

BAKER'S PRACTICE, &c.



RIFLEMAN PRESENTING

Published by E. Barker, Gun-maker, N° 24 White Chapel Road opposite the Church (from Little Alie Street.)

N° 1.

Charles Plant.
July 10th / 67.

TWENTY-SIX YEARS
PRACTICE
AND
OBSERVATIONS
WITH
RIFLE GUNS
BY
EZEKIEL BAKER,
GUN-MAKER,
AND
RIFLE GUN-MAKER

TO HIS ROYAL HIGHNESS THE PRINCE OF WALES,

No. 24,
WHITECHAPEL ROAD, OPPOSITE THE CHURCH,
LONDON.

(FROM LITTLE ALIE STREET.)

THE THIRD EDITION.

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1806.

WRIGHT, Printer, St. John's Square, Clerkenwell.

TWENTY-SIX YEARS

THE LANCET

ORIGINALLY

RIFLE GUNS

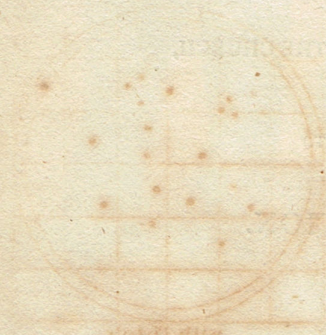
THE LANCET

THE LANCET

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Charles Klant

B A K E R'S

PRACTICE, &c.

ONE load of powder at all distances should be attended to; no noise or conversation to take place, whilst any one is presenting or taking aim, as it will take off the attention. The rifle should be held firm in hand, in all positions, in presenting to fire; lying on the belly, it will be found difficult for the left hand to grasp the stock forwards; in that case, the sling or belt should be pulled firmly back, to keep the rifle steady while firing, as appears in figures presenting, No. 2 and 3. To fire off hand without a rest, the right foot should be behind the left about 16 inches, the left knee upright and not bent, the right elbow down towards the body, the butt of the rifle in the hollow of the shoulder, the body easily bent forwards, so that

the right eye comes over the great toe of the left foot, as figure presenting No. 1. Quarter face is the strongest position, as a piece cannot be held too firm in hand whilst presenting and firing, and the man is less exposed to his enemy than in full face, as figure presenting No. 1. If the body is more bent the man will not stand so easy, nor yet so steady. The left hand, when presenting, to be forward on the swell of the stock, the sling under the elbow, which will make it firm and steady: in presenting to fire, and taking aim, both eyes open is best: it may be difficult to many to open both eyes in taking aim, but when it can be done, I am positive it will have the advantage, as, from my former observations, numbers have declared to me that they have accustomed themselves to it, and have found much benefit by it, as by that he will quarter his piece: that will shew him when his head is too far over the centre of the stock. The cheek should be pressed on the stock very hard at all times, or the man will deceive himself, for his eye should be as a fixture on the stock every time he takes aim. In taking

aim, lay the muzzle of the rifle to the lowest part of the object he means to strike, then bring it up gradually to the part he means to take his aim at: in bringing up the rifle, the fore-finger to be kept light on the trigger, when up to the point intended, he draws the front sight into the notch of the back sight with his eye, as line drawn figure No. 4. He holds his breath, and pulls gradually without any snatching, as that will alter the direction of the rifle. In taking aim, sometimes he may hold his breath so long, as will cause a trembling; in that case, the rifle should be taken down, take breath and aim again: as I never could fire so true, as when I took the first sight. It is a more certain way, to bring the muzzle of the rifle up than down, where the object can be obtained. In bringing the rifle up to the point intended, the cheek is as a fixture on the stock, that when brought to the point, it wants no alteration; but when the muzzle is brought down, it will require the face to be pressed on the stock: in that case the point will be lost, and the man much deceived. After the trigger is pulled, keep

the rifle firm to the shoulder, till the ball strikes the target at 100 yards: this will be known by hearing the ball strike or hit, as that will prevent any starting or throwing back the head, as is often the case in firing. A rifleman should practise to pull the trigger, with a wood-driver in the cock, till he can fire off his piece without starting, or shaking the muzzle of his rifle, or blinking: this is a part that every rifleman should be well acquainted with, as it will make him have more command of his rifle. A rifleman, to judge of his distance, should be in the habit of stepping his ground from 1 to 300 paces, or any other distance that may be thought proper, and let him fire at any object, at the distance he steps to. By this continual practice, he will learn to measure the distance with his eye to a tolerable certainty at any time: this he should practise in different places, and in all sorts of weather; in windy weather, and in particular, cross winds. I have at all times found the cross winds most difficult to fire in, as it does not blow regular: if it blows in the front a little more elevation is required, as the

ball will drop from the great body of air it meets with; if it blows in the rear, so much elevation is not required. I would recommend a young rifleman when he can fire well at 200 yards, in calm weather, to practise in windy, and all sorts of rough weather. I have found it very difficult to fire during the time of snow falling, much more than in rain; as the air is thick, as well as so many pieces flying about, dazzles the eye very much. It is necessary a rifleman should practise, which will instruct him what allowance to make from the object to be fired at, either to right or left, as the wind has great power on the ball at long ranges. I have found 200 yards the greatest range I could fire at any certainty. At 300 yards I have fired very well, at times, when the wind has been calm. At 4 and 500 yards I have frequently fired; and I have sometimes struck the object. I have aimed as near as possible at the same point, and have found it to vary from the point intended: whereas at 200 yards I could have made sure of the point, or thereabouts. From my practice, I am convinced

the wind has great power on the ball, after it has passed to a certain distance. I have found it very uncertain to fire over water; if I took the same elevation of the object as on land, I found the ball drop short. Firing over swamps and bogs, I have found to have a similar effect as firing over water. A rifleman should never use himself to more than one rifle, until he is a complete master of it: then he may use any one for the information of others. In loading with a ball, be careful that the ball is in the middle of the patch of leather or greased rag, provided for that purpose, before it is rammed down the barrel: if it is more on one side than the other, it will have an inclination to throw the ball from the straight line: both sides of the patch greased is the best; in hurry of loading, there can be no mistake.

A ball forced down too hard, or yet too easy, I never found to go so true, as when properly fitted. The ball with its patch should fit air tight, or it will not have the desired effect. If the rifle

is ever so well cut, and the ball does not fit, it will not answer the intended purpose. Be careful that the ball is rammed home to the powder, and with as little bruising as possible. Every rifleman should mark his rammer at the muzzle end of the barrel, when loaded, which will show him when the ball is close down on the powder. The ball not being close rammed on the powder, is in great danger of bursting the barrel: but as rifle-barrels are, in general, made very strong, the danger is not so great; but, setting aside all danger, I never found any dependance on the truth of the ball, that is not rammed home to the powder, in a rifle or any other piece, that I have practised with; but when the rammer is marked, as before-mentioned, it will shew when the ball is close rammed to the powder. If the ball fits airtight it will prevent its going down, without some small difficulty: it will require two or three pushes with the rammer, before the air can escape. I do not recommend the ball, as I have before mentioned, to be bruised with the rammer, but pushed. If the ball has ragged edges it will be

more impeded, as well as thrown from its true direction by the air; more so than when in its globular shape, in the front part of the ball. As to ramming hard on the powder, or breaking the grains, I never found it to diminish its strength, but will rather make it hang fire. At all times care should be taken that the hammer is shut down upon the pan, before the ball is rammed down, or the air which the ball drives before it, will blow all the powder out of the touch-hole. If, by mistake, that should happen, the ball must be drawn out with a screw turned into the end of the rammer, and provided for that purpose. Under the head of the rammer is a small hole made, to put in a lever, which makes the rammer similar to a carpenter's gimblet, and forms a purchase to screw into the ball, and by that means draws the ball out of the barrel. After firing a few rounds, it will be found difficult to draw out the ball. To remedy this, I have found the following method to have the desired effect. Pour a little water down the barrel, which will loosen the filth, and the ball will be drawn with

ease. It may happen that water, at such times, cannot be got: if the man can make urine, and apply it in the same kind of way, it will have the same effect. After the ball is drawn, it will stick so fast on the screw, as the fingers cannot unscrew it; then lay the ball on a stone or hard ground, and strike it with the butt end of the rifle to flatten it: it will then be taken off with ease: the barrel should be wiped dry before loaded again.

The pans of rifle locks should be grooved on each side, or what is termed raised, to admit of the water and filth, as I have seen, after firing a few rounds. Filth from the powder driven against the fence has kept the hammer so open as to lose the prime, and all the powder, blown out of the barrel by forcing down the ball. The locks to the rifles that I have made for the Honourable East India Company are raised so, as well as inclined towards the fence that shortens the lower part of the hammer, which makes it leave the pan sooner, and admits the fire more quick into the

prime. The locks for musquets raised in this manner would answer very well.

Rifles throwing to the right or left is sometimes owing to the trigger pulling too hard, and at other times, to the man throwing his head too far over the centre of the stock, which causes a cross-sight. To prove whether a rifle carries to the right or left, I tried the following method, which I found to answer very well.

I framed boards in a target, in a similar manner to a plate rack; for 12 boards deep, $\frac{1}{2}$ an inch thick, placed one inch apart from each other, the ball passing through them, will show its direction. I have fired at these targets at 100 yards, when I have had a rifle that has thrown from the straight line, and have found the ball one inch more on one side, on the outward board than the front board, where the ball first entered. These experiments I have tried in calm weather, as the wind would, in a great degree, drive the ball from the strait line, let the piece carry ever so true.

The trigger should not draw so hard as to alter the direction of the rifle in firing. A rifleman, to know when his trigger pulls too hard, is to suspend the trigger of the rifle on the fore-finger of his right hand, with the muzzle downwards, with the lock on full cock, which should just bear its own weight, and if it requires considerably more than the weight of the piece, to pull off the trigger it is too hard, and will take the rifle out of its right direction when fired. I do not mean air-triggers, but the triggers with common pull, as used by the 95th regiment ; nor gun over heavy, nor very light ; for the extreme of either would be wrong, as the gun might be made so heavy, that were the trigger to bear the weight of it, it would cause too great exertion : and a gun too light, by the same rule, would not be safe. The rifles I allude too, are used by the 95th regiment, which are nine pounds and a half each, and the locks which have a fly or scape, in the tumbler, to prevent the seer catching at the half cock, as is likely to be the case, if the lock pulls as it ought to do without it. If the rifle is found to throw

to the right, the back sight should be drove to the left, and the front sight to the right; the sights are left loose for that purpose; if it throws to the left, move the sight contrary, (as above) till the man who uses it finds it right. I do not approve of the sights being moved, after once set straight for the man that practises it.

To accommodate a cross wind, I have found the best method to make an allowance. I have no opinion of the folding elevating sights; the sight for the greatest range may be up, when a shot at a shorter distance may offer: in that case, the man not perceiving it, would be much deceived at his intended object; besides, it will require the face taken from its stationary place on the stock, for the eye to pass over it; in that, a man will be deceived, as he will have no rest for his cheek. I have found it the more certain way to make allowance in the elevation, than to move the face from its stationary place of the stock, for the eye to pass over the folding elevating sights, for 300 yards range. In trying off guns, I have been

deceived by the folding elevating sights, for which reason, I have found one sight most certain to be depended upon, at all distances; and its shape, on the top, a sphere of a circle, with a small notch in the centre, so as to admit of the light, on each side of the front sight, which forms itself to the eye better than any sight I have ever yet tried. The back sight should not stand too near the lock, as it will be liable to be filled with smoke from the pan, which will be a great denial to taking a true sight through the small notch. For if a man cannot measure his distance with his eye, he cannot do it with all the folding elevating sights that can be made. One of the principal things in shooting, is, for a man to measure his distance before he shoots, and if he cannot do it, all the sights that can be added will not make him a good shot: this is only to be obtained by practice.

A rifleman should fire from a rest, at a short distance, first, to ascertain the straight line of his sights; after he has so done, he should ascertain the elevation of his rifle at point blank. From

that, he will elevate or depress, according to the distance he is from the object he fires at; the sights on the king's regulation rifles are intended for 200 yards point blank.

A rifleman should not be in too great a hurry in loading and firing. I have found one shot in one minute as much as I could fire, to keep myself steady. In ramming down the ball, the air will sometimes force the powder into the touch-hole very hard, which will occasion the rifle to hang fire, or flash in the pan, and not fire the powder in the barrel, particularly in joint or patent breech barrels: as the narrow chamber at the bottom of the breech inside is forced full of powder so hard by the air, which the ball drives before it, it makes the rifle hang or miss fire more than it will with a plain breech. This I have frequently experienced, and give the preference to plain breeches to rifle barrels. A rifle to hang or miss fire, is a great denial to a rifleman, and may be the cause of losing his life. To remedy this, put a picker, made for that purpose, into the touch-hole whilst loading, shut down the ham-

mer on the picker, or the air will blow it out; when loaded, take out the picker, prime, and with the picker force a little powder into the touch-hole. Be careful not to prime too full, as it will prevent the hammer going down, and occasion the prime to be lost, or the damp to get to the priming; which will make the rifle hang, or miss fire. A pin or small feather will answer to stop the touch-hole occasionally.

This mode of loading will do in practice, but in action I have my doubts, as they will be apt to lose the picker. In lieu of a picker or feather after loading, pick the touch-hole; this will loosen the powder, which is forced hard in loading.

A rifle-man should be careful not to have his lock on full cock whilst loading, as from the pressure of forcing down the ball it might go off, which might be attended with bad consequences. The bolt that I have invented, under the patronage of H. R. H. the Prince of Wales, is certainly a preventative against its going to cock, or off at half cock, until unbolted, as it bolts itself in going to half cock. This mode of bolting for rifles or pis-

tols will prevent many accidents that have before happened. To clean a barrel after firing, wash the barrel out with hot or cold water; after drying the barrel with tow, put a little sweet oil on the tow, rub it up and down the barrel: the muzzle of the barrel should be stopped to keep out the air, to prevent rust, or it will soon injure the rifles.

A rifle barrel should be always kept brown, as it will prevent the glare of the sun obstructing the eye, as is the case on all bright barrels. I have here added four different positions, the most easy and certain way which I could find to fire in, as per figures, 1, 2, 3, 4. The positions, No. 3 and 4, I have found very useful in windy weather, and most certain in all sorts of weather, where the object can be obtained: likewise two men targets that I have fired at, and a table of the weight and diameter of lead balls, from one to fifty to the pound. The charge of good powder I have found to be nearly equal to one third the weight of the ball, priming included.

A rifleman should not blame his rifle if it does

not at all times throw the ball to one point. I have seen rifles fixed so as to be immoveable in firing, and yet have varied, as here shewn in Appendix No. 1, 2, and 3, and many other experiments that I have attended, and have had the same effect, altho' every care has been taken in loading, &c. The breech pin, barrel, and false breech and barrel should be marked on the top with an index, to shew when the breech pin in barrel is turned to its right mark ; that will at all times keep the sight and touch-hole in the right place. I have recommended to the Honourable Board of Ordnance to have all the musquets marked so, which they have been pleased to adopt ; that will enable the soldiers to see when the pins are right, and prevent many mistakes that have before happened, by their turning the breech pin in barrel too far, or not far enough, that has thrown the touch-hole out of its place, either under the pan or over the hammer, which has been one cause of the musquet's frequently missing fire ; and it will bring the loops on barrel to their right place, which will prevent the stock from being

split : which has often been the case, by the loops not being in their right place to receive the bolts or wire pins that hold the barrel in stock.

It was ever understood that $\frac{3}{4}$ or a whole turn in the angle of rifle in a barrel three feet in length was the best for throwing a ball to a certainty. This mode of rifling is practised by the Germans, French, and Americans, and all the foreign rifles that I have ever yet seen are rifled so, and several English gun-makers are firmly of opinion that one turn in four feet is the best angle possible. These angles of rifle I never could fire at a long range to any degree of certainty. If I put in powder to make it range at 300 yards, I found the ball go very random : from this I judged the ball striped over the top of the rifle. In that case it fired as random as a common musquet ; in order to find out the cause of this evil I rifled a barrel one turn in four feet, tried it, and afterwards cut it at different times, tried, and found the nearer I came to the straight line, the more true and farther I could range. I cut it to one foot one quarter turn, and found I could fire more true at a

short distance than I could when more angle in rifle. From this I made a barrel 2 feet 6 inches, and rifled it one quarter turn, and found I could range farther and more true than ever with any before, and with less elevation.

In the year 1800, many of the gun-makers in England were called on by the Honourable Board of Ordnance, to produce a specimen, in order to get the best rifle possible; among the rest, I was one. There were also many rifles from the Continent and America, all tried at Woolwich, by a committee of field officers, appointed for that purpose, for the use of a rifle-corps, (the 95th. reg.) raised by government; my barrel having $\frac{1}{4}$ turn only in the rifle, was approved of, in preference to the whole; the practice of which is here shewn, as per appendix, No. 1. fired at a target 300 yards distance, in the year 1803; a target fired at, at 200 yards distance, by command of H. R. H. the Prince of Wales, with a rifle-barrel 20 inches in length, for the use of his regiment, 10th Light Dragoons.

AN EXPERIMENT TRIED AT WOOLWICH, 15th
MAY, 1806, BY ORDER OF THE HONOUR-
ABLE BOARD OF ORDNANCE.

WITH two wall piece barrels of equal dimensions, one rifled, the other not rifled, to try the advantage the rifle would have over the smooth one, and to see if rifling so large a piece would have the effect on the ball that has been proved by smaller ones. The ball was 3 oz. 3 drs. 18 grs. fired with various loads of powder: after several separate times, and many rounds, fired, the advantage the rifle had was not in comparison with the former practice I have had with rifles, the balls twenty to the pound. I have made rifles as large as four to the pound, and have found no size to answer better than that used by the 95th. regt. 20 to the pound. The largest I have found to shoot the best is 14; on a larger ball than 14 I am convinced the rifle has not the effect as on smaller sizes; the smaller the ball, the less the elevation is required.

FINIS.

WRIGHT, Printer, St. John's Square.



Engr. by Gardner.

RIFLEMAN PRESENTING

Published by L. Tucker (near market) No. 24 White Chapel Road opposite the Church (from Little Mr. Street.

No. 2.

263

THE UNIVERSITY OF CHICAGO PRESS

CHICAGO, ILL. 60637



RIFLEMAN PRESENTING

Published by L. Barker Gun maker, 17, & 19, White Chapel Road opposite the Church (from Little Alie Street).

Nº 3.

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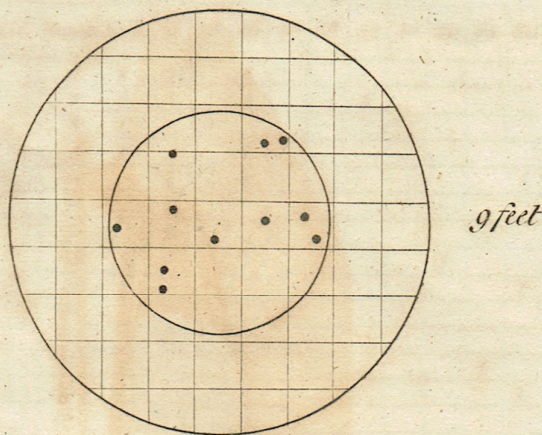
RIFLEMAN PRESENTING

Published by E. Weber, Gun maker, N° 31 White, Chapel Road opposite the Church (from Little, the street)

N° 4.

HONORABLE BOARD OF ORDNANCE.

the 4.th Day of February. 1800.



This Barrel made by M^r Baker two feet six in length, quarter turn in rifle was firmly fixed in a mortar bed as was all the other rifle barrels fixed on these experiments in such a manner as to be perfectly immoveable; 12 rounds were fired at a target 300 yards distance 11 of which struck as points here shewn the balls were the same that are used in mosquets, 14 $\frac{1}{2}$ of which weigh a pound with four drams of powder; the balls were placed in a greased leather patch. After firing many foreign rifles as well as English, this had the preference of the whole.

Sign'd..... Thomas Bloomfield.
Colonel & Inspector of Royal Artillery

Woolwich, March 3. 1800.

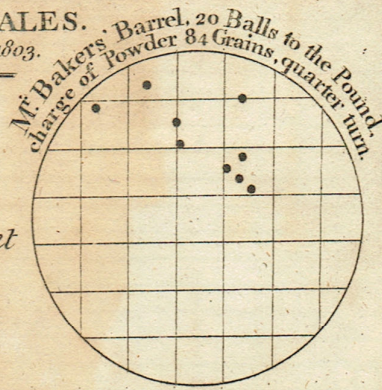
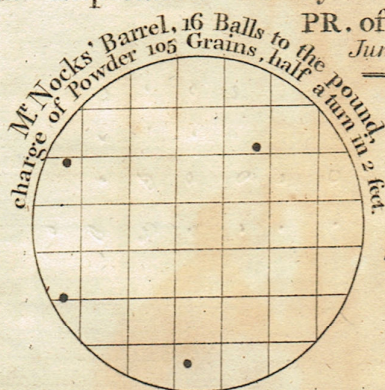
APPENDIX, N^o II.

APPENDIX, N^o III.

This Experiment was by order of his ROYAL HIGHNESS the

PR. of WALES.

June 4. 1803.



The two barrels 20 inches in length were fired at a target 200 yards distance, firmly fixed in a mortar bed in such a manner as to be perfectly immoveable; 12 rounds from each barrel were fired, and points struck as in targets here shewn. M^r Bakers barrel was afterwards mounted in a stock & 18 rounds were fired by him from the shoulder, without a rest, at a target 100 yards distance with balls 24 to the pound; fixed to the cartridge as in use for smooth barrels; in rather less than seven minutes, 15 of which struck the target; the extreme divergence of the balls in inches is 22 to the right, 29 $\frac{1}{2}$ to the left 33 $\frac{1}{2}$ over and 25 inches under.

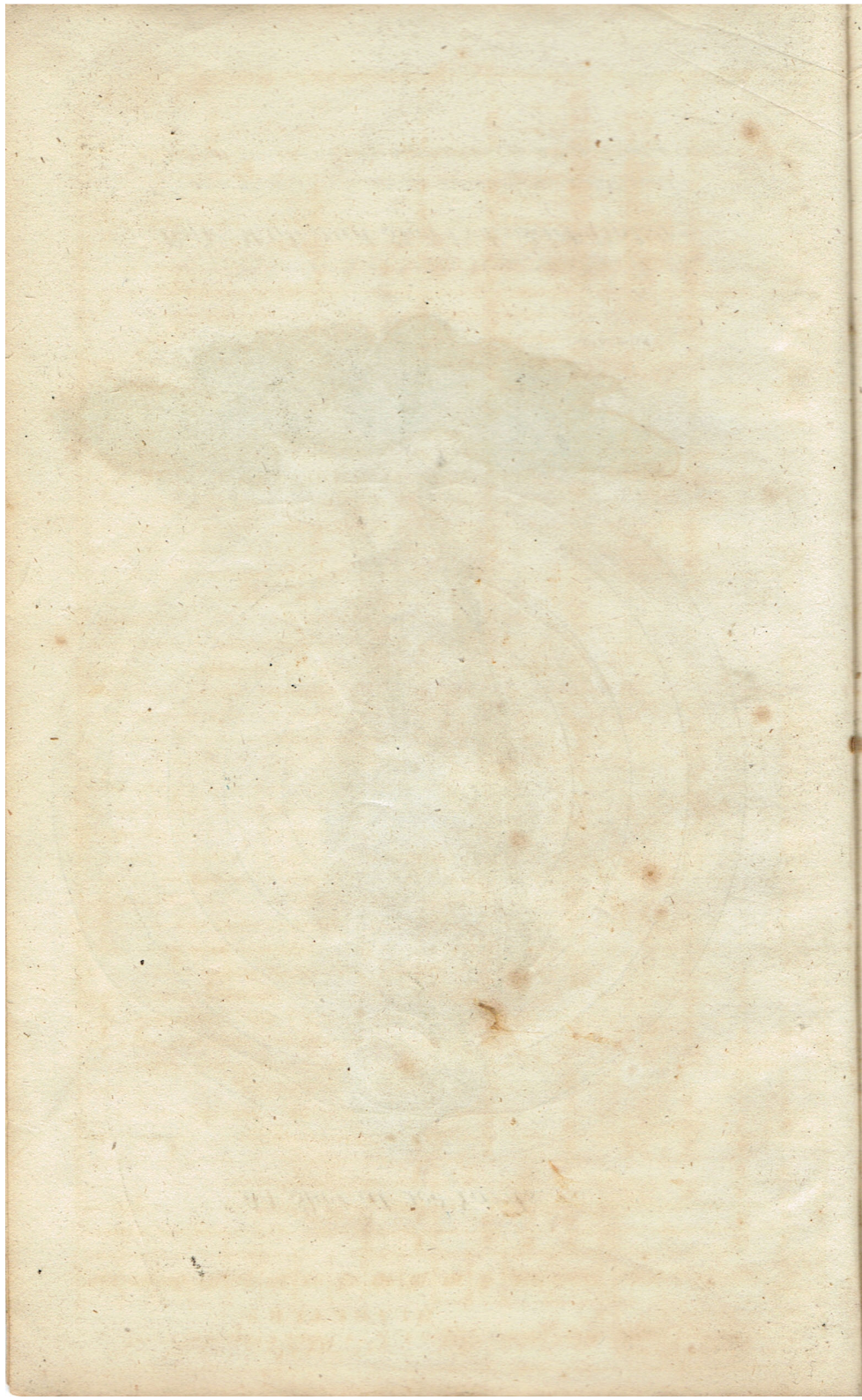
Sign'd..... Benjamin Bloomfield.
Captain of the Royal Artillery & J. Miller
Colonel & Assistant Inspector of the Royal Artillery

Woolwich. 1803.

Weight of Lead Balls from
One to Fifty to the Pound.
16 Ounces a Pound, 16 Drains an
Ounce, 28 Grains a Drain.

By Ezekiel Baker, N. 24 White Chapel Road.
DIAMETERS.

Numb. of Balls	Ounces	Drains	Grains	Numb.	Inch.	8	10	16	20	28	32	40	50	64	80	100	150
1	16			1	1	5		1									
2	8			2	1	2		1			1						
3	5	5	$9\frac{1}{3}$	3	1	1										1	
4	4			4	1			1									
5	3	3	$5\frac{3}{5}$	5		7		1							1		
6	2	10	$18\frac{2}{3}$	6		7						1					
7	2	4	16	7		7										1	
8	2			8		6		1					1				
9	1	12	$12\frac{4}{9}$	9		6									1		1
10	1	9	$16\frac{4}{5}$	10		6										1	1
11	1	7	$7\frac{7}{11}$	11		6											1
12	1	5	$9\frac{1}{5}$	12		5		1						1			
13	1	3	$22\frac{8}{13}$	13		5		1							1		
14	1	2	8	14		5		1									1
15	1	1	$1\frac{13}{15}$	15		5				1							1
16	1			16		5					1						1
17		16	$1\frac{11}{17}$	17		5						1					
18		14	$6\frac{2}{9}$	18		5							1				
19		13	$13\frac{5}{19}$	19		5											
20		12	$22\frac{2}{5}$	20		4	1								1		
21		12	$5\frac{7}{21}$	21		4	1										1
22		11	$17\frac{9}{11}$	22		4		1						1			
23		11	$3\frac{15}{23}$	23		4		1							1		1
24		10	$18\frac{2}{3}$	24		4		1				1					
25		10	$6\frac{18}{25}$	25		4		1								1	
26		9	$28\frac{9}{13}$	26		4		1									
27		9	$13\frac{13}{27}$	27		4			1								1
28		9	4	28		4			1								
29		8	$23\frac{5}{19}$	29		4							2				
30		8	$14\frac{14}{5}$	30		4				1							
31		8	$7\frac{7}{31}$	31		4					1						
32		8		32		4							1				
33		7	$21\frac{7}{33}$	33		4								1			1
34		7	$14\frac{14}{17}$	34		4									1		1
35		7	$8\frac{36}{35}$	35		4										1	
36		7	$3\frac{1}{9}$	36		4											1
37		6	$25\frac{27}{37}$	37		4											
38		6	$20\frac{12}{19}$	38		3		1			1		1				1
39		6	$15\frac{31}{39}$	39		3		1			1		1			1	
40		6	$11\frac{1}{5}$	40		3		1			1		1		1		
41		6	$6\frac{34}{41}$	41		3		1			1		1				1
42		6	$2\frac{14}{11}$	42		3		1			1				1		
43		5	$26\frac{30}{43}$	43		3		1			1					1	
44		5	$22\frac{10}{17}$	44		3		1			1						1
45		5	$19\frac{23}{45}$	45		3		1			1						1x
46		5	$15\frac{19}{23}$	46		3		1			1						
47		5	$12\frac{24}{47}$	47		3		1					1				
48		5	$9\frac{1}{3}$	48		3		1						1			1
49		5	$6\frac{14}{19}$	49		3		1						1			
50		5	$3\frac{9}{25}$	50		3		1							1		1



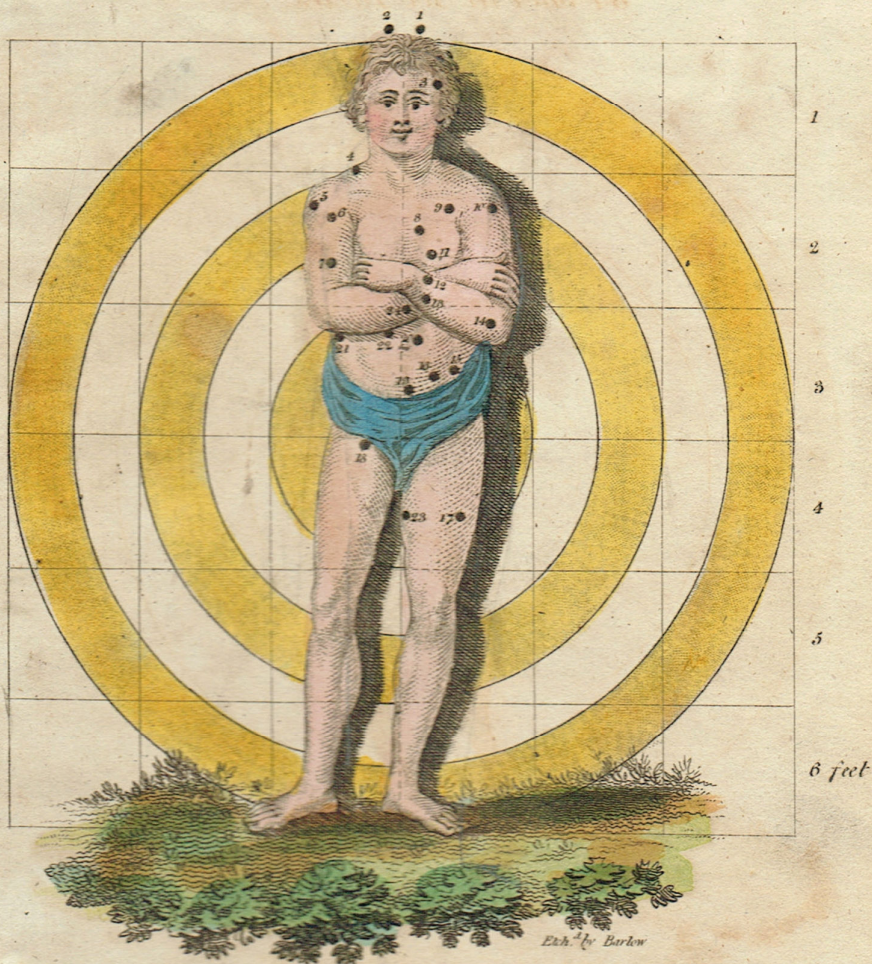
34 Shot at 100 Yards.



Rifle Made and Shot by Ezekiel Baker.

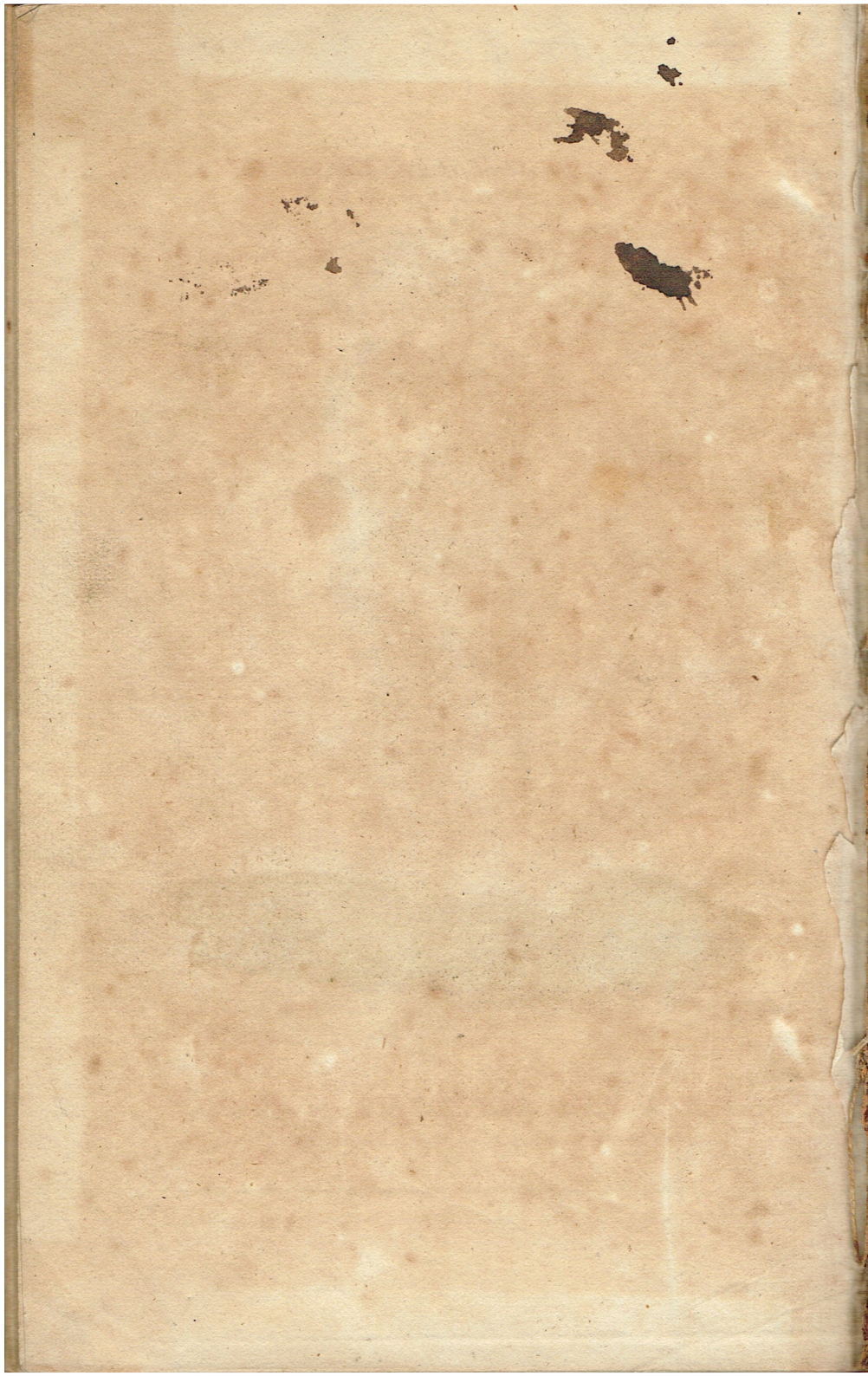
Published by E. Baker Gun-maker No 24 White Chapel Road opposite the Church from Little Alie Street

24 Shot at 200 Yards.



Rifle Made and Shot by Ezekiel Baker.

Full Shot by E. Baker from number 10 & 4 White Chapel Road, opposite the Church (from Little Alie Street)



Laurel Planting
Plant.

June 18th 1677

From the garden

