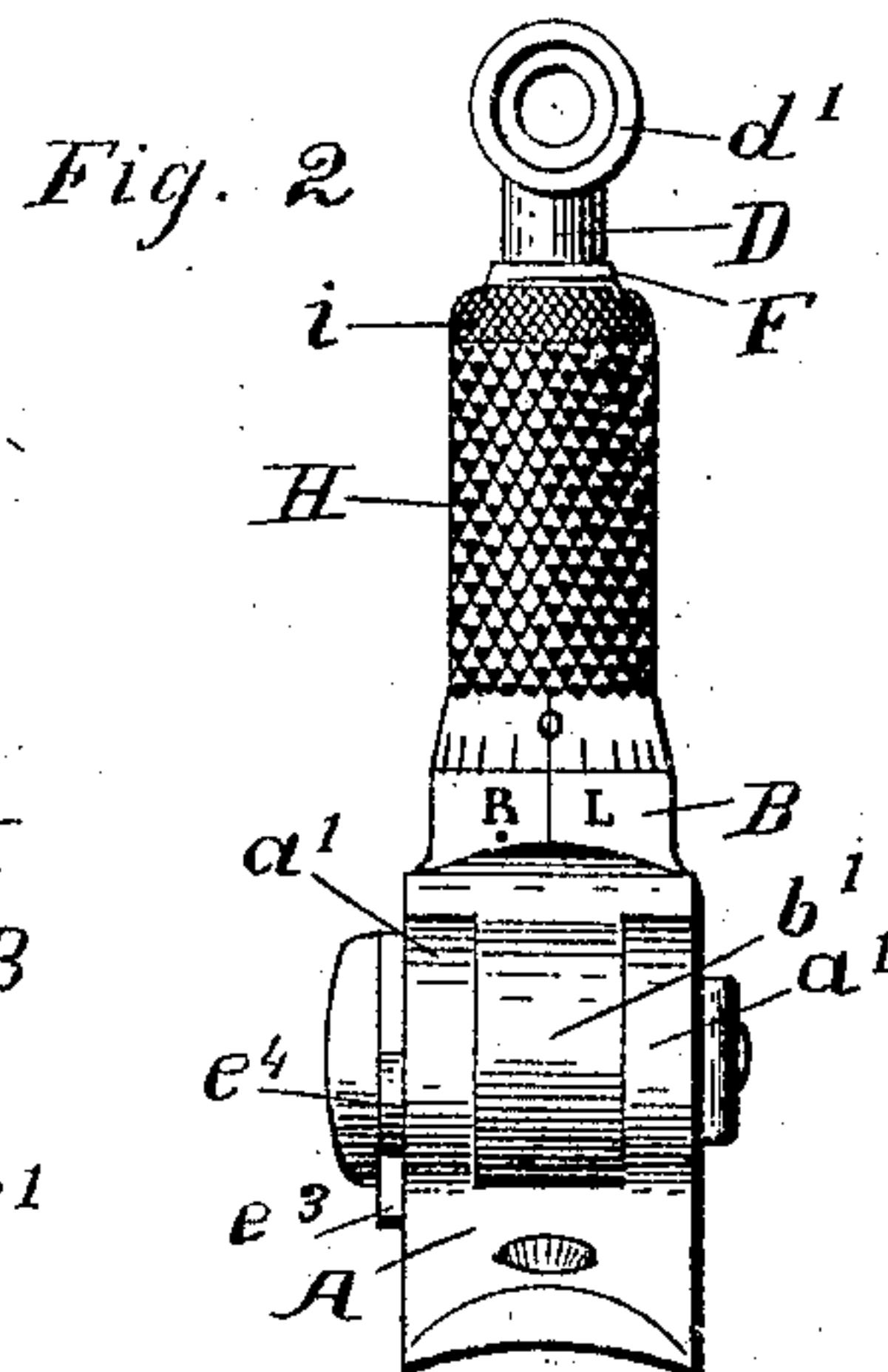
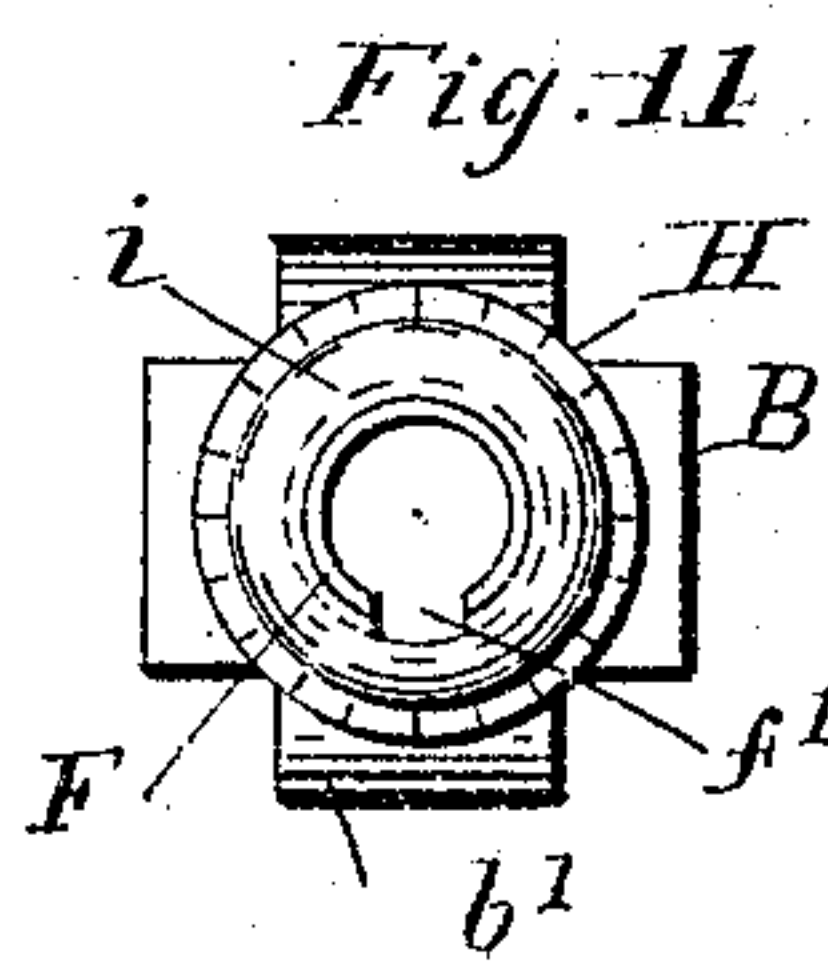
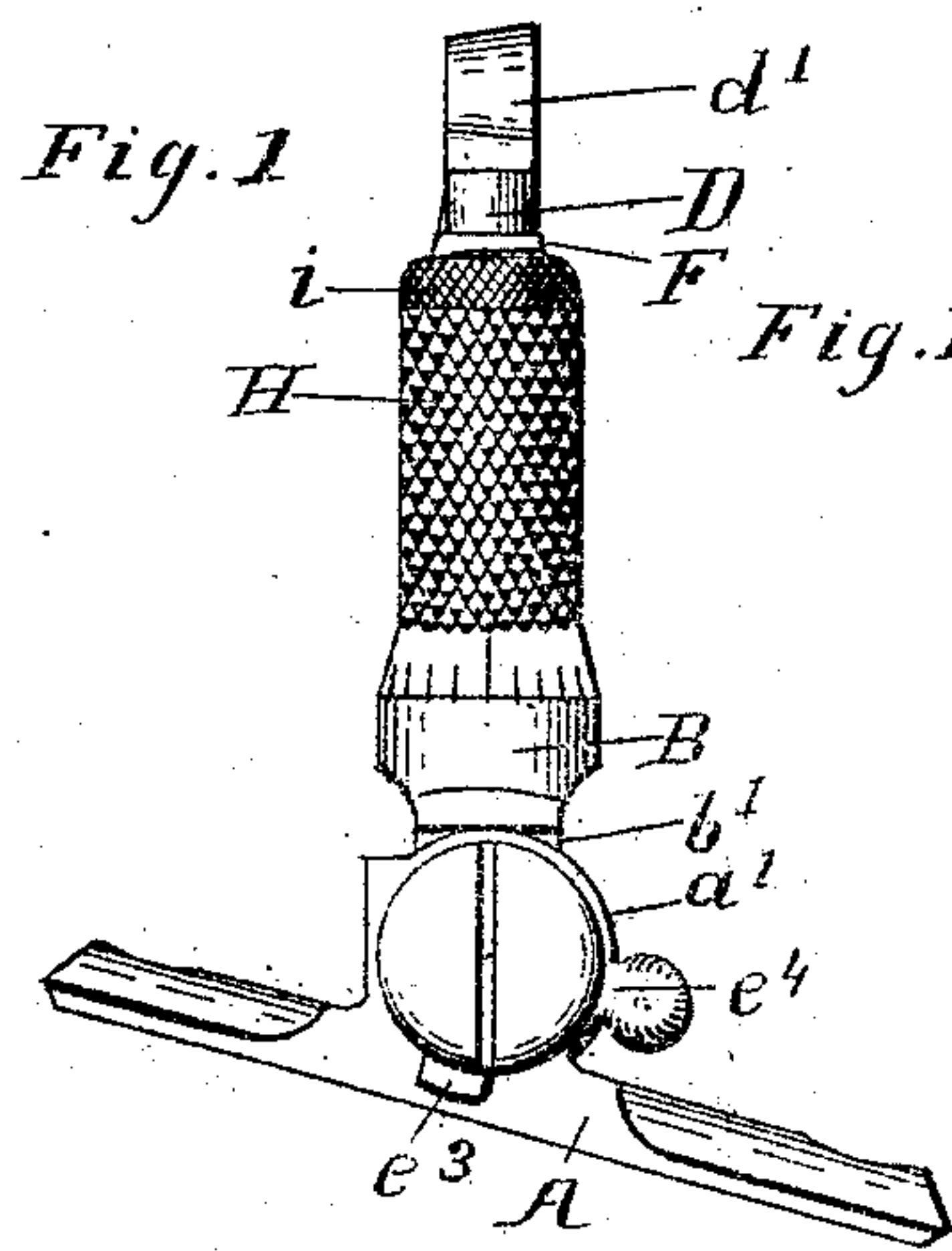


No. 846,638.

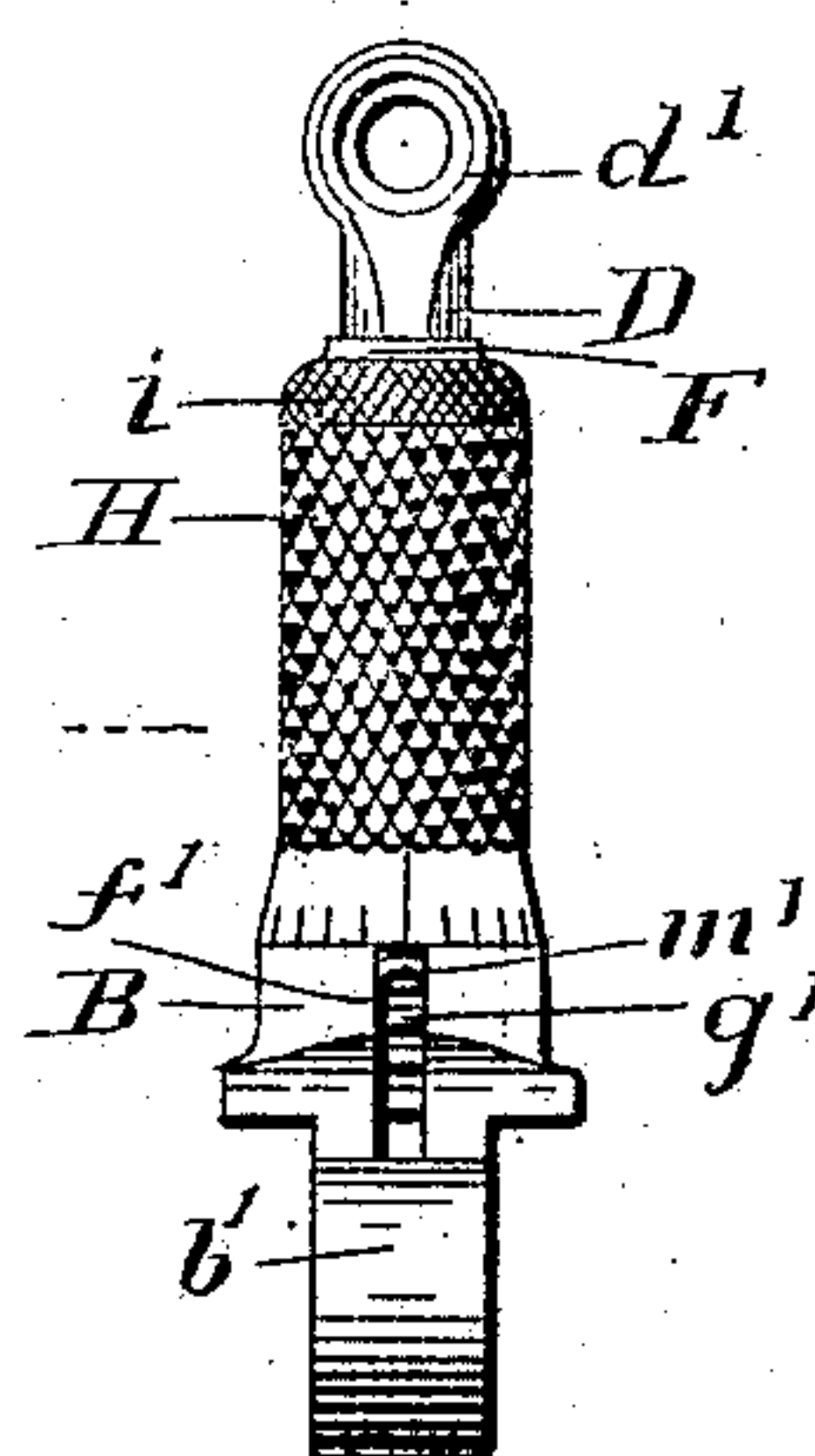
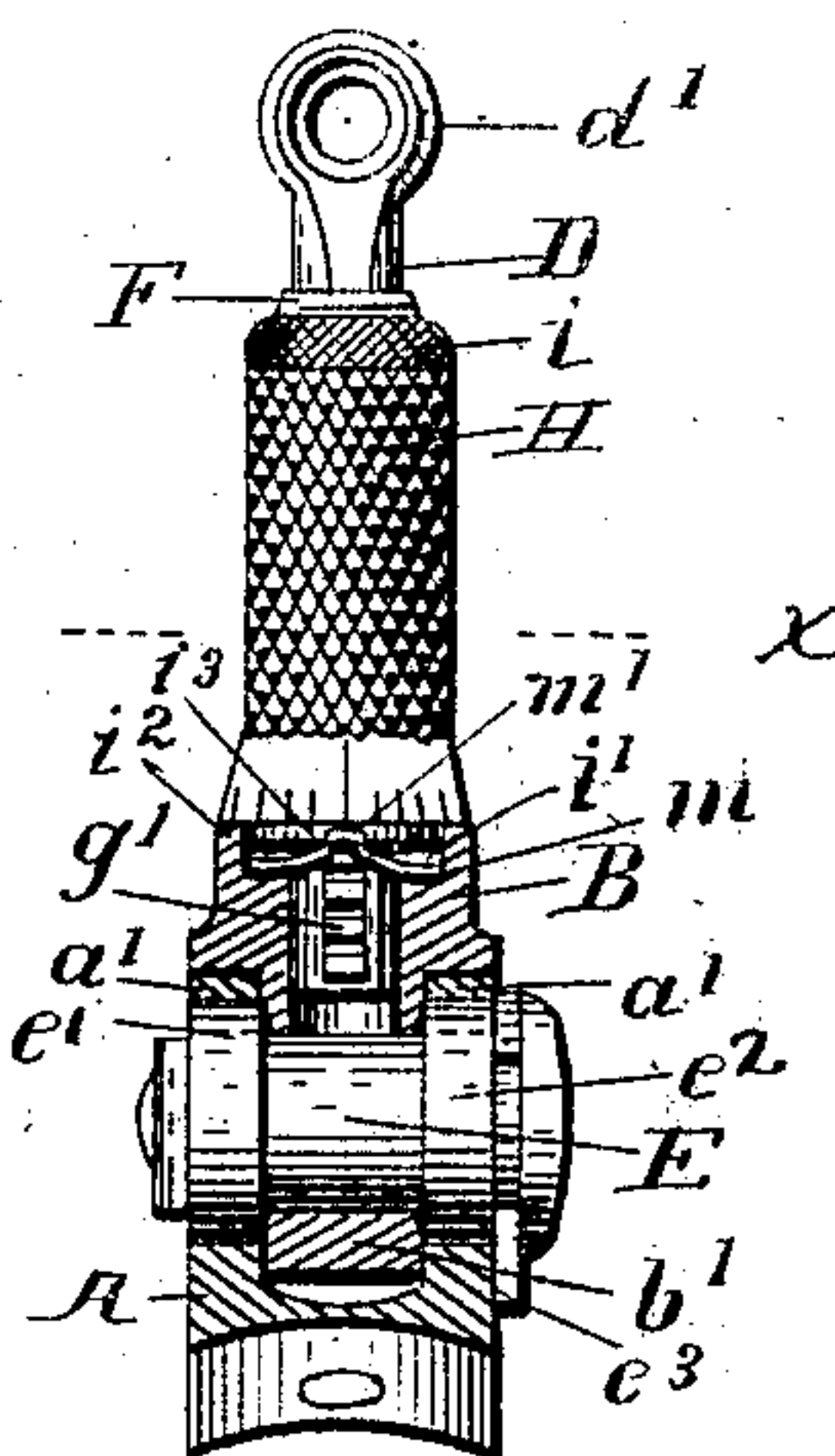
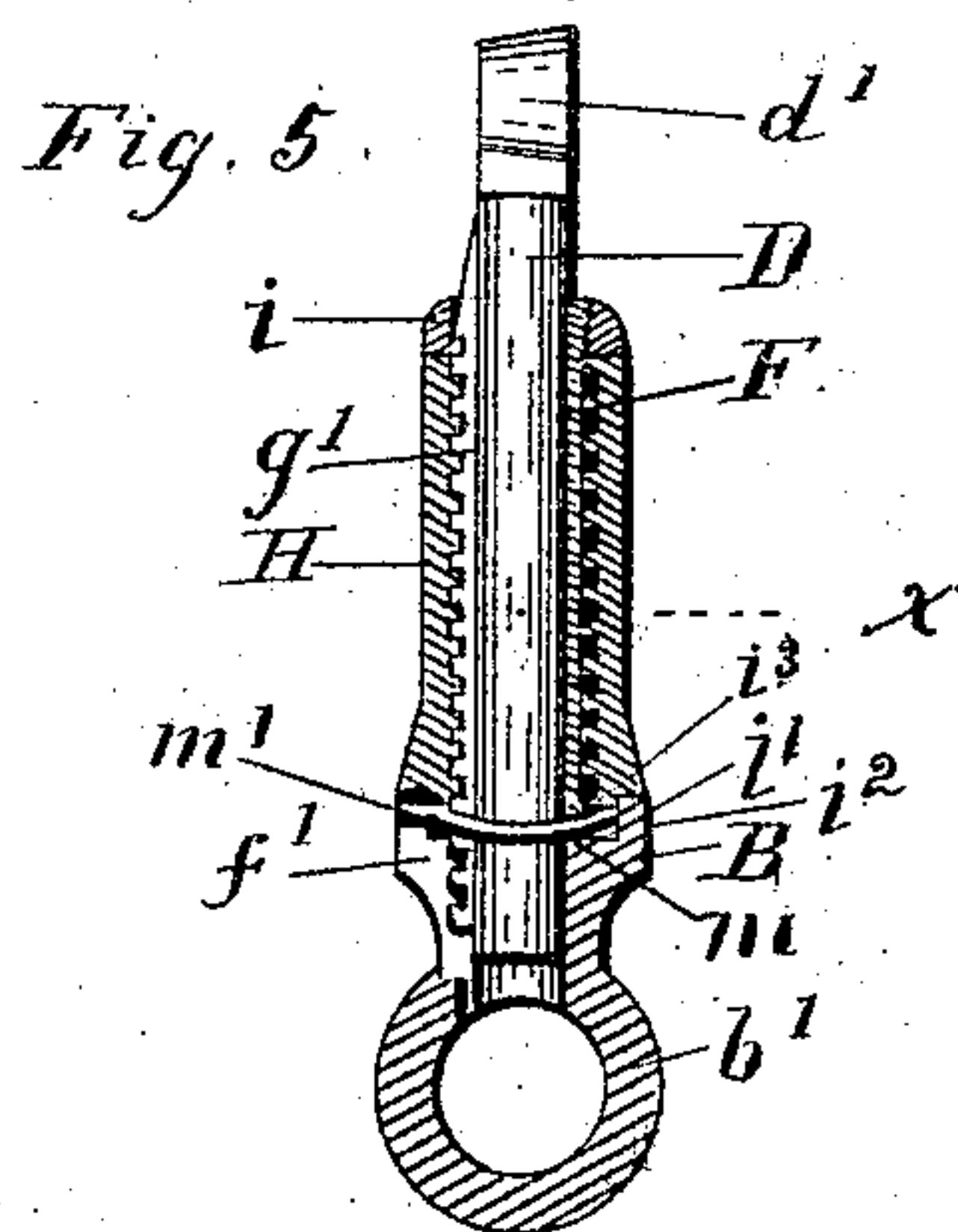
PATENTED MAR. 12, 1907.

J. WINDRIDGE.  
SIGHT FOR FIREARMS.  
APPLICATION FILED MAR. 23, 1906.



*Fig. 3*

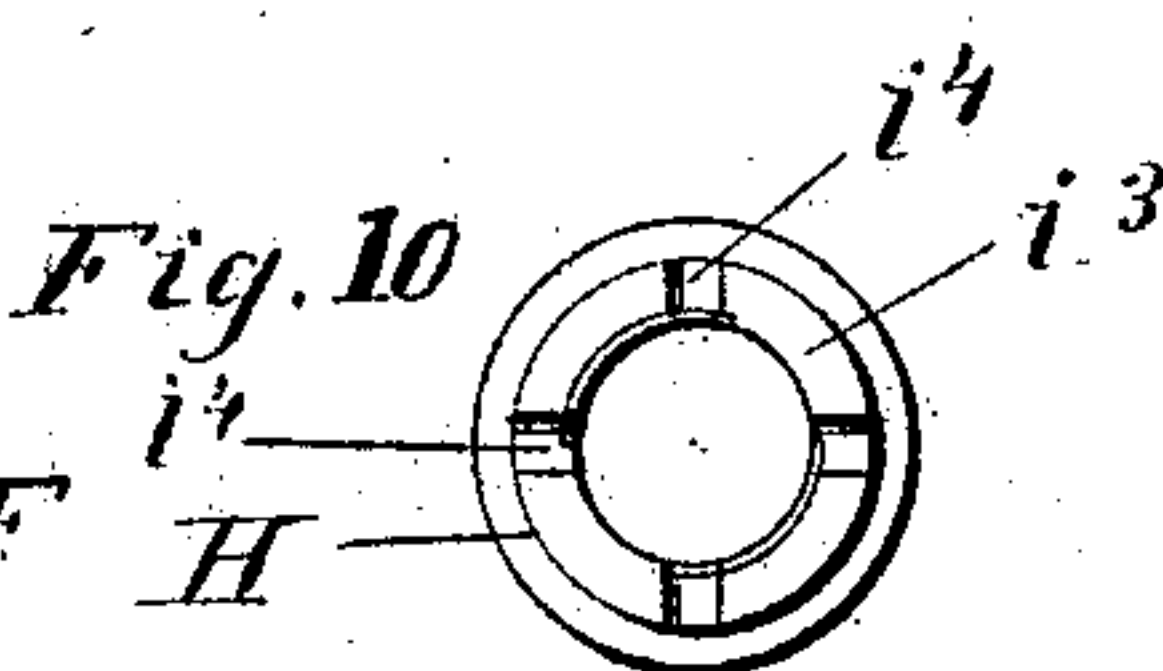
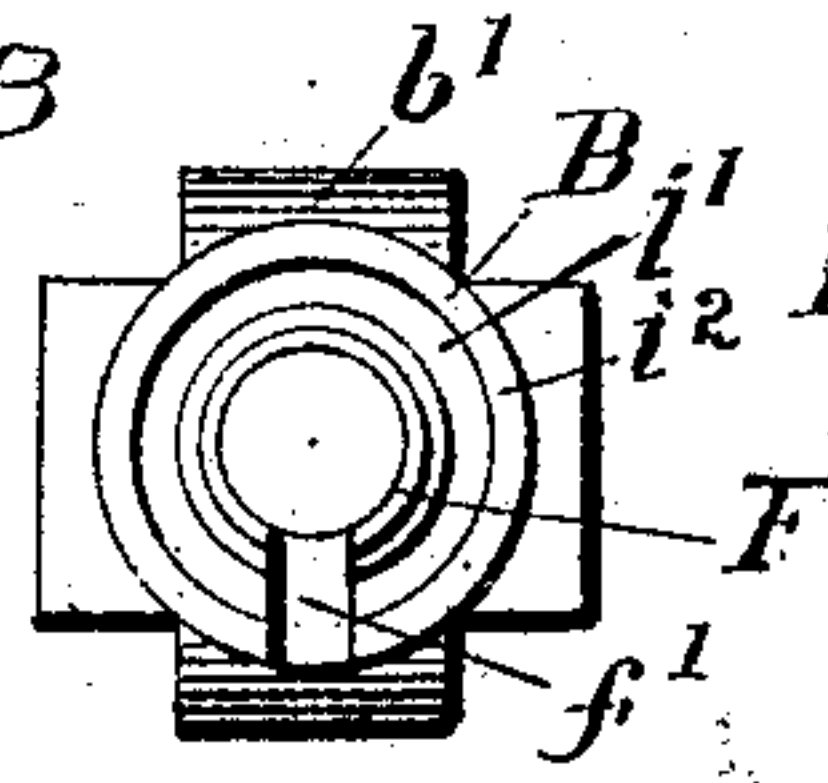
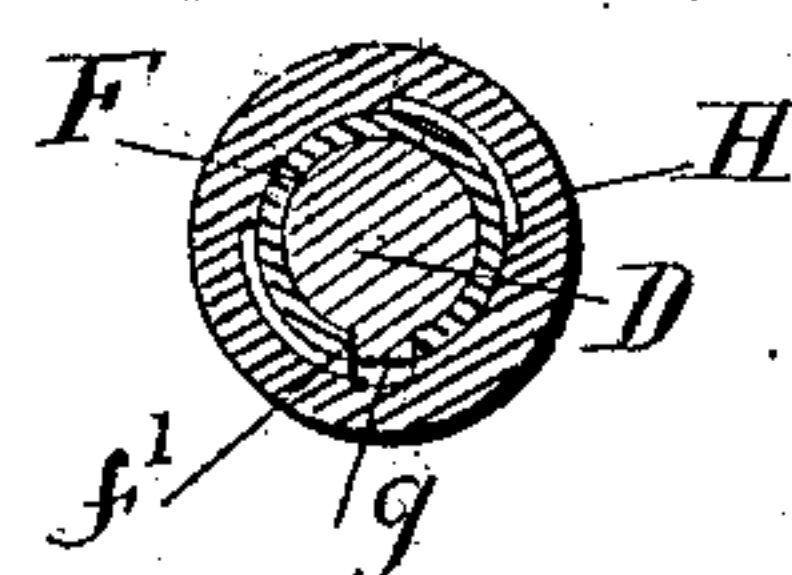
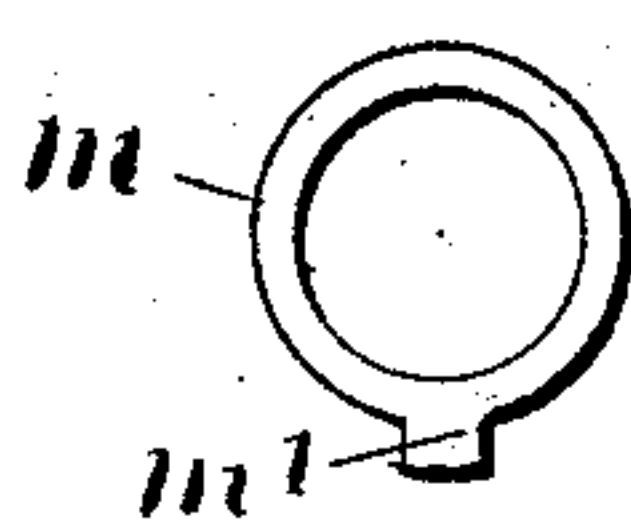
*Fig. 4*



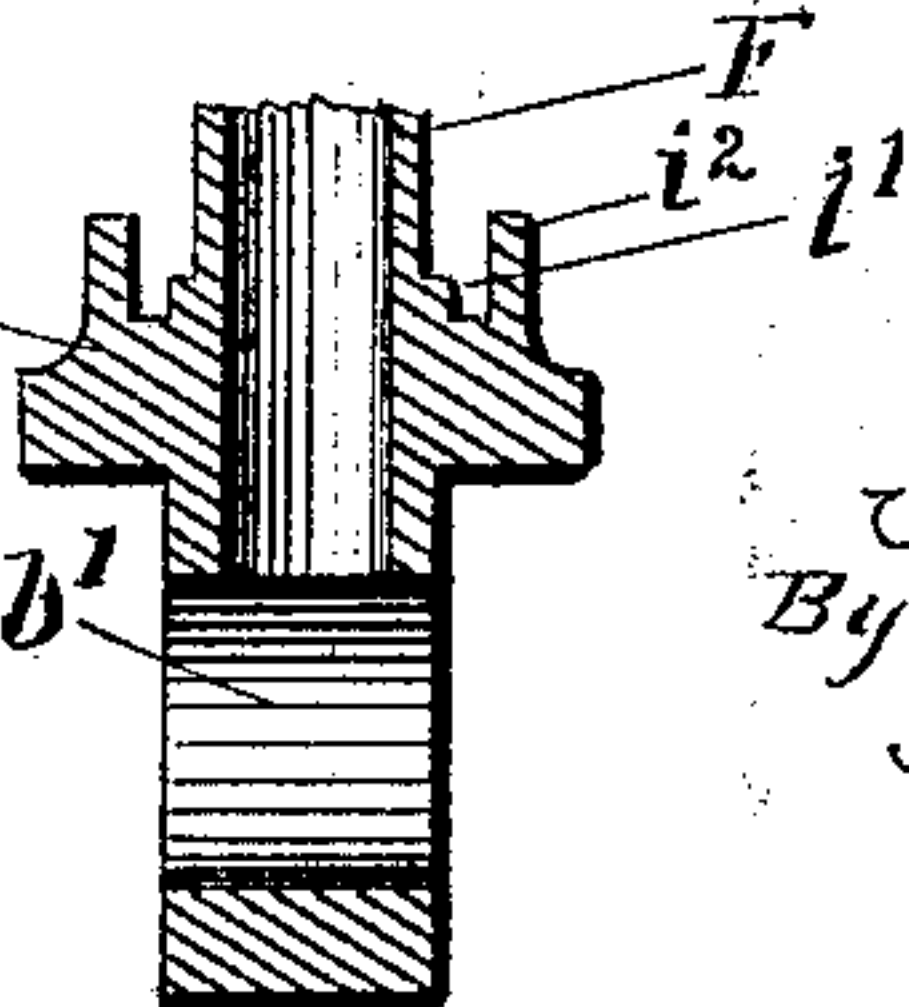
*Fig. 6*

*Fig. 7*

*Fig. 8*



*Fig. 9*



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D. H. Nielsen.

Inventor:  
James Windridge  
By George L. Barnes, Atty.



# UNITED STATES PATENT OFFICE.

JAMES WINDRIDGE, OF MIDDLEFIELD, CONNECTICUT, ASSIGNOR TO THE  
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## SIGHT FOR FIREARMS.

No. 846,638.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed March 23, 1906. Serial No. 307,717.

*To all whom it may concern:*

Be it known that I, JAMES WINDRIDGE, a citizen of the United States, residing at Middlefield, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Sights for Firearms, of which the following is a specification.

My invention relates to a sight for firearms of the class in which the sight is adjusted for elevation by means of a rotal nut in engagement with a rack carried on the sight-post. In such mechanism it is important that the adjusting-nut shall be spring-pressed lengthwise in one direction to avoid end play in its bearings and consequent inaccuracy in the sight adjustment and also that the nut shall be held secure from accidental displacement by means of a spring-actuated detent. The small size and compact form of such sights have rendered it difficult to adapt a satisfactory spring to these requirements.

My invention has for its object to provide a simple and reliable spring for the purposes aforesaid that shall effectually combine the functions of taking up the endwise motion of the adjusting and holding the nut stationary and secure from disturbance after being set, the spring at the same time being easily manufactured and readily assembled in place and not subject to become out of order. The improvement is therefore broadly adapted as a nut-lock; and it consists in a novel annular spring arranged to act in an axial direction upon the nut in combination with a detent for locking the nut and in the arrangement and construction of parts, as hereinafter more particularly described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a folding rear sight of the class described embodying my improvements. Fig. 2 is a rear elevation of the same. Fig. 3 is a front elevation, partly in central vertical cross-section, showing the construction of the hinge mechanism and detent-spring. Fig. 4 is a front view of the joint or folding member of the sight and its parts unhinged or detached from the base. Fig. 5 is a central vertical section through Fig. 4 on the lengthwise plane of the base. Fig. 6 is an enlarged plan view of the detent-spring. Fig. 7 is a cross-section on the line X X, Figs. 3, 4, and 5. Fig. 8 is an enlarged plan view of the

sight-supporting member or joint viewed from its upper end. Fig. 9 is a central vertical cross-section of Fig. 8. Fig. 10 is an enlarged plan view of the lower end of the sight-adjusting sleeve. Fig. 11 is an enlarged plan view of the joint and its parts viewed from its upper end. Fig. 12 is an enlarged perspective view of the detent-spring.

Referring to the drawings, A designates the base of a sight of the class referred to, having a sight-supporting member or part B, carrying an adjustable sight-post D, provided with a sight  $d'$  of any required design. In the mechanism shown, which is of the well-known type of rear folding sights, said mounting comprises a "joint" or folding member, having an eye  $b'$  fitted between a pair of corresponding ears  $a'$  on the base and hinged thereto by a suitable pivot E, which enables the sight to be swung rearward and down from the vertical or sighting position shown in the figures. Said pivot is a bolt having its cylindrical head  $e^s$  and corresponding nut  $e^2$  fitting freely in the ears of the base and rigidly clamped against the faces of the eye of the joint, thus forming trunnions thereon, which turn or oscillate in the ears of the base as the joint is swung on the axial line of these bearings as a center. The head  $e'$  carries a catch  $e^3$  for engaging the base A to hold the joint B in the upright position and which may be securely locked by means of a locking-key  $e^4$ ; but all the aforesaid construction is old and extraneous to the invention forming the subject of this application, and hence requires no detailed description.

The joint is provided with a hollow stem F, projecting from or surmounting its cylindrical main part or body B. Said stem is formed with a longitudinal slot  $f'$ , extending throughout its entire length and down through the cylindrical part or body B to the hinge-eye  $b'$ . Guided within the stem F is the sight-post D, having a toothed rack  $g'$  fitting the slot  $f'$ , with its teeth projecting outside of the circumference of the stem. The adjusting nut or sleeve H is internally screw-threaded and is fitted on the stem F with its threads in engagement with the teeth of the rack  $g'$  of the sight-post, whereby in operation the rotation of the sleeve is adapted to actuate the sight-post upward or downward in the stem F of the joint. The ad-



justing-sleeve is held in place on the stem by means of a cap-nut or collar *i*, screwed on the upper end thereof and also slotted, as shown, to permit the rack *g'* to travel through it.

5 In the body of the joint B, at the base of the stem F, an annular groove or socket *i'* is milled, the internal circumference of which may consist of the stem itself or may be of larger proportions to insure greater strength  
10 of the stem at its junction with said body part of the joint. In the present instance, which is the preferred construction, the said increase of diameter at the base of the stem is not of equal height with the rim *i''*, sur-  
15 rounding the socket *i'*, being somewhat lower than the rim, as shown in Figs. 3, 5, and 9. The adjusting-sleeve H is provided with a boss or cylindrical portion *i'''*, slightly enter-  
20 ing said socket in the joint, and a series of radial indentations or detent-notches *i''''*, in the present instance four in number, placed ninety degrees apart, are milled in the flat sur-  
face of said boss.

In the socket *i'* is fitted an annular spring  
25 or ring *m*, of elastic material, having a radial projection *m'* fitting and received in the slot *f'* in the body part of the joint, as shown in Figs. 3 and 5. The spring is arched or curved flatwise by a slight bend at the diametral  
30 line, which is at right angles to the diametral plane of the radial projection *m'*—that is, the respective halves of the ring, as determined by a diameter at right angles to said radial  
35 projection, occupy planes which form a slight angle with each other, extending upward from their meeting-point or intersection, the bend being distributed as far each side of the  
40 diameter as may be preferred. The radial projection or detent *m'* is also raised or struck up somewhat above the plane of the contig-  
uous portions of the ring and curved or rounded over, as shown, to insure the neces-  
sary strength and give its upper surface the  
proper configuration to engage and readily  
45 slide into and out from the radial detent-notches *i''''* of the adjusting-sleeve. Thus constructed the detent and opposite high  
point of the ring will impinge against the ad-  
justing-sleeve, while the points of the ring at  
50 ninety degrees therewith will bear upon the joint or surface at the bottom of the socket *i'*.

In assembling the parts of the sight the annular spring is first set in its socket with  
its detent *m'* in the slot *f'*, and the adjusting-  
55 sleeve is then fitted upon the stem F, after which the collar *i* is screwed upon the stem above the sleeve, thus forcing all the parts to place against the resilience of the spring,  
which is so proportioned that it will be flat-  
60 tened from its normal shape into a state of tension when the adjusting-sleeve is in juxtaposition with the body part B of the joint. The sight-post is then inserted in the stem  
and drawn down to place by screwing the ad-  
65 justing-sleeve upon it. In this position the

rack of the sight-post by engagement with the slot in the collar *i* serves to lock the collar in place secure against being unscrewed or dis-  
lodged without first removing the sight-post. In operation the upward thrust of the spring  
70 will hold the adjusting-sleeve in intimate contact with the collar *i*, and the detent *m'* when engaged with one of the notches *i''''* will lock the adjusting-sleeve securely in position,  
75 while permitting it to be normally turned by the exertion of sufficient force to cam the de-  
tent out of its seat.

The construction of the spring is such that it may be readily struck out of sheet metal, inclusive of the detent, which in such case  
80 need be made no thicker than the spring itself, as it will derive sufficient strength from its arched or rounded cross-sectional configuration. The engagement of the detent  
with the notches of the sleeve as they pass  
85 over it results in a sharp clicking sound that enables the amount of rotation to be estimated by the sense of hearing, each click registering a quarter of a revolution of the  
adjusting-sleeve in the construction speci-  
90 fied. The lower part of the sleeve is of conical configuration, tapering inward from the body of the joint, and it is graduated to indicate the position of the sleeve with reference  
to a zero-mark (°) on the rear side of the  
95 joint, as shown in Fig. 2. In the present instance the circumference of the cone is divided into twenty spaces or five lines per quarter  
or distance between the detent-notches, and the pitch of the thread of the adjusting-  
100 sleeve is one-twentieth per inch. Hence each division represents an elevation of the sight of one four-hundredth of an inch, and  
each click of the detent-spring denotes one-  
eightieth of an inch, or the fourth part of the  
105 pitch of the thread.

The novel conical shape of the graduated portion of the adjusting-sleeve presents superior advantages with respect to reading  
and noting its lines, as its surface by being  
110 inclined from the vertical is better lighted and is ordinarily presented more squarely to the line of vision from the natural position of the eye. The balance of the adjusting-  
sleeve is cylindrical, and its surface is  
115 knurled in the ordinary manner to provide a firm hold in operating the sleeve. The collar *i* is also knurled to facilitate its being  
screwed upon and removed from the stem F. The letters "R" and "L" are stamped on the  
120 body of the joint, as shown, to indicate the direction in which the sleeve is to be turned to raise or lower the sight.

I claim as my invention and desire to se-  
cure by Letters Patent—

1. In a sight for firearms, the combination  
of a longitudinally-movable sight-post, a ro-  
tal member acting to move said post, a bear-  
ing for said member to turn upon, a stop to  
limit endwise movement of said member, and  
130



a spring holding said rotal member against said stop.

2. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal nut engaging said post to move the same longitudinally, a bearing for the nut, a stop to limit endwise movement of the nut, at one end thereof, and a spring acting on the nut at its other end and pressing it toward said stop.

3. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a bearing for said member to turn upon, a stop to limit endwise movement of said member, and a spring acting to hold said rotal member against said stop and to hold it from rotation.

4. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a stop to prevent endwise movement of the rotal member in one direction, and a spring-detent device to hold said member from rotation and exerting endwise pressure thereon.

5. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a bearing for said member to turn upon, an annular spring concentric with said bearing, a detent engagement between the spring and the rotal member, and means to prevent the spring from rotating.

6. In a sight for firearms, the combination of a longitudinally-movable sight-post, a support in which the same is mounted, rack-teeth on said post, a rotal member on said support engaging said rack-teeth, and a nut or collar screwed on the support at one end of the rotal member, said nut being perforated for the passage of the sight-post, and having a slot engaged by the rack thereon, whereby the nut or collar is held from rotation.

7. The combination with a rotal adjusting member having detent-notches in its faces, of a standard or stationary part forming a bearing or support for said member, and an elastic ring of flatwise or curved configuration interposed and adapted to act expansively between the parts and provided with a detent for engaging the notches of the adjusting member, and means for preventing rotal movement of the elastic ring, substantially as and for the purpose specified.

8. In a sight for firearms the combination with the sight-supporting member of a sight-post movably mounted or guided in said member, a rotal adjusting-nut journaled on the sight-supporting member in engagement with the sight-post, and an annular spring of flatwise curved or arched configuration interposed between and exerting its tension upon the adjusting-nut and its thrust-bearing, substantially in the manner and for the purpose specified.

9. In a sight for firearms the combination with the sight-supporting member of a sight-post movably mounted or guided in said member, a rotal adjusting-nut journaled on the sight-supporting member in engagement with the sight-post, an annular spring of flatwise curved or arched configuration interposed between and exerting its tension upon the adjusting-nut and its thrust-bearing, and means for holding the spring secure against rotation on its seat or with reference to the sight-supporting member, substantially as and for the purpose specified.

10. In a sight for firearms the combination with a sight-supporting member of a sight-post movably mounted or guided in said member, a rotal adjusting-nut journaled on the sight-supporting member in screw-threaded engagement with the sight-post and having a series of detent-notches in its end, and an annular spring of flatwise curved or arched configuration interposed between and exerting its tension upon the adjusting-nut and its thrust-bearing and having a radial projection or detent guided in the sight-supporting member and adapted to engage the notches of the adjusting-sleeve to hold it stationary, substantially as and for the purpose specified.

11. The combination of a sight-supporting member having a guiding-way for the reception of a sight-post and an annular seat or socket surrounding the guiding-way, a sight-post fitting said guiding-way, an annular spring of flatwise or arched configuration received in said socket and provided with a detent projection, an adjusting nut or sleeve mounted on the sight-supporting member in engagement with the spring and having a series of detent-notches for the engagement of the detent projection of the spring, means for securing the adjusting-sleeve against the thrust of the spring, and means for holding the spring from rotating in its seat, substantially as and for the purpose specified.

12. The combination of a sight-supporting member having a guiding-way for the reception of a sight-post and an annular seat or socket surrounding the guiding-way, and having a slot extending from the socket, a sight-post fitting the guiding-way and provided with a toothed rack, an adjusting-nut mounted on the sight-supporting member over said annular seat with its screw-threads in engagement with the rack-teeth of the sight-post, and having a series of detent-notches in the end adjacent said annular seat, a collar mounted on the sight-supporting member at the opposite end of said adjusting-nut to hold the same in place, and an annular spring of flatwise curved or arched configuration received in said socket and provided with a detent projection guided in the slot extended from the socket and adapted to engage the notches of the adjusting-sleeve, said spring



exerting its tension to hold the adjusting-sleeve against its holding-collar, and engage the detent projection with the notches of the adjusting-sleeve, substantially as and for the purpose specified.

13. The combination of the sight-supporting member provided with a tubular stem having a slotted way and an annular seat or socket at the base of the stem, and a radial slot in connection therewith, a sight-post guided in the tubular stem and provided with a toothed rack fitting and projecting through the slotted way thereof, an internally-threaded adjusting nut or sleeve journaled on the stem in engagement with said rack and having a series of detent-notches at the end adjacent the socket of the sight-supporting member, a nut or collar screwed on the stem to secure the adjusting-sleeve thereon and an annular flatwise or bent spring received in the said socket and provided with a detent projection guided in said radial slot and adapted to engage the detent-notches of the adjusting-sleeve, substantially as and for the purpose specified.

14. The combination of the sight-support-

ing member provided with a tubular stem having a slotted way and an annular seat or socket at the base of the stem and a radial slot in connection with the socket, a sight-post guided in the tubular stem and provided with a toothed rack fitting and projecting through said slotted way, an internally-threaded adjusting nut or sleeve journaled on the stem in engagement with said rack and having a boss entering said socket provided with a series of detent-notches, a nut or collar screwed on the stem to secure the adjusting-sleeve thereon, and an elastic ring of flatwise curved or bent configuration received in the socket and provided with a detent projection guided in said radial slot and adapted to engage the detent-notches of the sleeve to lock the sleeve stationary, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES WINDRIDGE.

Witnesses:

GORDON S. GOODRICH,  
MARY A. MORAN.