

No. 709,987.

Patented Sept. 30, 1902.

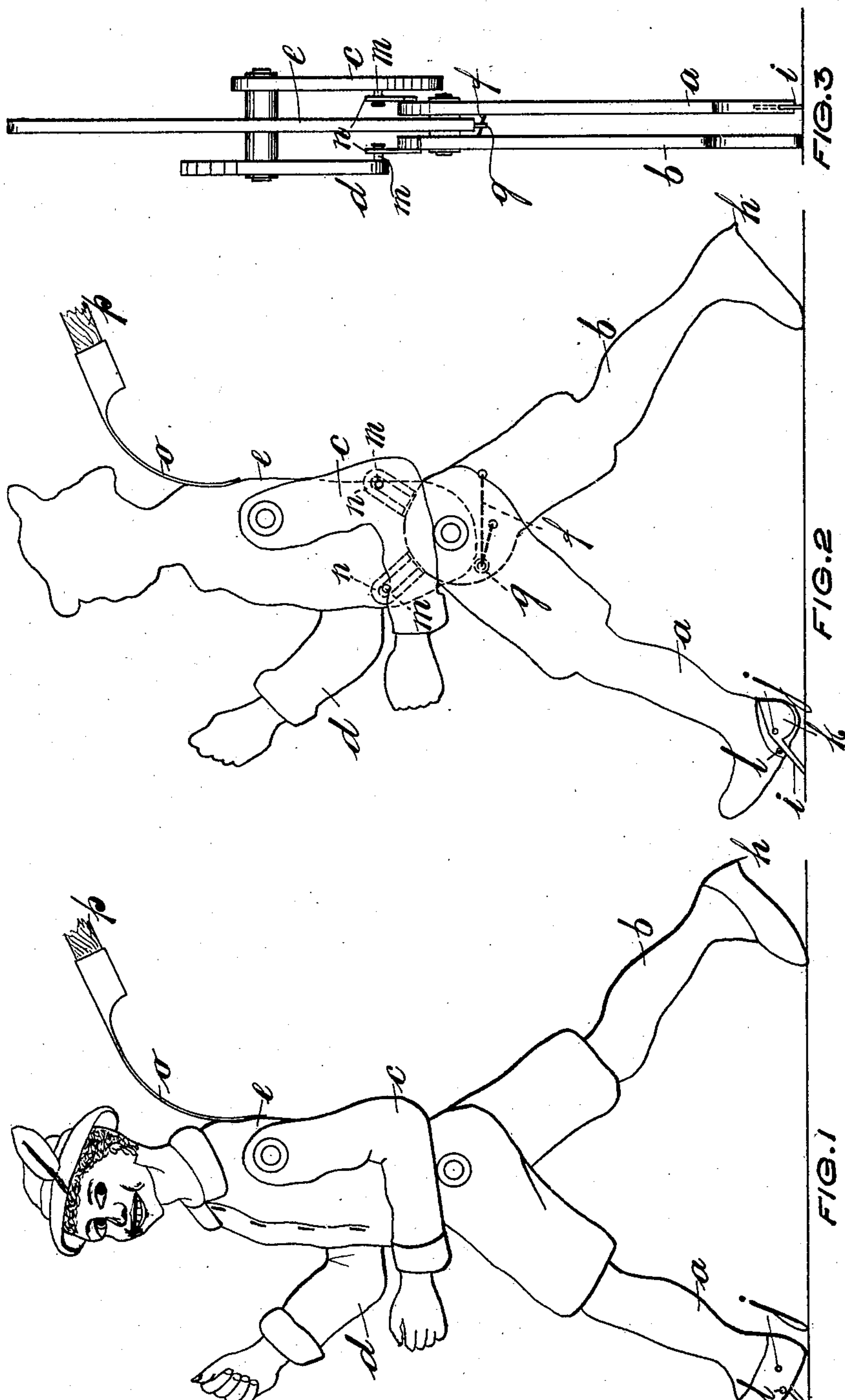
E. A. JEFFREYS.

WALKING TOY.

(Application filed June 17, 1902.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES:

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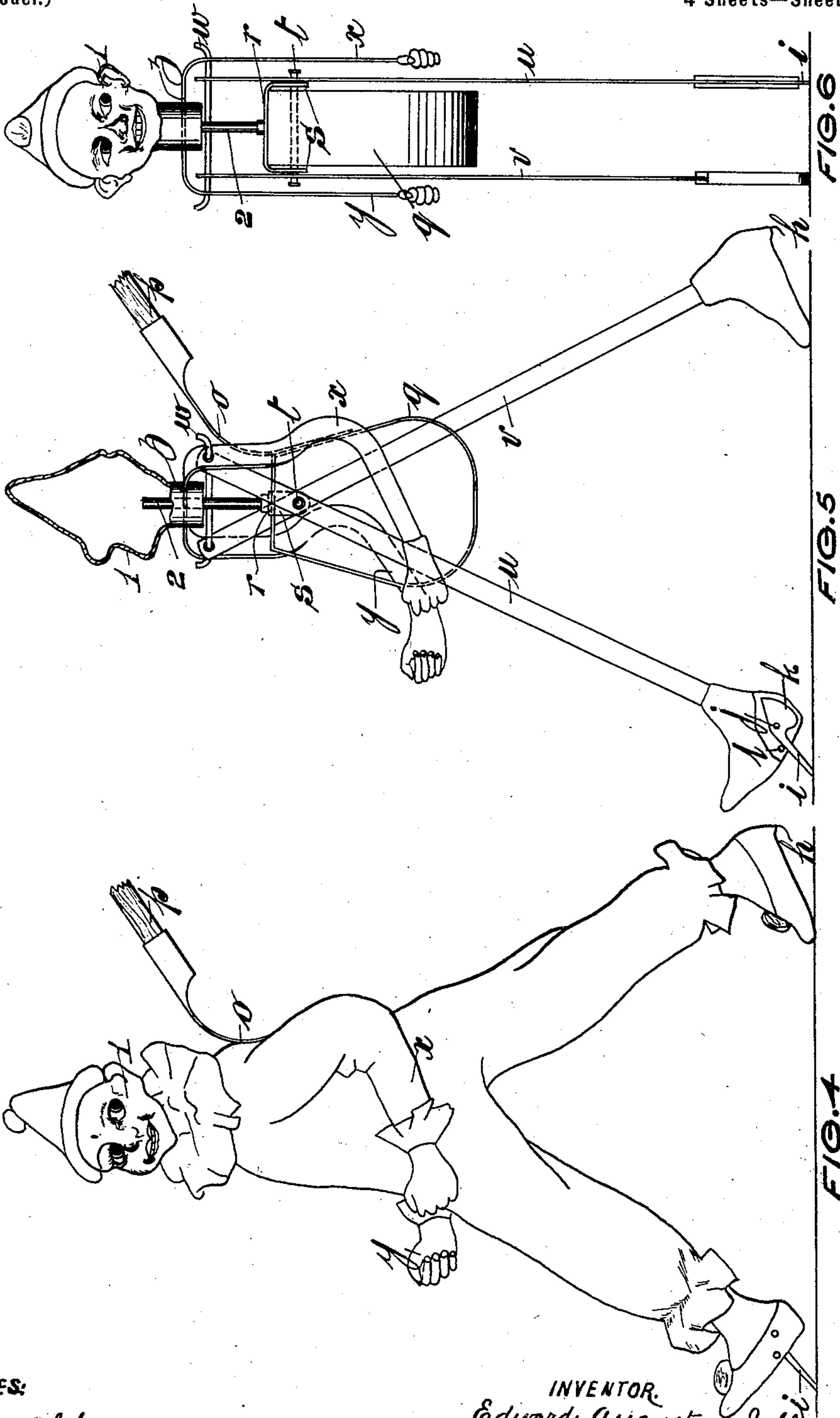
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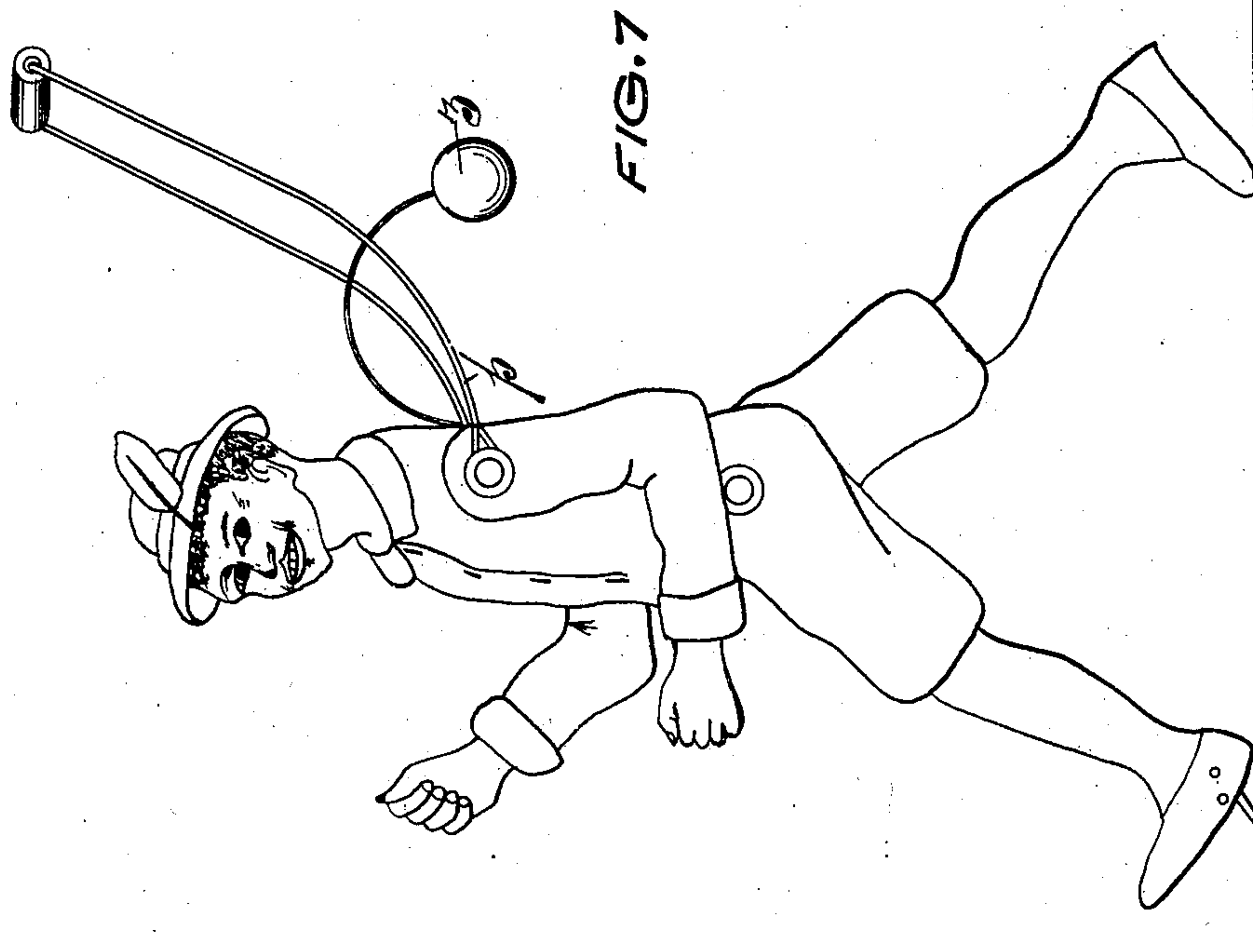
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4 Sheets—Sheet 3.



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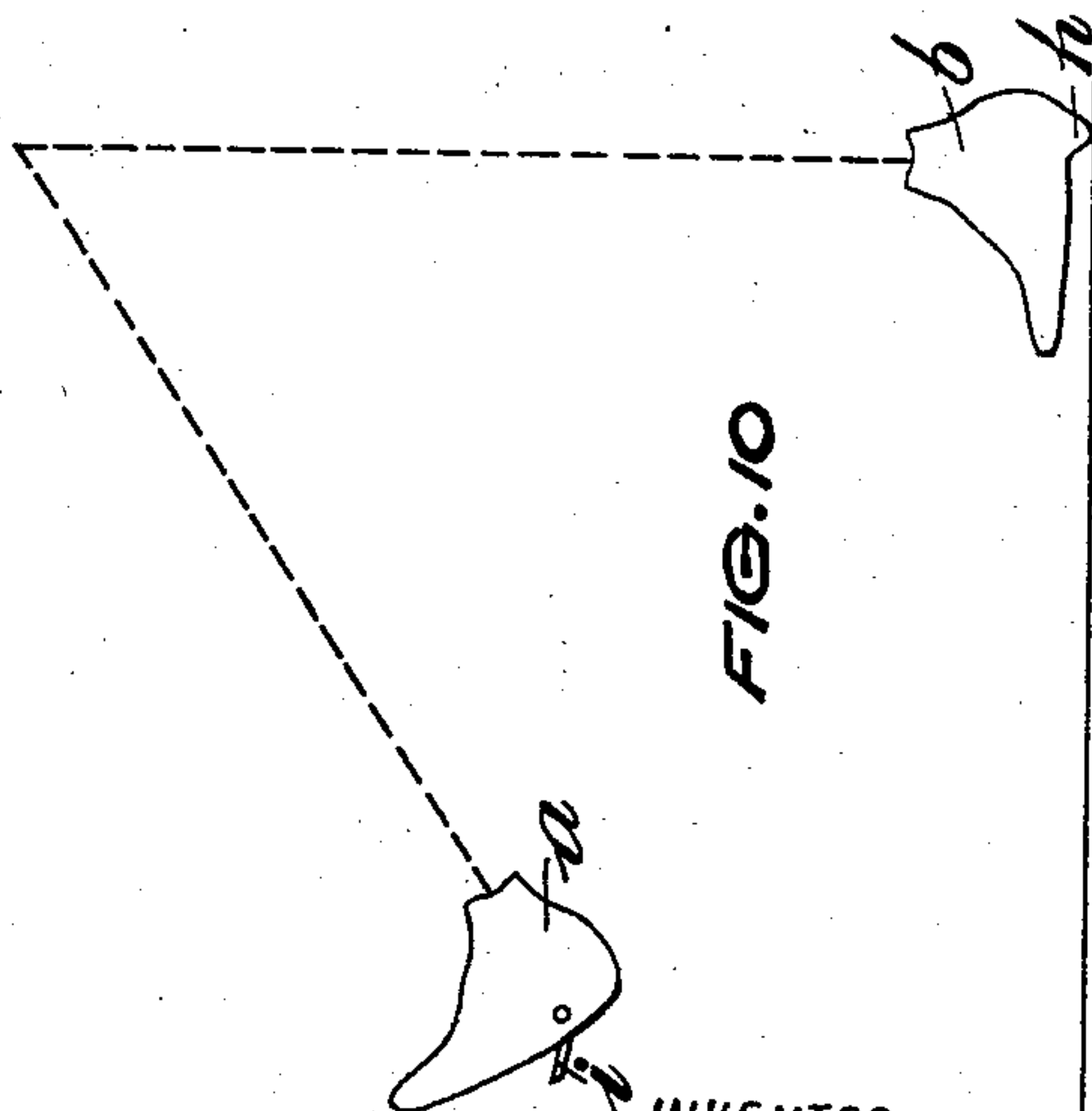
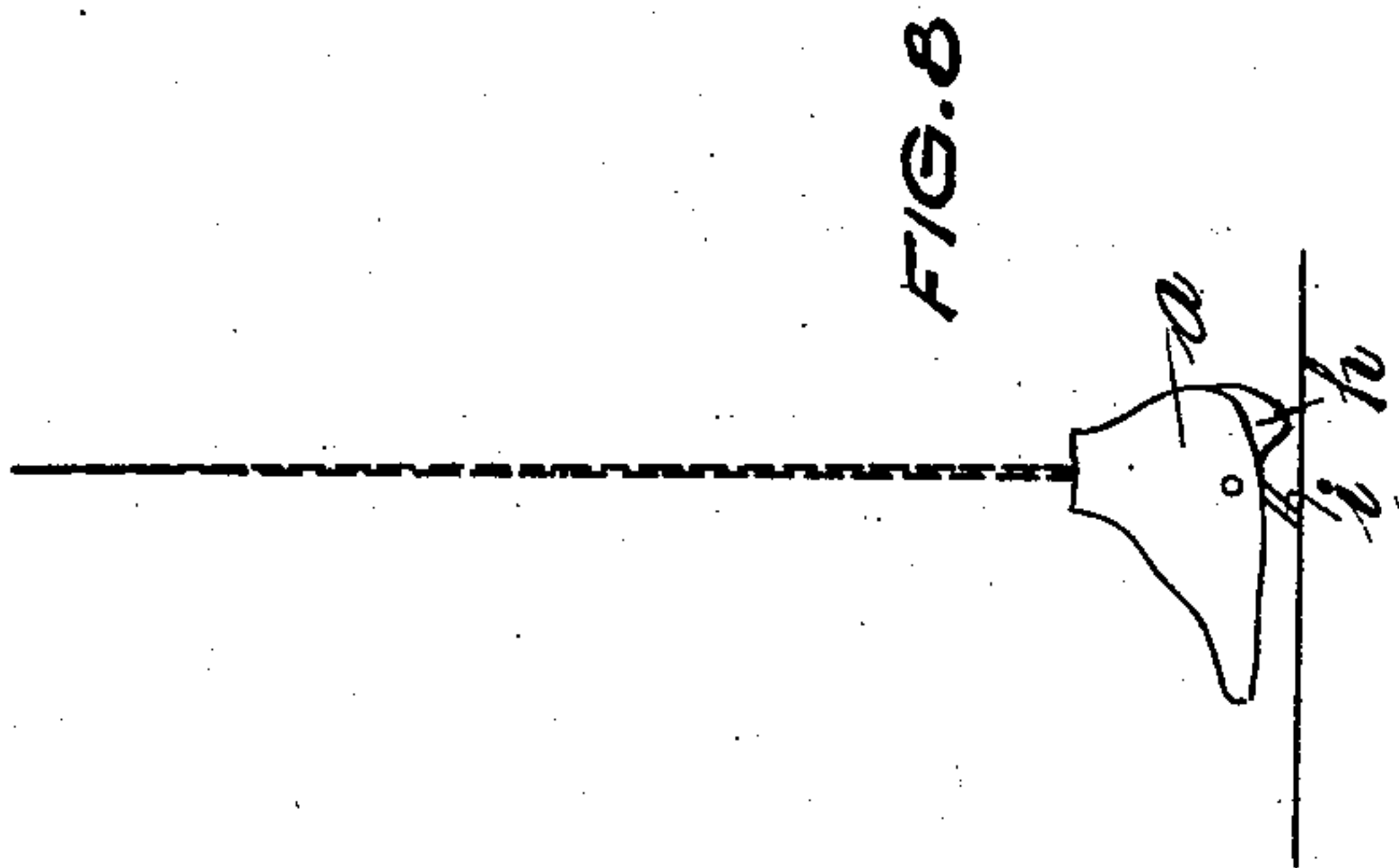
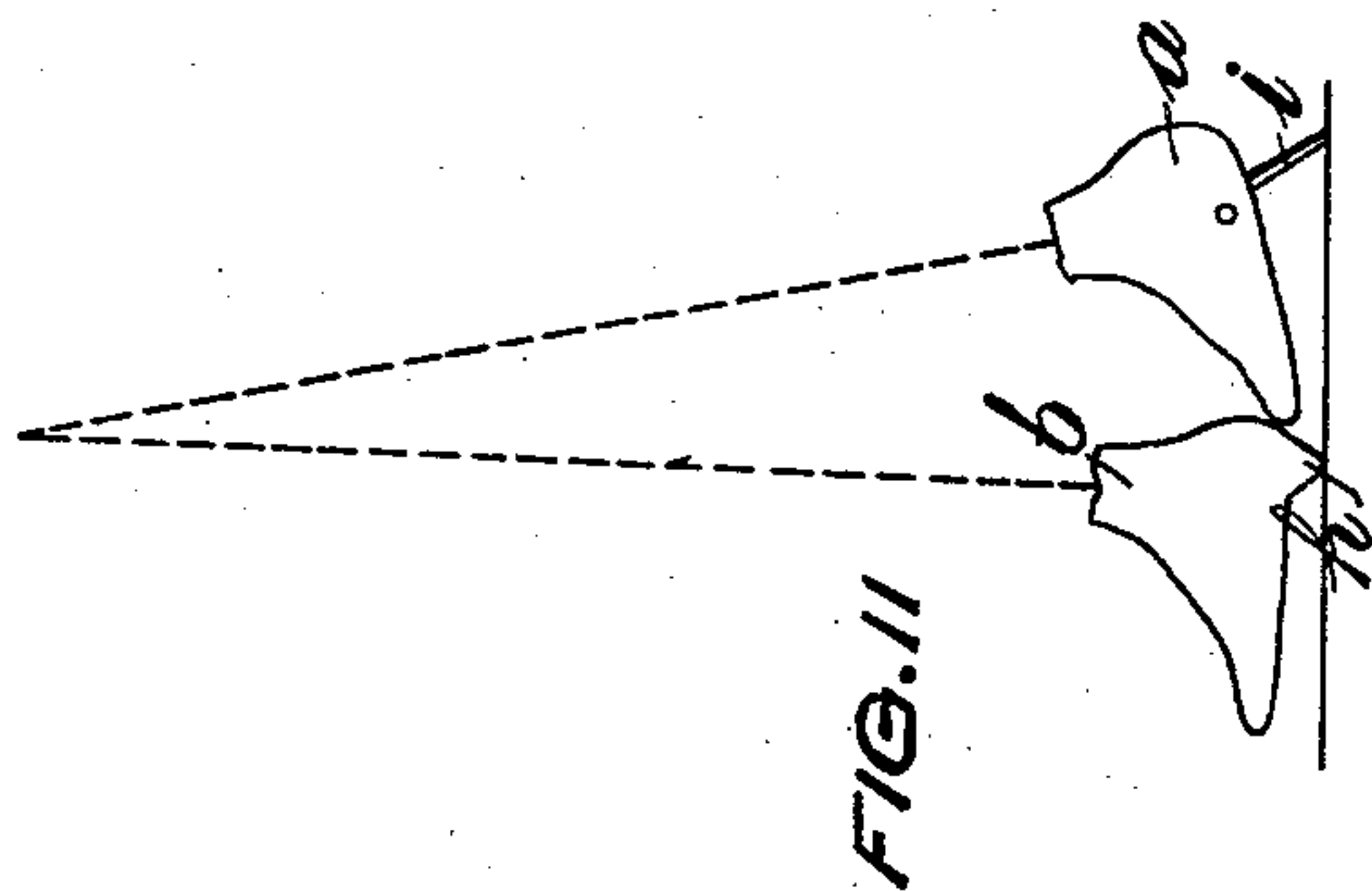
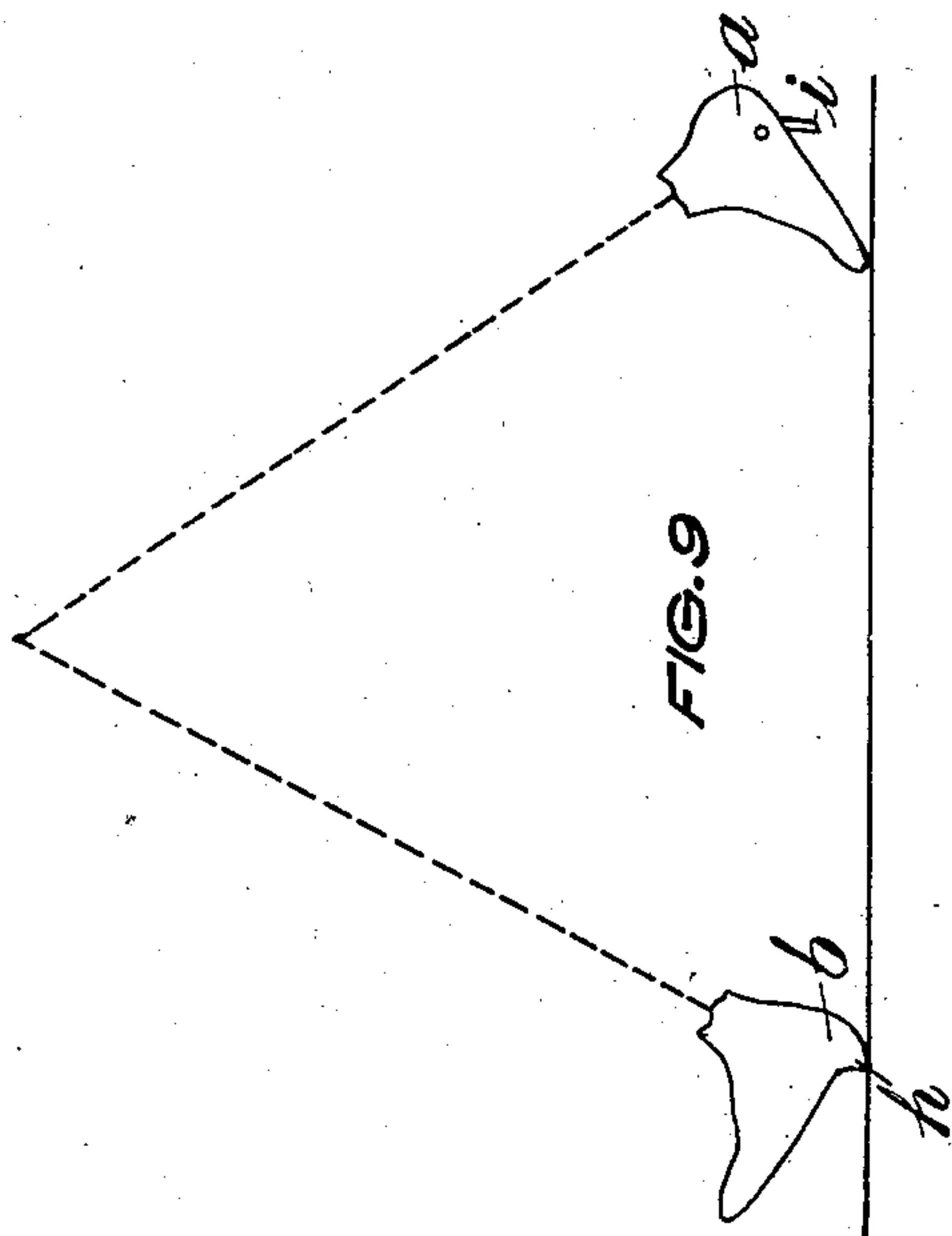
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WALKING TOY.

(Application filed June 17, 1902.)

(No Model.)

4 Sheets—Sheet 4.



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# UNITED STATES PATENT OFFICE.

EDWARD AUGUSTUS JEFFREYS, OF MOSELEY, NEAR BIRMINGHAM,  
ENGLAND.

## WALKING TOY.

SPECIFICATION forming part of Letters Patent No. 709,987, dated September 30, 1902.

Application filed June 17, 1902. Serial No. 112,082. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD AUGUSTUS JEFFREYS, a subject of the King of Great Britain and Ireland, and a resident of Thistlewood, Coppice Road, Moseley, near the city of Birmingham, England, have invented certain new and useful Improvements Relating to Walking Toys, (for which I have filed an application in Great Britain, No. 23,872, bearing date November 25, 1901,) of which the following is a specification.

This invention consists of improvements relating to walking toys whereby I am enabled to construct at small cost representations of human beings and animals that can be readily caused to move in a life-like manner.

Referring to the four accompanying sheets of explanatory drawings, Figure 1 is a side elevation showing a completed wooden toy as constructed in accordance with my invention to represent a boy in the act of walking. Fig. 2 is a side elevation of the toy in a partially-completed state, and Fig. 3 an end view of the same. Fig. 4 is a side elevation showing a completed metal toy as constructed in accordance with my invention. Fig. 5 is a side elevation, and Fig. 6 an end elevation, of the same with the dress or covering removed. Fig. 7 is a side elevation of a modified form of my wooden toy. Figs. 8 to 11 are diagram views representing different positions assumed in the movement of a figure constructed in accordance with my invention.

The same reference characters in the different views indicate the same or similar parts.

In the construction of a wooden bipedal toy in accordance with my invention, and as illustrated at Figs. 1 to 3, I pivot the legs *a b* and arms *c d* independently on the respective sides of the trunk or body part *e* of the figure. The legs are connected together by a strap or cord *f*, attached to their upper extremities and passing through an aperture in the body or through an eye, as *g*, secured thereto, for the purpose to be hereinafter referred to.

Under the heel of one of the legs, as *b*, a projection *h* is provided, while within the heel of the other leg *a* a small counterpoised or weighted stilt-piece or strut *i* is pivoted.

The said stilt-piece *i* is freely mounted on its pivot *j*; but it is provided with a counterpoise or weighted portion *k*, whereby it is normally retained in contact with the stop-piece *l*, fixed in the foot of the leg *a*.

Each arm *c* and *d* is connected to the adjacent leg *a* and *b*, respectively, by means of a pin *m*, projecting from the arm and engaging with a wire loop or slot *n*, attached to or formed within the leg. The arms are thus caused to swing with the movements of the legs.

By the addition of weights to the forearms of the figure I can dispense with the connection formed between the legs by the strap or cord *f*, hereinbefore referred to, or I may employ both strap and weights.

For the purpose of propelling the figure I secure in elastic connection with the shoulder of the body part *e*, by means of the spring attachment-piece *o*, a rod *p*, which serves as a handle.

The action of the figure constructed as aforesaid is as follows: The figure is supported in an erect position on the ground by means of the handle *p*, and a forward movement is imparted through the said handle to the body. Since the legs by virtue of the projection *h* and stilt-piece *i* are of different lengths, the figure when erect and with both legs in a vertical line with the body can stand upon only one of such legs—namely, the leg *a*, in the foot of which is the stilt-piece *i*. This position is shown in the diagrams at Fig. 8. In consequence when the body is propelled or pushed in a forward direction under the action of the person handling the figure the shorter and free leg *b* swings or steps forward until it is brought into contact with the floor or ground. The figure will be thus supported both on the projection *h* from the foot of the leg *b* and on the toe or front part of the foot of the other leg *a*. This position is shown by the diagram Fig. 9. The continued propelling action of the person holding the handle causes the body part *e* to be inclined somewhat in a forward direction and to advance while the projection *h* remains stationary on the ground. During



such advance the now rear leg *a* is dragged forward by the body, while the spring *o* becomes curved under the propelling pressure transmitted through the handle *p*; but as the leg *a* moves past the supporting-leg *b* the former is raised clear of the ground, and by the impulse due to the recovering or straightening action of the spring *o* on the body *e* the leg *a* (through its connection with the body by the cord *f*) is jerked forward to the position shown by the diagram Fig. 10. As the operator continues to press forward with the handle *p* the figure will drop onto the stilt-piece of the leg *a*. Such leg *a* thus becomes the support for the figure during the next step which is taken by the leg *b* in a manner precisely similar to the hereinbefore - described step with the leg *a*. The alternate stepping of the legs of the figure will continue so long as the operator continues to progress and to push with the spring-connected handle *p*.

The necessary variation in the length of the leg *a* to permit of the progressive movement as aforesaid is effected by means of the weighted stilt-piece or strut *i*. When the figure rests upon the stilt or strut, it is supported at a distance from the ground sufficient to permit the leg *b* to swing forward; but when the latter leg supports the figure on its projection *h* and the stilt-leg *a* swings forward the stilt-piece *i* is pushed back, (by its contact with the ground,) as is shown by the diagram Fig. 11, sufficiently to prevent obstruction to the movement of the toy.

In the application of my invention to a quadrupedal figure I also employ legs of different effective lengths, pivoted to the body part, and pivoted stilts or struts for giving the required variation in length.

Referring now to the form of toy illustrated in the drawings at Figs. 4 to 6, the body part *q* is made up of a strip of metal bent to the shape shown at Fig. 5. Attached to the top of the said body is a cross-piece *r*, having ears or bearing-pieces *s* formed therewith to carry the pin *t* for the legs of the figure. The said legs *u v* are formed from metal strips, to which feet are attached and in which holes are pierced for the insertion of the aforesaid pin *t*. The legs have extensions above their pivot-pin *t*, and in such extensions holes are provided for the arm connecting the pin *w*. The foot on the leg *u* is made hollow, preferably, by riveting to each side of the strip a similarly-shaped portion of sheet metal, and within the intervening space a stilt-piece *i* is pivoted. On the foot of the other leg *v* a projection *h* is formed, as in the case of the wooden toy hereinbefore described.

The arms *x* and *y* are also formed from metal strip, but preferably in one piece, the portion *z* of the strip serving as the connection between the said arms. The arms can also be made separately and in various forms. The head 1 of the figure is formed from sheet-

metal stampings, wood, papier-mâché, or other suitable material and is secured to the connecting-piece *z* of the arms aforesaid.

Extending from the body part *q* a steadying-piece 2 is disposed, which passes through the connecting-piece *z* into the interior of the head. It does not, however, interfere with the cross pivot-pin *w*, since the latter passes immediately behind the said steadying-piece 2. The complete toy is dressed to represent a grotesque or humorous figure, such as the one illustrated at Fig. 4 of the drawings.

The action of the metal toy is similar, so far as the manipulation is concerned, to that of the wooden toy already described; but the effect is somewhat different in several particulars. The arms in this case do not swing about the shoulders of the figure, but about the central steadying-piece 2. The hands, therefore, while moving to and fro, always remain in the same horizontal plane. Moreover, by reason of the arms moving in the said manner about the steadying-piece 2 the connecting-piece *z* has a vibratory motion which causes the head to turn from side to side as the figure progresses along the ground.

The swinging of the legs is effected, as in the previous case, partly by the push or impelling action of the operator transmitted through the spring connection *o* to the body and partly by the jerk produced by the impulse due to the recovery of the spring to its normal curvature after having been distorted by the said push of the operator; but the strap *f* of the wooden toy is not needed in the metal toy constructed as described.

In the modified form of toy (illustrated at Fig. 7) I dispense with the spring connection *o*, hereinbefore described, and in place of the same employ a weight 3 in attachment with the back of the toy. Such weight, whose function is the same as that of the aforesaid spring *o*, may be made in the form of a bell or an ornament. The handle *p* in this case is directly attached to the shoulder pin or pivot of the toy or figure and can be swung over from the pushing position illustrated to the front of the figure, so that it may be employed for dragging the same, if desired.

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

1. In walking toys, the combination with a jointed figure of a counterweighted stilt-piece in a foot of the said figure automatically varying the length of the leg, a propelling-handle, and a leg-jerking attachment on the body of the figure, substantially as set forth.

2. In walking toys, the combination with a jointed figure of a counterweighted stilt-piece in a foot of the said figure automatically varying the length of the leg, a propelling-handle, and a leg-jerking spring attachment disposed and fixed between the handle and the body of the figure, substantially as set forth.

3. In walking toys, the combination with a



jointed figure of a counterweighted stilt-piece in a foot of the said figure automatically varying the length of the leg, a propelling-handle, a leg-jerking attachment on the body of the figure, and connections between the legs and the arms transmitting movement from the one to the other, substantially as set forth.

4. In walking toys, the combination with a jointed figure of a counterweighted stilt-piece in a foot of the said figure automatically varying the length of the leg, a propelling-handle, a leg-jerking spring attachment, and a pair of arms in rigid connection with each other and jointed with extensions from the legs of the figure, substantially as set forth.

5. In walking toys, the combination with a jointed figure of a counterweighted stilt-piece in a foot of the said figure automatically varying the length of the leg, a propelling-handle, a leg-jerking spring attachment, and a pair of arms in rigid connection with each other

and with the head of the figure and jointed with extensions from the legs of the same, substantially as set forth.

6. In walking toys, the combination with a jointed figure of a counterweighted stilt-piece in a foot of the said figure automatically varying the length of the leg, a propelling-handle, a leg-jerking spring attachment, a pair of arms in rigid connection with each other and with the head of the figure and jointed with extensions from the legs of the same, and a steadying-piece fixed to the body part and projecting into the interior of the head, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDWARD AUGUSTUS JEFFREYS.

Witnesses:

EDWARD MARKS,  
JOHN MORGAN.