the striker. By means of a loose collar on this rod, and an ingenious arrangement which will be understood by reference to the section shown in Fig. 197, the rod is caused, after striking, to rebound into the tube, and so leave the sliding breech-block free to move up and down. This arrangement has the advantage that it places the hammer and mainspring in a closed tube, apart from the cartridge, and out of the way of wet, smoke, or dust. The rebound action removes the danger of accidental discharge in loading, to prevent which intercepting bolts are needed in most automatic guns.

The external lever is placed on the right side of the frame, and is thrown downward by the thumb of the right hand, when it is desired to open the breech, and raised again by the forefinger. A spring bears on the axis of this lever in such a way that when a part of the upward or downward movement is effected by the hand, the pressure of the spring completes it. The position of this lever presents the advantage that the rifle can be reloaded in any position of the rifleman—erect, prone, or supine—without removing the butt from the shoulder or much change of the position of the hands, and that the lever is not liable to be impeded by grass or twigs, as is the case when it is placed underneath the gun. The automatic cocking of the lock is effected by the same downward movement of the side lever. The arm on the axle, which lowers the breech, carries also, pivotted to it, a bar by which movement is given to the tumbler, and the lock brought to full cock.

An important improvement is in the striker, which plays freely in the breech-block without a spring. It is provided with a second parallel pin sliding in a hole in the block, and so placed that, should the striker from any cause fail to come back into the block after the discharge, the arm which lowers the latter comes first against the end of this pin, and

compels the striker to retire into its place before it commences to lower the block.

This invention remedies the defect to which all sliding block rifles, that depend upon a spring to retire the striker, are liable, namely, that when the striker becomes stiff or sticks in the cap, and the spring is unable to withdraw it, the breech cannot be lowered, and the rifle is useless.

The lock of this rifle, which is very simple, is fitted with a novel arrangement of the scear and trigger, which is the subject of a separate patent, and applicable to all gunlocks. Its object is to secure a safe full cock combined with a trigger pull which will be easy to the finger. The trigger when pressed moves a short distance, and lifts the spring which holds the scear pressed into the bent or notch in the tumbler; it then touches the scear, the contact being easily felt, and when the aim is perfected a slight additional pressure discharges the arm. On the other hand, when quickly pressed, no appreciable delay is experienced, but the chance of jerking the rifle is much diminished.

The extractor has an accelerated motion, which throws the fired cartridge shell clear of the gun when reloading rapidly. The block and trigger plate are easily detached from the action for the purpose of cleaning, oiling, &c.

The description of the action here given refers to the lettered figure (197).

CHAPTER VI.

MANAGEMENT OF THE TARGET RIFLE.

THE following remarks must not be taken as in any way fully covering the important precautionary measures upon which the successful use of the target rifle in match shooting so largely depends. That the soldier in actual warfare may not be able to put in practice some of the minutiæ, presently to be described, is no reason why in competitive shooting these points should not receive due attention, assisting as they do in bringing out to the fullest extent, the powers of both the rifle and the man. I regret that the limits of space prevent my treating as fully as I should wish, the very interesting questions that are in this chapter only cursorily touched upon.

To proceed at once with our subject: the first point to be considered is that of

POSITION IN FIRING.—The regulations issued by the Council of the N.R.A. prescribe several different positions of the body in firing at various distances, as is well known; and it is of the greatest importance that the shooter should be able to display his ability in these various attitudes of the body, from a military point of view, which requires a considerable blending of physical training, together with skill in the use of the rifle. To thoroughly master each of these positions, those of firing standing, kneeling, prone, and supine (or "back position"), a considerable amount of time and perseverance is required, and no effort should be spared by any one desirous of obtaining the best results in his firing, as all riflemen do, to adapt himself to these positions so com-

pletely, that no perceptible change or variation in any position can be detected when firing at either one time or another. When a man, for instance, fires from the knee, upon one occasion holding his rifle in a certain manner and contorting his body in one style of position, and upon another occasion materially varies these details, can it be expected to be otherwise than that under such circumstances the firer should suffer embarrassment in consequence of what appears to him an unaccountable difference in his firing? The same remarks apply to the other varieties of position, the effects of a changing and uncertain attitude only proving more disastrous as the range fired at increases in distance.

No better groundwork can be found for the three positions of firing—standing, kneeling, and prone—than the well-known "Hythe" instructions as to position, as taught in the Army; but every man can more or less modify these rules to suit his own bodily conformation, and time spent in position drill for the purpose of discovering the little points in these positions that appear to be of value in individual cases is time well spent. Several, if not most, of our most successful rifle shots spare no pains in this particular matter, not only in acquiring their positions in firing, but in keeping up such an amount of drill as enables them to retain what has cost so much pains to acquire. With regard to the "back position" in firing, now so universally adopted at the longer ranges, there can be no question as to its great superiority in assisting accuracy of fire, though objections probably exist against its employment at the shorter ranges for military reasons.

Some time ago several varieties of the back position were in use, and occasionally some of these are seen now; but one particular style of this position seems to be likely to supersede the rest.

It is difficult without illustrations to give a thorough idea of such a position, but the one I allude to is that in which,

while the right hand grasps the rifle in the usual place, the left hand is applied near the "heel" of the stock, the head of the firer receiving support and steadiness from his seizing the cuff of the left sleeve with his teeth; a band or strap is generally fitted loosely over the sleeve cuff for this purpose. The forward part of the rifle is rested in a fork, formed by the legs of the firer as usual. I may give as an illustration the statement made to me by one of our prominent rifle shots "that to obtain his present kneeling position had cost him nearly two years of practice;" this shows conclusively what pains are and must be taken to acquire perfection in what appears at first sight a very subordinate detail in the art of rifle shooting.

AIMING.—The position of the firer being sufficiently perfect to enable him to hold his rifle steadily when pointed at the target as in the act of aiming, we must next consider a few points bearing on this latter process. Of course in the case of ordinary sights it is impossible for the eye to focus simultaneously, or to see with an equal degree of clearness, the three objects involved in the act of aiming at one and the same time. Any effort to do this will be invariably attended with "blurr," or want of clearness of definition, with one or more of the three objects (these being the bar or notch of back sight, the tip or cone of front sight, and the bullseye or point of aim upon the target). What actually does take place is that the sights being brought into approximate alignment, the eye, by an almost instantaneous change of focus, flashes from point to point, and satisfies the firer of the correctness of his aim. He then should be so steady in his position as to be able to get off his shot without disturbing the laying of the rifle in the slightest degree.

When the eye of the firer is incapable of this power of rapidly changing its focus, the man labours under a serious disadvantage as a rifle shot, whatever his other qualifications

in this respect may be. During the last few years it has become the fashion to assist the eye in aiming by the use of colour upon the sights. At first any colours were allowed to be used, and men were to be seen with sights painted partially red, blue, yellow, and a combination of these colours; but it is questionable if the introduction of these primaries offers any substantial advantage over mere black and white. At all events, for various reasons, none but the latter are now allowed, and considerable ingenuity is shown in painting the front sight especially with these tints; annexed is shown three of the more popular styles, but the variations in use are numerous. Fig. 198 is one of the earliest plans adopted, and

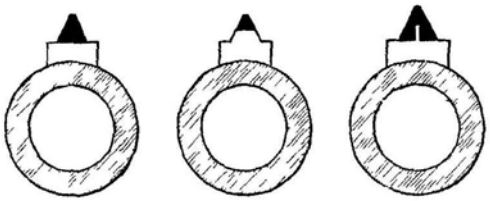


FIG. 198 FIG 199. FIG 200

it will be seen that the "block" is painted white upon its front; while the whole of the cone of the sight, or "barley-corn" as it used to be called, is blackened. The object to be attained by this method of colouring the front sight is the preservation of the angle of elevation, in consequence of the assistance given to the firer in insuring the same amount of fore sight to be taken in when aiming, the cone always being taken in down to the white block, which, when the aim is complete, should be just visible. If it were not for the assistance of the whitened portion of the sight, sometimes in difficult lights some of the block might be included in the aim, thus increasing the angle of fire, and causing a high shot, while the necessity of seeing the white prevents a careless marksman from firing without seeing the cone fully, which would of course reduce the angle and lead to a low shot.

Fig. 199 is simply a modification of the former, made to suit the "fine sight" style of aiming almost imperative at the longer ranges. In Fig. 200 we find that, in addition to affording a check to variations in elevation, an aid in maintaining the lateral direction is attempted; this is effected by a small white line, often only a dot, which is painted upon the centre of the cone. In aiming the visibility of this line above the bar of the back sight checks off the elevation as in the former examples, while the line on the fore sight is made to coincide exactly with the platina line upon the bar of the back sight, thus obviating what has always been a fruitful source of error in aiming with the plain bar of the military back sight, viz., that tendency to wander with the tip of the fore sight to one or other side of the line upon the bar. Every care should be taken to aim with truth and correctness upon the identical spot of the target that it is decided in the mind of the firer is the proper point of aim under the circumstances, for a slipshod style of aiming is easily acquired and difficult to get out of. Some years ago there were many abstruse theories afloat as to the influences upon the aim in consequence of changes of light caused by passing clouds or other causes. Now, I believe, it has been pretty fairly proved that if a man, during such a change, will distinctly make an effort to *see* his sights and point of aim as in his previous shot no material difference in the position of the shot upon the target will be possible. Of course, if from the approach of darkness or fog, he cannot see what he is doing, good results cannot be expected; but many of the calamities occurring to rifle shots in their scoring, attributed to the evil influence of a change of light, may be much more fairly put down to the man's own careless habit of aiming. One thing does affect the aim to an extent not very generally known, and that is, when, from rapid firing or other causes, the barrel gets hot, the radiated heat is communicated

to the air round the front sight, causing, instead of a clear definition of it upon the target, a wavy blurr, and many scores have been spoiled from this cause. While upon this subject it will be well to notice the effect of "mirage" upon aiming with open sights; this peculiar phenomenon is due to a similar cause to the one above mentioned, except that it is the heat radiated from the sun-baked ground, mixed with the moisture that may be raised by evaporation, which produces it, instead of that of the heated barrel, and like the former it causes considerable trouble to rifle shots. Its appearance is well known, and it should be borne in mind that when drifting to the right or left, or streaming upwards, some slight allowance should be made for the effect of its current similar to the allowance made for wind influence. Of course, it does not act upon the bullet as the latter does, but its effect is an optical one, drawing the target in appearance in the direction in which it is streaming, the actual position of the target being a little behind the direction of the stream of "mirage."

Letting off.—The art of discharging the rifle by pressing the trigger without disturbing the aim, would appear at first sight to be an exceedingly simple matter, and one easily acquired, but it is not so. There can be no doubt that perhaps nothing so perplexes the rifle shot during his earlier years of practice more than this particular detail, and perhaps the most difficult part of the business lies in the fact that he is seldom aware of the defect, or to what extent the jerk or tremor imparted to the rifle at the moment of discharge, may interfere with, and, to some extent, upset all the trouble he has taken in aiming, wind allowance, and other preparations for a successful shot. No pains should be spared to get the rifle off in a perfectly undisturbed manner, and much depends upon the position of the hand in firing, that is whether the trigger finger be so disposed as to freely obey the mental

intention to fire the arm; if a cramped and awkward grip of the weapon be indulged in, the free and instantaneous action of the trigger finger is interfered with—this of course may be brought about, especially when a man has a small hand, by the "grip" or "hand" of the stock being of a large and awkward shape, as in the Martini-Henry rifle. In such cases it is found to be almost impossible to use the forefinger upon the trigger in a satisfactory manner, and the second finger is used instead, which gives an increased amount of purchase upon the trigger, this finger exerting more power in this position than the other, but some people with practice, get on very well by firing in this manner. Various modifications of the ordinary trigger have been brought forward from time to time, especially those that are so situated as to be pressed by the thumb of the firer; as yet, however, nothing has surpassed the ordinary arrangement. Probably a false idea of what should be the correct manipulation of the trigger has been caused by the use of the phrase "pull off," as describing the act of firing, there should be no *pull* by the barrel, but as the aim is completed, the pressure of the finger should gradually increase until the rifle is discharged during a moment of perfect aim. Of course the existence of mechanical defects in the lock action of the weapon, whether they be faults in construction or workmanship, will, if sufficiently pronounced, render it impossible to "let off" in a thoroughly perfect manner, and great practice, care, and mental discipline are required to fully enable the rifle shot always to perform this little but important function properly.

ADJUSTING THE BACK SIGHT for elevation and wind allowance is a most important matter with the rifleman, and could not be performed with the accuracy that modern rifle practice requires if it were not for the aid afforded by a little instrument called a "sight elevator." There are numerous forms of this apparatus, one of the most approved being here illustrated.

It will be seen by examining Fig 201 that this instrument is constructed so that, by means of a slide to engage with the bar of the back sight and a screw to raise and lower it, the sight bar can be adjusted vertically upon the sight leaf to the desired angle of elevation required. A scale furnished with a vernier is marked upon one edge, as is shown in the engraving. This scale, as I have before explained, is constructed upon the basis of the distance

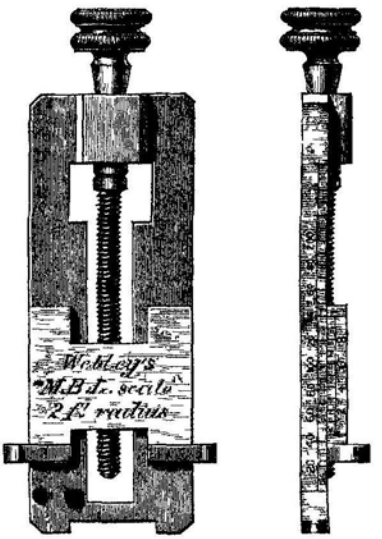


FIG 201. M.B L. SIGHT ELEVATOR.

between the front and back sight—in this case as most suitable to the M.H. and most M.B.L. rifles the distance is two feet. The scale is so divided that with its vernier it affords us spaces practically equal to one minute of angle upon a great circle having a radius of two feet, or the distance between the sights; consequently we can move the sliding bar such a quantity as will cause a corresponding value upon the target; thus, if when firing at 500 yards, we raise the bar the amount of one point upon our sight elevator, the bullet should strike *five* inches higher than before upon

the target. If this process is applied at 1000 yards, the position of the bullet is *ten* inches higher upon the target, and so on at all ranges where the tangent leaf of the back sight is used. This mode of graduating a sight scale affords an easily remembered proportion between the movement of the sight slide and the corresponding difference of position of the bullet upon the target. A farther use can be made of this pattern sight elevator, as in the accompanying illustrations, where it is shown as applied to the sight leaf of a M.H. rifle,

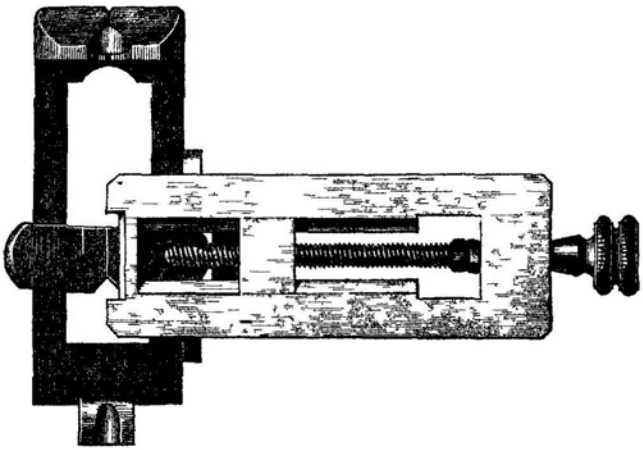


FIG 202

so as to mark on the sliding bar the amount of lateral allowance required by a certain amount of side wind.

If when the sight elevator be applied, as in the drawing, to the sight of a M.H. rifle, and set so that the lower edge of the gauge coincides with the middle line upon the bar, the scale will read about 57 or 60 points as a zero; if it is then set to 39 or 40 it will be found to coincide with the right side line, and at about 77 it will agree with the left-side line, showing that the space usually inclosed between the central and side lines with this rifle is equal to about 19 points on the scale of the sight elevator; but I have shown that these points have a value on the target according to the range at which they

may be used, and this value holds good for both lateral and vertical movement; therefore, whatever degree of strength we may estimate the wind as blowing with, we can easily mark upon our bar with the help of this gauge—a line that if our judgment be correct will enable us to continue our aim upon the bullseye. For instance, in the illustration of the sight leaf given herewith (Fig. 203), it will be perceived that an auxiliary wind line has been marked upon the bar midway between the permanent central and side lines; this has required 9 points of movement from the zero given above, and at 500 yards the wind allowance obtainable with such a line would be 5in. × 9=45in., or 3ft. 9in.; at 1000 yards, 10in. × 9 = 90in. or 7ft. 6in., and so on at intermediate ranges.

FIG. 203. MARTINI-HENRY BACK SIGHT.

This rule holds good, whatever the distance between the sights of the rifle may be, though the scale must be cut accordingly, the same scale not suiting rifles having their sights any closer together or wider apart than the radius the scale is arranged from.

I herewith give a table calculated some years ago, of the wind allowances in feet upon the M.H. rifle back sight; it is calculated for every 100th of an inch available between the central and side lines, the total space on each side being approximately one-eighth of an inch.

WIND GAUGE ALLOWANCES IN FEET.

Range.	·01	·02	·03	·04	·05	·06	·07	0 8	0·9	.10	.11	·12
500yds. .	62	1·25	2·14	2·50	3·12	3·75	4·37	5·00	5·62	6·25	6·87	7·50
600 „	·75	1·50	2·25	3 00	3·75	5·00	5·25	6·00	6·75	7·50	8·25	9·00
700 „	·87	1·75	2·60	3·50	4·37	5·25	6·12	7·00	7·87	8·75	9·62	10·50
800 „	1·00	2·00	3·00	4·00	5·00	6·00	7·00	8·00	9·00	10·00	11·00	12·00
900 „	1·10	2·25	3·37	4·50	5·62	6·75	7 87	9·00	10·12	11·25	12·37	13·50
1000 „	1·25	2·50	3·75	5·00	6·25	7·50	8·75	10·00	11·25	12·80	13·75	15·00

Now that the sliding wind gauge bar is allowed to M.B.L. rifles, of course the graduations thereupon should be upon a similar basis, the sight elevator not applying to them for wind gauge allowance—only to plain sight bars like those upon the M.H. rifle.

It would be possible to carry this chapter to much greater length if the several important features in connection with target rifle-shooting were here investigated exhaustively; but as this volume is now much larger than it was intended to be, I must perforce leave these points until some future opportunity presents itself of ventilating them in the columns of the *Field*. I must conclude this section of my labours by again remarking that many important questions I have touched upon in connection with this subject require fuller and further investigation; and my readers must bear in mind that the columns of the *Field* are always open to temperate discussions relating to any and every thing of interest to the modern sportsman. As an appropriate conclusion to this section, I append a copy of the scoring made in the last great shoot of the Midland Rifle Club, being their annual competition for their Club trophy, shot for with M.B.L. rifles, having military sights and no cleaning out or sighting shots allowed, nor coaching, each member, of course, striving for the coveted prize. I believe this shoot is, up to its date, one of the finest exhibitions of the accuracy of the modern M.B.L. rifle that we have on record; and I am glad that, through the courtesy of the hon. sec. of the club, I am able to give it shot for shot as a standard of excellence that will not probably be easily surpassed at present.

MIDLAND RIFLE CLUB.

Date, Oct. 6, 1883. *Weather, fine, moist. Light good, fading at* 1000 *yards. Wind, left rear, moderately fresh, variable at* 900 *yards. Fifteen shots at each range—shot for shot—no sighting shots.*

Rifle.	Names.	800 Yards.														Total.
W. Webley	F. Osborne...	3	5	5	4	3	4	5	4	5	5	5	4	5	5	5	67
,, ...	G. H. Hart...	5	5	5	3	5	4	5	5	4	5	5	5	4	3	5	68
,, ...	H. Webley...	2	5	5	3	3	4	4	0	2	5	5	4	5	5	5	57
,, ...	R. H. Jones .	R	5	4	5	5	4	5	5	5	5	2	5	5	4	5	64
,, ...	H. Bates ..	3	4	3	3	5	5	5	2	5	3	4	5	5	5	5	62
F. Turner	J. Foulkes ...	5	5	4	5	4	4	5	5	4	3	4	5	4	5	5	67
,, ...	T. Turner ...	3	4	5	2	3	5	5	3	5	5	3	4	3	4	5	59
D. E. Metford . .	J. White	5	4	5	5	5	3	0	3	3	4	4	4	5	4	5	59
		900 Yards.														
	F. Osborne...	3	5	4	5	3	2	5	4	3	5	3	4	5	4	3	58
	G H. Hart ..	5	3	4	5	4	5	5	4	5	3	4	4	5	4	3	63
	H. Webley...	5	5	3	3	2	3	5	4	4	4	5	5	4	5	4	61
	R. H. Jones .	3	5	5	5	4	5	4	4	2	5	2	3	4	2	4	57
	H. Bates . .	3	5	2	5	3	5	5	5	5	5	4	5	5	4	0	61
	J. Foulkes ...	3	4	5	0	5	5	4	5	4	3	4	3	3	4	5	57
	T. Turner . .	5	4	3	4	5	4	4	5	5	4	3	2	3	4	4	59
	J. White	3	3	3	5	5	5	3	5	4	2	5	5	3	4	4	59
Aggregate		**1000 Yards.**														
193	F. Osborne...	3	3	5	5	5	5	5	4	5	4	4	5	5	5	5	68
188	G. H Hart ..	4	5	4	2	4	4	3	4	3	5	5	3	4	2	5	57
181	H. Webley...	5	4	4	5	3	5	4	4	4	3	4	5	4	4	5	63
178	R. H. Jones .	3	4	3	5	3	4	5	3	3	5	2	5	5	5	2	57
177	H. Bates ...	4	5	3	3	4	3	3	4	2	5	2	5	3	3	5	54
177	J. Foulkes ...	3	5	5	4	2	4	0	4	2	3	5	4	4	5	3	53
175	T. Turner ...	3	5	5	5	3	4	5	5	3	3	3	5	3	3	2	57
174	J. White ...	4	4	4	3	3	4	5	5	3	3	4	4	3	2	5	56

Signed FRED. A. BIRD, Hon. Sec.

Range total	800 yards	503
Average individual score...	,, ...	62·875
Range total	900 yards	475
Average individual score...	,, ...	59·375
Range total.....	1000 yards	465
Average individual score ...	,, ...	58·125

Average aggregate score ..... 180·375.

GLOSSARY OF TERMS USED IN VOL. II.

BORE, LARGE.—A rifle in which the diameter of the bore is greater than ·577in.

BORE, SMALL.—A rifle in which the diameter is not more than ·577.

DROP OF BULLET.—The distance between the line in which a bullet is projected and the point to which it is carried down by force of gravity; in other words, the space between the straight line of fire and the curved line of trajectory (see page 131).

ELEVATION.—The extent to which the muzzle of the gun is raised in order to counteract the tendency of the bullet to drop towards the earth. The "Line of Elevation" is the same as "Line of Fire" or "Line of Projection"

ENERGY.—The amount of force or working power existing in a moving projectile (see page 233)

EXPRESS RIFLE.—(See pages 11—28).

FLIGHT, LINE OF.—Same as "Trajectory"

FLIP.—A term used by Mr Metford to indicate a peculiar movement of the barrel, which causes the projectile to depart from the line of fire in a direction different from the jump (see pages 221 and 354).

INITIAL VELOCITY.—A term for which "Muzzle Velocity" is now usually substituted as being more accurate.

JUMP.—An effect of recoil which causes the projectile to depart from line of fire, in an upward direction.

LINE OF AIM.—The prolongation of a line drawn from the back to the front sight (see page 130).

LINE OF FIRE.—A prolongation of the long axis of the barrel (see page 130).

MAGNUM.—A term applied to a rifle carrying an unusually heavy bullet.

MUZZLE VELOCITY.—The speed of the bullet as it leaves the muzzle.

POINT BLANK.—An obsolete term of indefinite meaning (see page 14).

PROJECTION, LINE OF.—See "Line of Fire" and "Elevation."

SIGHT, APERTURE.—A disk with a small hole in it for the sight.

SIGHT, BACK.—An addition to the breech end of the barrel, or to the stock, intended to regulate the aim by giving the proper amount of elevation.

SIGHT, FINE.—When only a small part of the front sight is visible (see page 343).

SIGHT, FRONT.—An addition to the muzzle of the barrel for the same purpose.

SIGHT, FULL.—When the whole of the bead appears in the V of the back sight (see page 343).

SIGHT, LINE OF.—Also called "Line of Aim."

TRAJECTORY.—The curved line which the centre of the ball takes after leaving the barrel (see page 130).

TRAJECTORY HEIGHT.—The distance between the highest point of the trajectory and the line of sight (see page 130)

INDEX.

INDEX TO ADVERTISEMENTS.

MISCELLANEOUS—

GUNPOWDER.

TRADE  MARK.

EACH FLASK THUS LABELLED.

MESSRS. JOHN HALL & SON

BEG respectfully to direct the attention of Sportsmen to the varied and well-known Brands of their manufacture, which, with the traditions and experience of very many years, are yet constantly adapted to the enlarged development of practical science in Guns.

Their familiar SPECIALITIES—the "RIFLE," "GLASS," and "TREBLE STRONG" POWDERS, in all Sizes of Grains from Nos. 1—8)—will be found worthy of their fame; while the Brand recently introduced with so much success—"FIELD B."—specially prepared for Choke-bore Guns, and giving admirable results in competitive Matches, brings up Black Gunpowder to its highest present excellence, and insures those trustworthy and calculable results which *can be obtained by no other form of explosive.*

Messrs. HALL'S GUNPOWDER may be obtained of all Gunmakers and dealers; and Sportsmen who do not fill their own Cartridges will do well to insist that the Powder of their choice is used in the cartridges they buy.

N.B.—Sportsmen in India and the Colonies are urgently solicited to see that they are supplied with *the highest class of Sporting Powder*, and not to be satisfied with the lower qualities largely in demand for ordinary commercial purposes, which, while of excellent proportionate quality, differ widely from the ammunition on the use of which a man may safely stake his reputation, and, as has oftened happened, his life.

All Messrs. HALL'S Best Sporting Powder sent to India now bears this additional Trade Mark.

TRADE 

MARK.

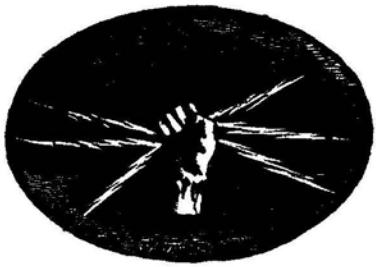
MILLS:—FAVERSHAM, KENT; LOCHFYNE, ARGYLLSHIRE.

Established by Queen Elizabeth, A.D. 1565.

Office: 79, Cannon Street, London, E.C.

SCHULTZE GUNPOWDER.

GRANULATED.

TRADE  MARK.

WHOLESALE ONLY, AT THE COMPANY'S OFFICES.

32, GRESHAM-ST., LONDON, E.C.,

And to be had Retail and in Cartridges from all Respectable Dealers.

THE REPUTATION OF THE SCHULTZE GUNPOWDER IS LARGELY EXTENDING AMONGST SPORTSMEN, WHO APPRECIATE ITS

HIGH PENETRATION, WITH LESS SMOKE, LESS FOULING, AND LESS RECOIL THAN BLACK POWDERS.

It was used by all the Prize Winners at the International Pigeon Shootings 1881, 1882, and 1883.

SCHULTZE GUNPOWDER versus BLACK GUNPOWDER.

Competition at the Gun Club, July 5th, 1882, for a Cup and Sweepstakes.

CONDITIONS—Those using Black Powder allowed to stand one yard nearer than their respective Handicap distances.

		RESULT.																			
1st.	Mr. E. B. Cunliffe, 29 yards. "**Schultze**" Powder.....	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1		
2nd.	Mr. Pearce, 28½ yards. "**Schultze**" Powder.....	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0		
3rd.	Mr. Turner-Turner, 31 yards. "**Schultze**" Powder.....	1	1	1	1	1	1	1	0												

There were other Competitors.

N.B.—There is only one quality of

"SCHULTZE GUNPOWDER."

Each Canister bears a Label with Trade Mark as above.

[P.T.O.

[SEE PREVIOUS PAGE.

"THE FIELD," May 27, 1882.

"Bison" asks for information with regard to oval smooth-bore rifles. I have just returned from a shooting trip to Ceylon. I took out one of Lancaster's ·500 smooth oval-bore double hammerless Express rifles. I found that it was very accurate, and made better penetration than other rifles on the grooved system of rifling, in some of which the weight of the bullet was not so well regulated to the charge of powder. It never got leaded, and was easy to clean, and, though roughly used in a hot, damp, trying climate, never got out of order; and by using a hollow or solid bullet, as the case required, I was able to kill every sort of game with it, from peacocks to elephants. . . . . H. N. B. GOOD.

The Priory, Berwick St. John, Wilts, May 23

"FIELD" TRIAL OF OVAL-BORE EXPRESS.

In "THE FIELD" of Feb. 17, 1883, the Editor writes as follows:

On Monday morning last, after several adjournments owing to the weather, we proceeded to Mr C. Lancaster's ground at Wormwood Scrubbs, with a view to witness a trial of one of his oval-bores, which we have been requested to do by several correspondents. The morning was by no means favourable to good shooting; indeed, the wind was so high as to tax the strength of the shooter in keeping the barrel steady. It blew from the right front of the range, and occasionally with great force, with a few drops of rain, which necessitated an umbrella being held over the front sight.

The rifle was a single ·500 oval-bore, with Mr. Field's action, weight 10lb. 6oz., length of barrel 26in. We began with a series of ten shots, with 160gr. C. and H. No. 6 and 600gr. pure lead bullet, having a cavity in front, 1-16th in. in diameter, and half the depth of the bullet distance 100 yards.

First eight shots were grouped in a space of 5in. by 4in., the ninth 1¼in, and the tenth 4in. to leeward of the group.

Second series.—Powder, 160gr.; lead 440gr pure soft lead, with a cavity in front filled with wax. Eight shots were fired, of which the first six were in a group 3¼in. square; the seventh was 6in. from the centre of this group to the top right. Mr. C. Lancaster, having previously stated that he was hitherto making no allowance for wind, now declared to make a bull (1¼in.) by allowing for wind, and did so.

This performance, even without taking into consideration the gusts of wind which were blowing, is a very good one, but, making allowance for this drawback, our readers will, we think, agree with us that it was highly satisfactory to Mr. C. Lancaster, who, besides being the maker, shot the rifle himself

The initial velocity of the heavy bullet was about 1620ft. per second, and that of the lighter one 1750ft., as taken by the chronograph belonging to Messrs. Curtis and Harvey; consequently, there should be a difference of about 1in. in the elevation of the two at 100 yards on this calculation, yet in practice, though Mr. C. Lancaster took the same sight throughout, they were as nearly as possible alike, which can only be accounted for by the greater "jump" given by the heavier ball. This is a very interesting fact in support of the "jump" theory.

NOTES ON RIFLES.

"THE FIELD," MARCH 17, 1883.

SIR,—Having read with much interest the various letters that have appeared in your columns respecting rifles for deer stalking, I beg to hand you return of my own shooting during the past season, with one of Charles Lancaster's Smooth Oval-bore Express Rifles, ·450 bore, double barrel.

The first day of the season I killed five stags—viz., two rights and lefts, and one single. I then went on killing without a miss till I reached twenty-five, and in the afternoon of one day I killed a right, and left and a single. I then killed on up to my fortieth, when I made two misses, and then to fifty-five without a miss. I killed seventeen stags in four days, bonâ-fide stalking.

This finished the season for stags. In due time I began the hinds, and killed forty-five without a miss.

I should mention that all these slain beasts were not picked chances, but that I took them as they came at ranges varying from 40 to 200 good yards, the beasts in all positions and paces; *i.e.*, standing in every position, walking, lying down, and galloping, and all sheer stalking.

This speaks volumes for the accuracy of the rifle, and I believe it is the best that ever was made.

In conclusion, I trust that my record may be the means of showing stalkers that a rifle can be built to give such grand performances, and with little or no recoil to the shooter, owing to the smooth interior of the barrel. FRANK MORRISON.

8, Cromwell-houses, South Kensington, S.W., March 14, 1883.

[P.T.O.

CHARLES LANCASTER

Begs most respectfully to inform his Patrons and Sportsmen that the following are his CASH PRICES for

for this Season, viz.:

12-Bore C.F., 3drs., 1⅛oz., at 10s. per 100.

16-Bore C.F., 2¾drs., 1oz., at 9s. 6d. per 100.

20-Bore C.F., 2drs., ¾oz., at 8s. per 100.

Eley's Best Cases, loaded with Curtis and Harvey's best powder, four best wads, and hard shot, thin packing cases included.

Schultze or "E.C." Powder 1s. per 100 extra.

Stout Cases FOR RAIL, 6d. first 200, adding 2d. each additional 100.

N.B.—ALL ORDERS MUST BE ACCOMPANIED BY A REMITTANCE.

Packed in extra Stout Packing Cases, lined with tin, for India, at 10s. per 1000 extra.

C. L. delivers Loaded Cartridges at Bombay, Madras, or Kurrachee, at the following rates for freight, plus the price of Cartridges and Packing Cases, viz :—

1,000 at ...	£2	2	0	5,000 at	£3	0	0	9,000 at ...	£4	15	0	17,000 at	£7	0	0
2,000 at	2	10	0	6,000 at	3	10	0	10 000 at	5	0	0	18,000 at	7	5	0
3,000 at .. .	2	15	0	7,000 at	4	0	0	15,000 at .	6	0	0	19,000 at	7	10	0
4,000 at .. .	2	17	6	8,000 at	4	10	0	16,000 at	6	10	0	20,000 at	7	10	0

N.B—Cartridges cannot be shipped direct to Calcutta, only *via* Bombay

Insurance charged at the rate of ONE per cent extra

C. L. begs to draw the attention of Sportsmen to the following figures, giving a return of the Cartridges he has supplied, viz.:

89,538 in 1880.

322,222 in 1881.

442,263 in 1882.

505,664 in 1883.

Clearly demonstrating that his Cartridges are yearly gaining in favour, owing to the superior quality of materials used, and the excellence and regularity of the loading.

LOADING ROOM OPEN TO INSPECTION AT

151, NEW BOND STREET, LONDON, W.

DETAILED PRICE LISTS ON APPLICATION.

ESTABLISHED 1826.

[SEE PREVIOUS PAGE.

IMPROVED HAMMERLESS GUN,

With Rigby's Patent Vertical Grip and Safety Bolting.

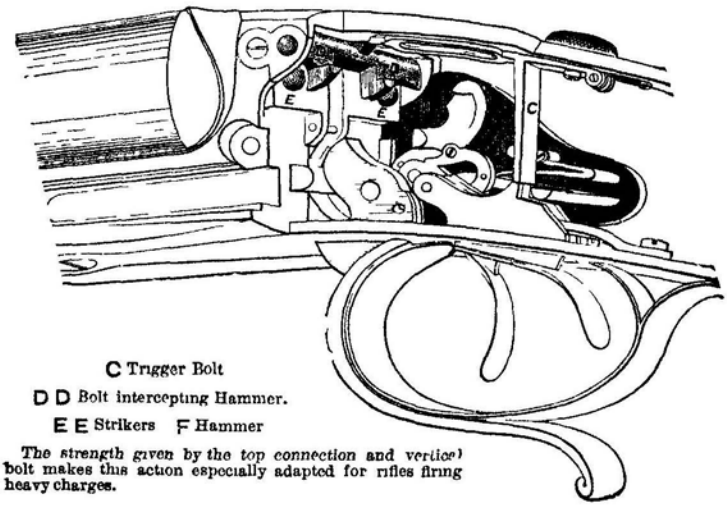
A SPECIAL MAKE OF STEEL BARRELS.

The Editor of the *Field* in his report of the Gun, January 7, 1882, says:

"In this action all our ideas are carried out to the fullest extent."

"Altogether we consider this the best safety bolt we have seen."

"In Mr Rigby's Gun the action is as strong, or even stronger than any of its rivals, the barrels being kept down by the well-known Purdey bolt and the spring at the angle prevented by a top connection, into which travels upwards a perpendicular bolt similar to that designed by us, but improved upon in a simple manner by leaving the metal of the body intact between it and the barrels, by which it is well supported as if it were a part of the action itself."



C Trigger Bolt

D D Bolt intercepting Hammer.

E E Strikers F Hammer

The strength given by the top connection and vertical bolt makes this action especially adapted for rifles firing heavy charges.

RIGBY'S EXPRESS RIFLES.

Celebrated for their Killing Power, Accuracy, and First-class Workmanship, insuring Durability.

Gauges ·577, ·500, ·450, ·400, ·380; Weights from 11lb. to 5lb.

The Annual Sportsman's Contest in India was won with Rigby's 450 Double Express the last three years.

BREECHLOADING, MATCH, MILITARY, AND EXPRESS RIFLES WITH RIGBY'S IMPROVED ACTION.

ALL SPORTING NECESSARIES SUPPLIED.

PRICE LISTS, &c., ON APPLICATION TO

JOHN RIGBY & CO.,

24, Suffolk-St., Dublin; and 72, St. James's-St., London, S.W.

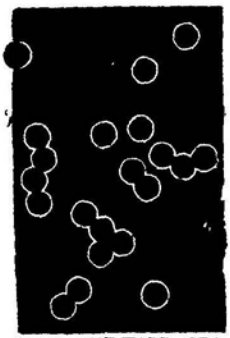
BLAND'S SPECIAL RIFLES.

NEW HAMMERLESS SELF-EXTRACTING
ROOK & RABBIT RIFLE

In ·230, ·300, and ·360 Bores.

PRICE 10 GUINEAS.

SIMPLICITY OF ACTION. ACCURACY OF SIGHTING.
SPECIAL NON-FOULING RIFLING.



SCALE: ONE-HALF SIZE.

Authentic Diagram of 21 consecutive shots made with the above Rifle, ·360 bore, at 100 yards, WITHOUT CLEANING.

Also a SPECIAL RIFLE, on the same system, prepared expressly for the Colonies; ·440 bore, using the Winchester cartridge, and sighted to 250 yards.

Price 10 Guineas.

The Editor of "Land and Water," before whom this Special Rifle was recently tested, in his issue of April 12 last, writes "NOT ONE SHOT WOULD HAVE MISSED A ROOK, AND THIS, AT 250 YARDS, IS ADMIRABLE WORK."

BLAND'S
SELF-EXTRACTING ARMY REVOLVER.

CALIBRE ·455.

Price £2. 17s. 6d.

"The Field," of March 24 last, says: "We have tested this revolver with nearly one hundred rounds, without fouling so as to create any difficulty in manipulation. With regard to accuracy, WE HAVE MADE EXCELLENT PRACTICE WITH IT: that is to say, AS GOOD AS WITH ANY REVOLVER WHICH WE HAVE YET TRIED."

ADAMS and CO.'S

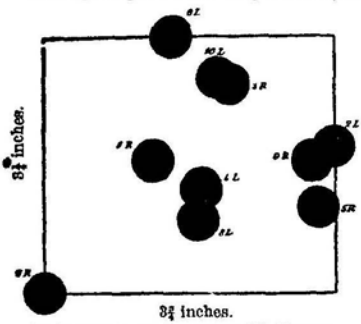
New Hammerless Gun "THE RELIANCE."

With AUTOMATIC INTERCEPTING PATENT BLOCK SAFETY,

By which the Hammers remain perfectly blocked until the moment of pulling the triggers. Absolutely safe against accidental discharge.

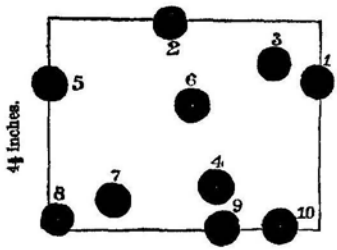
EXPRESS DOUBLE RIFLES, FROM ·360 TO ·577 BORE.

The diagram given below is a *fac simile* (reduced) of the shooting of one of our ·577 EXPRESS DOUBLE RIFLES, and published in the "Field," July 18, 1883. It was shot from Mr. Jones's machine rest in the presence of the Editor of the "Field."



10 CONSECUTIVE SHOTS AT 100 YARDS.

The Editor remarks: "To our great astonishment we got the diagrams made, which we publish this week, in one case from a ·450 bore, recently made by a well-known firm, and in the other from a ·577 bore, made by Messrs. Adams, of Finsbury Pavement, about a year ago, since which it has been used in India by a well-known sportsman. The ·577 diagram is a most excellent one, beating very considerably repeated trials from the shoulder From the shoulder, the best diagram made was 6in. × 4½in From the rest, the annexed splendid diagram was obtained; the shots are numbered R. and L., and it will be seen the group is quite free from any kind of uniformity, the shots being spread indiscriminately."



"FIELD" RIFLE TRIAL AT WIMBLEDON.
OCTOBER 6TH, 1883.

Fac simile (reduced) of diagram made from the shoulder with Adams and Co.'s ·500 bore Express Double Rifle, at 150 yards, being the best diagram of the class made at that range.

ADAMS & CO.'S
MARTINI-ZELLER PATENT RIFLES.

FOR ROOK, RABBIT, AND SMALL DEER SHOOTING.

Self Cocking. Ejects the fired cartridge clear of the rifle. Accuracy of shooting unsurpassed.

·380 Bore, price £3; ·360 Bore (extra quality), price £4.

HAMMERLESS AND HAMMER EJECTOR ROOK RIFLES, ·300 Bore and ·360 Bore.

GUN, RIFLE, AND REVOLVER MANUFACTURERS,

32, FINSBURY PAVEMENT, LONDON, E.C.

PRICE LISTS POST FREE.

FRASER'S

PATENT SIDE LEVER EXPRESS SINGLE RIFLE.

In strength and simplicity of lock mechanism equal to any Military Arm. It forms, when fitted with a barrel on our improved system of rifling, one of the most effective sporting weapons yet produced.

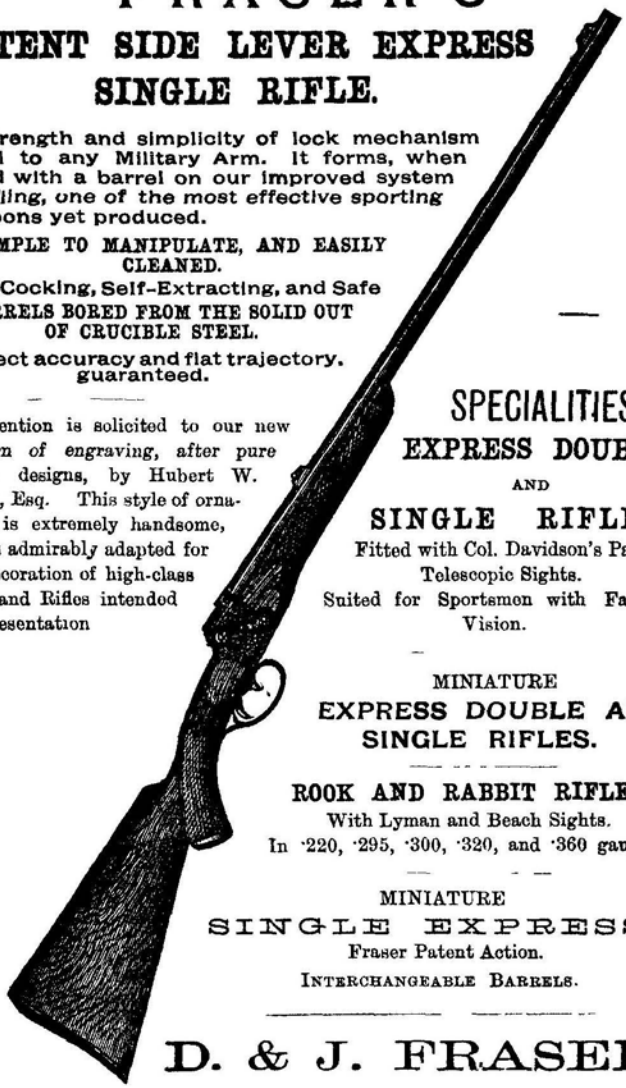
SIMPLE TO MANIPULATE, AND EASILY CLEANED.

Self-Cocking, Self-Extracting, and Safe

BARRELS BORED FROM THE SOLID OUT OF CRUCIBLE STEEL.

Perfect accuracy and flat trajectory. guaranteed.

Attention is solicited to our new pattern of engraving, after pure Celtic designs, by Hubert W. Paton, Esq. This style of ornament is extremely handsome, and is admirably adapted for the decoration of high-class Guns and Rifles intended for presentation



SPECIALITIES.

EXPRESS DOUBLE

AND

SINGLE RIFLES.

Fitted with Col. Davidson's Patent Telescopic Sights.

Suited for Sportsmen with Failing Vision.

MINIATURE

EXPRESS DOUBLE AND SINGLE RIFLES.

ROOK AND RABBIT RIFLES,

With Lyman and Beach Sights.

In ·220, ·295, ·300, ·320, and ·360 gauges.

MINIATURE

SINGLE EXPRESS.

Fraser Patent Action.

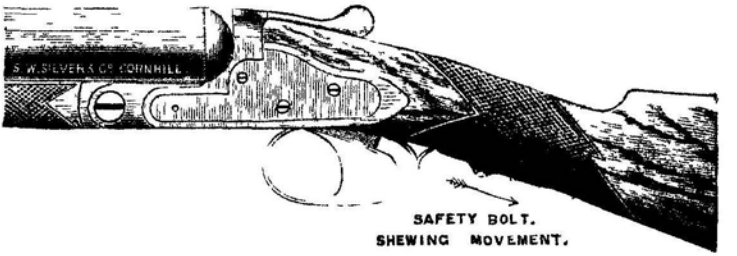
INTERCHANGEABLE BARRELS.

D. & J. FRASER,

4, LEITH STREET TERRACE, EDINBURGH.

Patentees and Manufacturers of the Match Rifle adopted by the National Rifle Club of Scotland.

S. W. SILVER & CO.'S HAMMERLESS GUN.



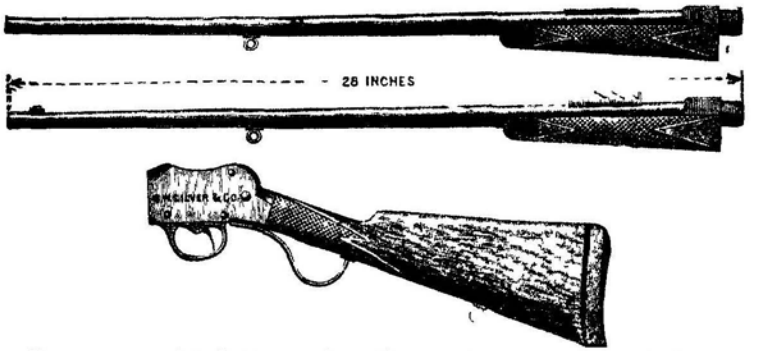
SAFETY BOLT.
SHEWING MOVEMENT.

Fitted with the "Automatic" Safety Bolt which effectually Locks BOTH TUMBLERS AND TRIGGERS, and they are released only in the act of firing —immediately the gun is taken from the shoulder either or both barrels are automatically at *safety*

This Safety Bolt is quite distinct from anything introduced before, and can be applied to every system of hammerless gun or rifle in use

On account of the simplicity of these weapons they are moderate in price, and suitable for Foreign use

S. W. SILVER & CO.'S PATENT "TRANSVAAL" RIFLE AND GUN.



Forming a complete Battery, and combining in one weapon with *interchangeable* Barrels, the means of using different kinds of Ammunition according to the variety of Game to be met with The arrangement of the Battery depends upon the requirements of the Sportsman Each Battery is packed with all the necessary Moulds and Fittings for each Barrel in a compact case —See Testimonials

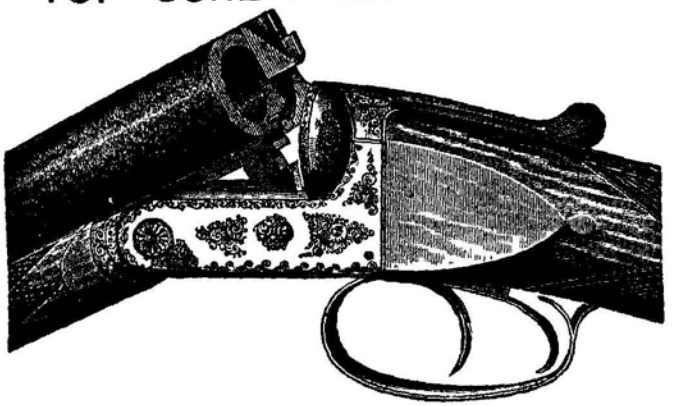
ILLUSTRATED CATALOGUE, with full particulars of above, and of every ARTICLE of EQUIPMENT for SPORTSMEN, COLONISTS, SETTLERS, EXPLORERS, and TRAVELLERS, on application to

S. W. SILVER & CO, 67, Cornhill, London

W. R. LEESON'S

PATENT

TOP SCREW GRIP ACTION.



The Editor of the "Field," in his review of the Gun, remarks:

"During the last few weeks we have received for notice in 'The Modern Sportsman's Gun' several novelties which there has not hitherto been time or space to notice in the 'Field.' For the benefit, therefore, of those who do not see the book, we insert descriptions of them in our columns, commencing with the above Gun, which was brought to our notice by Mr Leeson, of Ashford in the shape of a beautifully designed and finished pigeon gun, built for a well-known performer at the traps. In this gun the chief novelty is the bolting of the top connection, which is usually carried out either by a snap-bolt, as in the Westley-Richards gun, or by a cross-bolt, as in the Greener treble-grip. In neither of these, however, is there any grip or draw, in which resides the great power of the 'double grip,' so well known to all modern shots; but in the new top grip, as introduced into Mr Leeson's gun, an absolute grip is effected, either with or without a doll's head to assist it. On a careful inspection it will be seen that this action is full of merit, being exceedingly strong, working in all its parts very smoothly, and cocking the tumblers with remarkable ease. This last point is effected, partly by a careful adaptation of the levers, and partly by reducing the strength of the mainspring, and at the same time lengthening the throw of the tumbler, by which the breaking of the cap is ensured; while, at the same time, the force required to open and cock the gun is greatly reduced. In our opinion, this action is by far the more pleasant to handle than any barrel cocker we have yet seen, and we have proved by experiment that the cap is well broken by the reduced spring. The strikers are separate from the tumblers, in which respect they differ from the ordinary Anson and Deeley gun, being let in from the front and provided with shoulders, which intercept the gas escape to a very great extent. The barrels are of Siemen's steel. We congratulate Mr Leeson on both the principle and workmanship of the gun exhibited to us.'

It will be seen from the above excellent authority that this action is the strongest made, and therefore especially suitable for Rifles when large charges are used, and is equally adaptable for guns and rifles with or without hammers.

EXPRESS DOUBLE RIFLES, with this action, from **£26.**

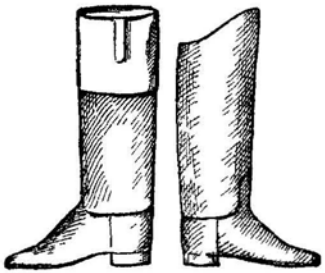
HAMMERLESS EJECTOR ROOK and RABBIT NON-FOULING RIFLES, of either ·220, ·300, or ·360 bore, **£9 9s.**

Ditto, with Hammers, from **£4 15s.**

SPECIAL.—·300 bore **HAMMER ROOK RIFLE,** the same pattern as supplied to H.R.H. The Duke of Edinburgh, **£10 10s.**

DRAWING AND PRICES ON APPLICATION.

ASHFORD, KENT.



MILITARY.
HUNTING.
FISHING.
SHOOTING.
WALKING.

HIGH-CLASS BOOTMAKERS.

FAGG BROTHERS,

29, HAYMARKET.

LADIES' RIDING AND SHOOTING BOOTS.

LADIES'
GLOVE KID,
GLACE KID,
BUTTON, AND
BALMORAL BOOTS.

SENT SAFE TO ANY PART OF THE WORLD.

T. A. JONES'S

IMPROVED LEVER

OR

HORSEMAN'S WATCH,

FOR FIELD, ROAD, OR CAMPAIGN

TIME UNAFFECTED BY RIDING.

COMMENDED BY "THE FIELD."

With reference to these Watches "The Field" of June 5, 1875, says

"Our own experience is that although we have spared neither expense nor trouble, we have never until now been able to procure a watch which would stand the saddle. We have never found it vary from the true time more than half a minute a week when riding two or three times, and not more than a few seconds on those rare occasions when during the seven days we have not been in the saddle more than once. WE CAN CONFIDENTLY RECOMMEND MR. JONES'S WATCH."

And again on Jan 12, 1878

"Among the numberless questions on all sorts of subjects addressed to us by our correspondents, we have recently been twice asked the following 'How is it that my watch goes well in London but is constantly driving me in the country?' . . . WE ADVISED HIM TO OBTAIN ONE OF THE HORSEMAN'S WATCHES MADE BY MR JONES, OF 352, Essex ROAD on which we reported favourably two years ago and we speedily heard from him that, having taken our advice, his hunting had not interfered with the excellent time kept by it and that he was greatly obliged for our advice'

FOR ALL CLIMATES.

	No 1 Silver	No 2 Silver	18-ct Gold
Hunter, Demi Hunter or Crystal Glass	6 6 0	8 8 0	18 18 0
Keyless ditto ditto	10 10 0	15 15 0	25 0 0

The No 2 Silver have movements as in Gold

REPEATER AND CHRONOGRAPH WATCHES OF ALL KINDS

LADIES' WATCHES same make as Horseman's gold elegant designs, small sizes, £15 15s Keyless, £21 and £25

Usual Warranties Pamphlet and Price List (Illustrated, post free

18 Carat GOLD ALBERT CHAINS, £4 4s per oz

T. A. JONES,

WATCH MANUFACTURER,

352, ESSEX ROAD, ISLINGTON, LONDON.