

No. 868,240.

PATENTED OCT. 15, 1907.

J. WINDRIDGE.  
SIGHT FOR FIREARMS.  
APPLICATION FILED JULY 3, 1907.

Fig. 1

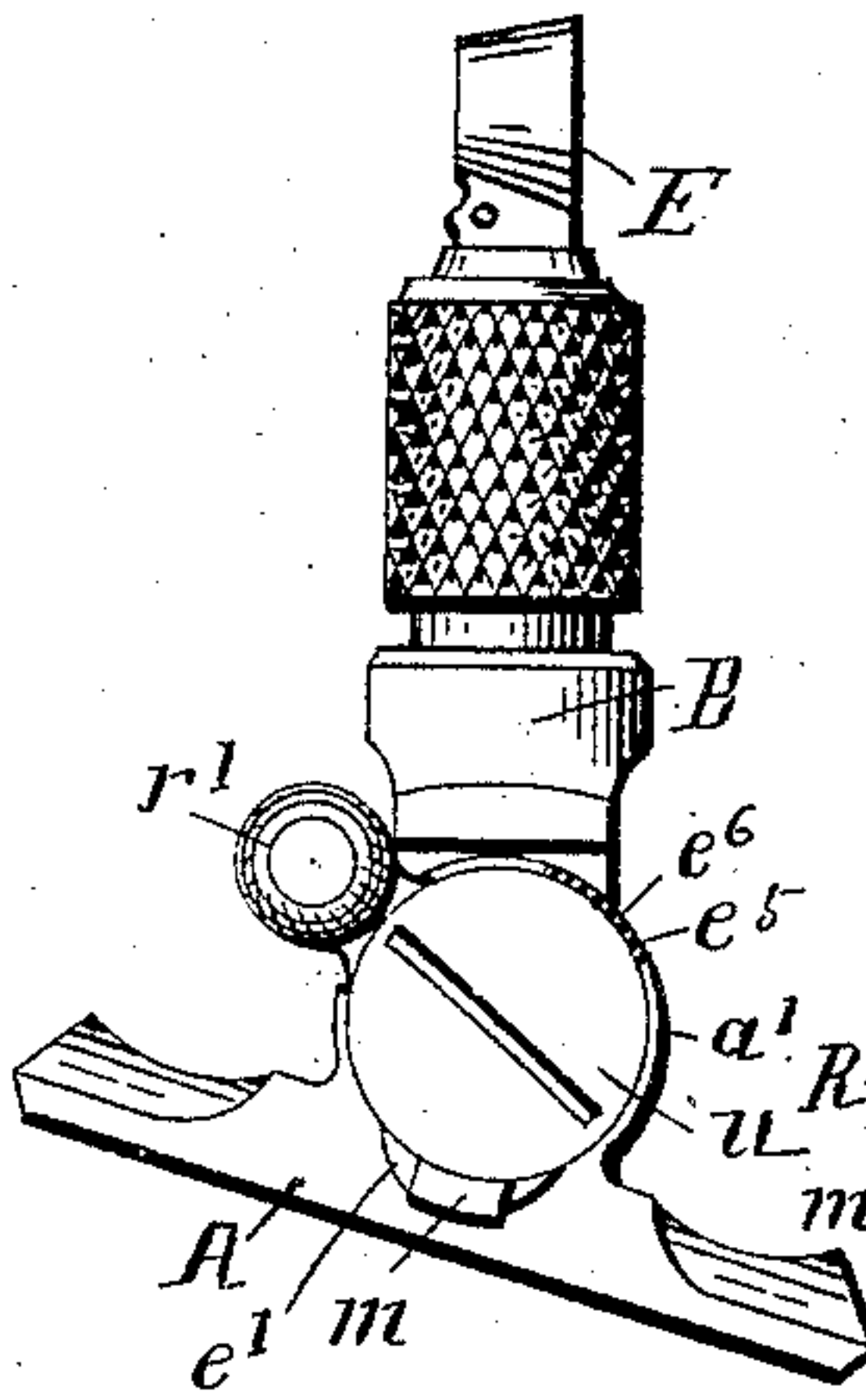


Fig. 2

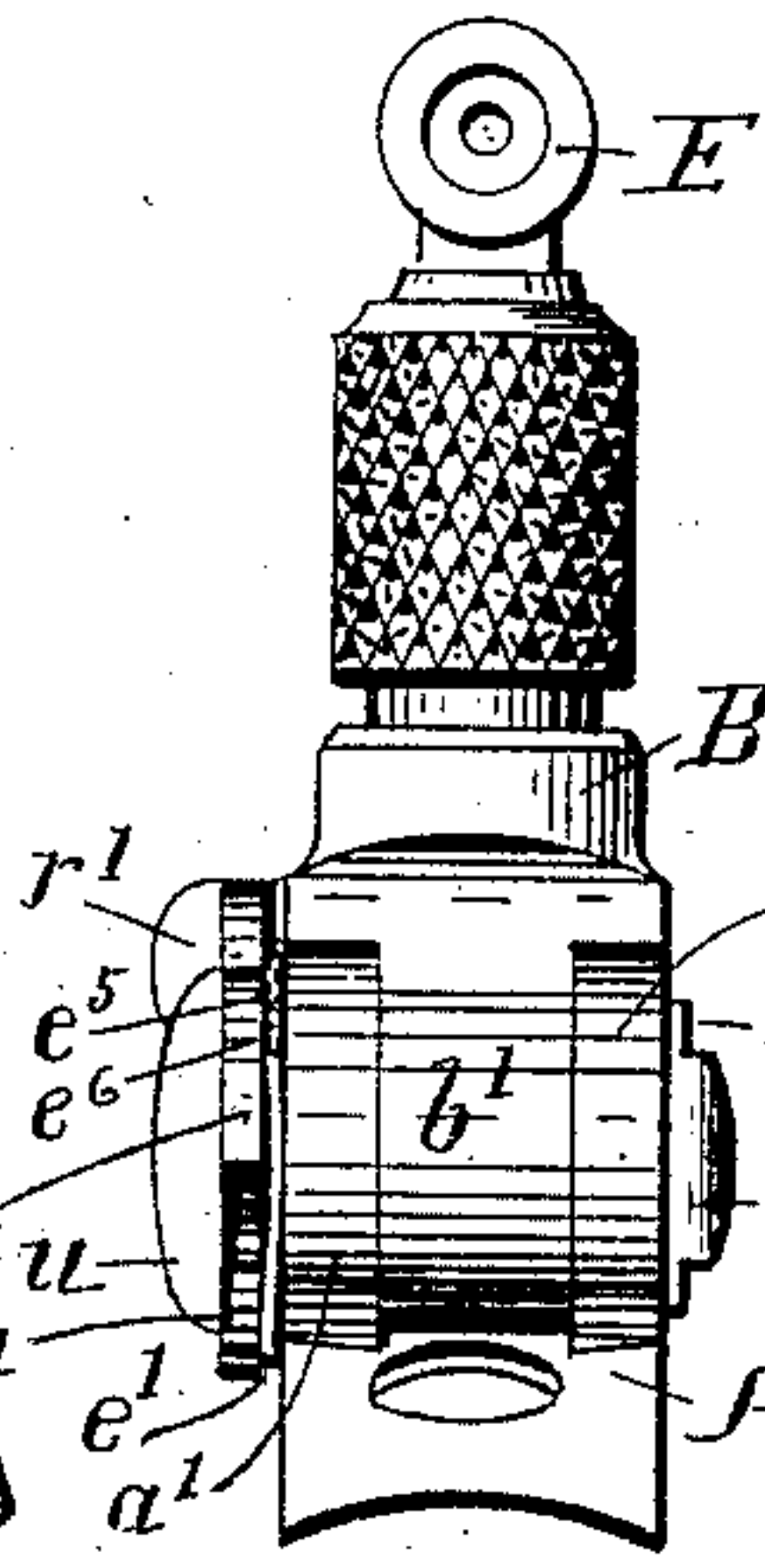


Fig. 3

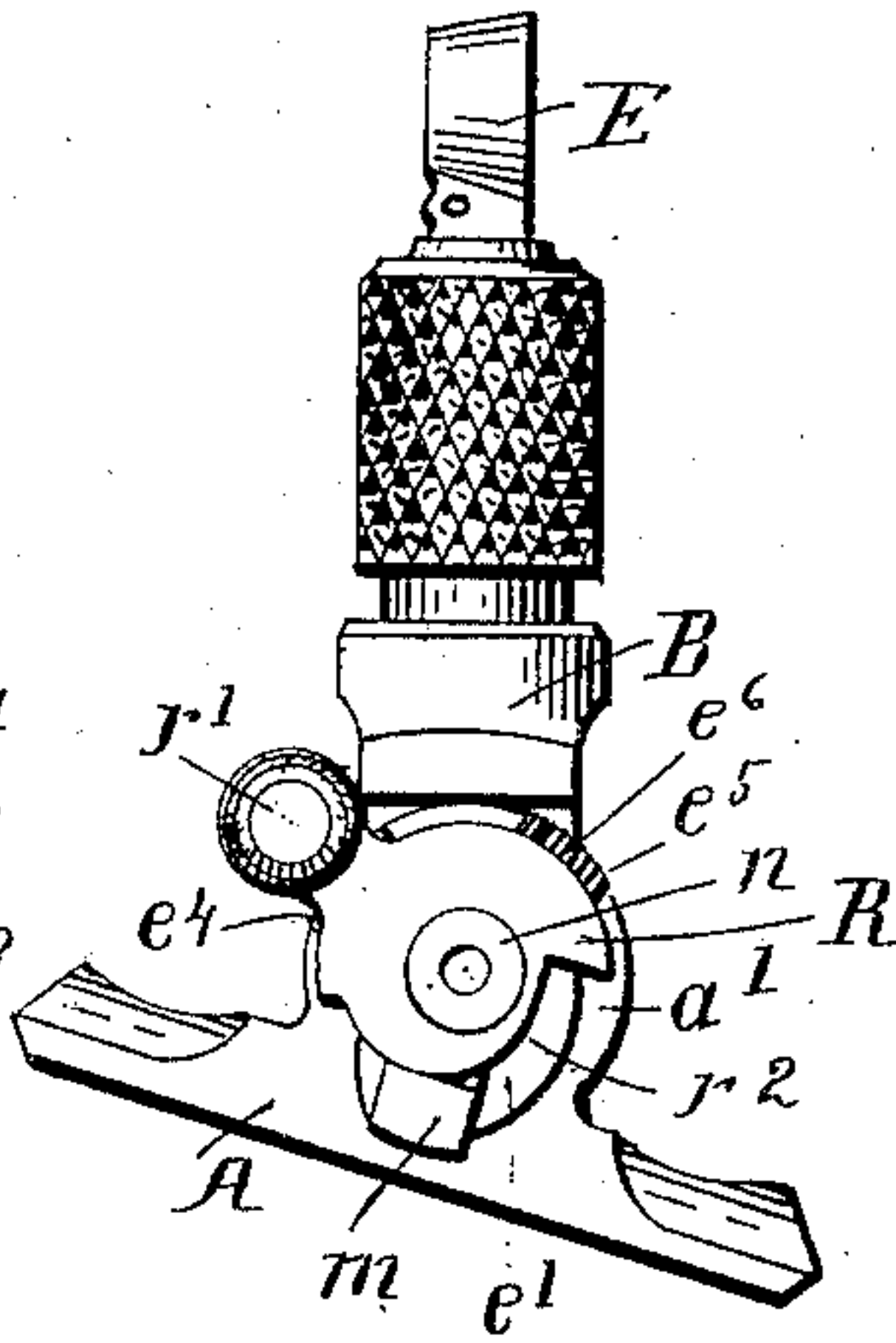


Fig. 9

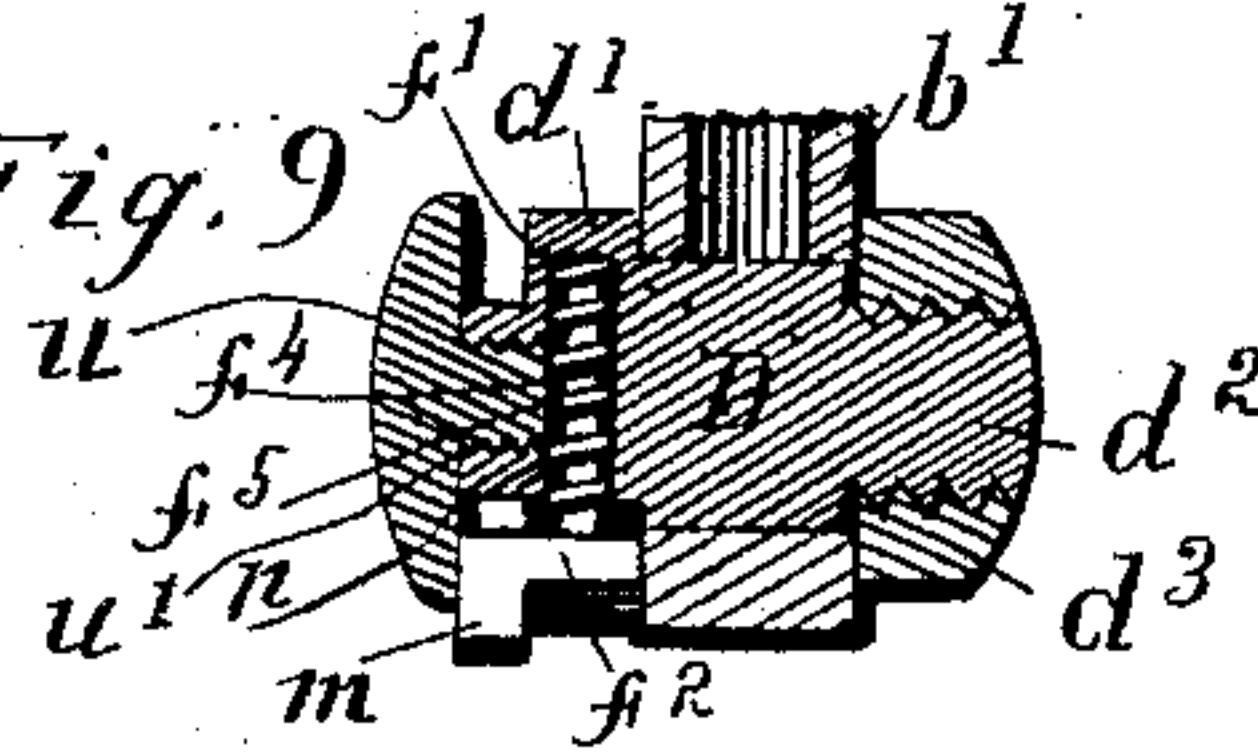


Fig. 4

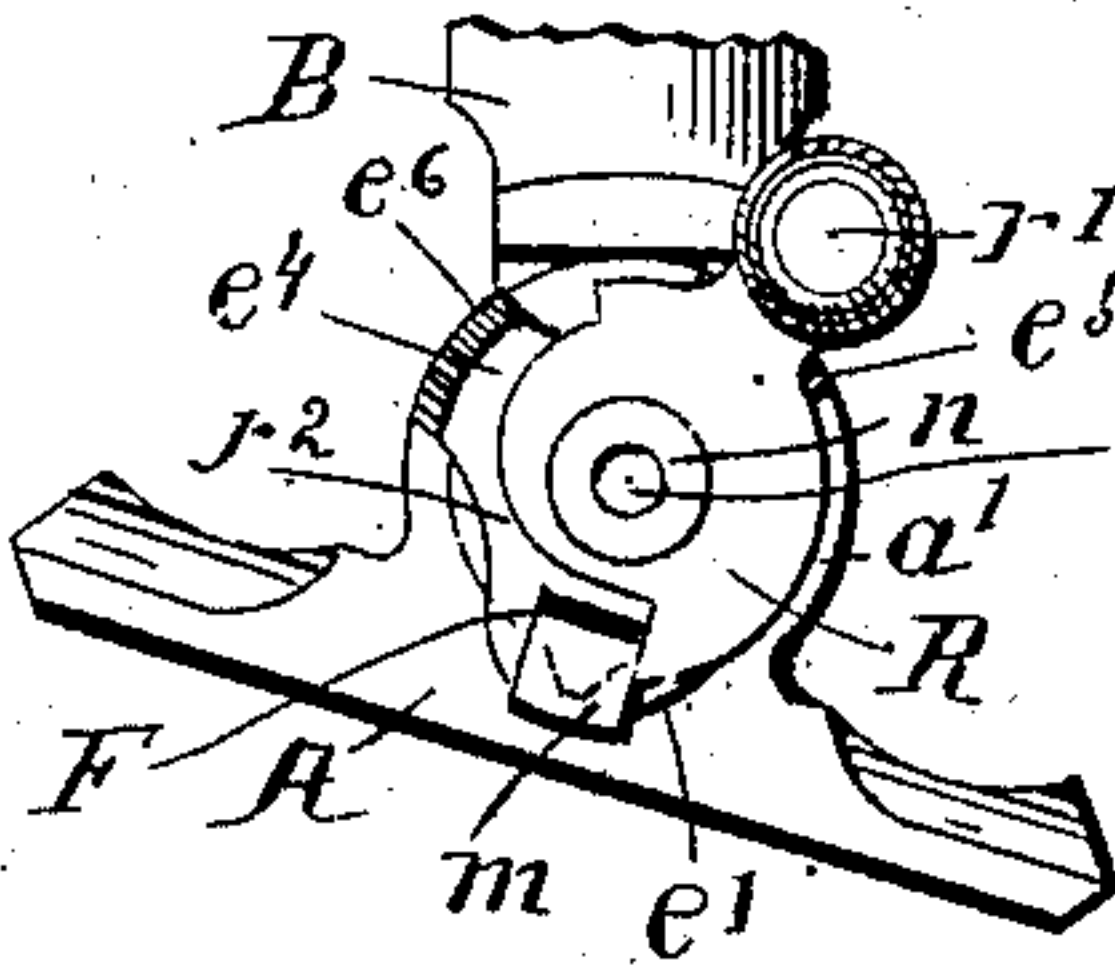


Fig. 5

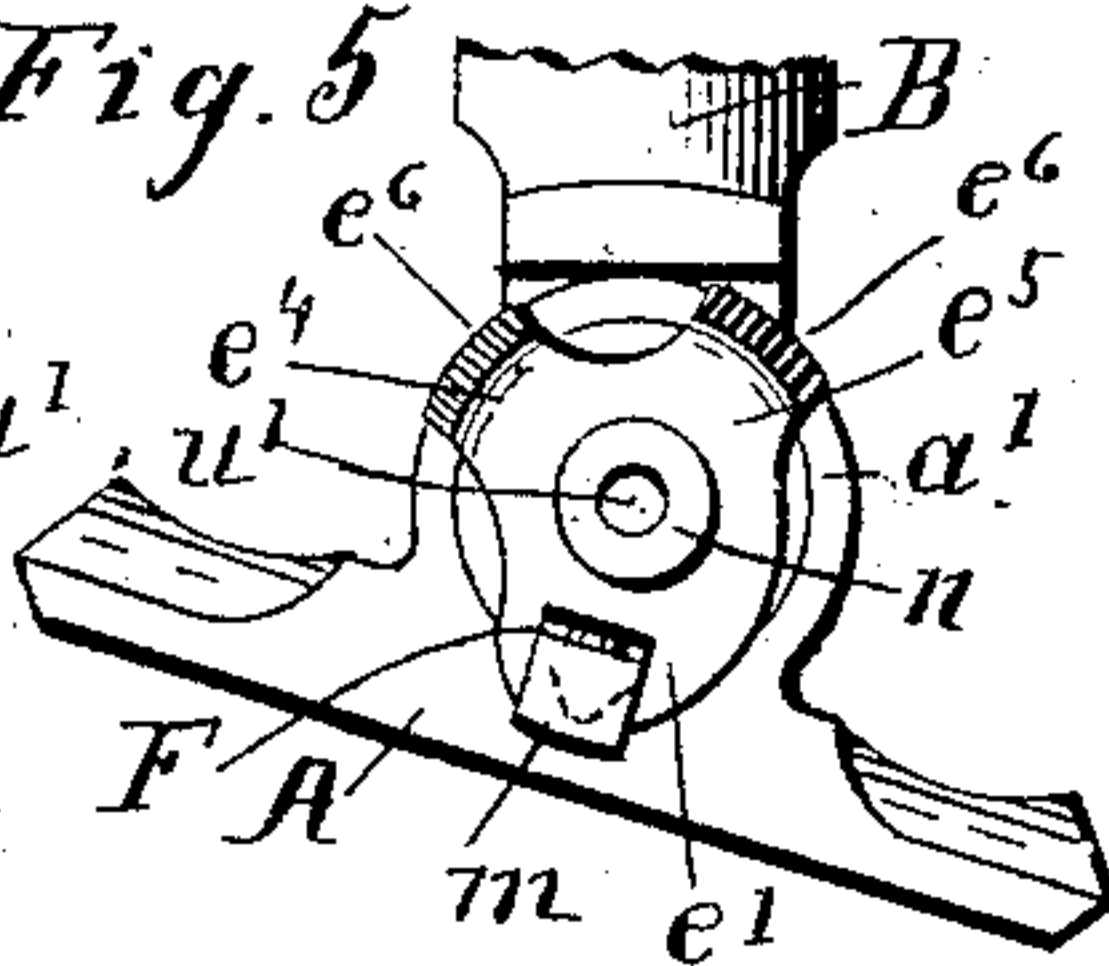


Fig. 6

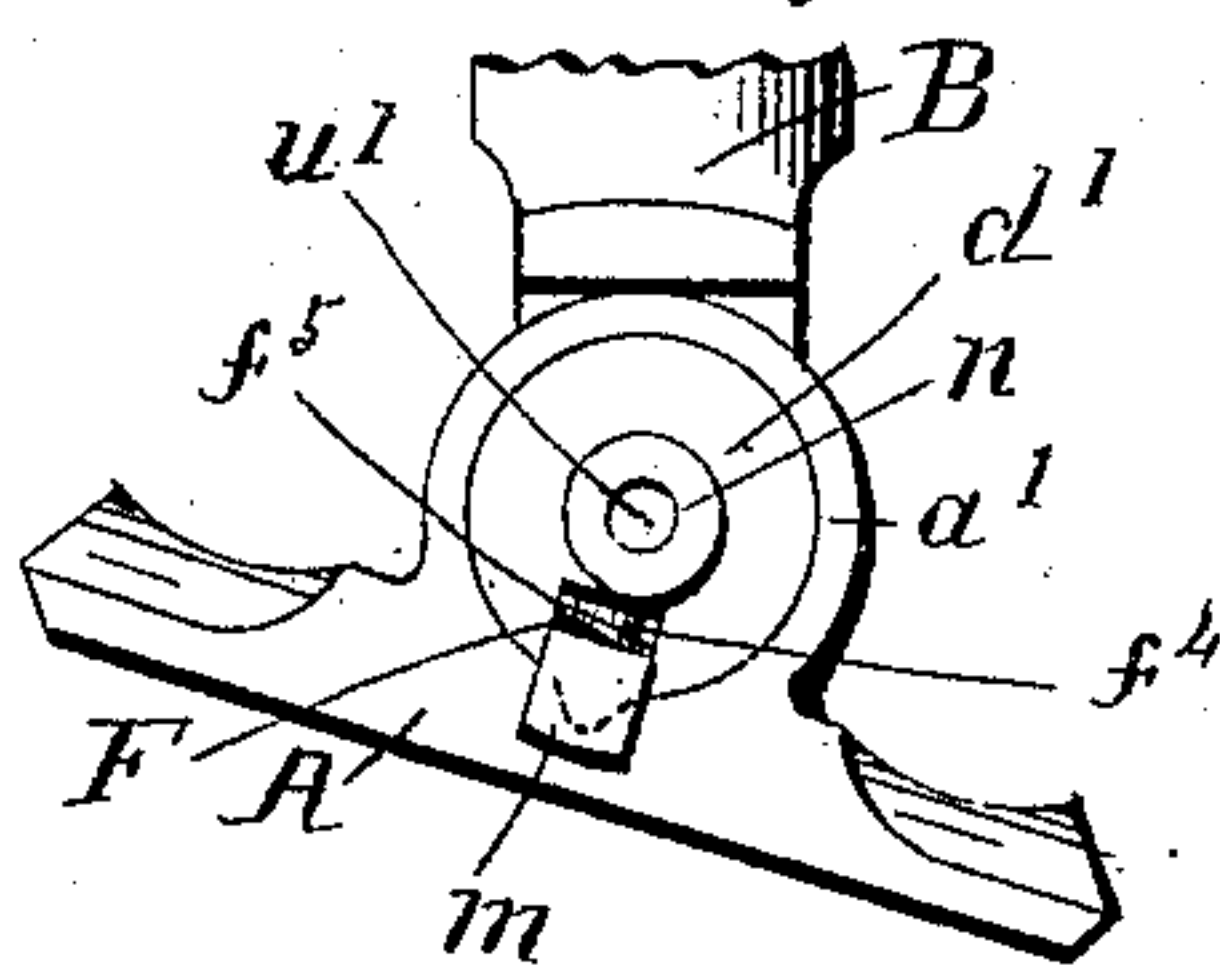


Fig. 7

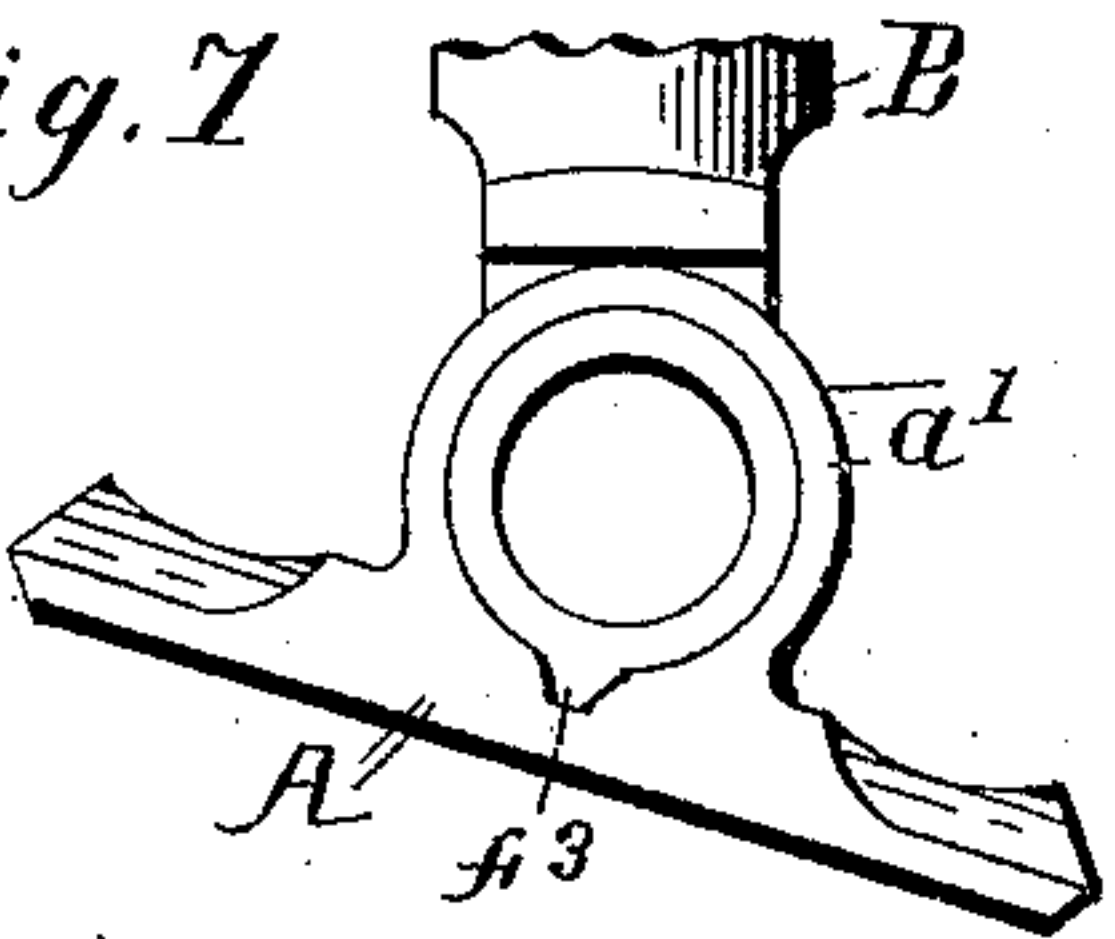


Fig. 8

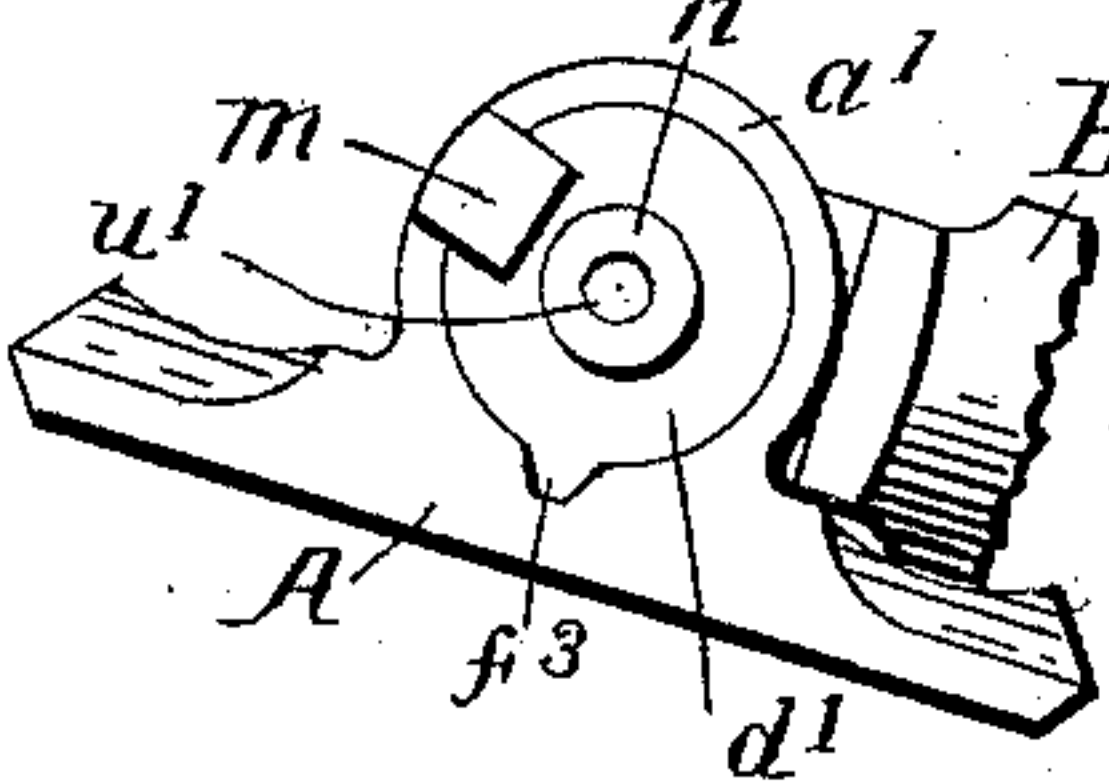


Fig. 10

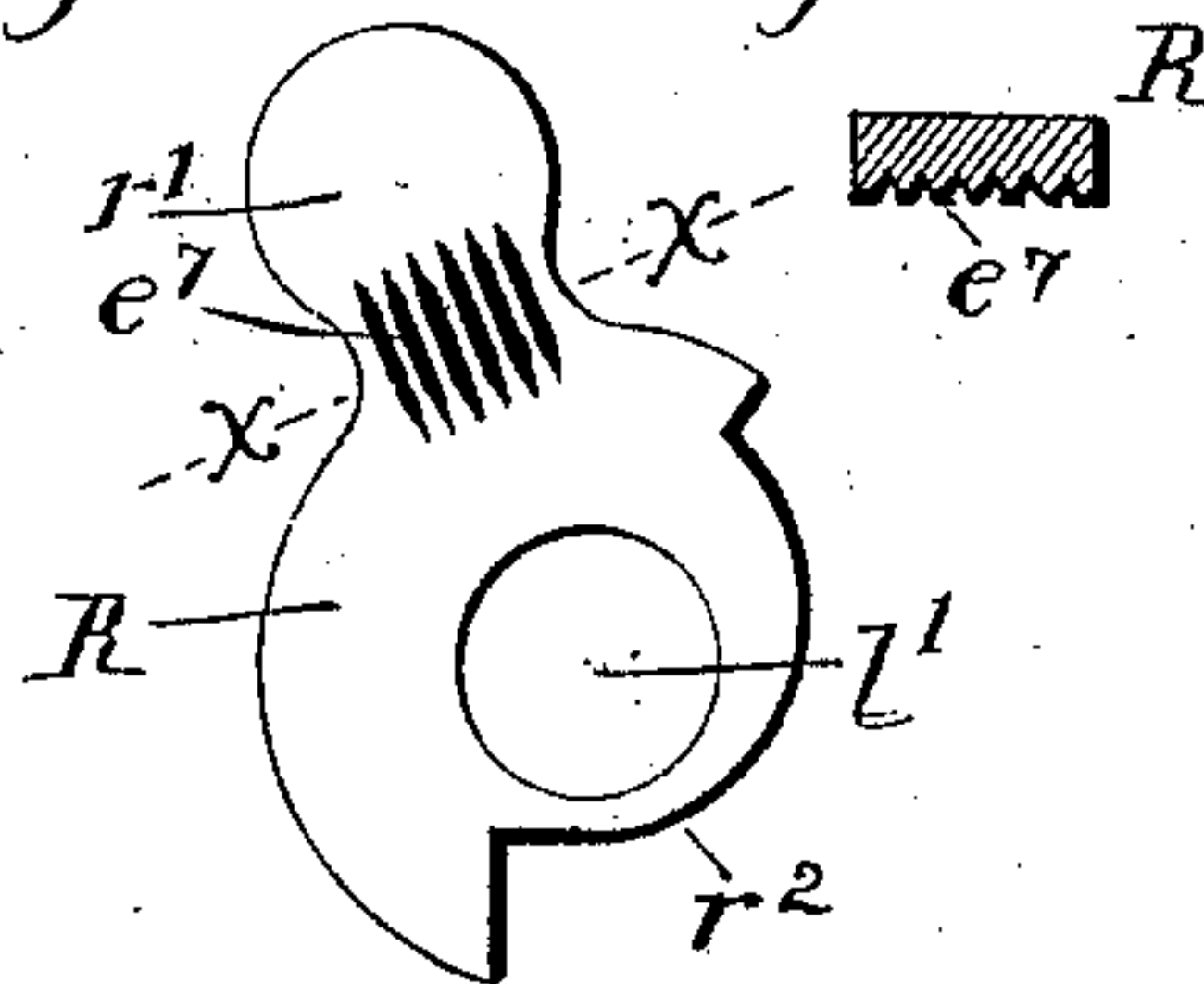


Fig. 11

Fig. 12

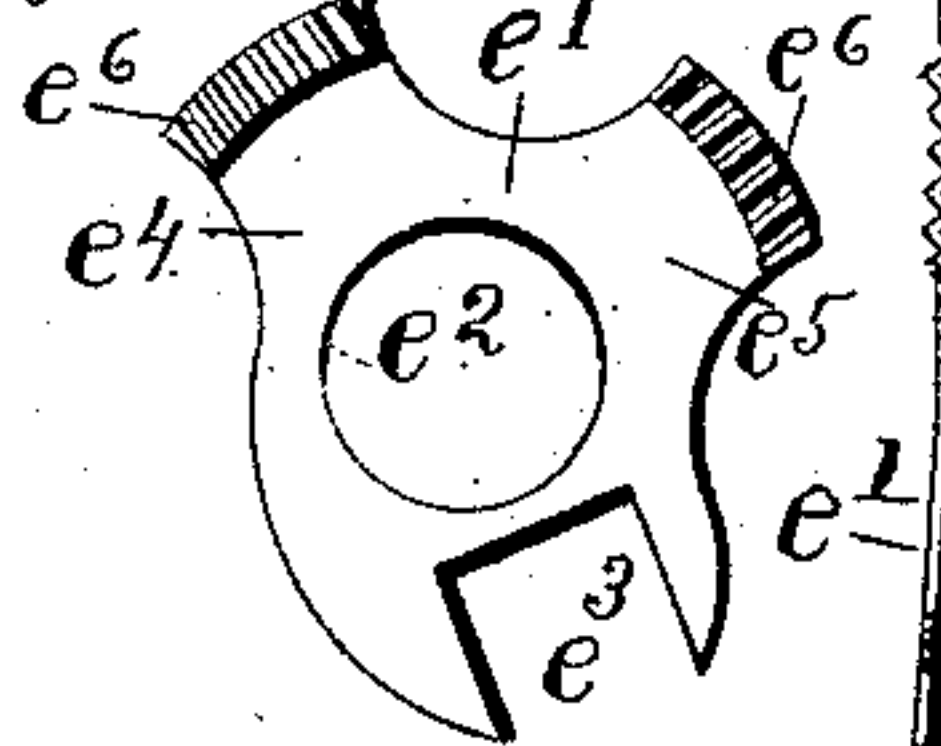


Fig. 13



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# UNITED STATES PATENT OFFICE.

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## SIGHT FOR FIREARMS.

No. 868,240.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed July 3, 1907. Serial No. 382,008.

*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 an improvement in that class of sights for firearms known as folding rear sights, or those in which the base of the sight is secured to the tang of the firearm and the sighting part is hinged to the base and adapted to be swung rearwardly from the vertical or sighting position and folded down upon or parallel with the tang, out of the sighting plane of the arm.

The invention comprises an improvement upon and attachment to the sight forming the subject of Letters Patent Number 795,468 granted to me July 25, 1905, and it has for its object to provide auxiliary means for locking the sight locking mechanism of the class of sights represented in said Letters Patent.

The improvement consists in the novel combination and arrangement of parts as hereinafter more particularly described and fully pointed out in the claims.

In the accompanying drawings forming a part of this specification Figure 1 is a side elevation of a sight of the class referred to embodying my improvement and showing the locking mechanism in locked position. Fig. 2 is a rear view of the same. Fig. 3 is a view similar to Fig. 1 with the cap screw removed showing the locking lever. Fig. 4 is a view similar to Fig. 3 but having the locking lever in unlocked position. Fig. 5 is a similar view to Figs. 3 and 4 but having the locking lever removed. Fig. 6 is a similar view having both the locking lever and its locking attachment removed. Fig. 7 is a similar view having the pivotal part or hinge bolt and locking mechanism all removed. Fig. 8 is a view similar to Fig. 6 but having the sight part folded down upon the base. Fig. 9 is a central vertical transverse section through the pivotal part or hinge bolt and the "joint", or part which carries the sight. Fig. 10 is an enlarged view of the locking lever. Fig. 11 is a cross section on the line  $x-x$  Fig. 10. Fig. 12 is a front elevation of the locking attachment. Fig. 13 is an edge view of the same.

Referring to the drawings, A designates the base of the sight adapted for being mounted on the firearm rearwardly of the barrel. It is provided with the vertical transversely-perforated hinge bearings or ears,  $a^1$ , between which the hinge-eye  $b^1$  of the joint, B, is fitted with its perforation concentric with those of the bearings, but of somewhat smaller diameter. Through these parts is passed a bolt, D, fitting the hinge-eye  $b^1$ , and having a cylindrical head  $d^1$ , journaled in one of the hinge-bearings, and a screw-threaded portion  $d^2$ ,

whereon is screwed a cylindrical nut  $d^3$ , journaled in the other hinge-bearing. The nut projects slightly outside of the bearing, and such projecting portion is milled away to provide the parallel-sided part  $d^4$  for the application of a wrench to screw the nut to place. When the nut is tightly screwed against the hinge-eye  $b^1$ , thus correspondingly clamping the head  $d^1$  against the opposite surface of the hinge-eye, the bolt-head and nut are rigidly held with reference to the joint and comprise trunnions on which the latter is swung in the hinge-bearings of the base, enabling the sight to be folded down rearwardly from the vertical or sighting position shown in Fig. 1 flat upon the base as shown in Fig. 8. The joint carries the sight proper, E, and the mechanism employed in adjusting it for elevation, here requiring no further description.

In the lower edge of the head,  $d^1$ , considered with the joint in sighting position, is a radial recess, F, in alignment with which a chamber,  $f^1$ , is drilled diametrically through the head nearly to the upper edge thereof. Guided in said recess is a spring pressed detent,  $f^2$ , which is adapted to yieldingly engage a notch or seat,  $f^3$ , in the base to hold the joint in the upright or sighting position, but may readily be cammed out of the notch when pressure is applied to the joint tending to fold it down rearwardly. The detent is provided with a stem,  $f^4$ , extending nearly to the top of the chamber upon which a coiled spring,  $f^5$ , is received, bearing upon the detent,  $f^2$ , and reacting against the top of said chamber to force the detent into the notch,  $f^3$ . The detent is provided with an offset step or shoulder,  $m$ , projecting laterally beyond the plane of the end face of the hinge bolt and extended radially somewhat beyond the rounded outer end of the detent proper to cover and conceal the notch,  $f^3$ , of the base.

A central, circular hub,  $n$ , is formed on the face of the head,  $d^1$ , of the hinge bolt, D, projecting axially therefrom or overhanging the ear of the base to the same extent as the part,  $m$ , of the detent. On the hub is journaled a rotary key R, which substantially comprises a disk formed with the projecting handle,  $r^1$ , and a central perforation,  $l^1$ , fitting the hub,  $n$ , and cut away on one side as shown to provide a segmental space,  $r^2$ , adapted to receive the offset step or shoulder,  $m$ , of the detent and permit a certain amount of rotary movement of the key on its journal, in the present instance comprising about one-third of a complete revolution. The position of the space,  $r^2$ , with reference to the handle,  $r^1$ , is such that the offset part,  $m$ , is at the forward end thereof when the handle is in the forward position shown in Fig. 3, permitting the handle to be turned rearwardly from said position to the position shown in Fig. 4 when the sight is in the vertical position. At its rear end the space,  $r^2$ , is proportioned to provide a clearance



space between the offset part and key when the detent is engaged with the notch of the base, as shown in Fig. 4.

4. The rear end of the space,  $r^2$ , is proportioned to just receive the offset part,  $m$ , when the detent is engaged with the notch,  $f^3$ , of the base, that is, the key bears upon or contacts with the offset part,  $m$ , through said rear portion of the space when the detent is engaged with the notch. Thus in operation, with the detent engaged with the notch, if the key be rotated forwardly to the position shown in Fig. 3, the key will bear upon the offset part,  $m$ , and lock the detent in said notch. This effect will be insured if the engaging surface of the key be made concentric with the center of said rotary movement, but it is preferable to proportion said surface slightly eccentric to the axis of the hub,  $n$ , so that the highest portion or part of its surface farthest removed from the center will bind on the offset part,  $m$ , as the key approaches the locking position. The rotary key is held in place on the hub,  $n$ , by a cap screw,  $u$ , screwed into a central screw threaded perforation,  $u^1$ , in the hub, and having its head of sufficient size to fully cover and protect the key, as shown in Fig. 1. Said mechanism comprises the subject of the Letters Patent hereinbefore referred to, and here requires no more detailed description.

The improvement forming the subject of the present application has for its object to securely lock the aforesaid rotary key against accidentally working loose or becoming dislodged by the recoil of the arm in the act of firing. The key is effectually fastened in both the locked and unlocked positions of its movement by means of this improvement, which is as follows: Mounted upon the hub,  $n$ , of the hinge bolt between the ear of the base and the rotary key,  $R$ , is a sheet metal spring plate,  $e^1$ , having the central perforation,  $e^2$ , fitting upon the hub, and a radial slot,  $e^3$ , which is received upon the detent and is thereby held fixed in relation to the hinge bolt and caused to turn therewith as the sight is swung upon its axis. The plate is provided with two radial arms,  $e^4$  and  $e^5$ , corresponding respectively to and occupying the positions of the locked and unlocked positions of the handle or lever,  $r^1$ , of the key,  $R$ . Said arms at their outer edges or circumferential portions are crimped to form a series of serrations or teeth,  $e^6$ , as shown conspicuously in the enlarged views, Figs. 12 and 13. In the contiguous face of the handle of the rotary key,  $R$ , a corresponding series of notches,  $e^7$ , is formed, as shown in the enlarged views, Figs. 10 and 11, and in operation these notches are engaged by the teeth of the spring plate when the handle of the key is brought over them, which is when it is in the locked or unlocked positions shown respectively in Figs. 3 and 4. The space between the key and the base, or face of the head,  $d^1$ , is proportioned sufficiently greater than the thickness of the spring plate to permit the lateral vibration of the arms,  $e^4$ ,  $e^5$ , as the teeth,  $e^6$ , pass into and out of the notches,  $e^7$ , of the key in their movement over the same, and the plate is bent or curved with relation to the key so that its tension presses the arms  $e^4$ ,  $e^5$ , and that portion of the plate, diametrically opposite to them against the face of the key, and the parts intermediate of those points against the face of the head,  $d^1$ , of the hinge bolt, as shown in Fig. 2. Thus constructed the tension of the plate holds the teeth in contact with the notches of the key, but

permits the yielding movement necessary to disengage them when sufficient pressure is applied to the lever of the key tending to turn it on its axis.

In operation, when the spring pressed detent,  $f^2$ , is engaged with the detent,  $f^3$ , if the handle,  $r^1$  of the rotary key be carried forward to the position shown in Figs. 1 and 3, the high part of its eccentric will be forced tightly upon the step or shoulder,  $m$ , of the detent, and lock the detent in the notch,  $f^3$ , thus locking the sight on the base, and the key itself will be locked in said position by the engagement of the teeth of the arm,  $e^4$ , with its notches,  $e^7$ . And when the lever is thrown rearward to the unlocked position shown in Fig. 4 to release the detent from the notch of the base, it will be similarly engaged by the teeth of the arm,  $e^5$ , and securely locked in said unlocked position, but susceptible of being moved from one of said positions to the other by adequate thumb pressure applied thereto in the direction of movement. The lever will be held secure against being displaced by the recoil of the fire-arm, or accidental jarring, or contact with twigs. The ear of the base having the detent notch is alone sufficient for the purpose of hinging the sight member thereto, and the mechanism would be entirely operative if the opposite ear were lacking, but the construction shown providing a pair of bearings for the pivotal bolt with the sight member intermediate thereof is preferable, and insures greater stability.

I claim as my invention:

1. In arbor locking mechanism the combination of an arbor, a locking detent carried by the arbor, an arbor supporting base or frame provided with detent arresting means, a movable locking key mounted on the arbor for locking the detent in engagement with the detent arresting mechanism, and an elastic toothed locking plate carried on the arbor and adapted to engage and lock the key in place.
2. In arbor locking mechanism the combination of an arbor, a locking detent carried by the arbor, an arbor supporting base or frame provided with a detent notch, a rotary locking key mounted on the arbor for locking the detent in engagement with the detent notch and an elastic toothed locking plate carried on the arbor and adapted to engage and lock the locking key in place.
3. In arbor locking mechanism the combination of an arbor, a radially movable locking detent carried upon the arbor, a toothed spring plate carried upon and movable with the arbor, an arbor supporting base or frame provided with a detent engaging notch, and a locking key movably mounted on the arbor provided with an eccentric abutment for locking the detent in engagement with the detent engaging notch, and toothed to engage the spring plate in the detent locking position.
4. In arbor locking mechanism the combination of a base and an arbor respectively provided with coacting locking devices one of which is movable with relation to and engageable with the other, a locking key movable with relation to the movable locking device, and yieldingly engageable coacting toothed devices respectively carried by the locking key and the part whereon the movable locking device is mounted, to secure the key in position.
5. In folding sights for firearms the combination of a base and a sight carrying pivotal member respectively provided with coacting locking devices one of which is movable with relation to and engageable with the other, a locking key movable with relation to the movable locking device, and yieldingly engageable coacting toothed devices respectively carried by the locking key and the part whereon the movable locking device is mounted, by engagement of which the locking key may be secured in position.
6. In folding sights for firearms the combination of a base and a sight carrying pivotal member respectively provided with coacting locking devices one of which is



movable with relation to and engageable with the other, a locking key movable with relation to the movable locking device and provided with locking teeth, and a toothed locking device carried by the part whereon the movable locking device is mounted, yieldingly engageable with the locking teeth of the locking key to lock the key in position.

7. In folding sights for firearms, the combination of a base, a sight carrying pivotal member mounted on the base, a locking detent carried on said pivotal member, locking shoulders provided on the base adapted to be engaged by the detent, a movable abutment mounted on the pivotal member in engageable relation with the detent and provided with locking teeth, and an elastic locking plate carried on the pivotal member and provided with locking teeth for yieldingly engaging those of the abutment to lock the same in position.

8. In folding sights for firearms the combination of a base provided with a journal bearing or ear having a detent notch, a sight member having a head or trunnion journaled in the bearing, and provided with a smaller hub or journal overhanging the base, a detent guided in the head or trunnion engageable with the notch of the base, and provided with a step or shoulder overhanging the base in the plane of the hub, a rotary key mounted on the hub and provided with an abutment engageable with the overhanging step of the detent to lock the detent in the notch, and a spring plate mounted upon the hub and step to swing with the sight member, in juxtaposition to the key, said plate and the key being provided with interengaging teeth and notches to yieldingly lock the parts together by the tension of the plate.

9. In folding sights for firearms the combination of a base provided with a pair of journal bearings or ears, in one of which a detent notch or step shoulder is formed, a sight carrying part provided with a hinge bolt journaled in said bearings, and having a hub or journal projection axially overhanging the base, a spring pressed detent seated and radially guided in the hinge bolt and adapted to engage the notch of the base, and provided with a step or shoulder projecting longitudinally from the bolt in the plane of the hub, a lever hinged upon said hub or journal having an abutment adapted in the throw of the lever to engage and press upon the detent step to lock the detent in the detent notch, a spring arm mounted upon the hub and engaged with and carried by the detent step in the folding movement of the sight carrying part, said lever and spring arm being provided with coacting engaging points for locking the parts together subject to disengagement through the yielding action of the spring plate, and means for securing the lever and spring upon the hinge bolt, substantially as and for the purpose specified.

10. The combination of a pivoted sight carrying member, a locking means for locking said member consisting of a detent and a notch, a locking key movable into and out of locking engagement with said detent, and a locking device for said key.

11. The combination of a pivoted sight-carrying member, a means for locking said member consisting of a detent and a notch, a locking key movable to lock and release said detent, and means for locking said key.

12. The combination of a pivoted sight-carrying member, a means for locking said member consisting of a detent and a notch, a rotatable locking key movable to lock and release said detent, and means for locking said key.

13. The combination of a pivoted sight-carrying member, a means for locking said member consisting of a detent and a notch, a locking key movable to lock and release said detent, and means for locking said key in each of several positions.

14. The combination of a pivoted, sight-carrying member, movable to and fro to place it in positions for and out of use, a locking means for said member, consisting of a detent and a notch, a locking key movable to and fro to move it into and out of locking engagement with the detent, and a locking device for said key.

15. The combination of a pivoted sight-carrying member, movable to and fro to place it in positions for and out of use, a locking means for said member, consisting of a detent and a notch, a locking key movable to and fro to move it into and out of locking engagement with the detent, and a locking device for said key connected to and moving with the sight-carrying member.

16. The combination of a base having a detent-engaging notch, a sight-carrying member pivoted thereto, a detent, connected to and moving with the member, a locking key movable to lock and release said detent, and a locking device for said key connected to and movable with said sight-carrying member.

17. The combination of a base having a detent-engaging notch, a sight-carrying member pivoted thereto, a detent for said member connected to and moving with the same, a pivoted key to lock and release said detent, and means for locking said key consisting of a plate having a slot that engages said detent to connect the plate to the sight-carrying member.

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

JAMES WINDRIDGE.

Witnesses:

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GEORGE L. BARNES.