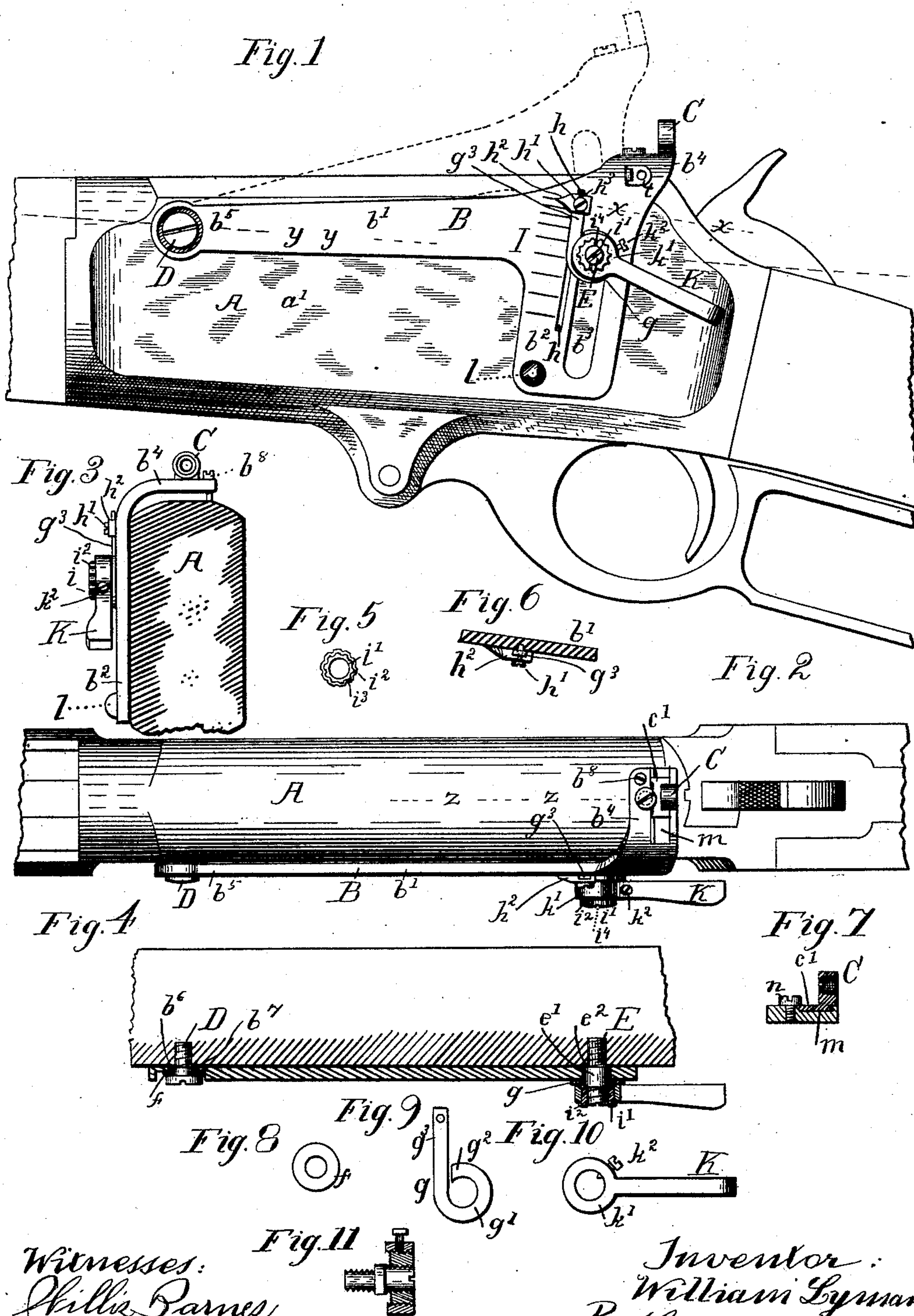


(No Model.)

W. LYMAN.  
SIGHT FOR FIREARMS.

No. 541,559.

Patented June 25, 1895.





# UNITED STATES PATENT OFFICE.

WILLIAM LYMAN, OF MIDDLEFIELD, CONNECTICUT.

## SIGHT FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 541,559, dated June 25, 1895.

Application filed January 8, 1895. Serial No. 534,278. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LYMAN, 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 improved sight for firearms, the object being to provide a rear sight of extremely simple construction, which shall be capable of rapid adjustment, and adapted to fit the gun snugly and compactly, without projecting parts liable to engage twigs and branches while being carried through thickets or underbrush.

The invention consists in the novel oscillating side lever sight pivoted to the arm, in the clamping means, and the arrangement, combination and construction of parts, as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this invention, Figure 1 is a side elevation of my improved sight fitted to a firearm. Fig. 2 is a plan view, and Fig. 3 is a rear end elevation, of the same. Fig. 4 is a horizontal section on the line  $y\ y$ , Fig. 1. Fig. 5 is an end view of the clamping-nut viewed from the inner end. Fig. 6 is a horizontal section through the sight on the line  $X\ X$ , Fig. 1. Fig. 7 is a vertical lengthwise section on the line  $z\ z$ , Fig. 2. Fig. 8 is a plan view of a spring-washer. Fig. 9 is a similar view of the combined indicator-arm and spring. Fig. 10 is a view of the clamping-lever. Fig. 11 shows a modification of the clamping mechanism.

Referring to the drawings, A designates a portion of the breech of a firearm, of the form known to the trade as the Marlin model of 1893, to which class of arms my improved sight is particularly applicable.

B designates the sight lever, which is fitted against and pivoted to the flattened surface,  $a'$ , on the left hand side of the breech as far forward as possible, and it should be made as long as it can conveniently be, without interfering with the operation of the hammer. For the model referred to and in most others, the form of the lever will be substantially as shown in the drawings, comprising an arm or lever proper,  $b'$ , a depending clamping spur or branch  $b^2$  having a vertical slot  $b^3$ , and a

sight base  $b^4$  projecting laterally from the lever and overhanging the barrel to form a support upon which the sight C, is mounted. The forward end  $b^5$  of the lever is pivoted to the breech by the screw D, and a screw or stud E is screwed into the breech through the slot  $b^3$  in the branch  $b^2$  upon which stud is mounted the mechanism for clamping the sight in its various positions, as hereinafter described.

While the lever might be pivoted upon the screw D by having a simple circular bearing fitting the screw, the slot  $b^3$  also being curved in an arc struck from the pivot as a center, I prefer to make the slot  $b^3$  perfectly straight and to elongate the hole  $b^6$  through which the screw D passes as shown in Fig. 4, sufficiently to permit the bodily rearward movement of the lever to conform to such configuration of the slot, the movement of the lever lengthwise being about equal to the versed sine of the arc through which the lever would swing were the slot curved instead of straight. The lever is recessed to partly receive the head of the screw D, but such recess may be a simple circular counterbore, as shown, provided that it is made sufficiently large to permit the lengthwise movement of the lever aforesaid. The part of the screw fitting the hole  $b^6$  is cylindrical and forms a shoulder  $b^7$  to gage the depth to which the screw may be screwed into the wall of the breech, a cupped spring washer  $f$  being fitted on the screw under the head thereof to prevent lateral play of the lever on its pivot, the lever throughout its length fitting snugly against the flat surface of the firearm. The screw or stud E is also screwed into the flattened surface  $a'$  near the rear end thereof, and it has a middle cylindrical portion  $e'$  fitting the slot  $b^3$  in the lever, and somewhat larger than the threaded inner end of the screw, thus forming a shoulder  $e^2$  which may be screwed tightly against the flat side of the firearm. Said cylindrical portion in length exceeds the thickness of the lever and projects through the slot  $b^3$ , sufficiently to form a bearing for a spring  $g$  which consists of a flat spring bar having one end coiled around to form an eye  $g'$  fitting the part  $e'$  of the screw, said eye portion being made somewhat spiral, or having its end  $g^2$  deflected from the plane of the straight part or arm  $g^3$  of the bar whereby it



is adapted to form an elastic washer between the lever and the means for clamping the lever against its seat as hereinafter described. A straight groove  $h$  is formed in the lever at the side of and parallel with the slot  $b^3$  and a screw  $h'$  is screwed through the end of the arm  $g^3$  of the spring, projecting into said groove, as shown in Fig. 6, whereby as the lever is oscillated upon its pivot in operation the arm  $g^3$  is maintained in a position parallel with the slot  $b^3$ , the eye  $g'$  correspondingly swiveling upon its bearing  $e'$ . Thus arranged, said arm is adapted to carry a pointer  $h^2$  fitting upon it as shown in Fig. 6 and held in place by the aforesaid screw  $h'$ , clamped between the head of the screw and the arm. The lever is graduated by a series of lines  $I$  in the path of said pointer to indicate the various elevations or gage of the sight  $C$  in sighting. The hole  $h^3$  in the pointer through which the screw passes is somewhat elongated vertically to permit a slight adjustment of the pointer or its arm in setting the lever in the zero position, or "point blank," and a screw  $b^8$  is set in the part  $b^4$ , bearing upon the breech, for adjusting the lever to such position.

The outer portion of the stud  $E$  is screw threaded to receive an annular nut  $i'$ , which is received within the eye  $k'$  of a clamping lever or handle  $K$ , the nut being provided with a flange  $i^3$  on its outer end to hold the said handle in place. A series of notches  $i^3$  are milled on the periphery of the nut, and a set screw  $k^2$  is screwed through the rim of the eye of the clamping handle, having its pointed end adapted to enter the notches  $i^3$  of the nut. Thus in operation the clamping handle may be set in any required position, or radial line from the stud  $E$ , and the nut clamped firmly down upon it, by means of a screw-driver fitting the slot  $i^4$  in its flange, after which the set screw  $k^2$  may be screwed down into one of the notches  $i^3$ , thus insuring the proper position of the clamping handle when clamped down, which is preferably that shown in the figures, a result that could not readily be accomplished were the nut and handle made integral. To insure the utmost friction, the nut is made of less length than the eye of the handle, and does not impinge upon the spring  $g$ , the face of the eye of the handle only being brought in contact with the spring and subjected to frictional pressure. The spring  $g$  not only provides an anti rattling joint between the parts, but enables the clamping action of the nut to be graduated, as for instance, if the clamping handle be slightly loosed from the position in which it clamps the sight lever rigidly in place, it will still hold the sight lever in position while at the same time permitting ready adjustment thereof by sufficient force exerted upon a small knob,  $l$  provided as a thumb piece for convenient manipulation of the sight lever by the thumb, and very handy in use whether the clamping handle is wholly or partially loosed. If desired the nut  $i'$  may

be screwed into the eye  $k'$  as shown in Fig. 11 and secured by set screw, the thread of the nut serving the function of the flange  $i^3$ .

Any suitable form of sight may be used in connection with the oscillating lever. For purposes of illustration I have shown a simple tubular sight  $C$  secured on a plate  $c'$  which is fitted in a groove  $m$  on the overhanging laterally projecting part or sight base  $b^4$  of the lever, and held by a clamping screw  $n$ . The cross sectional configuration of the slot is preferably that shown in Fig. 7, the sides thereof being inclined as shown, and parallel, that is, one forming an acute angle and the other an obtuse angle with the surface of the sight base, the side having the obtuse angle being adjacent the clamping screw, whereby said screw, having its head overlapping the plate  $c'$ , will force the plate downward and laterally, by means of said inclined sides of the plate and slot, and the plate will be held in place on one side by the dovetailed form of the surfaces in contact, and on the other by the overlapping head of the screw, thus securely holding the sight in place. To limit the endwise movement of the plate, a portion of its edge may be cut away and the screw correspondingly set over into such space, as shown in Fig. 2.

The operation of this sight is extremely simple, and it may be readily and rapidly adjusted in any position. When at point blank, it fits the gun very snugly and has no projecting parts to catch twigs and branches while being carried through the underbrush. It is capable of a large range of adjustment, and if desired, an auxiliary folding sight, as  $t$ , in Fig. 1, (shown folded back) may be attached to the side of the lever, to be used in connection with a bead or other simple form of sight attached to the side of the gun anywhere between the breech and muzzle, in the usual manner, here requiring neither to be shown or described.

The sight may readily be applied to firearms by simply drilling and threading two holes for the reception of the screws  $D$  and  $E$ , and extreme accuracy is not required in laying out the said holes, owing to the lengthwise play of the lever on the screw  $D$ .

It is highly advantageous to use this sight on rifles like the Marlin model of 1893 (shown in the drawings) which have such a long bolt action as to make it inconvenient to put on a tang sight.

I claim as my invention—

1. A vertically oscillating sight lever pivoted upon the side of the firearm and provided with a laterally projecting sight base overhanging the gun breech and having a groove transverse to the barrel and rhomboidal in cross-sectional area, in combination with a plate fitting the groove and adapted to be secured therein by a clamping screw in the base bearing upon the plate on the side opposite that which is dovetailed into the base, a sight mounted on the plate and clamp-



ing means for securing the lever in sighting position, substantially as specified.

2. The combination of a lever pivoted to the side of the firearm and provided with a laterally projecting sight base overhanging the gun breech, a sight mounted thereon, a stud secured in the firearm and projecting through a slot in the lever, and a clamping nut on said stud for clamping the lever in different sighting positions.

3. The combination of a vertically oscillating sight lever pivotally mounted at the side of the firearm, suitably slotted for movement upon a clamping stud and having a laterally projecting sight base overhanging the breech, a sight mounted on said base, a threaded stud mounted on the firearm and projecting through said slotted part of the lever, and a clamping nut received upon the outer end of the stud, and adapted to clamp and hold the lever in various sighting positions, as and for the purpose specified.

4. The combination of a vertically oscillating sight lever pivotally mounted at the side of the firearm having a depending slotted spur, and provided with a laterally projecting sight base overhanging the breech, a sight mounted on said base, a threaded stud mounted at the side of the firearm and projecting through the slotted spur of the lever, a clamping nut mounted upon the projecting part of said stud, and a clamping lever or handle rotatively adjustable on said nut, substantially as and for the purpose specified.

5. The combination of a vertically oscillating sight pivotally mounted at the side of the firearm having a depending slotted spur and provided with a laterally projecting sight base overhanging the breech, a sight mounted on said base, a threaded stud mounted at the side of the firearm and projecting through the slotted spur of the lever, a clamping nut mounted upon the projecting part of said stud, a clamping lever or handle rotatively adjustable on said nut and an indicator mounted on a part fixed to the firearm, the lever being suitably graduated with reference to said indicator, substantially as and for the purpose specified.

6. The combination of a vertically oscillating sight pivotally mounted at the side of the firearm, comprising a radial arm, a laterally projecting sight base overhanging the breech, and a spur slotted transversely to the radius of the said radial arm, a sight mounted on said base, a threaded stud mounted at the side of the firearm and projecting through the slot of the lever, a clamping nut mounted upon the projecting part of said stud, a clamping lever or handle rotatively adjustable on

said nut, and an indicator or pointer mounted upon the said stud, the lever being suitably graduated with reference to said pointer, substantially as and for the purpose specified.

7. The combination of a vertically oscillating sight pivotally mounted at the side of the firearm, comprising a radial arm, a laterally projecting sight base overhanging the breech, and a spur slotted transversely to the radius of the said radial arm, the slot thereof being substantially straight, and the lever being adapted to radial movement on its pivot corresponding to the deflection of the oscillation of the lever from movement in the arc of a circle, due to said slot being straight and uncurved, a threaded stud mounted on the firearm and fitting said slot in the lever, a clamping nut received upon said stud outside of the lever, and adapted to clamp or secure the lever in place, an indicator arm pivotally mounted on said stud, and guided on the lever to remain substantially parallel with the slot thereof, as the lever is oscillated upon its pivot, the lever being suitably graduated with reference to the indicator to denote the range of firing, substantially as and for the purpose specified.

8. The combination of a vertically oscillating sight pivotally mounted at the side of the firearm comprising a radial arm, a laterally projecting sight base overhanging the breech, and a spur slotted transversely to the radius of the said radial arm, the slot thereof being substantially straight, and the lever being adapted to radial movement on its pivot corresponding to the deflection of the oscillation of the lever from movement in the arc of a circle, due to said slot being straight and uncurved, a threaded stud mounted on the firearm and fitting said slot in the lever, a clamping nut received upon said stud outside of the lever, and adapted to clamp or secure the lever in place, an indicator arm pivotally mounted on said stud between the lever and clamping nut, the eye thereof comprising a convolution of a coil and being elastic and adapted to serve as a spring to press the lever frictionally against the side of the firearm, and the outer end of the indicator arm being held and guided on the lever to remain substantially parallel with the slot thereof, as the lever is oscillated upon its pivot, the lever being suitably graduated with reference to the indicator to denote the range of firing, substantially as and for the purpose specified.

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Witnesses:

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