

No. 662,215.

Patented Nov. 20, 1900.

H. ALLENDER.  
TYPE WRITING MACHINE DOG.

(Application filed May 25, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

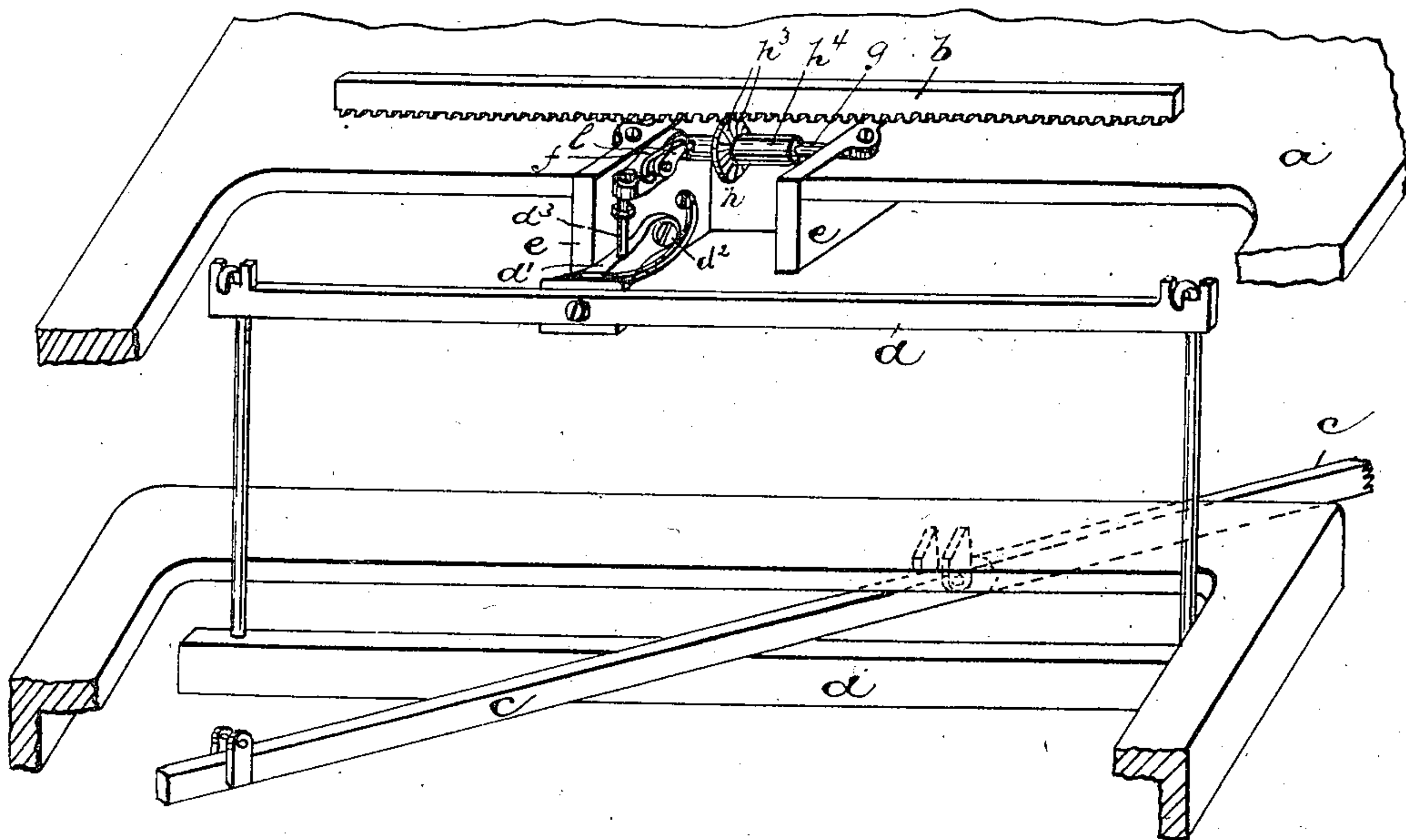


Fig. 2.

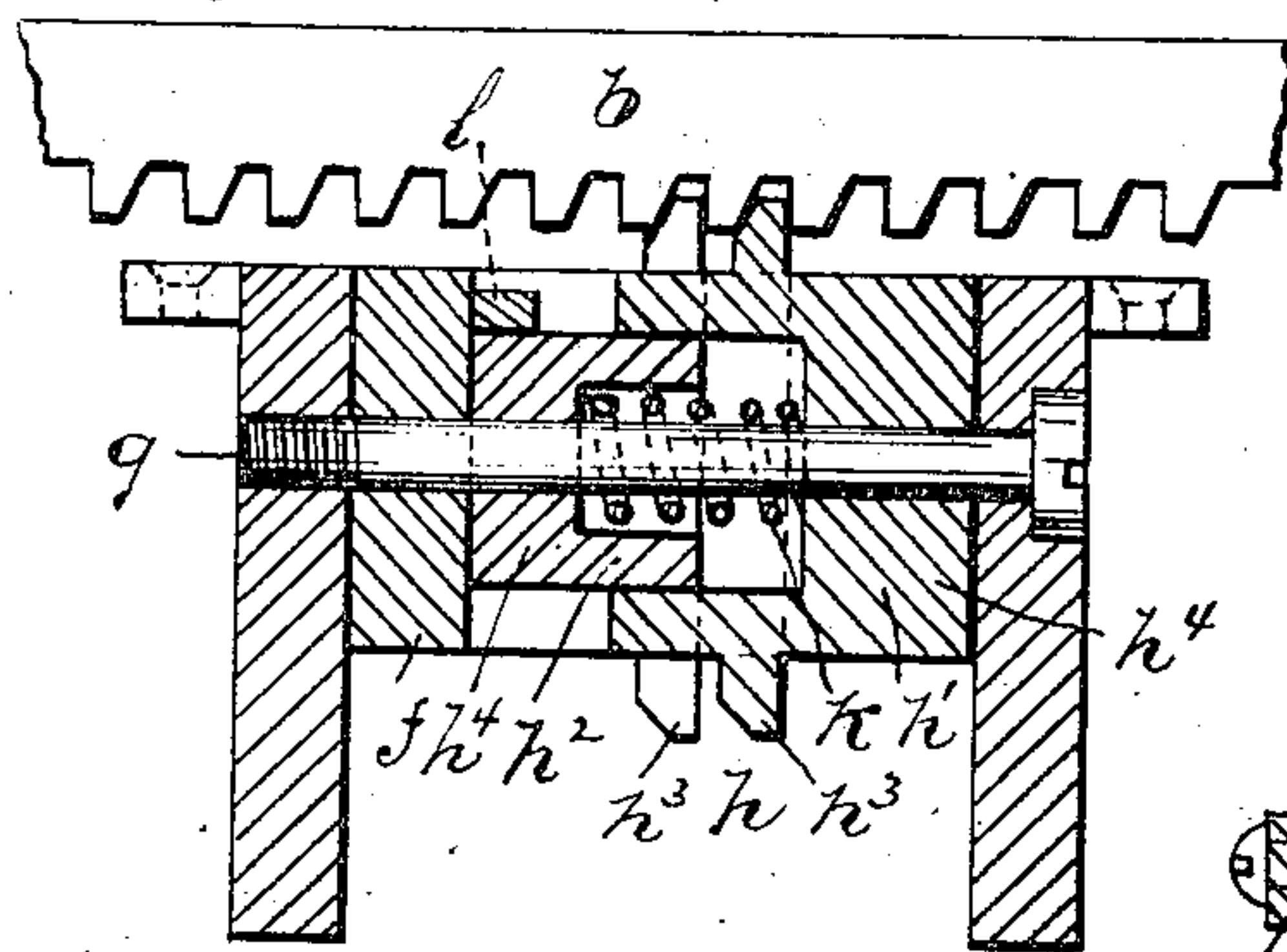
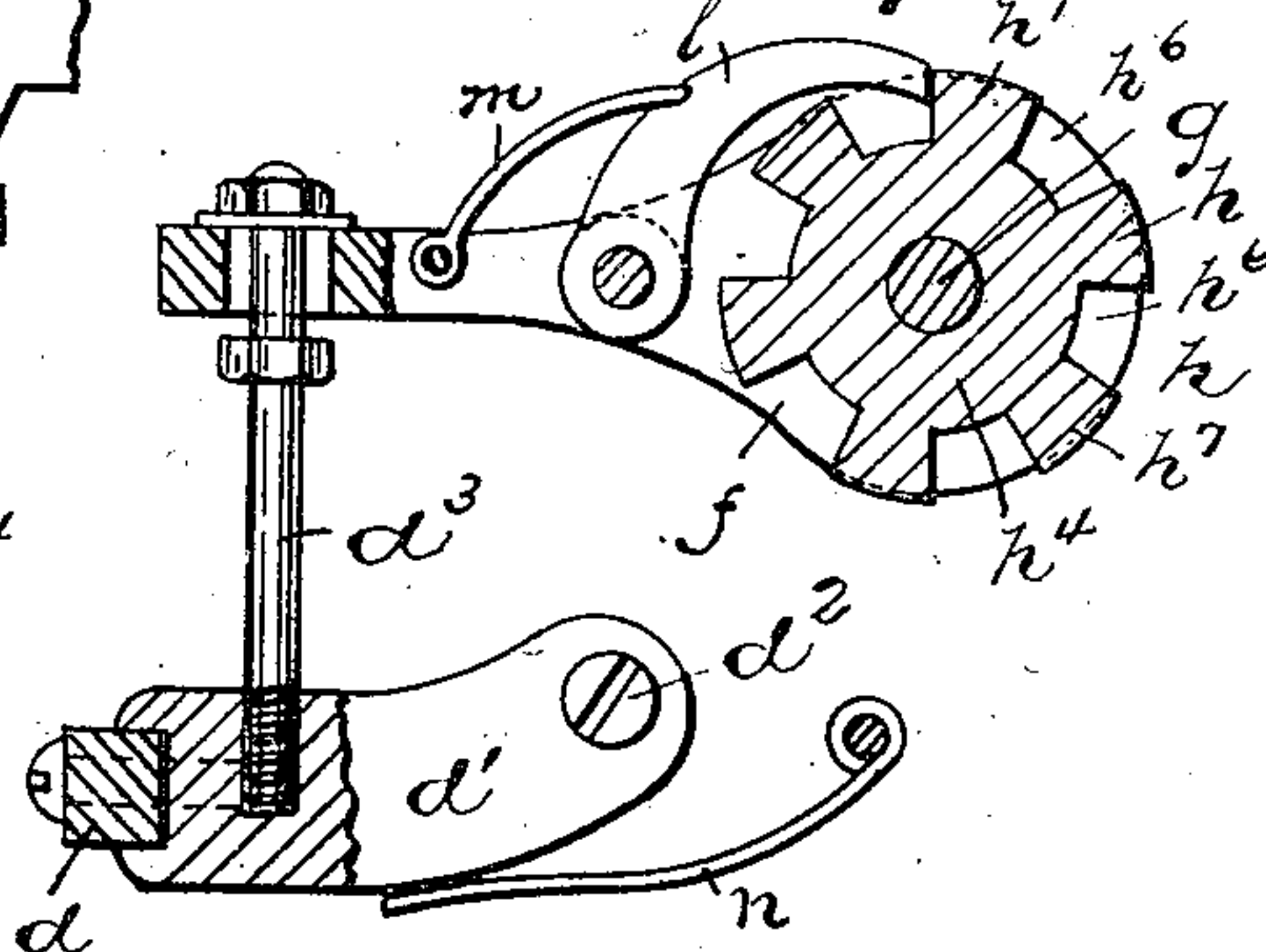


Fig. 3.



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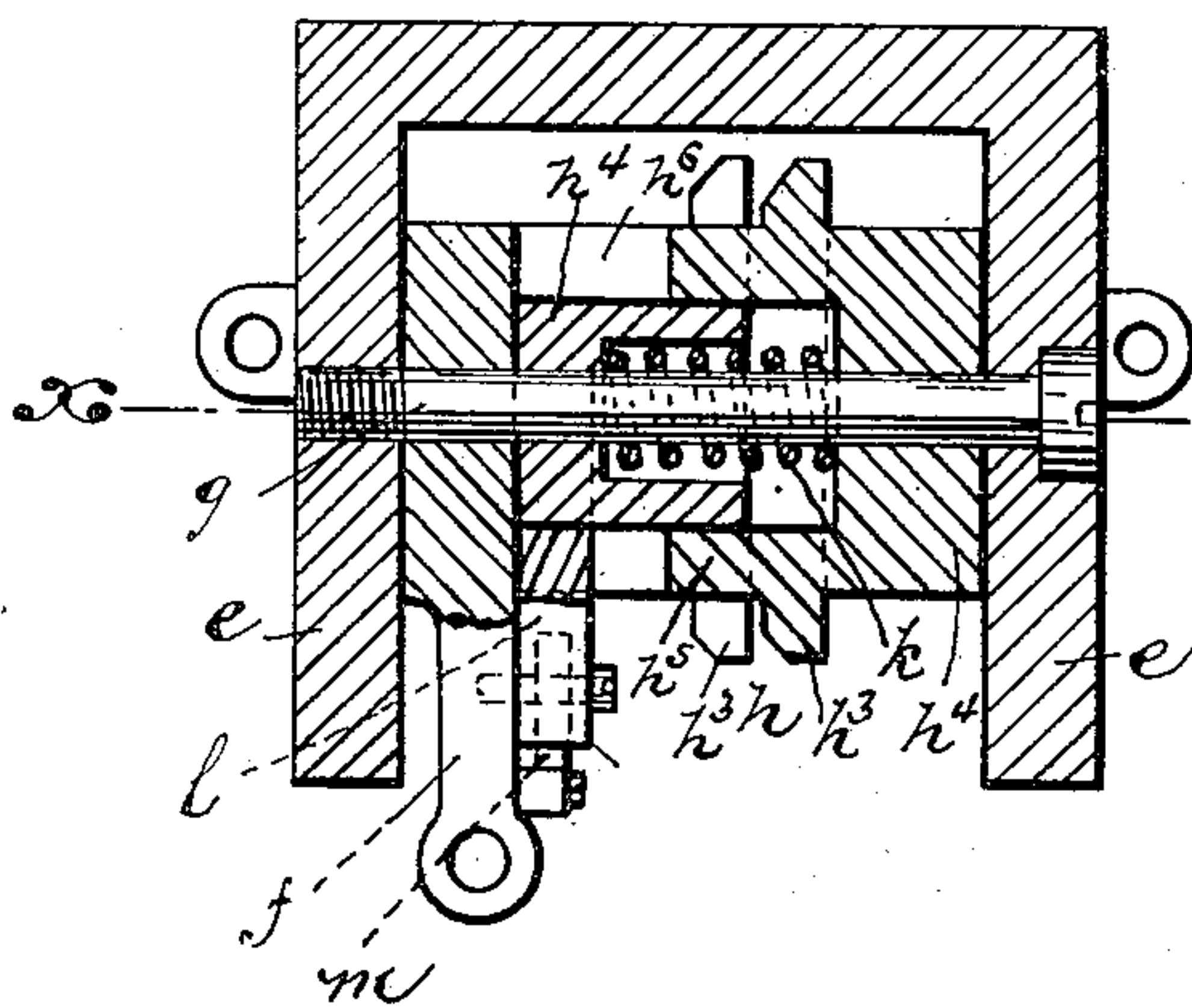
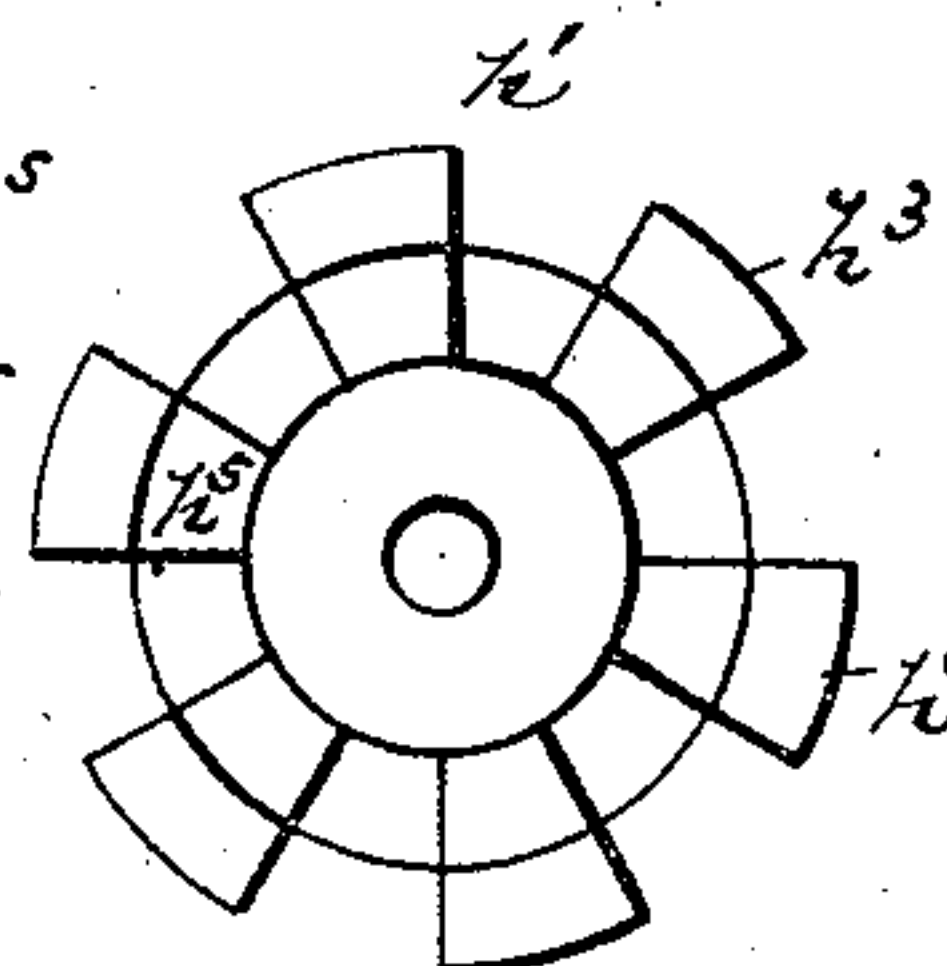
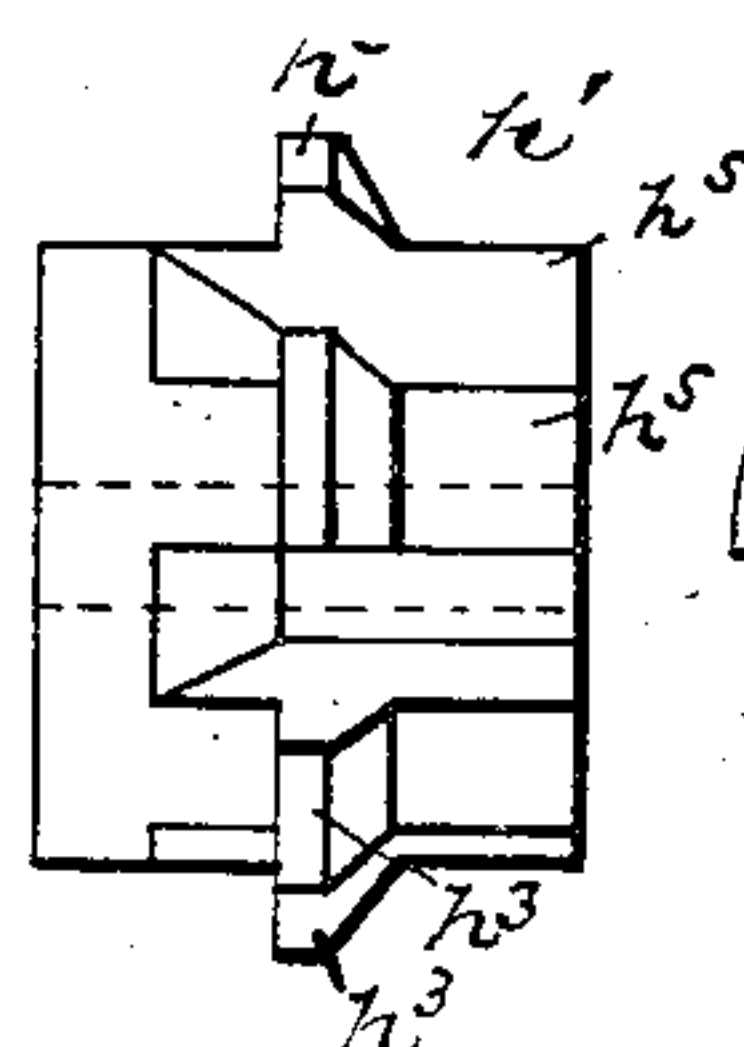
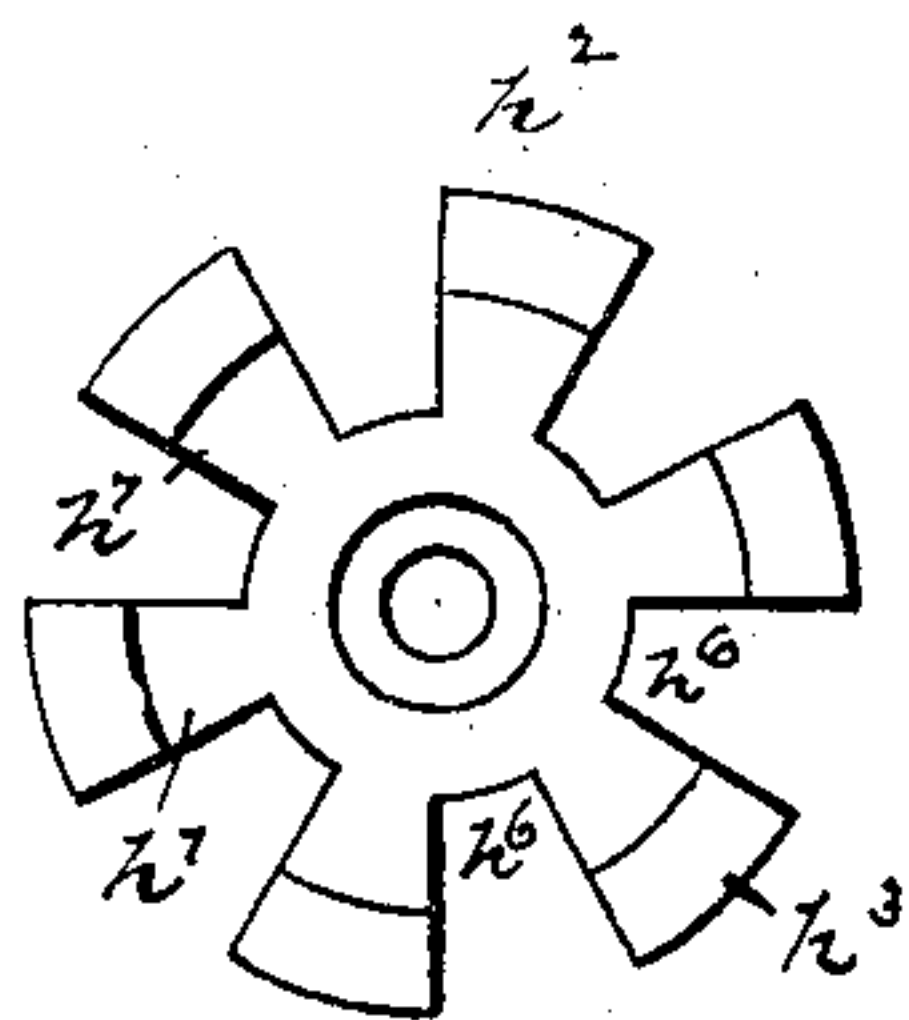
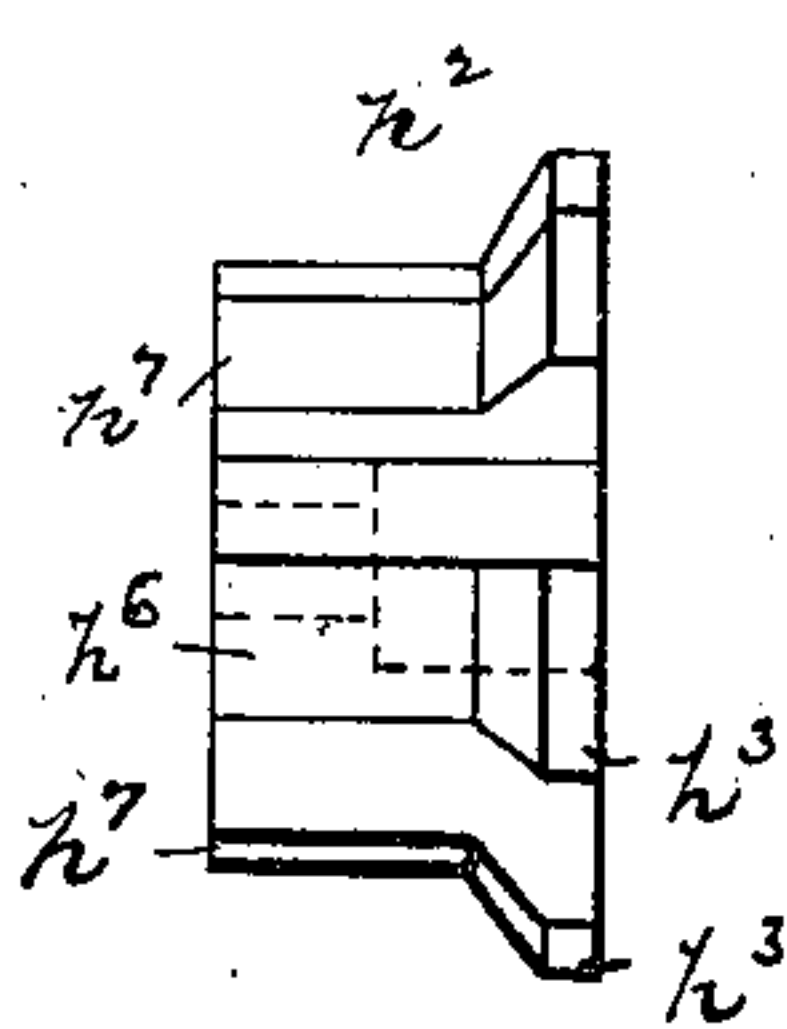
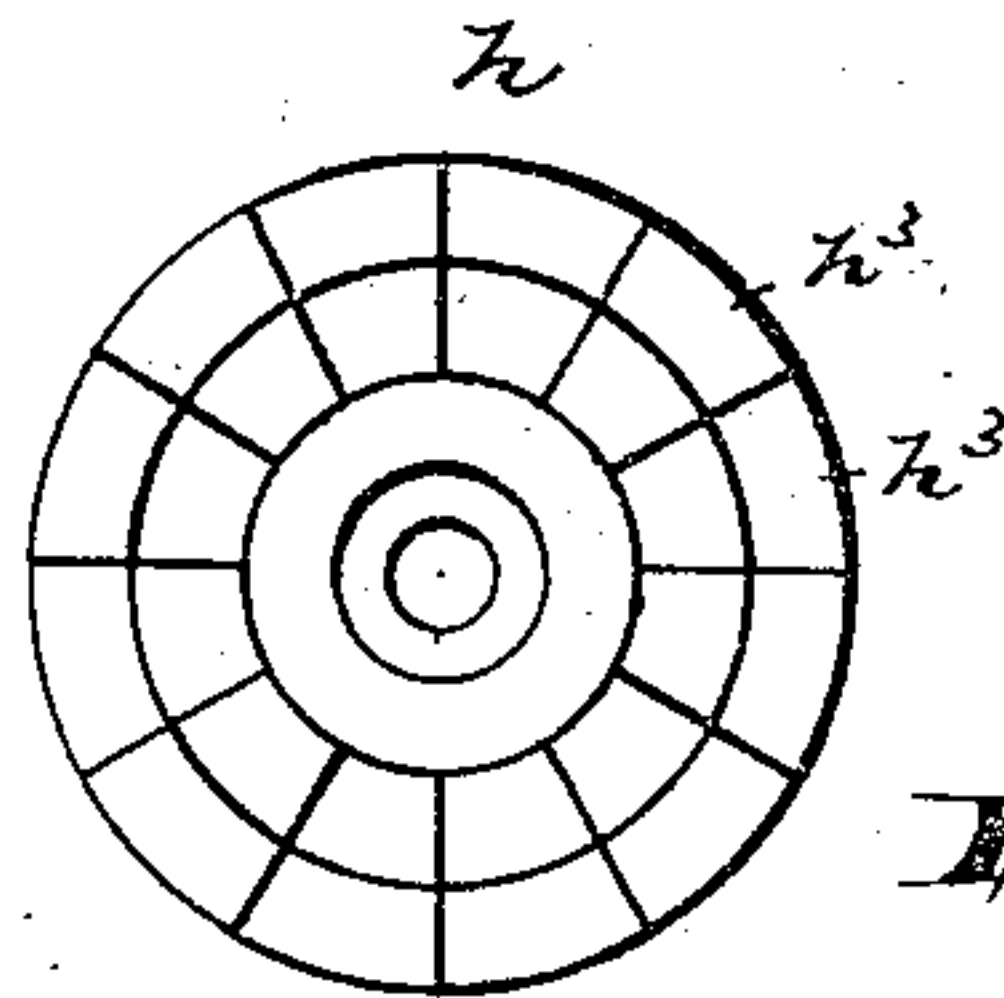
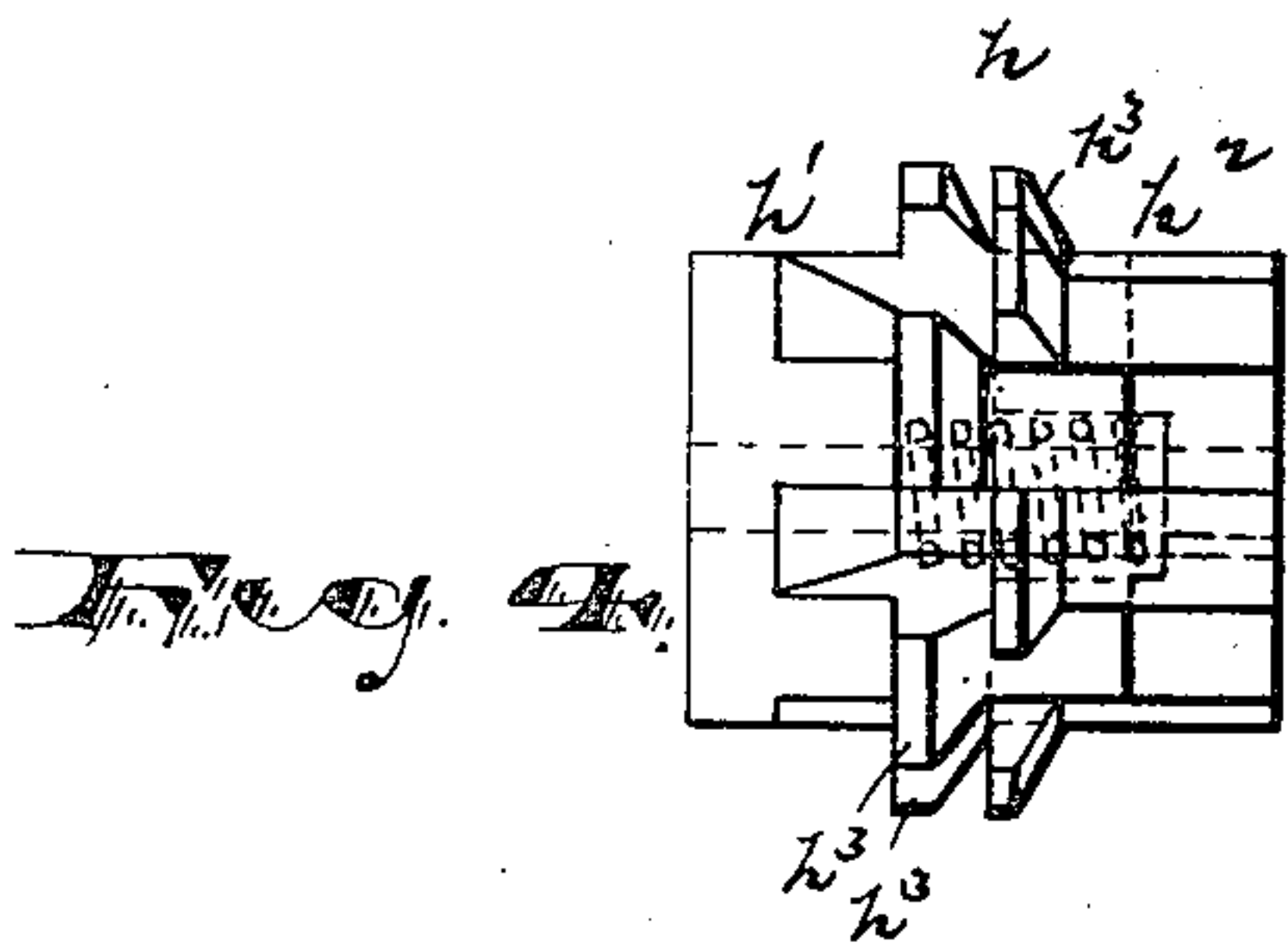
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TYPE WRITING MACHINE DOG.

(Application filed May 25, 1899.)

(No Model.)

**2 Sheets—Sheet 2.**



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY ALLENDER, OF NEWARK, NEW JERSEY.

## TYPE-WRITING-MACHINE DOG.

SPECIFICATION forming part of Letters Patent No. 662,215, dated November 20, 1900.

Application filed May 25, 1899; Serial No. 718,147. (No-model.)

*To all whom it may concern:*

Be it known that I, HENRY ALLENDER, a citizen 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 Type-Writing-Machine Dogs; and I 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 the letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to secure a greater durability of the type-writing machine, to facilitate adjustment of the dog to the rack of said machine, to secure a smooth, rapid, and certain movement of parts, to reduce the cost of construction, to obtain increased simplicity, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved dog for type-writing machines and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a perspective view of a portion of a type-writing machine having my improvements. Fig. 2 is a detail vertical section taken at line *x*, Fig. 10, showing the relation of the dog to the rack more clearly. Fig. 3 is a detail illustrating means for transmitting movement to the pawl. Fig. 4 is a plan of the dog, showing the same to be in sections. Fig. 5 is an end view of the same. Fig. 6 is a plan of one of the sections of said dog. Fig. 7 is a face view of the same. Fig. 8 is a plan of the other dog-section, and Fig. 9 is a face view thereof. Fig. 10 is a horizontal section showing the relation of the working parts more clearly.

In said drawings, *a* indicates a bed or frame of a type-writing machine having the usual carriage for the paper, with the rack *b* thereon, arranged in any usual manner. Said car-

riage and its rack are free to slide on the frame or attachments thereto when released from the dog under the power of a spring or weight, (not shown,) also in any usual manner. The usual type-key levers *c* bear upon the universal bale *d* to operate the same vertically when the keys are pressed down. To the upper part of said bale *d* is attached an arm *d'*, which at its inner end is pivoted, as at *d''*, to one of the cheek pieces or parts *e* of the frame and at its upper side carries a finger *d'''* for operating a pivotal pawl-carrier *f*. Said carrier *f* is given an oscillating movement, with the shaft *g* as a center, by the parts *c* *d* *d'* *d'''*, which is converted into a step-by-step rotary movement of the sectional dog *h*.

While I have described one construction and method of operating the dog, I do not wish to be understood as limiting myself thereto. I may vary the operating means to suit the style or variety of machine in which the dog is employed.

Upon the cheeks or bearings *e e* of the frame *a* contiguous to the rack *b* is formed or secured the shaft *g*, on which the rotary dog is journaled. Said dog *h* is in sections *h'* *h''*, having peripheral teeth *h'''* extending radially out from hubs *h<sup>1</sup>*, the teeth of one section being adapted to be brought into circumferential alinement with the teeth of the other section, said teeth intermeshing or alternating when in such alinement. Said sections, or at least one of said sections, have a limited movement on the shaft *g* one from the other under the power of a spring *k*, arranged on the shaft *g* and imposed between said sections. The hub of the section *h''* is grooved to receive the sliding clutching-fingers *h<sup>5</sup>* of the section *h'*, the grooves *h<sup>6</sup>* extending the full length of the hub, so that the ratchet-teeth *h<sup>7</sup>* are formed around the periphery of the hub to receive the pawl *l*, as shown clearly in Fig. 3. Said pawl is pivoted on the pawl-carrier *f* and is held in engagement with the ratcheted hub of the dog-section *h''* by a spring *m*.

In operating the device the operator presses upon the finger-key in the usual manner, and by means of the connections—such as the lever *c*, bale *d*, arm *d'*, connecting-rod *d'''*, and oscillating pawl-carrier *f*—draws the pawl *l* backward upon the circumferentially-ratcheted part of the dog-section *h''* and brings said pawl



into initial engaging position with a tooth, as shown in Fig. 3. The rack  $b$  meantime is held against its spring-impelled longitudinal movement by engagement of one of its teeth, as  $b'$ , with, we will suppose, the tooth  $o$  on the dog-section  $h^2$ , which has no longitudinal movement in operation, reference being now had more particularly to Fig. 2 of the drawings. The other dog-section  $h'$  is held at its farthest limit of movement from the section  $h^2$  against the cheek-piece  $e$ , which serves as a stop by the spring  $k$ . It will be remembered that the teeth of this sliding section  $h'$  alternates in circumferential line with those of the stationary section  $h^2$ , and therefore the rack  $b$  extends between two adjacent teeth on the sliding section  $h'$ . Said teeth, however, lie close to the rack and in circumferential line with the spaces  $s'$  between the rack-tooth  $b'$  then engaged by the dog and the next tooth  $b^2$  ahead. Upon the operator releasing the finger-key the usual spring (not shown) for raising said key serves with the spring  $n$ , Fig. 3, to effect a return or forward movement of the pawl  $l$  and its connections, said pawl thus pushing upon the ratcheted dog-section  $h'$  and producing a partial rotation of the entire dog upon the shaft  $g$ . This partial rotating of the two dog-sections together is carefully regulated in amount, and the first part of it is sufficient to carry the tooth  $o$  on the longitudinally-stationary dog-section out of engagement with the rack  $b$ , at the same time bringing the next succeeding tooth in circumferential line on the dog, as  $q$ , into the space  $s'$  of the rack to be engaged by the next rack-tooth  $b^2$  to the one just released. The said next succeeding tooth  $q$  of the dog is on the sliding section  $h'$ , and the spring  $k$ , which normally holds the sliding section  $h'$  away from the other section  $h^2$ , being weaker than the spring which impels the rack  $b$  said rack slides longitudinally forward between the teeth of the dog-section  $h^2$ , carrying the sliding section  $h'$  along with it. This sliding continues until the dog-teeth of both sections are brought into one circumferential line, when it is stopped by contact of the two adjacent ends  $p, p$  of the hubs of the dog-sections or any other suitable stop-surfaces. Continuation of the partial rotation inaugurated by the improvement of the finger-key or the last part of said partial rotation carries the now interlocked teeth around until the next succeeding tooth  $o'$  on the non-sliding dog-section  $h^2$  is in the line of the rack, and therefore engaging its tooth  $b^2$ . This also moves the sliding dog-section, so that two of its teeth  $q$  and  $q'$  straddle the rack and are free therefrom, when the spring  $k$  at once returns said sliding section of the dog to its normal position away from the other section  $h^2$ . The parts are now in the relation with which this description began, and the rack  $b$  and paper cylinder (not shown) have been carried along one tooth to receive another letter. Depression of the finger-key in striking this next

letter resets the pawl  $l$ , and the upward rebound of the key is accompanied by a repetition of the train of movements described. Thus the dog-teeth permit the rack to move by a step-by-step progression. The dog-teeth present broad bearing-surface to the rack-teeth, and inasmuch as a number of such dog-teeth are employed the wear on the teeth is reduced and greater durability is obtained.

Having thus described the invention, what I claim as new is—

1. The improved dog for type-writing machines, comprising wheels or rotary sections journaled on a shaft, and having a step-by-step forward rotation thereon, said sections being keyed or otherwise connected to rotate in unison and one of them being longitudinally movable with respect to the other, and said rotary sections having at their peripheries alternate teeth and open spaces or notches, substantially as set forth.

2. In a type-writing machine, the combination with a toothed rack, of a dog comprising a shaft and wheel-like dog-sections rotated together thereon and always in one direction, said sections having hubs with cooperating clutch-fingers and grooves permitting longitudinal separation, and peripheries with alternate teeth for engaging said rack and open spaces for the rack to slide through, substantially as set forth.

3. In a type-writing machine, the combination with a longitudinally-movable rack, of disk-like dog-sections rotating always forward, clutch means causing said sections to rotate together while permitting one to slide longitudinally away from the others, and said sections having at the circumference alternate portions adapted to engage the rack and open recesses, substantially as set forth.

4. The improved dog for type-writing machines, comprising rotary sections, each of which has a circumferential row of teeth and longitudinal grooves cut between said teeth, and one section being recessed at its end and the toothed fingers so formed being adapted to slide in the grooves of the other section, substantially as set forth.

5. The improved type-writer dog, comprising cylindrical sections each having a circumferential series of teeth and longitudinal grooves alternating with said teeth, one section having its end recessed to receive the other section and the longitudinal tooth-carrying portions of each section lying in the grooves between the teeth of the other section, a spring for throwing said sections apart, and stops, substantially as set forth.

6. In a type-writer, the combination with a sliding rack, of a rotating dog having sections each with a circumferential series of teeth, the teeth of one section alternating in circumferential line with those of the other whereby the rack may be engaged by a tooth on one section and slide between the teeth of the other section, clutch means for causing said sections to rotate together but permit-



ting relative longitudinal movement, and means for imparting a step-by-step rotation to the dog, substantially as set forth.

7. In a type-writer, the combination of a  
5 rack, a dog comprising wheel-like sections having peripheral teeth alternating with open spaces and hubs longitudinally grooved or slotted to clutch each other and hold the sections with the teeth of one section in longitu-  
10 dinal line with the open spaces of the other sections, said slots or grooves being prolonged

on one section, a pawl adapted to enter said prolonged grooves and means for pushing the pawl to rotate the dog, substantially as set forth.

In testimony that I claim the foregoing I  
have hereunto set my hand this 8th day of  
May, 1899.

HENRY ALLENDER.

Witnesses.

CHARLES H. PELL,  
C. B. PITNEY.