

No. 708,443.

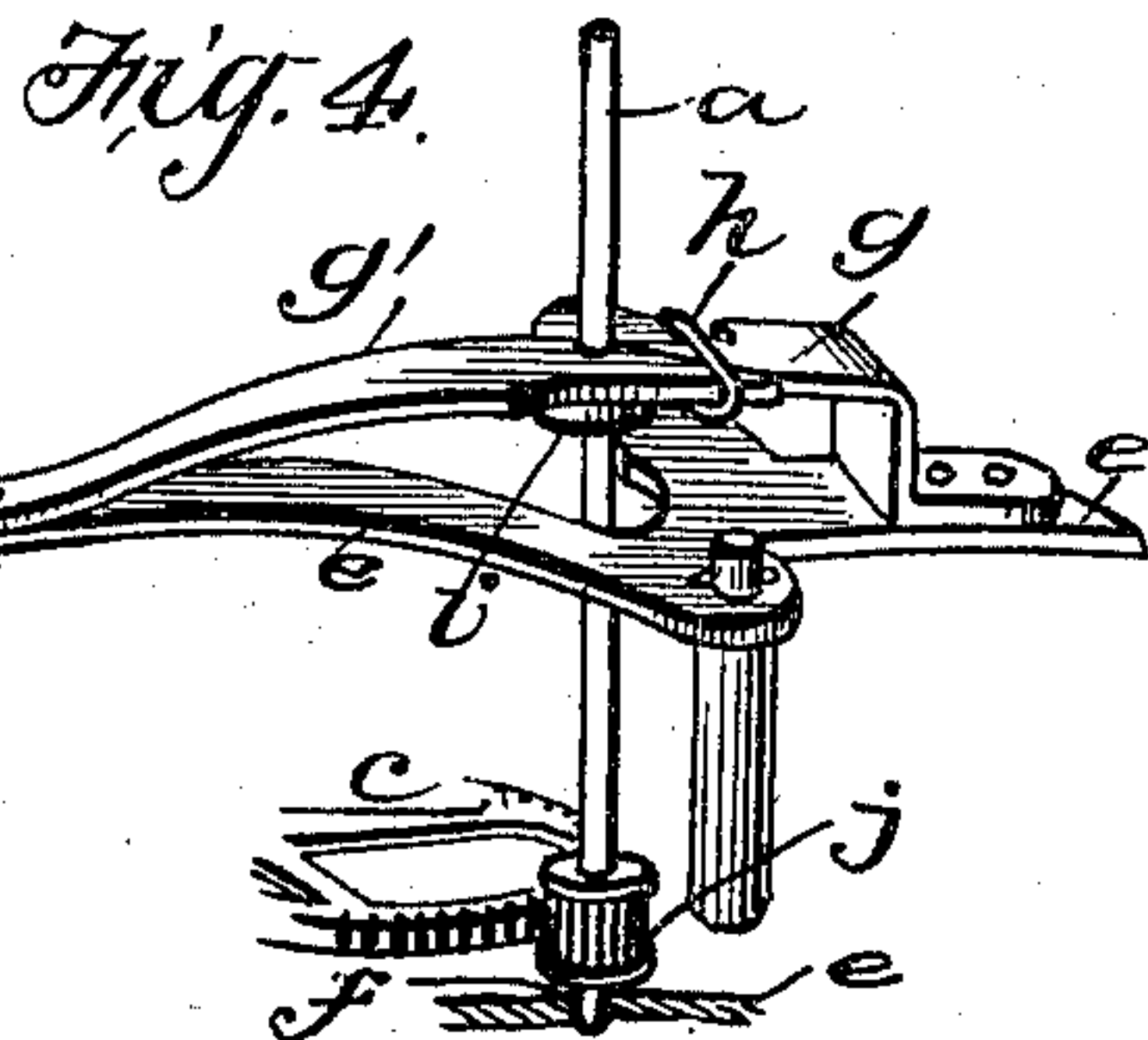
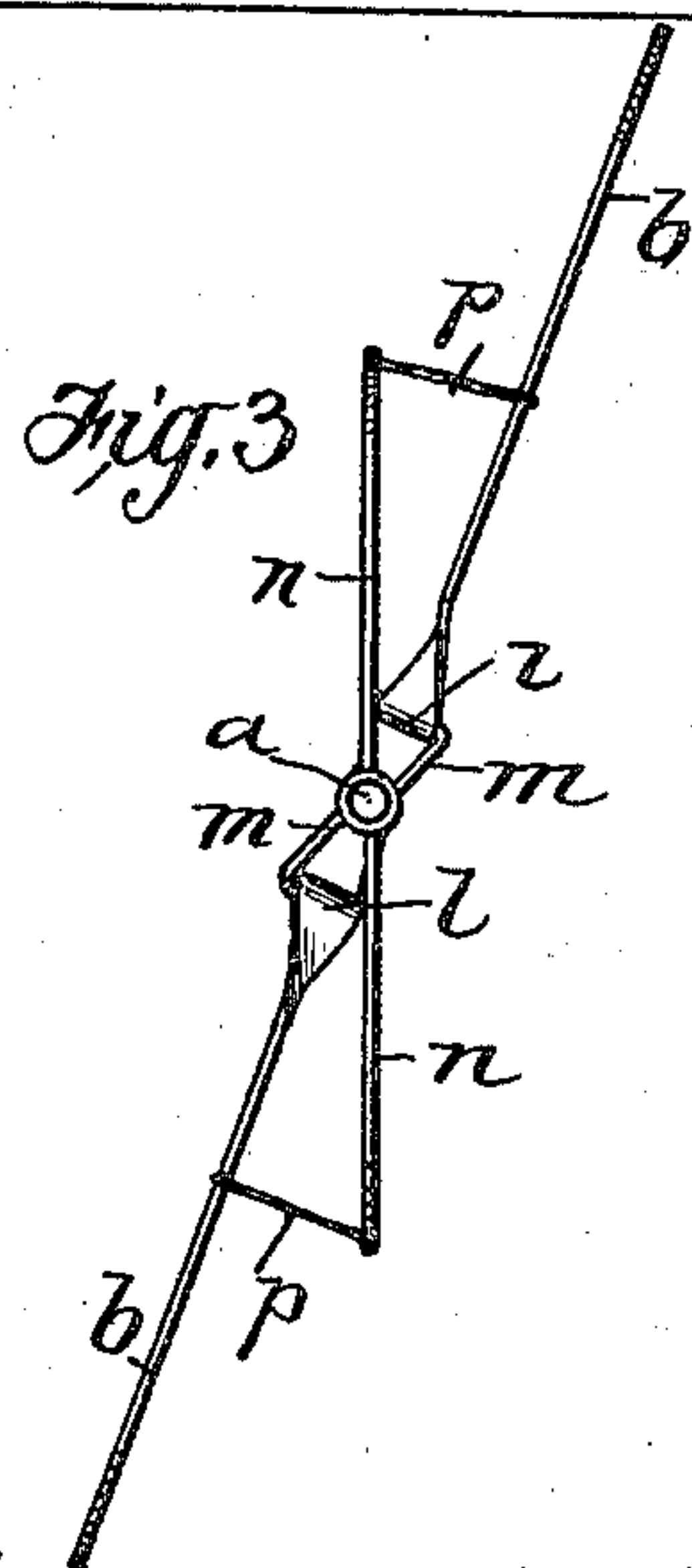
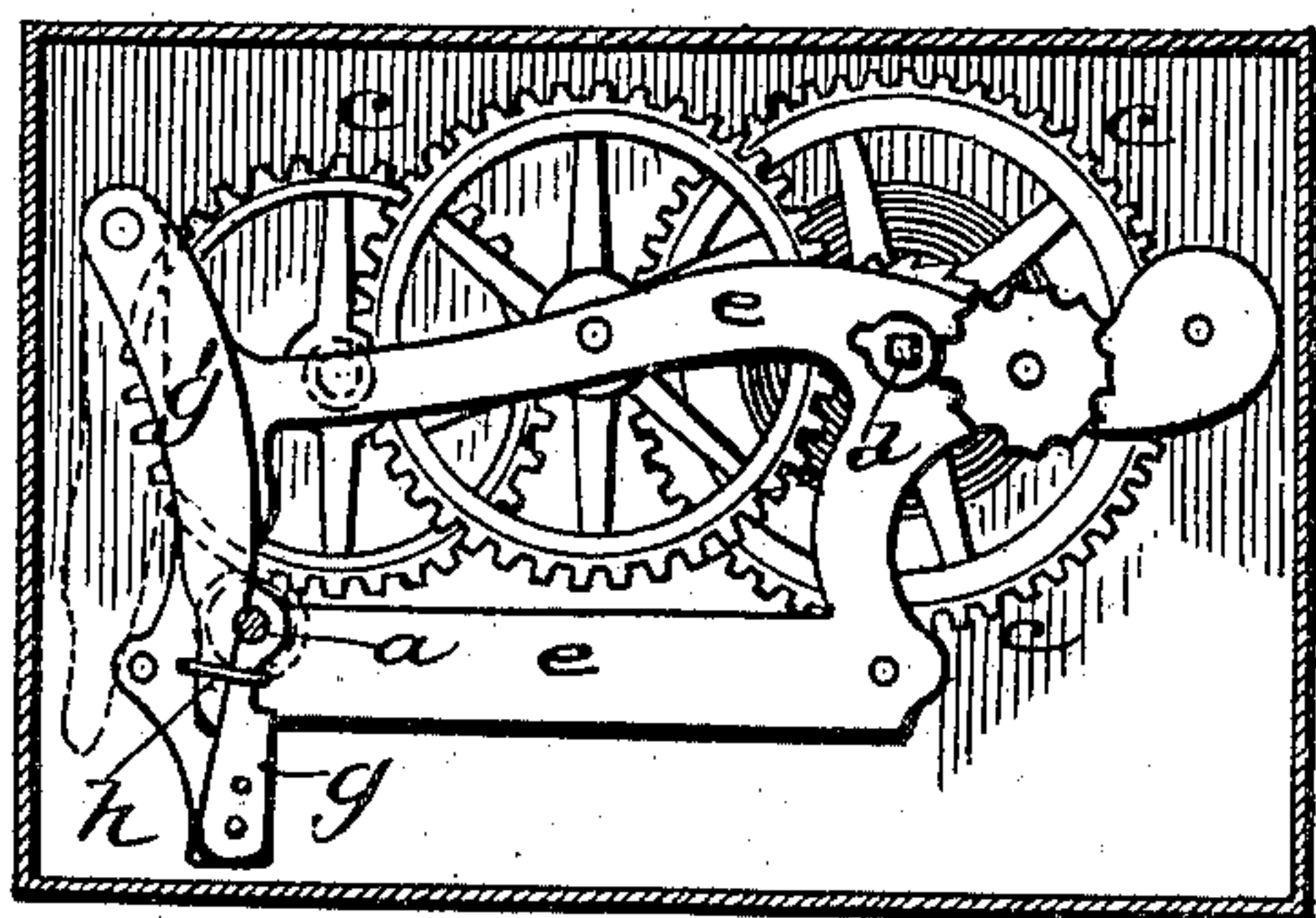
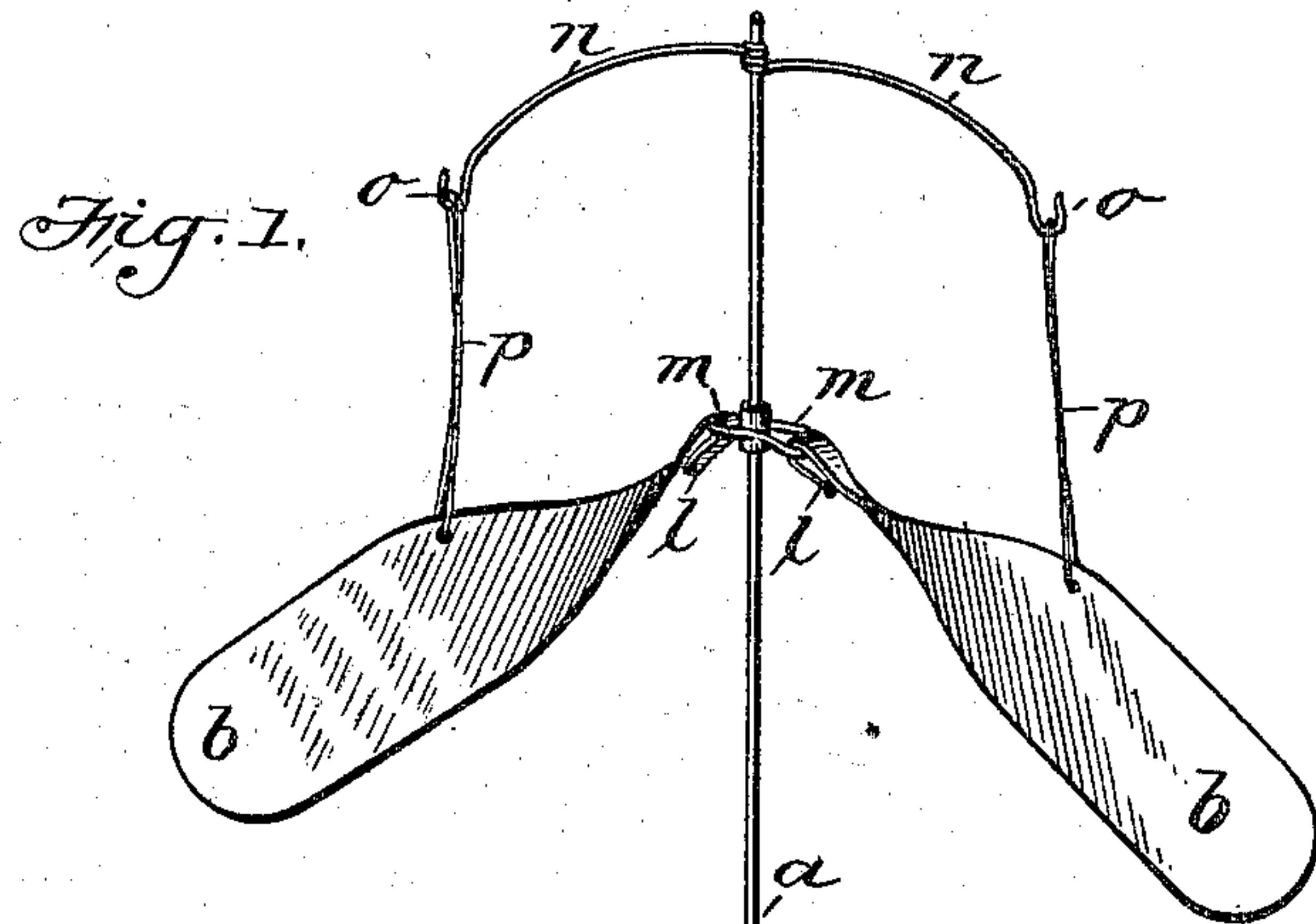
Patented Sept. 2, 1902.

J. D. WILLIAMS.

AUTOMATIC FAN.

(Application filed Oct. 29, 1901.)

(No Model.)



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JEFF DAVIS WILLIAMS, OF DENNING, ARKANSAS.

AUTOMATIC FAN.

SPECIFICATION forming part of Letters Patent No. 708,443, dated September 2, 1902.

Application filed October 29, 1901. Serial No. 80,446. (No model.)

To all whom it may concern:

Be it known that I, JEFF DAVIS WILLIAMS, a citizen of the United States, residing at Denning, in the county of Franklin and State of Arkansas, have made certain new and useful Improvements in Automatic Fans, of which the following is a specification.

My invention is an improvement in that class of automatic fans which are designed to be placed upon tables or any other suitable supports in dining-rooms, sick-rooms, and other places for creating a breeze of air and driving away flies and other troublesome insects.

The chief features of novelty are the means for supporting the fan-shaft and securing it detachably and for adjusting the fan-blades on the shaft.

The details of construction, arrangement, and operation are as hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved fan. Fig. 2 is a horizontal section of the fan-case inclosing the main parts of the apparatus. Fig. 3 is an end view of a portion of the apparatus. Fig. 4 is a detail perspective view of parts by which the fan-shaft is supported in working position.

a indicates a fan-shaft which is arranged vertically and provided with blades b . The said shaft is supported by means hereinafter described and is rotated automatically by means of spring-actuated gearing c , such as ordinarily employed for driving clocks, and which therefore requires no detailed description. The spring of the said gear is wound up by means of a wrench or key applied to the post d . The frame e of the apparatus consists, principally, of two skeleton plates arranged horizontally parallel, the gearing c being arranged between them in a well-known manner. The fan-shaft a is stepped in the lower plate of the frame at f and is journaled at a higher point or just above the upper plate of the frame in a bearing formed of two plates or bars g and g' . The shorter bar g is riveted to the upper plate of the frame, and the longer one, g' , is pivoted on the opposite side of the same. The shorter bar g is provided with a groove in one side near its end to receive the shaft a , and the free end of the pivoted bar

g' is so shaped as to fit closely against such portion of the bar g , so as to hold the shaft in place when secured by means of a sliding link or keeper h . In other words, the meeting ends of the bars form, practically, a scarf-joint, and one of them is tapered. The keeper is arranged on the shorter bar g and adapted to slide over the tapered end of the pivoted bar g' , so as to lock the two firmly together. The shaft a is provided with a collar i (see Fig. 3) at a point directly below its upper bearing, so that when the parts $g g'$ are locked together the shaft is held in its bearings, both as to vertical and lateral motion. The lantern-pinion j , fixed on the lower portion of the fan-shaft a , meshes with the outer driving-gear of the clockwork c . It is apparent that by sliding the keeper h backward or away from the fan-shaft a the latter may be readily adjusted when it is required for any purpose—as, for instance, to pack the machine for shipment or storage—and by reversing the operation the fan-shaft is as readily set in place for operation.

The fan-blades b may be constructed of any light material. They are attached to the shaft by means of hooks or clasps l , formed on their inner ends, the said hooks engaging stirrups or links m , which are fixed on the shaft at a suitable elevation above the frame e of the apparatus. On the upper end of the shaft a are fixed laterally-diverging and downwardly-curved arms n , provided with hooks o at their outer ends. These arms are not arranged in the same vertical plane with the links m , but in planes which are radially at an angle of ten degrees to fifteen degrees to each other. The blades are connected with the free ends of the arms detachably and adjustably by means of cords or chains p . By the arrangement of the arms in a different plane from the links the chains or cords p extend vertically at an inclination, as shown in the drawings, and the joints of the blades with the links are therefore relieved of torsional strain, which would otherwise occur by reason of air-pressure on the blades. It is apparent that the blades b may be held at any desired elevation—say forty-five degrees—or horizontal by means of the cords or chains p , since the latter may be taken up or adjusted in length, as conditions may require.

The fan-blades *b* and the cords or chains being detachable from their supports they may be packed along with the shaft and the remainder of the apparatus, so as to occupy
5 the least possible space.

The apparatus may be set upon a dining-table or upon any support adjacent to a sick-bed or an invalid's chair, or in a barber-shop or any other place where a breeze is required,
10 either for driving away flies and other insects or for the comfort of individuals. All that is necessary to set the apparatus in operation is to wind up the spring of the clock-gear *c*, as before described.

15 What I claim is—

1. In an automatic fan of the class described, comprising spring driving-gear, a rigid frame in which the same is mounted, a fan-carrying shaft having a collar fixed
20 thereon, and a detachable bearing for said shaft, composed of two bars arranged horizontally on the upper portion of the frame, one of them being pivoted and the other fixed, and their meeting ends being scarfed
25 as described, and the slidable keeper, for locking the bars together, as shown and described.

2. In an improved automatic fan of the class described, the combination, with the
30 fan-shaft having links and arms fixed there-

on at different points, fan-blades adapted for attachment to said links, and adjustable devices connecting the blades with the arms and serving to support them in the manner
shown and described.

3. In an automatic fan of the class described, the combination, with the fan-shaft, having links and arms fixed thereon at different elevations, of fan-blades which are detachably engaged with the links, cords or
40 their equivalent connecting the fan-blades with the outer ends of the said arms, and adapted to be shortened or extended for the purpose of adjusting the angle of the blades, substantially as shown and described.

4. In an improved automatic fan of the class described, the combination with the fan-shaft and links secured thereto, of arms also attached to the shaft but at a higher
50 point, and arranged in a different vertical plane, and fan-blades adapted for attachment to the said links, and means for connecting the blades with the free ends of the arms, substantially as shown and described, to operate as specified.

JEFF DAVIS WILLIAMS.

Witnesses:

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