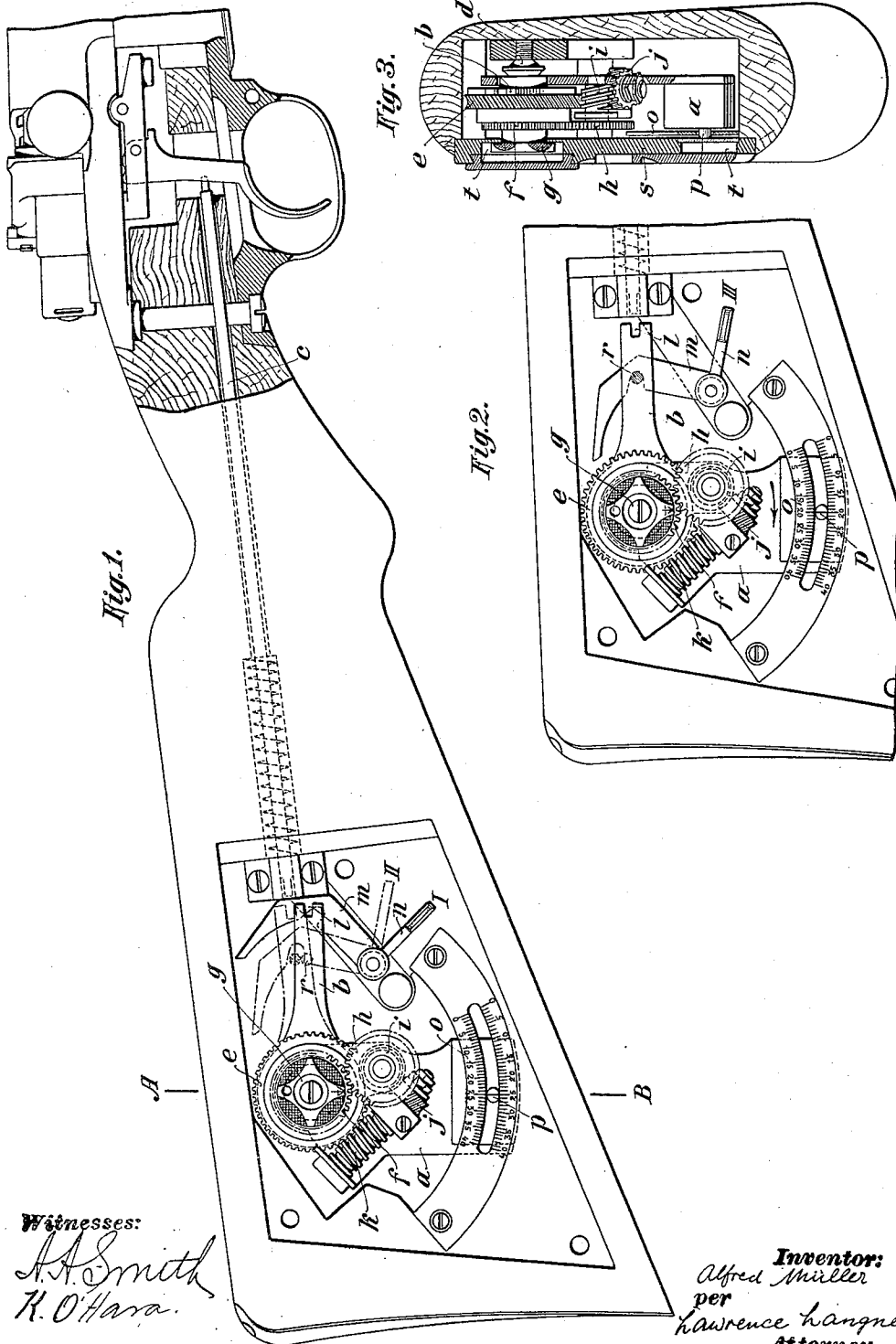


A. MÜLLER.
SAFETY DEVICE FOR FIREARMS.
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1,058,887.

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UNITED STATES PATENT OFFICE.

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SAFETY DEVICE FOR FIREARMS.

1,058,887.

Specification of Letters Patent.

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Application filed October 4, 1911. Serial No. 652,829.

To all whom it may concern:

Be it known that I, ALFRED MÜLLER, retired major, a subject of the King of Prussia, residing at No. 95 Berlinerstrasse, Charlottenburg, near Berlin, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Safety Devices for Firearms, of which the following is a specification.

The invention relates to safety devices for fire-arms in which in the known manner a recess is provided in a locking member connected with a weight or pendulum in which a pressure rod acted upon by the trigger engages in the correct position of elevation or depression of the weapon so that the trigger can be drawn back while in other cases engagement between the pressure rod and the locking member is not possible so that the weapon cannot be fired. In this known firing mechanism the adjustment of the mechanism for a given aiming position is attained by adjusting the weight or pendulum relatively to the locking member in which case it was possible to utilize the weight or pendulum itself for ascertaining the required angle on a fixed scale. The device serving for this purpose was not very practical, however, and the adjustment was very troublesome to effect as a separate scale on the locking member was necessary.

The present invention has for its object to greatly simplify the adjustment of the locking device for the aiming position of the weapon for the time being while rendering it more exact and the entire mechanism is constructed in such a manner that in actual use in the field the weapon provided with it will always act reliably. This result is attained owing to the fact that the weight or pendulum and stop member are formed as separate elements which are connected one with the other by tooth and worm gear, a locking device being provided for the oscillating parts such that when the stop member has been locked with its recess in engagement with the pressure rod, by the convenient rotation of a knob or the like the adjustment of the weight or pendulum relatively to the arm corresponding to a given aiming position can be effected on a single fixed scale. It is also possible by releasing the locking device to allow the pendulum to rock freely with the stop member and to employ the pendulum directly for reading the necessary ad-

justment with a given aiming position of the weapon.

The firing mechanism is illustrated in the accompanying drawing in which—

Figure 1 represents an elevation with the locking device released and with the adjustment for a given aiming position of the weapon ascertained by the oscillations of the pendulum. Fig. 2 is a similar view with locked locking and pendulum device, and Fig. 3 is a cross section on the line A B in Fig. 1.

The firing mechanism consists of the pendulum *a* the locking arm *b* and the pressure rod *c* acted upon by the trigger. The pendulum *a* and arm *b* are formed as separate parts and rotatably mounted on a pivot *d* fixed in the stock. The locking arm *b* is rigidly connected with the worm wheel *e* and the gear wheel *f* with the knot *g* so that these parts are able to rotate freely and independently of each other on the pivot *d*. The gear wheel *h*, the worm *i*, the worm wheel *j* and the worm *k* are mounted on the pendulum *a*. The parts are mounted in such a manner that the gear wheel *f* of the locking arm *b* engages with the gear wheel *h* of the pendulum, the worm *i* with the worm wheel *j* and the worm *k* of the pendulum with the worm wheel of the locking arm *b*. This arm is provided in the known manner with a recess *l* in which the flattened end of the pressure rod *c* is able to engage. In the cavity in the stock of the weapon which contains the mechanism a locking lever *m* is rotatably mounted and by means of an adjusting lever *n* operated from the exterior it can be set in the three positions influencing the locking arm *b*. At the lower part a scale *o* is fixed over the cavity in the stock and comprises a slot in which a pin *p* mounted on the pendulum is engaged.

The operation of the firing mechanism is as follows: In shooting at a target of any kind in the first place the distance is estimated and when the sight has been adjusted the aiming position is assumed in which the adjusting lever *n* and also the locking lever *m* connected with it are located in the position indicated in firm lines in Fig. 1 and the pendulum *a* is able to oscillate freely with the arm *b*. Now assuming that when the target is covered and that the weapon has the elevation shown in Fig. 1 the pendulum which always hangs vertically will have the

line on its index pin *p* on the number 25 on the fixed scale *o* on the stock. This number is indicated to the other marksmen whereupon the firing mechanism of the fire-arms is fixed by changing the sighting lever from the position I into the position III (Fig. 2) so that the recess *l* in the locking arm *b* lies exactly opposite the end of the pressure rod *c*. In this position the mechanism is immovably locked by the engagement of the pin *r* provided on the locking arm *b* in a recess in the locking lever *m*. By suitably rotating the outwardly protruding knob *g* the pendulum *a* is displaced in the direction indicated by the arrow in Fig. 2 by the intermediary of the interposed tooth and worm gear until the line on its index pin *p* is exactly set on the number 25 of the scale. The setting lever *n* is then caused to occupy the position II (Fig. 1) and the locking lever *m* assumes such a position that the pendulum *a* and the locking arm *b* are again released and able to oscillate. It will be understood that in this position the locking arm *b* and the pendulum are retained in fixed relation after adjustment of the latter by the friction of the gearing *e, f, h, i, j, k* by which these parts are connected. The magnitude of the angle of oscillation is relatively small if the recess in the locking lever *m* is suitably formed (approximately 2°) so that in assuming the firing position excessive rocking to and fro of the pendulum is prevented so that it comes to rest more speedily on reaching the correct aiming position of the fire-arm. When this is so and the locking arm *b* occupies the position indicated in broken lines in Fig. 1 the pressure rod *c* which is acted upon by the marksman by pressing the trigger is able to enter the recess in the locking arm *b* which is now situated opposite to it and the weapon can be fired.

The entire mechanism which is arranged in the stock is covered externally by a plate *s* provided with apertures for the passage of the knob *g* and the setting lever *n* and also with an inspection aperture for the scale, all these apertures being readily and conveniently closed and exposed by the means of slides *t*.

What I claim and desire to secure by Letters Patent of the United States is:

1. In a fire-arm, the combination of a trigger, a trigger rod, a pendulum, a locking arm adapted to permit movement of said rod in a determined position of the fire-arm, gearing connecting said pendulum and said locking arm and adapted to effect a change of position of the one relative to the other and to maintain said pendulum and said locking arm in such adjusted positions.

2. In a fire-arm, the combination of a trigger, a trigger rod, a pendulum, a rotatably mounted locking arm adapted to per-

mit movement of said rod in a determined position of the fire-arm, gearing connecting said pendulum and said locking arm, for adjusting the position of said pendulum relative to said locking arm when said arm is locked, a locking lever adapted to hold the locking arm to change the relative position thereof, and an adjusting lever to actuate said locking lever.

3. In a fire-arm, the combination of a trigger, a trigger rod, a pendulum, a rotatably mounted locking arm formed with a recess adapted to permit movement of said trigger rod in a determined position of the fire-arm, gearing connecting said pendulum and said locking arm, a recessed locking lever adapted to hold said locking arm, a manually adjustable lever adapted to actuate said locking lever, and a pin on said locking arm adapted to be engaged by the recess in said locking lever.

4. In a fire-arm, the combination of a trigger, a trigger rod, weighted means, locking means, gearing connecting said locking means and said weighted means and adapted to effect a change of position of the one means relative to the other means, means adapted to act on said locking means to change the position thereof relative to the weighted means, and means adapted to lock said locking means when engaged by said trigger rod in the free position of said trigger.

5. In a fire-arm, the combination of a trigger, a trigger rod, weighted means, locking means adjustable relative to said weighted means and with which said trigger rod can engage in a determined position of the fire-arm to allow the trigger to be actuated, gearing connecting said weighted means and said locking means, and means adapted to coöperate with said locking means to confine the movements thereof.

6. In a fire-arm, the combination of a trigger, a trigger rod, weighted means, locking means adjustable relative to said weighted means and adapted to permit movement of said trigger rod in a determined position of the fire-arm, gearing connecting said weighted means and said locking means, means adapted to act on said locking means to adjust the position thereof, and means to lock the locking means after such adjustment has been effected.

7. In a fire-arm, the combination of a trigger, a trigger rod, co-acting with said trigger, weighted means, locking means adjustable relative to said weighted means and adapted to permit movement of said trigger rod in a determined position of the fire-arm, and gearing connecting said weighted means and said locking means and adapted to maintain said weighted means and said locking means in determined relative positions.

8. In a fire-arm, the combination of a

trigger, a trigger rod, weighted means, locking means adjustable relative to said weighted means and adapted to permit movement of said trigger rod in a determined position
5 of the fire-arm, and gearing connecting said weighted means and said locking means and adapted to allow of a change of the relative positions of said weighted means and said locking means and to maintain such relative
10 positions after an adjustment has been effected.

9. In a fire-arm, the combination of a trigger, a trigger rod, weighted means, locking means adjustable relative to said weighted means and adapted to permit movement

of said trigger rod in a determined position of the fire-arm, gearing connecting said weighted means and said locking means and adapted to maintain said weighted means and said locking means in determined relative positions, and means adapted to hold
20 said locking means during an adjustment of said weighted means relative to said locking means.

In testimony whereof I have affixed my
signature in presence of two witnesses.

ALFRED MÜLLER.

Witnesses:

ROBERT MICHALSKI,

HENRY HASPER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
