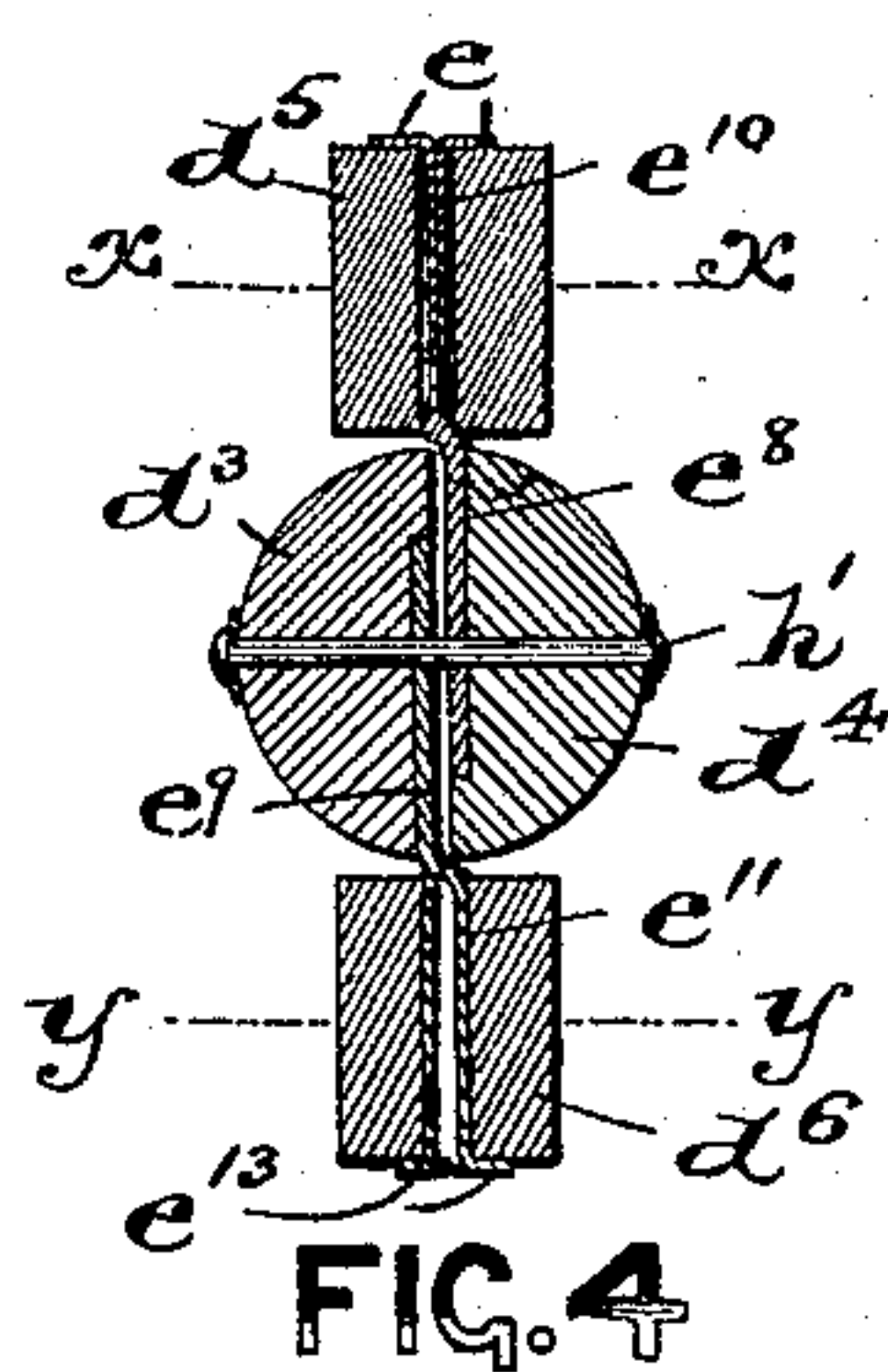
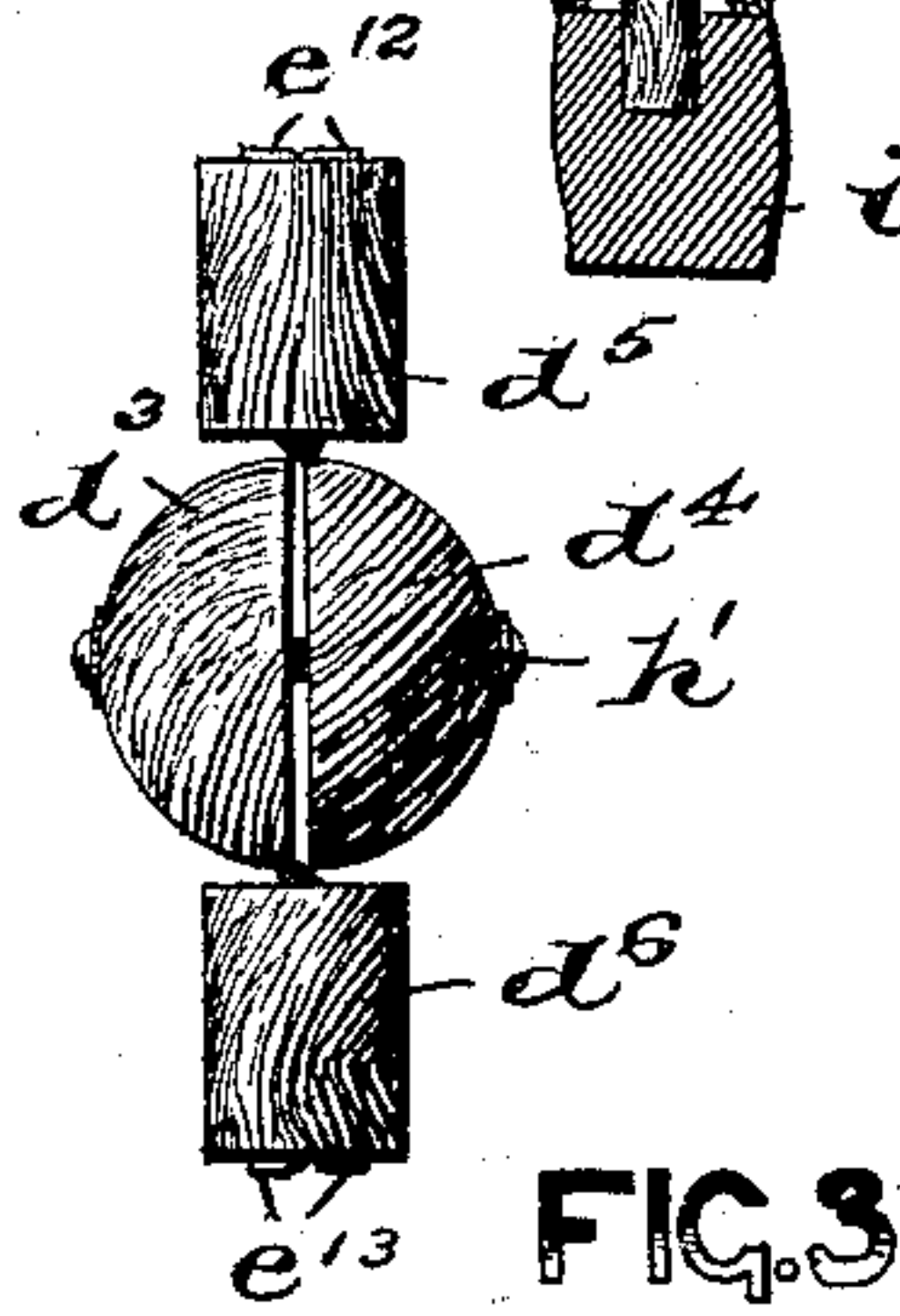
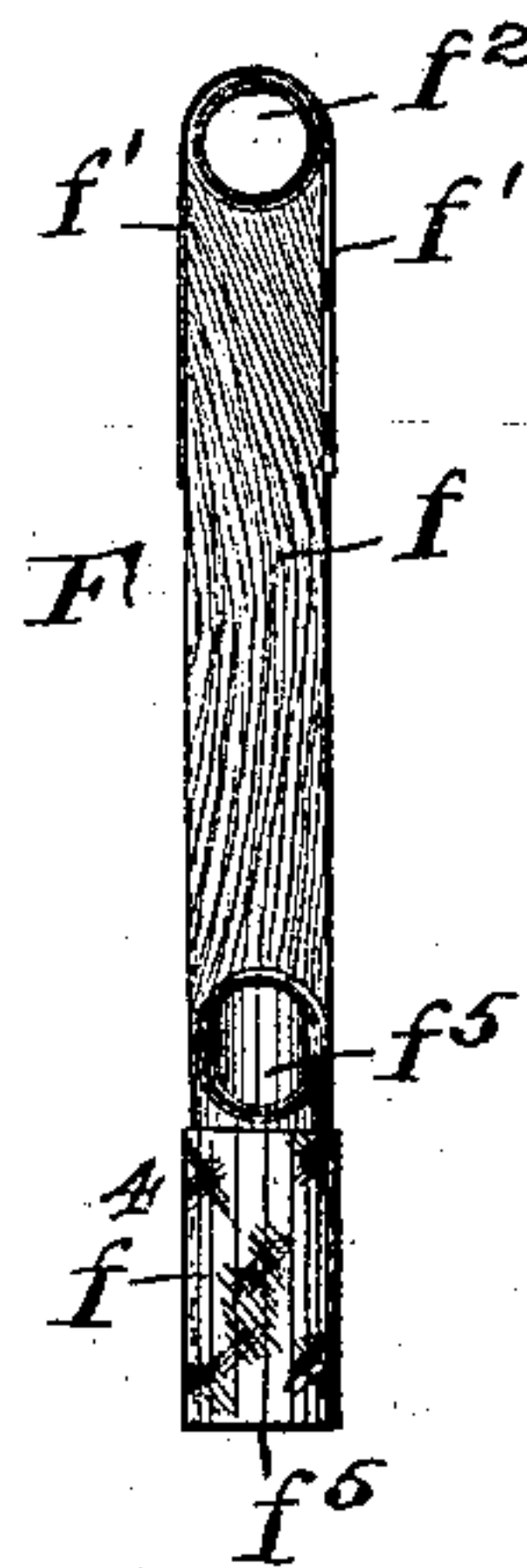
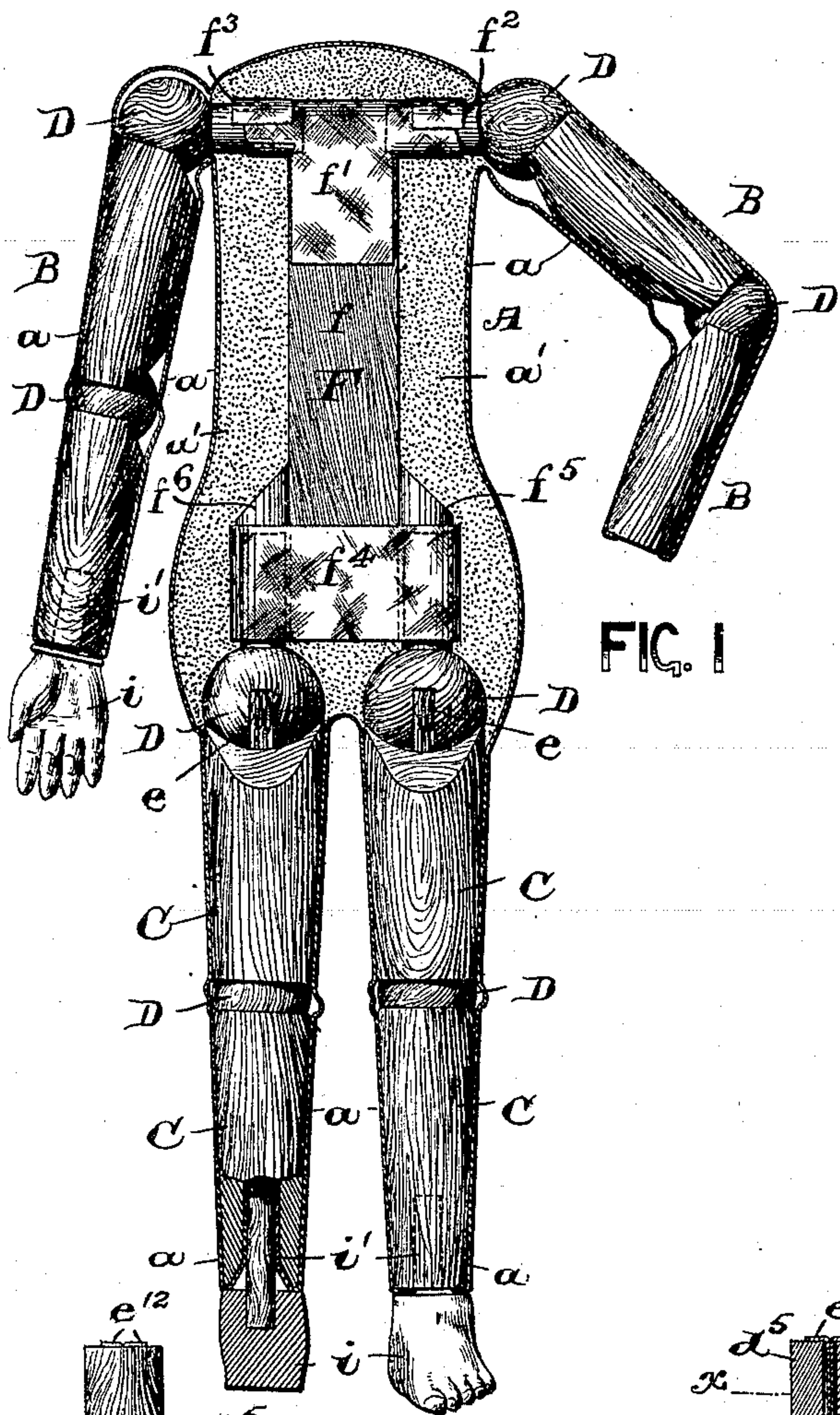


(No Model.)

E. VERPILLIER & C. W. GRAVES.
DOLL.

No. 604,243.

Patented May 17, 1898.



WITNESSES:

Nancy J. Insdell

Wm H. Bamfield Jr

INVENTORS:
EMIL VERPILLIER, AND
CHARLES W. GRAVES,

BY
Fred C. Fraentzel,
ATTORNEY

UNITED STATES PATENT OFFICE.

EMIL VERPILLIER AND CHARLES W. GRAVES, OF NEWARK, NEW JERSEY.

DOLL.

SPECIFICATION forming part of Letters Patent No. 604,243, dated May 17, 1898.

Application filed June 25, 1897. Serial No. 642,248. (No model.)

To all whom it may concern:

Be it known that we, EMIL VERPILLIER and CHARLES W. GRAVES, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Dolls; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Our present invention relates generally to improvements in dolls, and more particularly to kid or cloth covered dolls, although it is applicable to dolls made of papier-mâché or other plastic material.

The invention therefore has for its primary object to provide a novel construction of doll of the character hereinabove mentioned having its limbs connected, by means of any suitable construction of flexible joint, with tubular or socket-like portions on a suitable frame within the body of the doll, whereby its limbs can be moved into any desired position in the manner of the movements of human beings.

A further object of this invention is to provide a novel construction of joint for connecting any two parts of the doll whereby the limbs can be moved in any desired direction, and any two of such connected parts of the doll are capable of a rotary movement about an extension or arm of a hinge-joint which is movably connected with a certain sleeve or sleeves adapted to be secured in the articulating members of limbs of the doll.

A further object of this invention is to provide a novel means of attaching the hands and feet of the doll to their respective articulating members of the body of the doll.

The invention therefore consists in the novel construction of doll herein described and also in such novel arrangements and combinations of the several parts thereof and the minor details of construction, all of which will be fully set forth in the accompanying specification and finally embodied in the clauses of the claim.

In said drawings, Figure 1 is a sectional view of a doll provided with joints or con-

nections embodying the principles of our present invention. Fig. 2 is a side view of a skeleton frame having tubular or socket-like portions to which the articulating members of the doll are to be operatively attached. Fig. 3 is a face view of one form of hinge-joint employed in the herein-described construction of doll. Fig. 4 is a vertical section of the same; and Figs. 5 and 6 are horizontal cross-sections taken on lines *x* and *y*, respectively, in said Fig. 4.

Similar letters of reference are employed in all of the above-described views to indicate corresponding parts.

In the drawings, A indicates the main body or trunk of a doll or other figure; as that of a cloth or kid covered doll or other figure.

B are the arms, and C the legs, all of which are usually made of wood, papier-mâché, or any other suitable plastic compound.

The usual covering *a* of the body, which is also made to cover the arms and legs in the manner illustrated in Fig. 1, incloses the portion *a'*, usually consisting of sawdust, hair, or any other similar material, as will be clearly evident from an inspection of said Fig. 1.

One of the main features of this invention is the construction of a skeleton frame F, embodied in the portion or filling *a'* of the body A, said frame consisting, essentially, of a flat body or board *f*, to which is secured at its upper end, by means of a suitable cloth or paper fastener *f'* and glue or other similar adhesive material, or in any other desirable manner, a pair of pasteboard or other tubes *f*² and *f*³, which extend horizontally and on the opposite edges from the top of said flat body *f*, as shown. At or near the bottom of said flat body or board *f* is secured in a similar manner, by means of a suitably-formed cloth or paper *f*⁴ and glue or other similar adhesive material, or in any other manner, a pair of pasteboard or other tubes *f*⁵ and *f*⁶, which are secured to the opposite edges of said board *f* by means of said cloth or paper *f*⁴, as stated, and extend in a vertical direction, substantially as shown. Into these tubes or socket-like portions *f*² and *f*³ and *f*⁵ and *f*⁶, respectively, we have secured the sleeves of the form of joint D, described and claimed by us in our previous patent, No. 546,791, issued September 24, 1895. Said joints D are used for

connecting any two parts—as, for instance, an arm or leg portion—with the skeleton frame F in the trunk or body A of the doll or for connecting any two arm portions B or any
 5 two leg portions C, as will be evident from an inspection of the accompanying drawings.

In Figs. 3, 4, 5, and 6 we have illustrated a novel construction of hinge-joint which is of greater simplicity and of a cheaper construction than the form of joint illustrated in Fig. 1. This joint consists, essentially, of
 10 a pair of hemispheres d^3 and d^4 , to each of which is secured in a suitable recess a metallic arm e^8 and e^9 , respectively, the upper arm e^8 being flat and rectangular in cross-section, as at e^{10} , while the lower arm e^9 is tubular and circular in cross-section, as at e^{11} . Said arms are both perforated and with the
 15 said hemispheres d^3 and d^4 are pivotally arranged upon a pin h' to form a suitable hinge-joint, as will be clearly evident from an inspection of Fig. 4.

Upon the portion e^{10} of the arm e^8 is immovably secured a sleeve d^5 by means of the bent-over portions e^{12} of said arm e^8 , and upon
 25 the portion e^{11} of the arm e^9 is rotatively held on said arm, by means of the bent-over portions e^{13} , a sleeve d^6 , whereby a complete and operative joint or connection is formed. The
 30 sleeves d^5 and d^6 of the joint (represented in Figs. 3 and 4) are glued or otherwise secured in the tubular portions of the frame F, as well as in the hollow members or limbs of the doll, connecting any two parts of the doll in
 35 the manner as has been previously stated and as will be clearly evident from an inspection of Fig. 1. As will be seen from said Fig. 1, the members B and C are hollow, and in their free ends we have secured, in any well-known
 40 manner, certain stems or posts i' , with which are connected the hands and feet i of the doll, said parts being molded of a plastic material and colored to give them a most natural appearance.

45 Having thus described our invention, what we claim is—

1. A doll or the like, comprising a body, and a skeleton frame in said body, tubular portions on said frame, a ball-joint connected
 50 with each tubular portion, and members of the doll secured to said joints, whereby each member of the doll is capable of a rotary movement about its longitudinal axis, but is also capable, at the same time, of a flexible
 55 movement in any plane different to the plane of rotation, substantially as and for the purposes set forth.

2. A doll or the like, comprising a body, and a skeleton frame F in said body, tubes f^2 and
 60 f^3 at or near the top of said frame, and tubes f^5 and f^6 at or near the bottom of said frame, a ball-joint connected with each tube, and members of the doll secured to said joints, whereby each member of the doll is capable
 65 of a rotary movement about its longitudinal

axis, but is also capable, at the same time, of a flexible movement in any plane different to the plane of rotation, substantially as and for the purposes set forth.

3. A doll or the like, comprising a body, and
 70 a skeleton frame F in said body, tubes f^2 and f^3 at or near the top of said frame, and tubes f^5 and f^6 at or near the bottom of said frame, a ball-joint connected with each tube, and members of the doll secured to said joints,
 75 each joint consisting of a ball portion, a pair of hinge-pieces pivotally arranged on a pin or rivet in said ball portion, and a sleeve on each hinge-piece, adapted to be respectively secured, one in a tubular portion on the frame
 80 F and the other in the hollow part of a member of the doll, whereby each member of the doll is capable of a rotary movement about its longitudinal axis, but is also capable, at the same time, of a flexible movement in any
 85 plane different to the plane of rotation, substantially as and for the purposes set forth.

4. A joint for dolls or the like, consisting, essentially, of a pair of hemispheres pivotally arranged on a pin, an arm secured to each
 90 hemisphere, said arms projecting beyond said hemispheres, and sleeves arranged on said arms, substantially as and for the purposes set forth.

5. A joint for dolls or the like, consisting,
 95 essentially, of a pair of hemispheres pivotally arranged on a pin, an arm secured to each hemisphere, said arms projecting beyond said hemispheres, a sleeve permanently fixed on one of said arms, and a sleeve rotatively ar-
 100 ranged on the other of said arms, substantially as and for the purposes set forth.

6. A joint for dolls or the like, consisting, essentially, of a pair of hemispheres, recessed on their flat surfaces, a pin on which said
 105 hemispheres are pivotally arranged, and arms secured in the recessed portion of each hemisphere and also pivotally connected with said pin, and a sleeve on the free end of each arm, substantially as and for the purposes set forth.
 110

7. A joint for dolls or the like, consisting, essentially, of a pair of hemispheres, recessed on their flat surfaces, a pin on which said
 115 hemispheres are pivotally arranged, arms secured in the recessed portion of each hemisphere and also pivotally connected with said pin, a sleeve permanently fixed on the free end of one of said arms, and a sleeve rotatively arranged on the free end of the other
 120 of said arms, substantially as and for the purposes set forth.

In testimony that we claim the invention set forth above we have hereunto set our hands this 18th day of June, 1897.

EMIL VERPILLIER.
 CHARLES W. GRAVES.

Witnesses:

FREDK. C. FRAENTZEL,
 WM. H. CAMFIELD, Jr.