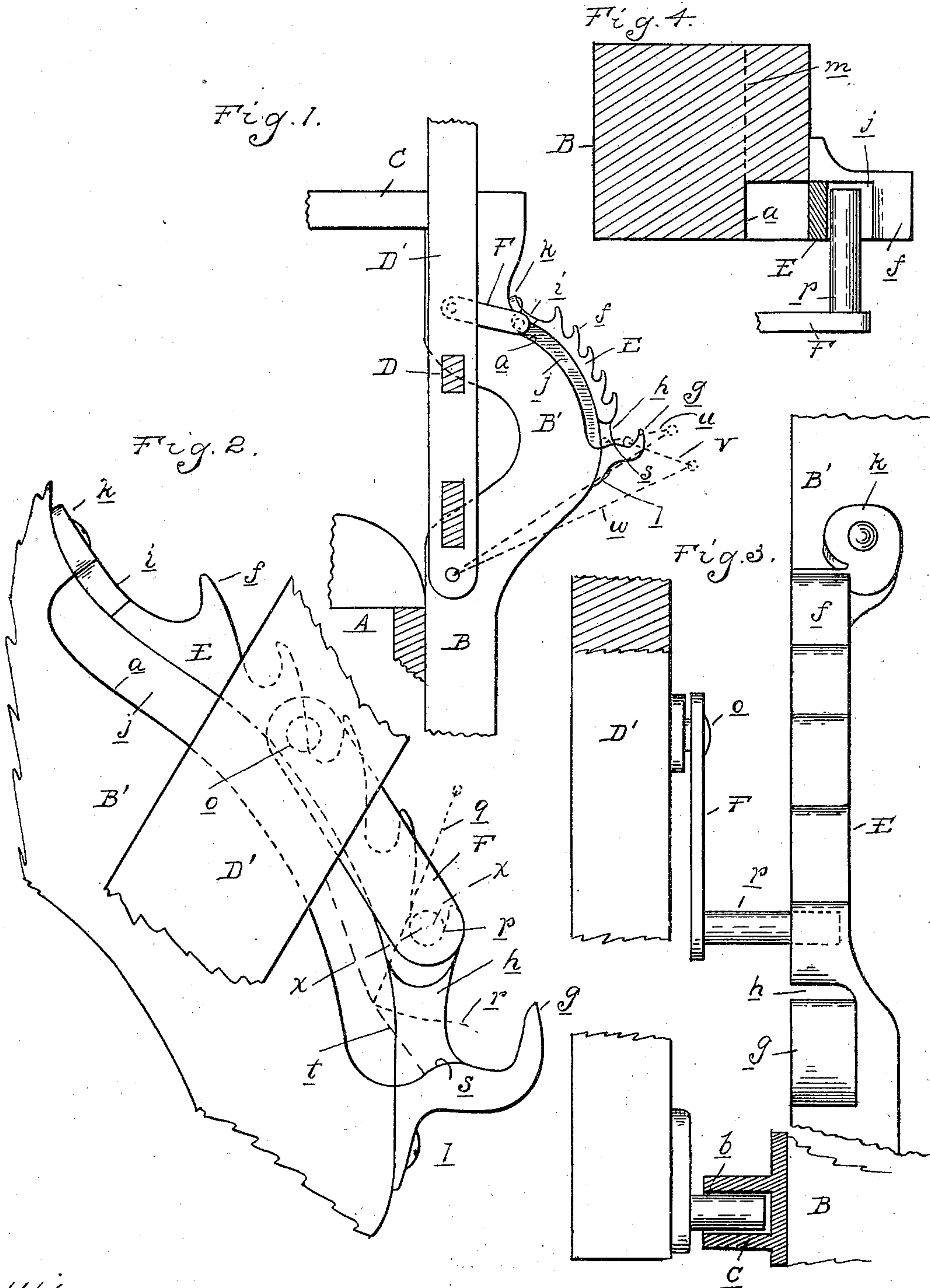


J. F. WALTON.
ADJUSTABLE BACK CHAIR.

(Application filed Sept. 24, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
H. B. Smith.
W. B. Bogherty.

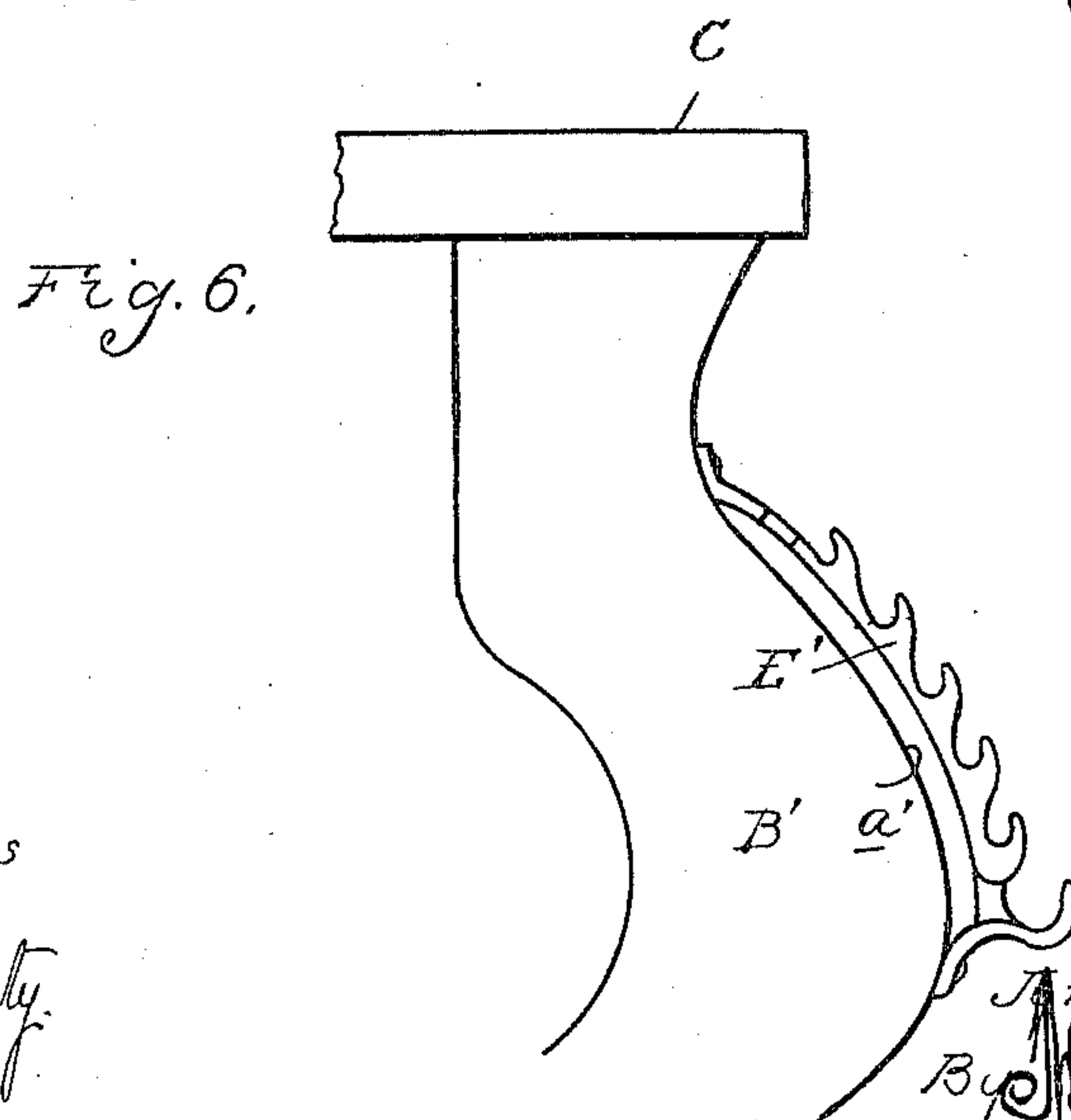
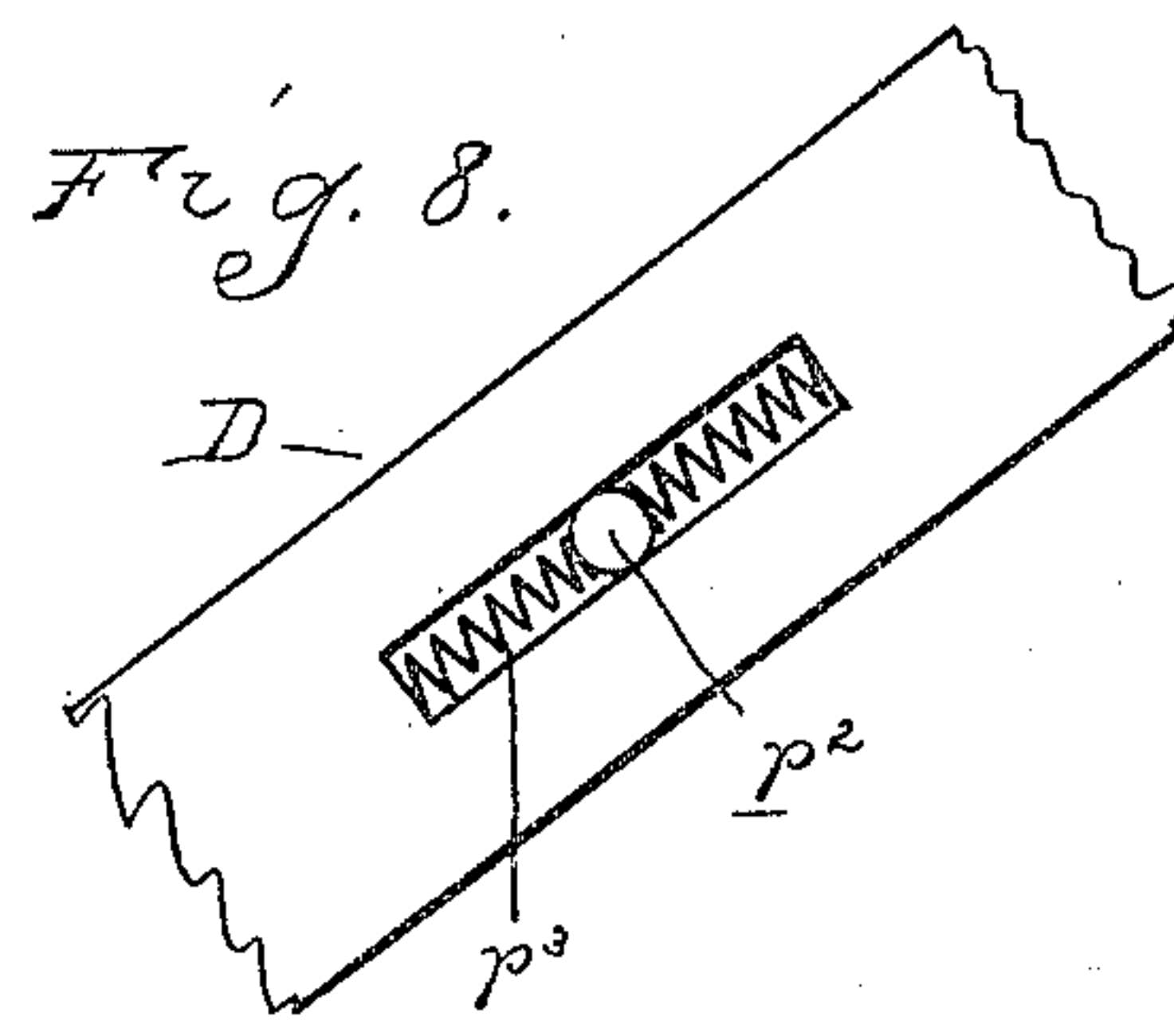
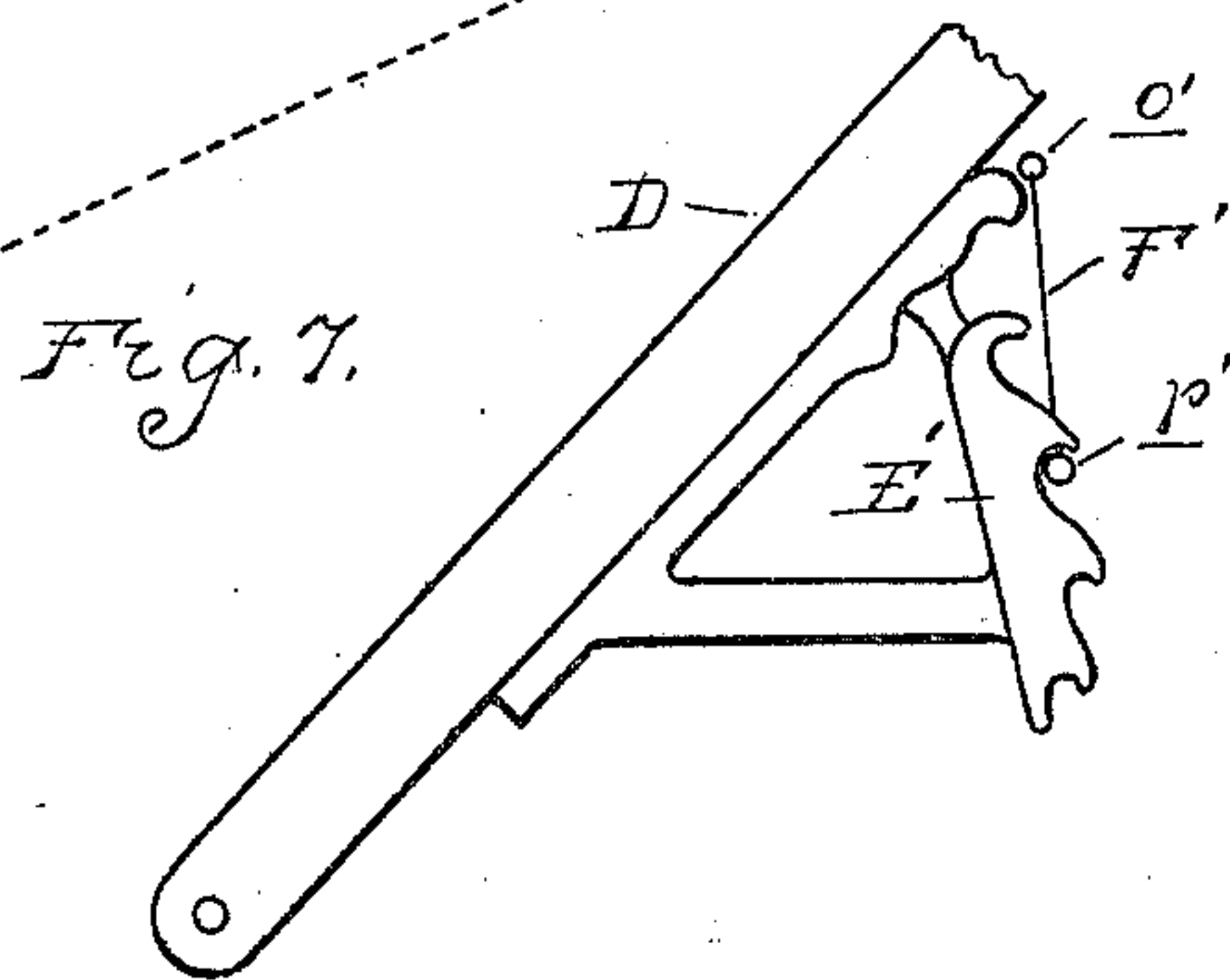
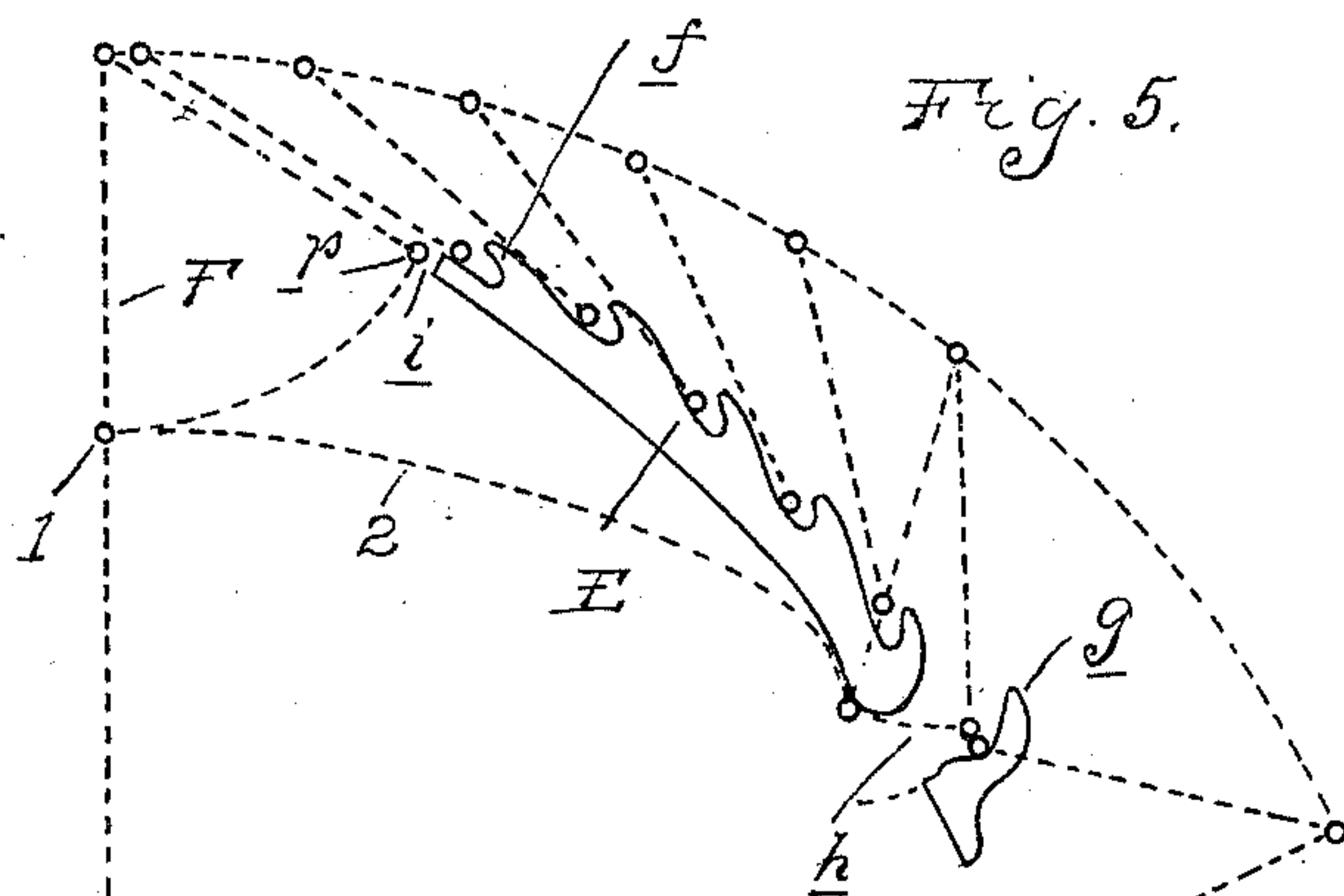
Inventor
J. F. Walton
By H. B. Bogherty, Attys.

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(No Model.)

2 Sheets—Sheet 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JERROLD F. WALTON, OF STURGIS, MICHIGAN.

ADJUSTABLE-BACK CHAIR.

SPECIFICATION forming part of Letters Patent No. 705,171, dated July 22, 1902.

Application filed September 24, 1901. Serial No. 76,336. (No model)

To all whom it may concern:

Be it known that I, JERROLD F. WALTON, a citizen of the United States, residing at Sturgis, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Adjustable-Back Chairs, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to adjustable-back chairs, and has for its especial object the obtaining of a construction in which a large range of adjustment may be made and which is easily manipulated by the user.

15 It is a further object to obtain a simple and inexpensive construction to build.

With these objects in view the invention consists in the peculiar construction, arrangement, and combination of parts, as hereinafter described and claimed.

20 In the drawings, Figure 1 is a vertical section through a portion of the seat and back frames of the chair. Fig. 2 is an enlarged view of a portion of Fig. 1. Fig. 3 is a rear elevation thereof. Fig. 4 is a section on line *x x*, Fig. 2. Fig. 5 is a diagram showing the manner of operation. Fig. 6 is an elevation similar to Fig. 2, illustrating modification; and Figs. 7 and 8 are elevations of the back-frame, 25 showing other modifications.

A is the seat-frame, which may be of any suitable construction, except as hereinafter described.

30 B represents the rear legs, forming a part of the seat-frame, and C represents arm-rests. These arm-rests are preferably supported by being secured to upward extensions B' of the legs B, and these portions B' are also extended rearwardly intermediate the seat and arm-rest. The portions B' of the legs are preferably formed of the curved shape shown in the drawings, so as to form the segmental rear face *a* for the purpose hereinafter described.

35 D is the back-frame. This is hinged to the frame A in any suitable way, as by providing pintles *b*, secured to opposite sides of said frame, and sockets *c*, secured to the legs of the seat-frame.

40 E represents rack-bars secured to the extensions B' of the legs and in rear of the curved or inclined face *a*. These racks are

preferably of the construction shown in Fig. 2, comprising a series of hooks *f* upon their outer faces and a somewhat larger hook *g* at their lower ends. Between the last hook *f* 55 and the hook *g* the rack is partially cut away to form a slot *h*, and a similar slot *i* is formed above the upper hook *f*. The rack E is so secured to the extension B' as to be separated from the face *a*. This is preferably accomplished by rabbeting or grooving the extension B', so as to form a curved face *a* and a channel *j*, as shown in Figs. 1 to 5. The rack is then secured in position by means of ears *k* and *l*, extending, respectively, above and below said rabbeted portion and screwed or otherwise secured to the extension B'. 60

In Fig. 6 a modification is shown in which the rabbet is dispensed with, and the rack E' is shaped to stand away from the rear face *a'* 70 of the extension B'.

In Fig. 4 another modification is illustrated by the dotted line *m*, which indicates a slot or channel extending the entire width of the portion B'. 75

F is a dog secured to the back-frame D and adapted to engage with the rack E. This is preferably in the form of a pivotal link secured at *o* to the side bar D' of the frame D and at its free end provided with a laterally- 80 extending pin *p*. This pin is of a length to overlap the rack-bar E and to engage with the hooked teeth thereof. The proportion of parts is such that when the back-frame is swung upward upon its pivots or hinge *b* the links F will be held in a rearwardly-inclined position, so that they will automatically swing into engagement with each succeeding hook of the rack E. As soon, however, as the highest hook has been passed the pin *p* will swing 90 through the slot *i* into the channel *j*, formed between the curved face *a* and the rack-bar. The back may then be lowered, and the channel *j* will form a guide for the pin *p* until the lower end of the rack is reached. In passing 95 downward through the channel *j* the pin *p* is first guided by the face *a*; but before the lower end of the channel is reached the pivotal point of the link will be carried rearwardly beyond the pin *p* into the inclined position indicated by dotted line *q*. Thus as soon as the pin *p* comes into registration with the slot 100

h it will swing outward and into engagement with the hook *g*, its path being indicated by the dotted line *r*.

From the description above given it will be readily understood that any desired angle of adjustment may be given to the back-frame by engaging the pin *p* with the proper hooks on the rack-bar. It will be further understood that this adjustment may be effected either by simply raising the back or if it is desired to lower it by first raising it until the pins *p* enter through the slots *i* into the channels *j* and then lowering until said pins are thrown into engagement with the hook *g*. Should it be desired to lower the back still further than where supported from the hook *g* with the links *F* in their normal position, this may be accomplished by quickly lowering the back, so that before the pins *p* have time to swing outward through the slot *h* they will come into contact with the lug or shoulder *s*, as indicated by the dotted lines *t* in Fig. 2. This shoulder *s* will hold the link from swinging outward, and if the back is then further lowered the links will be reversed in position, as indicated by the dotted line *u*, Fig. 1. The further lowering will draw the pins *p* outward into engagement with the hooks *g*, in which position the links *F* will extend at an angle, (indicated by the dotted line *v*, Fig. 1,) and the back will be in the position of the dotted line *w*. When the back is again raised, the links *F* will automatically reverse in position and the pins *p* will be successively engaged with the hooks *f*, as before described.

In the construction and operation as thus far given the pins *p* are guided in their return movement by passing through the channels *j*. This is not, however, necessary, as the arrangement of parts is such that even if the channel *j* and curved face *a* were omitted the operation would be substantially the same. As shown in Fig. 5, when the pin *p* passes upward out of engagement with the upper hook *f* the link *F* is free to swing to carry said pin through the slot *i*. Should the curved face *a* and channel *j* formed thereby be omitted, the link will continue its movement until in the vertical position, as indicated at *l*. In the subsequent lowering of the back the pin *p* will trace the path of the dotted line 2 until it comes in contact with the front face of the rack-bar near the lower end thereof. This will swing the link forward, so that when the pin *p* registers with the slot *h* it will be carried through said slot by the return swinging movement of the link and into engagement with the hook *g*.

Fig. 7 shows another modification, in which the rack-bar *E'* is carried by the hinged back frame and the swinging link *F'* is pivotally secured at *o'* to the seat-frame. The teeth of the rack are reversed and cooperate with the pin *p'* substantially the same as in the other construction.

In Fig. 8 in place of the swinging link the pin *p*² is movable in a slotted bearing trans-

versely of the rack and is returned to normal position by spring *p*³.

In all of the various modifications the self-returning movement of the dog causes it to successively engage with the teeth of the rack-bar and at opposite ends of said rack-bar to automatically pass from one side to the other thereof.

What I claim as my invention is—

1. In an adjustable-back chair, the combination with a seat-frame and a back-frame hinged thereto, of a dog secured to said back-frame, an inclined rack having a series of teeth with which said dog is adapted to successively engage in the upward movement of said back-frame, and an upward and rearward extension of said seat-frame to which said rack is secured having a groove therein forming a return-channel for said dog for carrying it from engagement with the highest to the lowest tooth of said rack.

2. In an adjustable-back chair, the combination of a seat-frame having an upwardly and rearwardly curved extension forming a portion of the arm-rest, a back-frame hinged to said seat-frame, a segmental rack secured to said curved extension of the seat-frame, and a dog carried by said back-frame adapted to successively engage the teeth of said rack in the upward movement of said frame; said curved extension being recessed to form a return-channel for said dog from the highest to the lowest tooth.

3. In an adjustable-back chair, the combination with the seat-frame provided with the upward and rearward curved extension *B'* having the rabbet *j* therein, of the rack *E* having the series of teeth *f*, and the slots *i* and *h* at the upper and lower end thereof, the back-frame hinged to said seat-frame, and the pivotal dog *F* secured to said back-frame having the laterally-extending pin *p* adapted to successively engage said teeth *f* in its upward movement and to return through the slots *i* and *h* and rabbet *j*.

4. In an adjustable-back chair, the combination with the seat and arm-rest, of a frame comprising a rear leg secured to said seat and arm-rest and having the portion therebetween extending rearward with an inclined rear face, a rack secured in rear of and separated from said inclined face to form a channel therebetween, a back-frame hinged to said seat-frame, and a dog secured to said back-frame adapted to successively engage with the teeth of said rack in the upward movement of the back and to return through said channel.

5. In an adjustable-back chair, the combination with the seat and arm-rest, of a frame comprising a rear leg secured to said seat and arm-rest, and having the portion therebetween extending rearward and having a segmental rear face, a rack secured to said leg in rear of and separated from said segmental face and forming a channel therebetween, said rack having hooked teeth upon its outer face

and being partially cut away to form slots leading respectively from its lower and upper hooks into said channel, a back-frame hinged to said seat-frame, and a pivotal dog secured to said back-frame adapted to successively engage with said hooks, in the upward movement of said back and to return through said channel.

6. In an adjustable-back chair, the combination with the seat-frame and a back-frame hinged thereto, of an upward and rearward extension of said seat-frame, an inclined rack secured to said extension and separated therefrom to form a channel therebetween, a pendent dog pivoted to said back-frame and having at its free end a lateral projection for engaging said rack, said dog being adapted to automatically successively swing into engagement with the teeth of said rack in the upward movement of the back, engaging with said channel at the upper end and to automatically swing out of said channel at the lower

end thereof into engagement with the lowest tooth of said rack.

7. In an adjustable-back chair, the combination with the seat-frame and a back-frame hinged thereto, of an inclined rack secured to said seat-frame, a pendent dog secured to said back-frame adapted to successively engage with the teeth of said rack in the upward movement of said back and to return on the opposite side of said bar to the lowest tooth, said dog being adapted to swing by gravity outward into engagement with said tooth when said back is lowered slowly, and means for arresting said dog and reversing it in position so as to suspend said back when lowered quickly.

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

JERROLD F. WALTON.

Witnesses:

JAY J. STANTON,
E. B. STROPAGEL.