March 9, 1971 J. K. JORCZAK 3,568,324

BATTLE SIGHT FOR AN AUXILIARY PROJECTILE LAUNCHER

Filed Jan. 9, 1969

FIG. 1

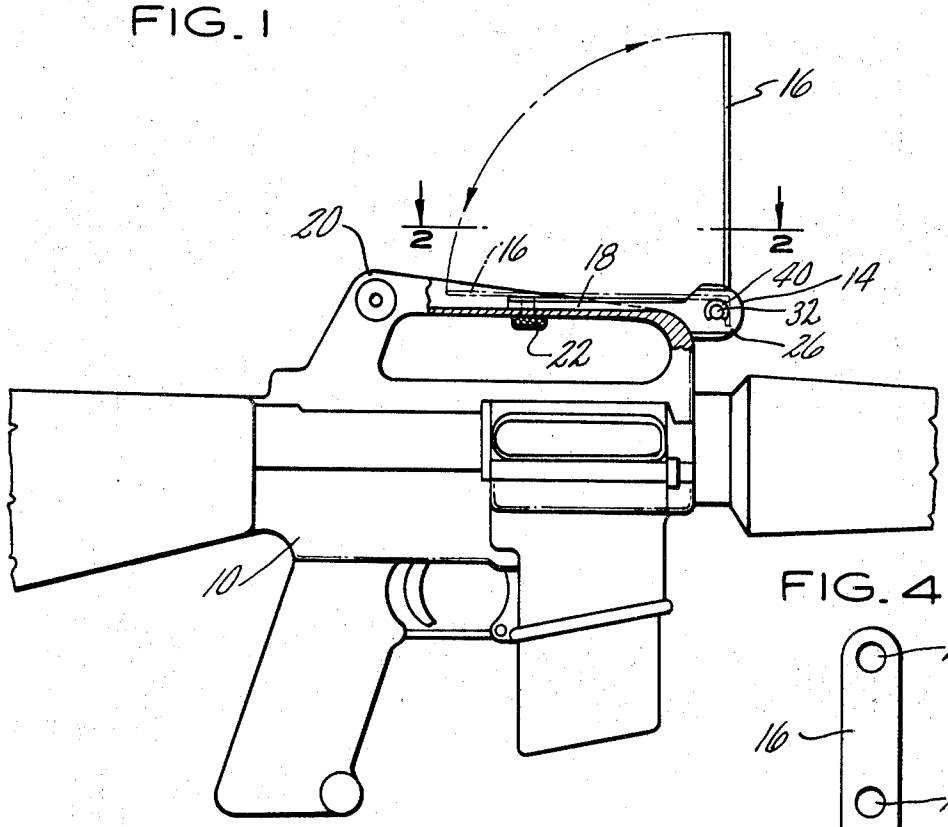


FIG. 4

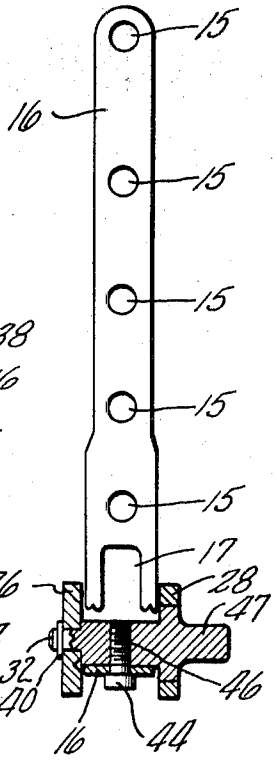


FIG. 2

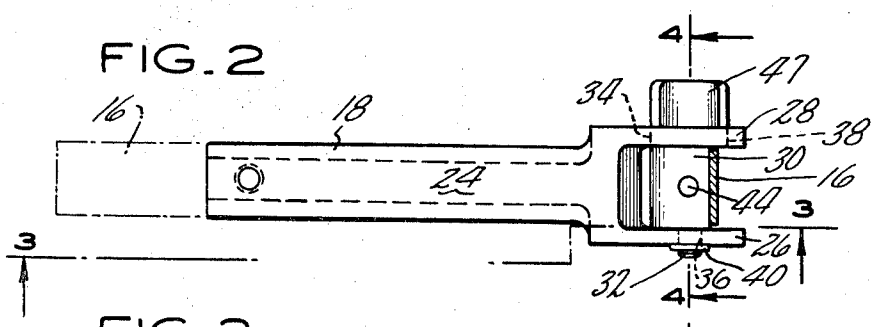


FIG. 3

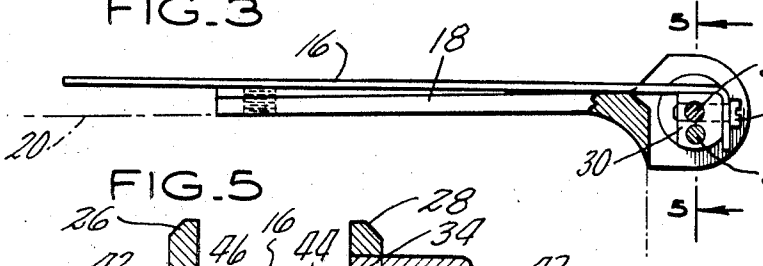
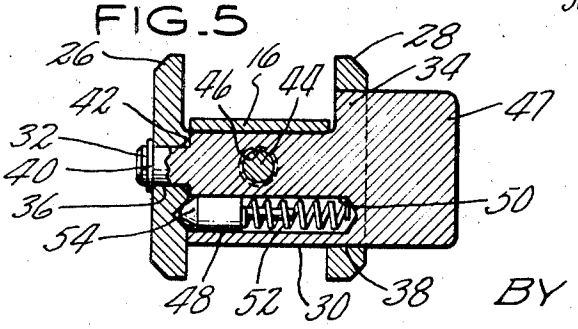


FIG. 5



INVENTOR
JOHN K. JORCZAK
Radford W. Luther
BY ATTORNEY

United States Patent Office 3,568,324
Patented Mar. 9, 1971

3,568,324

BATTLE SIGHT FOR AN AUXILIARY PROJECTILE LAUNCHER

John K. Jorczak, Springfield, Mass., assignor to Colt's Inc., Hartford, Conn.

Filed Jan. 9, 1969, Ser. No. 789,994
Int. Cl. F41g 1/48
U.S. Cl. 33—47 4 Claims

ABSTRACT OF THE DISCLOSURE

A pivotable auxiliary sight assembly having a series of preselected range apertures with the sight assembly secured to the carrying handle of a portable firearm having auxiliary projectile launcher may be expeditiously and accurately aimed under battle field conditions. The auxiliary sight assembly including a sight element that has stable detented storage and operational positions, either position permitting unobstructed use of the basic point fire sight of the firearm.

BACKGROUND OF THE INVENTION

(1) Field of invention

This invention relates to sighting apparatus for portable firearms, and more particularly to short-range auxiliary battle sights designed for use with auxiliary projectile launcher attachments for said portable firearms.

(2) Description of the prior art

The known prior art auxiliary sighting devices for use with firearms equipped with auxiliary projectile launchers wherein battle field operations may require the instant alternate selective use of either the primary function of firing normal projectiles (usually bullets), or the auxiliary function of launching auxiliary projectiles (usually grenades), include complex auxiliary sight adjustment devices to compensate for the variation in trajectory due to projectile drift.

Another problem with many prior art auxiliary sighting devices is that they restrict the instant use of the point-fire primary sighting system of the firearm when instant alternate selective sighting and firing of the auxiliary launcher system is utilized.

SUMMARY OF THE INVENTION

Prior are firearms utilize auxiliary launcher sighting devices which include complex adjustments to compensate for the known variable component of drift of the launched projectile over a range of trajectories. It has been found that the combat firing of auxiliary projectiles is predominantly in the zero to 250 meter range; and further, it has been found that at these short ranges the drift component of the launched projectile can be adequately compensated for by a visual line of sight adjustment on the part of the operator.

It is, therefore, the primary object of this invention to provide a simple, reliable sight for use with an auxiliary launcher attachment to a firearm by providing a construction that is adapted for quick single point attachment to the exterior slot of the carrying handle of the sight for use with an auxiliary launcher attachment to a tion of the basic point sight associated with the primary operation of the firearm.

It is a further object of this invention to provide a sight for use with an auxiliary launcher attachment to a firearm wherein the sight bar is rotatably secured, by means of a detent assembly, to a plurality of arcuate positions with relation to the base of the sight affixed to the exterior of the carrying handle of the firearm proper.

Still another object of this invention is to provide a sight for use with an auxiliary launcher attachment to a firearm wherein the sight mechanism includes a rotatable sight bar having a graduated range scale that comprises a series of fixed apertures and an enlarged opening to permit the use of the primary point fire sight device with the sight bar of the auxiliary sight mechanism in the extended position.

Yet another object of this invention is to provide a sight for use with an auxiliary launcher attachment to a firearm wherein the sight can be attached to the firearm without modification or replacement of any part of the basic firearm, while still permitting unrestricted use of the basic point-fire sight system of the firearm under all geometric extensions and conditions of use of the auxiliary sight apparatus of the instant invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The above-mentioned features and objects of this invention, and the specific nature of the invention itself, as well as other objects and advantages thereof, will clearly be apparent by reference to the description of the preferred embodiment, as shown in the accompanying drawings, in which:

FIG. 1 is a side elevation view of a portion of a rifle showing the carrying handle mounted launcher sight assembly of the present invention.

FIG. 2 is a top view of said sight assembly with the sight scale in the raised or operational position taken along the line 2—2.

FIG. 3 is a side view with the sight scale in the folded position taken along the line 3—3.

FIG. 4 is an end view along the line 4—4.

FIG. 5 is a sectional view of the detent assembly taken along the line 5—5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, a portion of a firearm **10** with a front sight (not shown) is shown having a launcher sight assembly **14** for use with a grenade launcher attachment (not shown), said sight comprising a pivotable sight scale or bar **16** supported for rotation with respect to a mounting bracket **18** secured to rifle carrying handle **20** by means of a thumb screw **22** projecting through an existing telescope mounting hole in the carrying handle **20** and threadably engaging mounting bracket **18** to fixedly clamp bracket **18** in the exterior slot of handle **20**. The exterior slot extends longitudinally of the firearm and the mounting bracket **18** has a longitudinal axis which is perpendicular to the transverse axis of the firearm. The mounting bracket **18** is clamped to the handle in such a manner that it lies within the exterior slot in abutting relationship with the handle **20**. The slot serves as a rear sight and is adapted to be sight aligned with the front sight for point-fire. The single attachment screw **22**, for the bracket **18**, is advantageous since it permits rapid manual attachment of the bracket to the firearm's handle **20** and release therefrom.

Referring to FIG. 2, the mounting bracket, shown generally at **18**, comprises a straight portion **24** having integral vertically extending bifurcated ends **26** and **28**. A pivot roller **30** has a smaller diameter journal end **32** and a large diameter journal end **34** rotatably supported in bores **36** and **38** in bifurcations **26** and **28** respectively. Snap ring **40** engages a groove (not shown) in end **32** to limit axial motion of pivot roller **30** in one direction while a body portion **42** of roller **30** coacts with the inboard face of bifurcation **26** to prevent axial motion in the opposite direction. Body portion **42** is smaller in cross section than bore **38** to permit assembly

therethrough. Sight bar **16** is fixed to roller body portion **42** by means of screw **44** (see FIG. 4) engaging a threaded transverse bore **46** in body portion **42**, the screw **44** facilitating removal of the sight bar **16** from the roller and replacement with another sight bar. Journal end **34** has an integral finger grip portion **47** which extends outboard of bifurcation **28** to permit application of torque to rotate roller **30**. Rotation of roller **30** through a given arc carries fixedly secured sight scale **16** through the same arc. A detent pin **48** is axially slideably positioned in bore **50** in body portion **42**, said pin being loaded against the inboard face of bifurcation **26** by spring **52**. Two local depressions **54** and a second depression in the inboard face of bifurcation **26** coact with detent pin **48** to provide stable sight scale positioning in the folded and raised positions respectively.

When sight scale **16** is folded against bracket **24**, detent pin **48** does not completely seat in depression **54**; thus permitting detent **48** to preload the scale tightly against bracket **24** to eliminate any possibility of looseness or play between these parts. When scale **16** is so stored in the folded position, the rifle line of sight along the basic point sight path, including the top of the carrying handle and the front sight at the end of the barrel, is not impaired in any way since the folded sight assembly is thin compared with the depth of the slot. Likewise with sight scale **16** extended to its upright operational position, the line of sight of the basic point sighting system is not impaired since a window or aperture **17** in the lower part of scale **16** provides an opening for the basic line of sight. Above window **17** are a series of carefully spaced sight apertures **15**, each bearing numerical indicia of the range to target in steps of 50 meters up to a maximum range of 250 meters. Said apertures are spaced according to known trajectory data for a given projectile and launch explosive charge. Basic changes in trajectory characteristics caused by changes in ballistic data can be accommodated by replacing sight scale **16** in the field with a scale having different sight aperture spacing according to the revised trajectory.

The portable firearm described in the specific embodiment of the invention and set out in the drawings and specification is but one form of firearm and is intended to be illustrative of the broad category of firearm upon which the instant invention may be utilized.

I claim:

1. In a firearm having a front sight, a carrying handle with a longitudinally extending exterior slot serving as a rear sight, and a mounting hole extending through the handle to the slot, an auxiliary sight assembly for use with auxiliary projectile launching apparatus attached to the firearm, the sight assembly comprising:

a mounting bracket with vertically extending bifurcated ends having a longitudinal axis perpendicular to the transverse axis of the firearm, the bracket being positioned within the slot in abutting relationship with the handle;

means extending through the mounting hole to permit rapid manual attachment of the mounting bracket to the handle and rapid release therefrom;

a pivot roller pivotably supported between the bifurcated ends;

a sight bar having aperture means and a window below the aperture means, the sight bar being fixedly secured to the roller for pivoting movement therewith between a folded and a raised position, the window being located adjacent the roller such that sight alignment between the slot and the front sight is not impaired when the sight bar is in the raised position, the aperture means being for sight alignment with a reference point on the firearm when the sight bar is in the raised position, and the sight bar and mounting bracket being sufficiently thin to permit sight alignment between the slot and the front sight when the sight bar is in the folded position; and

means to resist pivoting of the roller to retain the sight bar in the selected position.

2. The combination as defined in claim **1** wherein the pivot roller comprises:

a small diameter journal end;

a large diameter journal end;

a finger grip portion integral with the large diameter journal end;

a body portion intermediate the journal ends, the sight bar being secured to the body portion; and wherein the bifurcated ends comprise:

respective bores having axes perpendicular to the longitudinal axis of the mounting bracket, the journals being respectively pivotably supported in the bores such that the finger grip portion extends onboard of the mounting bracket, the body portion having a transverse cross section larger than the bore supporting the small diameter journal end and smaller than the bore supporting the large diameter journal end; and wherein there is further provided:

means to limit the axial motion of the body portion in the direction of the bifurcated end which supports the large diameter journal portion.

3. The combination, as defined in claim **2**, wherein the pivoting resisting means comprises:

a spring loaded detent pin slideably positioned within the body portion, and contacting the bifurcated ends which support the small diameter journal, the bifurcated end which supports the small diameter journal having two depressions positioned thereupon such that the pin is received by one of the depressions in the folded position and by the other of the depressions in the raised position.

4. The combination, as defined in claim **3**, wherein the body portion comprises:

a transverse threaded bore; and wherein there is provided:

a screw extending through the sight bar into threaded engagement with the bore to secure the sight bar to the roller, the screw facilitating removal of the sight bar and replacement with another sight bar.

References Cited

UNITED STATES PATENTS

426,887	4/1890	West	42—1(S)
888,858	5/1908	Sutherland	33—55
2,775,166	12/1956	Janson	89—191
3,156,992	11/1964	Beretta	42—1(F)
3,165,836	1/1965	Magardo	33—47
3,442,173	5/1969	Muller	42—1(F)

BENJAMIN A. BORCHELT, Primary Examiner

C. T. JORDAN, Assistant Examiner

U.S. Cl. X.R.

42—1

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,568,324 Dated March 9, 1971

Inventor(s) John K. Jorczak

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 15, after "launcher" insert -- apparatus such that the auxiliary projectile launcher -- .

Column 1, line 48, delete "are" and insert in place the -- art -- .

Column 1, line 62, after "the" (third occurrence) inser firearm without in any manner interfering with the function the basic point sight associated with the primary operation the firearm.

It is a further object of this invention to provide a -

Column 1, line 63, delete -- sight for use with an auxi launcher attachment to a tion of the basic point sight assoc with the primary operation of the firearm.

It is a further object of this invention to provide a -

Column 2, line 63, delete "smaller" and insert in place thereof -- small -- ;

Column 3, line 44, delete "firearm" and insert in place thereof -- firearms -- .

Signed and sealed this 14th day of March 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR. ROBERT GOTTSCHALK