

ARMS AND
THE MAN
NATIONAL RIFLE ASSOCIATION OF AMERICA

HOW SCIENCE IMPROVES AMMUNITION
THE RUNNING DEER AND RISING BEAR TARGETS
THIRTY YEARS AGO ON THE FIRING LINE
No. 6
PRACTICE ON REDUCED TARGETS GROWS
IN POPULARITY
EDITORIALS
and
THE LATEST NEWS OF RIFLE, REVOLVER AND
SHOTGUN, THE ARMY, THE NAVY AND
THE NATIONAL GUARD

VOL. LXII, No. 6



MAY 5, 1917

THE HIGH INDIVIDUAL SCORE IN THE 1917 N. R. A. INTER-CLUB MATCHES

was made by Mr. T. K. Lee, of Birmingham, repeating his marvellous shooting in the 1915 matches. This score, like all of Mr. Lee's previous records, was made with

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1st Match



2d Match



3d Match



4th Match



5th Match



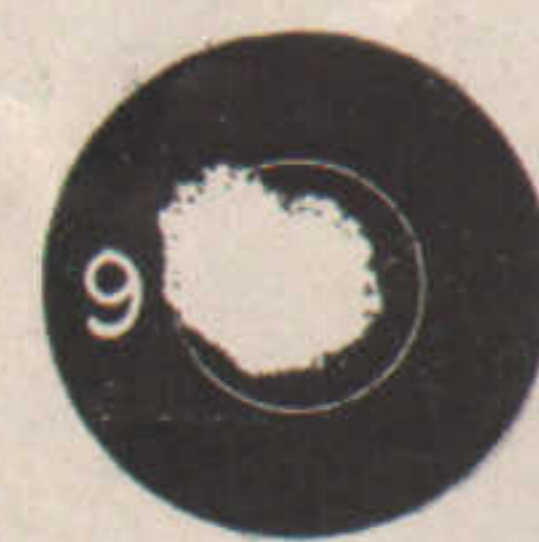
6th Match



7th Match



8th Match



9th Match



10th Match

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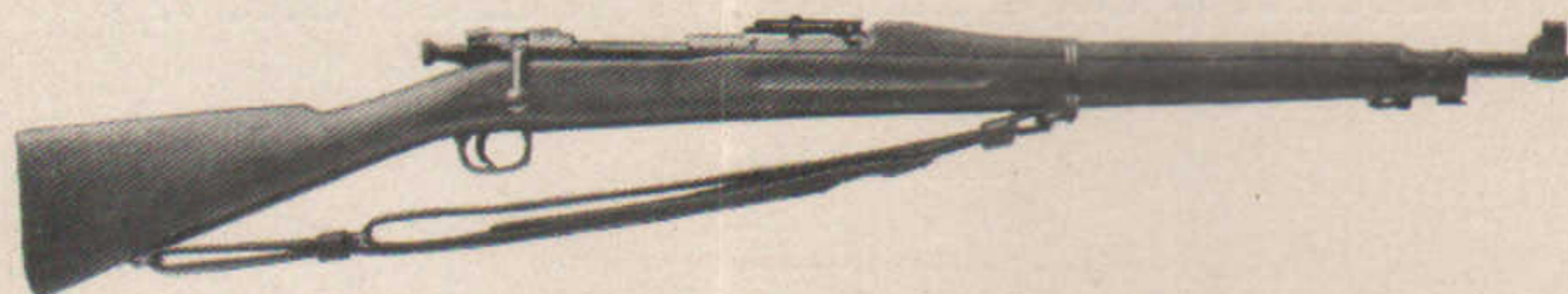
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The Marine Corps Score Book



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How Science Improves Ammunition

By THOMAS C. HARRIS

EVERY man who shoots a gun knows, in a general sort of way, that the powder charge, in burning, generates a gas at a high pressure. This gas rushes out of the barrel and drives the bullet before it, at a velocity in accordance with the quantity and quality of the powder.

For generations the hunting man has contented himself with this hazy sort of knowledge about his powder and arranged his charge to suit his own notions. In the old-fashioned muzzle-loading days, the careful hunter would experiment with his powder charge and find that quantity which suited his game and his rifle the best. His favorite charge he would measure out with great care and pour the same down the barrel, following it with a bullet encased in a greased linen "patch." In this way some men developed a marvelous accuracy at distances less than a hundred yards, with round bullets.

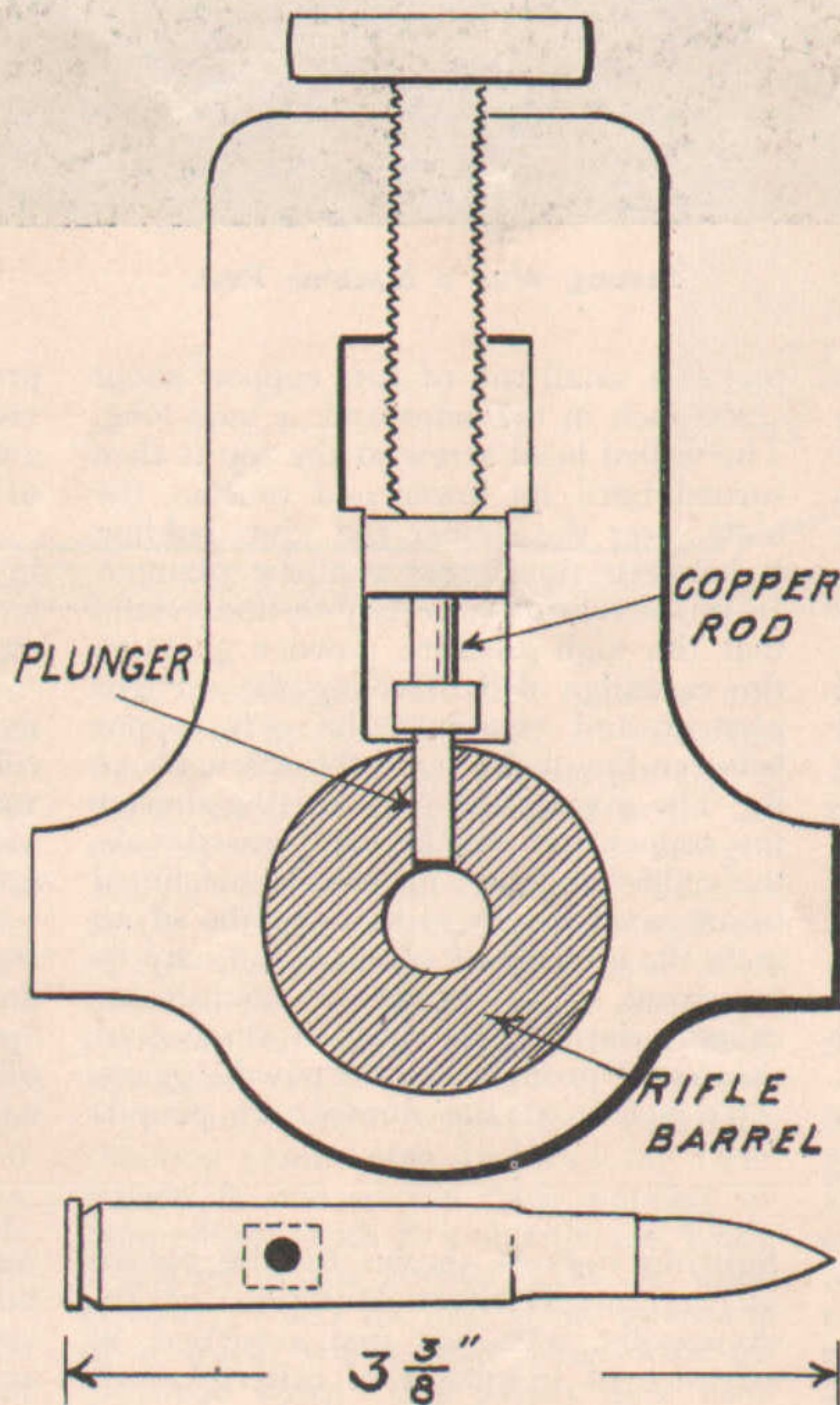
During the Civil War the rifle most used was the Enfield of 55 calibre. The bullets were of the Minie pattern, of soft lead, with a conical hole in the base. Some of that pattern had a conical plug fitted into the base, the idea being to expand the bullet by the pressure, thereby causing it to fit the rifling.

As prepared for the army, each bullet had attached to it a paper cartridge, with a liberal charge of black powder, which had to be torn open and poured down the barrel before ramming home the bullet with the steel ramrod. A percussion cap on the nipple completed the loading and the rifle was ready to fire.

With the advent of the breech loader and fixed ammunition, the military rifle, as well as the sporting arm, has reached a wonderful degree of perfection, due to careful and long-continued experiment.

The United States soldier of the present day is equipped with the most perfect rifle in the world and its ammunition has been developed to the highest degree of perfection.

It was the privilege of the writer to visit one of the largest



Apparatus For Testing Chamber Pressure

factories in the United States and to see the process of manufacturing the Springfield 30-calibre cartridges, as well as the methods of testing the same.

From the start to the finish of making a cartridge ready for the soldier, the cartridge goes through eighty-three separate and distinct operations, most of them on special and automatic machines. These machines are so specialized and adjusted as to require but little skill on the part of the operator, and imperfect work is almost impossible.

Each batch of powder to be used is tested for pressure and velocity, it being the aim to regulate the charge so as to produce something more than 40,000 pounds pressure to the square inch and a velocity of 2,700 feet per second. As the powder often varies a little in quality, the tests are necessary in order that the loading may be uniform in effect. An average of 47 grains of smokeless powder will be needed to produce this velocity. A grain or two more or less may be required in certain lots of powder received.

A brief description of the way these tests are made may be inter-

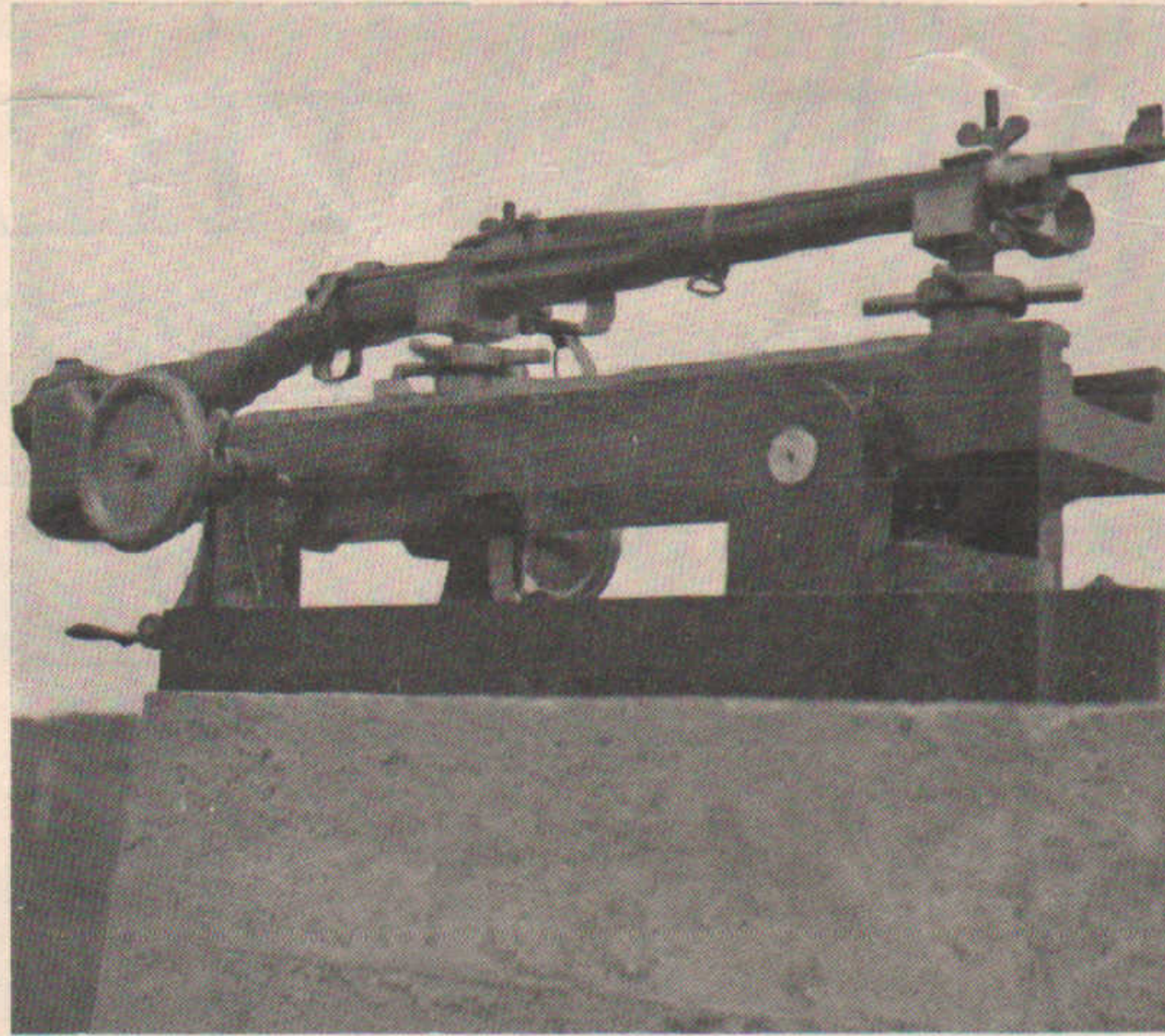
esting. As seen at the proving house, the rifles are fired from a machine rest, directed at a target placed at a known distance, say 200 feet, if under cover. Immediately in front of the muzzle is fixed a split ring, the two halves of which are connected by a fine copper wire in the precise path of the bullet as it leaves the barrel. This wire forms a part of the electrical circuit which, when broken, will start the chronograph. At the target is another arrangement which breaks the electrical circuit on the impact of the bullet, thereby stopping the chronograph. Now, the chronograph which is started and stopped electrically by the bullet, in flying a known distance, is an instrument which will measure and record a very small part of a second of time. The time is shown by a rod of metal which is released and allowed to fall endwise, by the breaking of the wire, and is marked on its downward drop by the current from the target, operating an electrical device, which

marks the rod, showing just how far it dropped. Since the rod will fall a known distance in one second of time, then the mark made by the electrical device may measure one-thousandth of that distance, showing that the bullet moved a certain distance in one-thousandth of a second. In this way the velocity is easily calculated by the simple rule of three. If the bullet travels 200 feet in one-thousandth of a second, it will travel 1,000 feet in five times that—or five one-thousandths of a second. In this proposition no allowance is here made of the air resistance which will retard the velocity the longer the bullet is in flight.

The penetration is tested by firing into a target made of a number of boards or iron plates. We saw iron plates three-quarters of an inch and also plates one inch in thickness which were perforated by a Springfield bullet of special construction. Fifty-nine one-inch boards have been penetrated by the Springfield rifle.

The test of pressure in the powder chamber of the rifle is also an interesting process. There is a steel piece of mechanism surrounding the breech of the barrel, at the point occupied by the cartridge. This block has a small opening, fitted with an air-tight plunger, as shown in the diagram. The opening and its plunger lie directly over a hole drilled into the cartridge containing the powder to be tested. The hole in the cartridge is closed by a tiny patch of tinfoil, to prevent the powder from spilling out in handling it.

On the flat head of the plunger is



Testing With a Machine Rest.

placed a small rod of soft copper, about .2260 inch in diameter and .4 inch long. The milled head screw at the top is then turned until its lower end touches the block over the copper rod, thus holding it between the screw and the plunger. In this condition it is easy to understand that the high-pressure powder gases in the cartridge will drive up the airtight plunger and compress the soft copper between the plunger and the screw above it. The greater the pressure the shorter the copper rod will be compressed. As the copper rods are previously machined to an exact length in thousandths of an inch, the amount of compression may be measured by a vernier or micrometer caliper, showing the precise amount of shortening produced by the powder gases.

To arrive at the number of pounds

required to shorten the copper rod a definite amount for that quality of copper, the rods are tested by compression in a machine, similar to a weighing scale, whereby any desired pressure may be applied and the amount of shortening measured. This gives a factor by which it is easy to construct a table of the number of pounds necessary to produce a shortening of one-thousandth of an inch.

Since the plunger has an area equal to only a small fraction of a square inch, then the actual pressure it is subjected to will be just that fractional part of the total for one square inch. In the rods described their area was about .04 of a square inch.

As this sort of testing is going on every day, the proof-house is often a noisy place to visit and the red flags to warn people away from the ranges are flying most of the time.

Uncle Sam spares no time or expense in getting the best results and makes exhaustive tests of all manner of war material.

Persons living in the immediate vicinity become so accustomed to the noise of rifles and the three-inch field guns, varied now and then by the sharp crackle of the machine gun, that they do not notice it.

It takes but a cursory examination to show that, in war materials, science is doing a great work. Let us hope that "preparedness" will cause the actual use of these improvements to be less and less needed.

McBRIDE RETURNS TO AID RECRUITING

CAPTAIN HERBERT McBRIDE, than whom no military rifleman was better known on the Camp Perry and Sea Girt ranges, has returned to the United States, after service with the British forces in France.

Captain McBride arrived on the armed liner *St. Louis* sometime ago.

Having left the military rifle shooting game after the Camp Perry Matches in 1911, he went to British Columbia as a construction engineer, was among the first to enlist with the Canadian contingent and accompanied the "first 30,000" to the front.

A story, published in a New York newspaper at the time he reached this country, says:

"What Americans can do in their

fighting togs is shown by the record of Captain Herbert McBride, of Indianapolis, who has just returned, in advance of hundreds of other Americans on the way home to help raise and instruct the American army.

"Three medals for service afield have been awarded him. When he enlisted late in 1915 in the Twenty-first Canadian Regiment he was a private, with a military experience confined to service in the Indiana National Guard. When he came back he was in the uniform of a British Captain.

"The three medals are the *Croix de Guerre* and the military medal, both given by France, and the silver military medal of England, pinned on the Captain's chest by King George himself at Buckingham palace.

"McBride's first battle was at Bail-leue. Here, with twelve other men, he

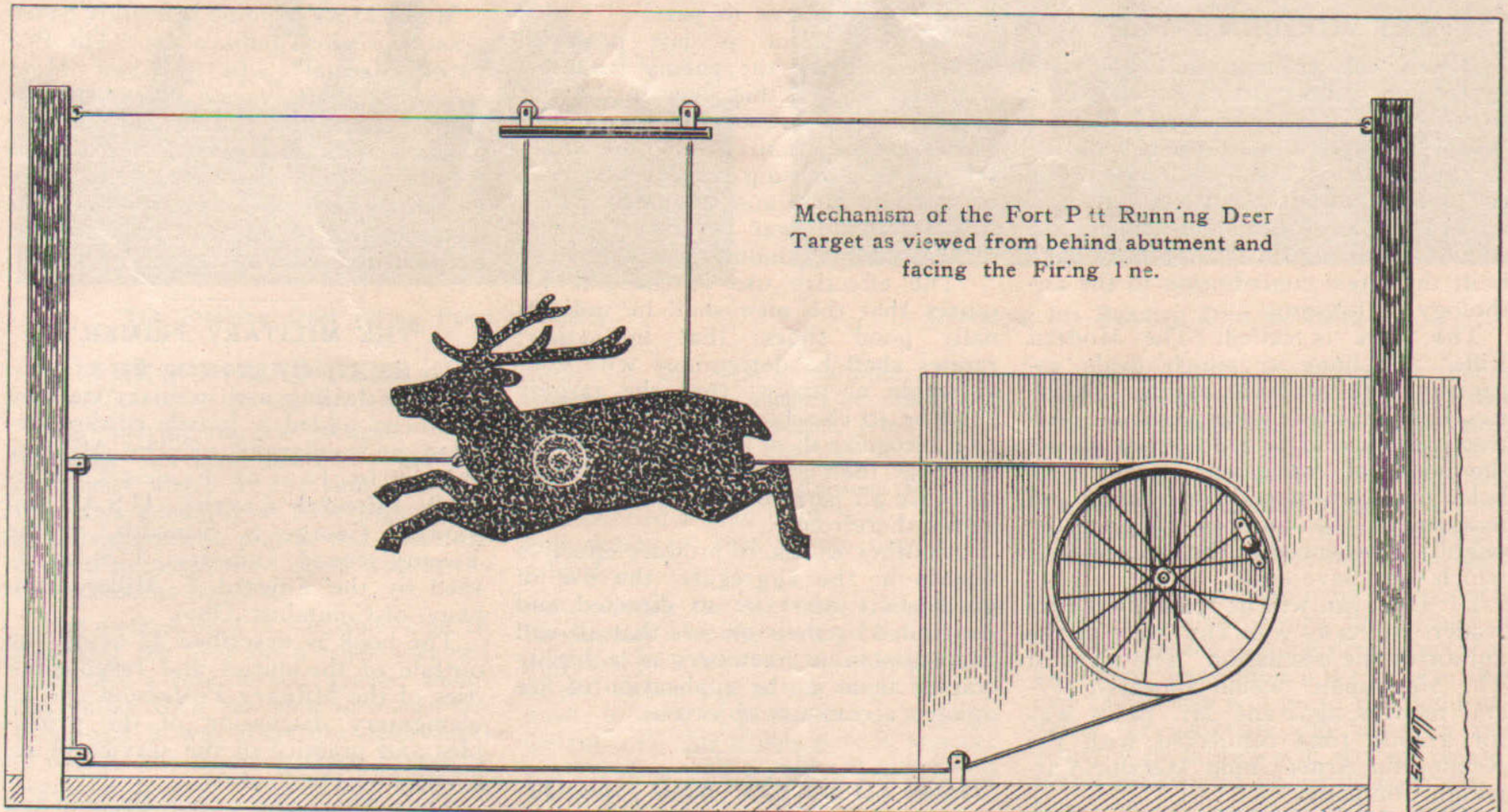
was given a machine gun position to hold. The captain was the only survivor. He was made sergeant for this exploit and given his first medal.

"Later on, on the same front, he was mentioned in dispatches for rescuing a French outpost and won his second medal.

"At St. Eloie he was given charge of a battery of six machine guns and told to hold the position until relieved. He held it fourteen days. Day after day, the Germans put his guns out of commission, and at night he led his little party into the German trenches and filled up his battery with guns of German make. At the finish, Capt. McBride had none of his original guns in battery, but he did have twelve German guns doing business in their places."

The Running Deer and Rising Bear Targets

By GEORGE S. BASSETT, Jr.



THIS is not intended as an argument in favor of moving targets as against the inanimate variety. We won't deny that there is good clean sport to be had in puncturing the elusive bull's-eye which, with mild unconcern, is forever staring at the "rifle bug" from somewhere near the center of a far-away paper.

There comes, however, a time in the life of every rifle club when the boys get stared out of countenance by the un-winking bull; when the edge wears off of cut-and-dried marksmanship courses, and when matches based upon the strictly military program temporarily lose their punch.

The symptoms are unmistakable. Attendance at the range becomes slim and the boys begin to yearn for that never-materializing yet always-desired test, a "distinguished rifleman" course.

When this "What's the use?" attitude is gradually throttling all enthusiasm, the staging of a Running Deer or a Rising Bear Match can almost always be counted on to produce the desired "pep." As these moving targets may be constructed at little expense, and can be made the basis for rifle and revolver matches alike, the chances are that they will prove a potent drawing card for the range.

Already several rifle clubs have taken up the moving target as an added attraction to their ranges. The Los Angeles Rifle Club some time ago under-

took the staging of such matches and met with marked success. A year ago the Fort Pitt Club, of Pittsburgh, staged these matches in connection with the meeting of the Wild Life League Matches at Conneaut Lake, Pa. Matches at the moving targets were so well received that similar targets have been installed on the home range, and competitions on both targets have been scheduled.

As most men acquainted with the shooting game know, the Running Deer Target is one of the most popular of competitions with British riflemen, being a feature of the British N. R. A. work at Bisley, where the deer is run by means of a track, which does away with all overhead wires. The Bisley deer runs at a rate of 15 miles an hour, and each run covers 110 yards and consumes about 5 seconds. The bull's-eye is invisible from the firing point, and for this reason good scores must be the result of extraordinarily skillful holding.

Something of the proficiency which can be gained in shooting at this rapidly moving target is indicated by the world's record established on the Running Deer by Walter Winans at Bisley in 1913. Winans already held the record of 35 out of a possible 40 when he made his 1913 score. At that time, using a .22-calibre High-power rifle, he fired 2 shots on each run of the deer for 4 runs, making 37 out of 40.

The Fort Pitt Club made its first start

in moving targets by a "Rising Bear" which differed very much from the one now in use. A bear's head was painted on plaster board and affixed to the regular target frames, which were adjusted so that the head only showed above the embankment. This did not work out very well, so it was abandoned for the more pretentious yet far more satisfactory form of moving target.

At that time the Fort Pitt Club numbered among its members many big-game hunters, and this form of rifle shooting was calculated to appeal particularly to them. In the beginning, however, the attitude of these big-game men indicated that they believed a mere mechanical deer could not possibly be worked to even approximate the difficulties presented, so far as hits were concerned, in bringing down a live buck; and that no bruin of plasterboard could be made to simulate the sudden rise of a startled black bear.

Now, these men were experienced hunters. They were accustomed to bringing in the meat. Yet, much to their surprise and chagrin, when the targets were finally working they found that connecting with a "vital point" on the target was no sinecure, and was much harder even than the real thing. As a result, these tryouts, by men who were thoroughly experienced in snap shooting, averaged only about 1 good hit out of every 5.

(Concluded on page 107)

BOOK REVIEWS

"THE MODERN RIFLE."

UPON the premise that one cartridge intelligently expended is worth more to the student rifleman than a hundred rounds fired desultorily, and without a full appreciation of the precise conditions which affect a bullet's flight, J. R. Bevis, and John A. Donovan, of Butte, Montana, have built the latest contribution to the anthology of firearms.

The work is called "The Modern Rifle". Volume 1, which deals especially with practical exterior ballistics, has just made its appearance. Attractively bound in rifle green sheep, the book, of convenient pocket size, holds much of interest for hunters and marksmen, the authors being thoroughly experienced in the science with which they have dealt.

Dr. Donovan will be remembered by readers of ARMS AND THE MAN as the author of the discussion "The Eyes of The Marksman" which appeared several months ago, and Mr. Bevis was for a long time connected with the Remington Arms-Union Metallic Cartridge Company.

While the first volume of "The Modern Rifle" deals with the arm from the standpoint of exact science, and treats exhaustively of the mathematics of a bullet's flight from barrel-muzzle to target, the varied phases of exterior ballistics were approached by the authors with an evident realization of the fact that if the volume were to be of any practical good, it should be readily understood by lay marksmen.

"BATTLE FIRE TRAINING."

Without attempting to detract from the importance of individual training in developing efficient military marksmen, Captain G. S. Turner and Captain J. J. Fulmer, in their book "Battle Fire Training" issued a few days ago by the Banta Company, suggest the adoption in the United States Army of a uniform system of collective "team work" for riflemen.

The authors lay particular stress upon the necessity of individual perfection among recruits before battle fire training is undertaken, in which they differ from the opinions of many of the earlier proponents of the field-fire school; upon this they are to be congratulated.

The authors, in presenting their views call attention to the fact that while the School of Musketry has had a system of collective fire under advisement for a long time, and will no doubt in the future, supply the lack of

a uniform system, the present crisis which has interfered with the operation of the school, has put a stop to the work.

In the introduction, Major H. B. Fiske, U.S.A., says in part:

"Artillery alone is not powerful enough to drive the enemy from his trenches. To do this, even in the war of position in France today, requires the attack of infantry; and for infantry, notwithstanding the extensive use of machine guns and grenades, which this stationary war permits, the rifle remains the paramount weapon.

"The effective use of the rifle requires that the men shall be individually good shots; that in action; ranges shall be determined with considerable accuracy; that the targets shall be so clearly designated that the men recognize them and aim as desired; and that their fire is so distributed as to cause all parts of the hostile line to suffer therefrom.

"In other words, to produce effective results in the aggregate, the fire of good shots must be so directed and controlled by their officers that all will act together as members of a highly trained team in the application of fire against a common objective.

"HOW TO SHOOT" AND "SHOOTING FOR BOYS."

Two volumes have made their appearance in the past few weeks which, taken together, will give any young man a pretty thorough understanding of the principles underlying the rifle-shooting game. One is "Shooting for Boys," by A. Frederick Collins, published by Moffatt, Yard & Company. The other is "How to Shoot," the latest volume from the pen of Major James A. Moss, U.S.A., with an introduction by Col. William Libbey, president of the National Rifle Association, and published by the George Banta Company of Menasha, Wisconsin.

While Mr. Collins' volume is intended primarily for the instruction and edification of the potential shot of the younger generation, it is a volume which shows careful preparation, and which in addition to dealing with the development of modern firearms, treats of all phases of modern shooting, including a discussion of ballistics in easily understood terms.

The boy who hopes someday to become a marksman will be benefitted by reading Mr. Collins' book as a preparation to actual rifle practice. It will undoubtedly give him a more comprehensive understanding of underlying principles which cannot help but bring to him the added pleasure of knowing something about the arm with which he is to work.

A careful study of Major Moss' volume, as a supplement to the Col-

lin's book, in the case of the amateur, might well result in directing the young marksman's comprehensions along proper lines, as well as being of value to the practical rifleman.

Major Moss' volume is frankly based upon a previous publication, "The Privates' Manual". In it Major Moss treats of all the varied phases of rifle work, from the standpoint of the finished marksman. The little book is tersely written, there being no place within its cardboard covers for useless discussions, and its value is increased by plentiful illustrations.

"THE MILITARY PRIMER."

To the rapidly growing list of publications dealing with military training has been added a fourth edition, revised and enlarged of The Military Primer, by Lt. Col. Francis C. Marshall, Fifteenth Cavalry, U.S.A., and Captain George S. Simonds, of the Twenty-second Infantry, U.S.A., issued by the Edward T. Miller Company, of Columbus, Ohio.

The book is described as being "an outline of the duties and responsibilities of the Military Profession and an elementary discussion of the principles and practice of the service of security and information.

The authors of the book disclaim any intention of presenting their work as a textbook for advanced students of military science, and offer it only as a guide for the beginner.

In the Military Primer such subjects are treated as: Notes on the organization of the Army; Map Reading; Orientation; Duties of Patrols; Solution of Tactical Problems; Messages, outposts and Advance Guards; Flank and Rear Guards; Patrolling and Field Sanitation.

"MOBILIZING AMERICA."

"There are endless lessons for us in the experiences of France and Great Britain. For nearly three years they have been struggling with the same problems which we now have to face. They have had some stupendous successes and have made some monumental blunders. In their adventures and misadventures we will find the signposts toward safety".

This is the keynote of a little volume entitled "Mobilizing America", written by Arthur Bullard and issued from the press of the Macmillan Company.

Mr. Bullard, who has spent much of his time in France and England since the war began, was an interested observer of the struggles of these nations in organizing democracies to resist the impact of actual war, and the volume which has resulted from these conclusions predicated upon first hand knowledge.



The Running Deer Firing Point at Bisley



Operating the Running Deer at Bisley

THE RUNNING DEER

(Concluded from page 105)

The moving-target contests being markedly different from the matches previously staged by the club, the Fort Pitt boys generally at first regarded it as an experiment, and it was therefore decided to install the targets with as little expense as possible.

The method used in England—that of operating the deer on a track—seemed to involve a considerably greater financial outlay than the club members desired, and it was therefore determined to operate the Running Deer Target by overhead trolley. While the methods finally worked out may appear crude, many very spirited contests have resulted, and placing hits on the deer is very much of a sporting proposition, since shooting from the 100-yard line the work requires not only some elevation, but considerable lead as well, and the slack in the wire gives the target an up-and-down bounce which is not apparent in the track-operated targets, and which contributes a most realistic imitation of a running animal.

In the construction of the deer and bear used at the Fort Pitt range, heavy plasterboard was used, reinforced by light strips at the back. This material proved very satisfactory, as it does not splinter when punctured by a bullet. The figures were worked out to conform with the proper proportions of the living animals.

In the case of the deer, the target measured 5 feet 2 inches from nose to tail, by 22 inches across the body. The plasterboard deer was then painted a light brown, and scoring rings, following the fashion at Bisley, were drawn with a heavy, soft lead pencil, which, while easily distinguishable for scoring, could not be discerned from the firing point. The system of counting on the Fort Pitt targets is slightly different from the English scale, which counts 5 for high, with the next circle 4, and parallel sections on neck and withers counting 2. In locating the scoring rings, the Fort Pitt boys drew a 12-inch

circle on the deer's shoulder, which counts 10. Other circles counting 9, 8 and 7 respectively graduate from this.

The bear target measures 4 feet 6 inches long by 24 inches across the body. It is painted a dead black, and a scoring bull similar to that on the deer is arranged.

In erecting the deer target for operation a stout wire was strung from a well-anchored post located a short space back of and to one side of the target pit butment, to another post located 30 yards distant. To this trolley-wire is attached a wood strip with a pulley at either end, forming a carrier to which the target is hung by a stiff wire. The power to operate the target is derived from an old bicycle wheel bolted to a post behind the pit butment, to which a crank is attached. A light rope fastened fore and aft on the deer is run through an upper and lower pulley attached to the far post, returning to and passing over the wheel acting as an endless belt. A bicycle wheel was found to be best suited, owing to the concave rim, which held the rope in place.

The construction and operation of the Rising Bear Target was a much simpler matter. The target was fastened to a 12-foot pole, the free end of which led behind the butment protecting the operator. Supports were constructed outside the pit, to which the pole was strapped, but allowing it to be turned freely to raise the target from the horizontal to perpendicular. When turned down and lying flat the target cannot be seen very well from the firing point. When the shooter is ready and the signal given the target is turned to the upright position, remaining thus for a period of five seconds; is then turned down, remaining so for five seconds, when it is again raised for the same length of time. This is repeated until the shooter fires his string of five shots.

In shooting at both these targets with the rifle, 100 yards is the distance to the firing points, while 50 yards is the range with the revolver, and any position may

be assumed by the shooter. One shot is fired at each run of the deer and shot must be fired before the deer is halted at the end of the run, and no shot is fired on its return to the operator behind the butment. In case of the bear, one shot is fired at each rise of the target, which is held in position for five seconds.

The sketch accompanying will possibly demonstrate more clearly the method of constructing the running-deer target than any mere description. We believe that any club which will go to the slight expense for materials and labor to construct such targets will stir up considerable enthusiasm among its members.

The method which the Fort Pitt boys have been following is to fire one shot at each run, the deer covering 25 yards at each dash. An "All ready" warning is given just before the first run. There are no warnings given thereafter.

NAVAL RESERVE AGE INCREASED

A bill to increase the age limit for men commissioned in the Naval Reserve from 35 to 50 years has been favorably reported by the House of Representatives Naval Committee.

The bill meets the approval of the Secretary of the Navy, who says:

"The maximum limit of age for persons enrolling in the naval reserve of the naval reserve force is 35 years. For persons who are able to qualify as officers this limit is thought to be too low, especially in view of the existing situation.

"The most or certainly many of the best and most experienced officers in the merchant service are above that age, and it is naturally to be presumed that, as in the regular service, an officer does not reach his maximum efficiency in practical qualities and mature judgment until he is at least 40 years old.

"For these reasons I very urgently recommend that the age limit for officers only, in this class of the naval reserve force, be increased from 35 to 50 years."

ARMS AND THE MAN

1110 WOODWARD BUILDING, WASHINGTON, D. C.

EVERY SATURDAY

Editor

BRIG. GEN. FRED H. PHILLIPS, Jr., Secretary N. R. A.

Associate Editor

KENDRICK SCOFIELD

Entered as second-class matter, April 1, 1908, at the post office at Washington, D. C., under the Act of Congress of March 3, 1879.

That the man shall serve his country in time of war is noble, brave and patriotic; but that a man shall properly prepare himself in time of peace to serve in war is all of these things and more. It is noble with a nobility which is real, not ideal. It is brave with a bravery which assumes in time of unemotional peace many burdens, among them that of bearing the lack of appreciation of those who do not consider military preparation or training necessary.

A STATE SUPERINTENDENT OF CIVILIAN RIFLE PRACTICE

TEXAS is blazing a new trail in rifle practice.

There is pending before the legislature at the present time, accompanied by a favorable committee report, a measure which, apparently the first of its kind, should be productive of untold benefit to the cause of the civilian rifleman in that State. The bill, in short, creates the office of Superintendent of Instruction for Civilian Rifle Clubs.

For many years the National Rifle Association has been laboring through the machinery of its general headquarters to serve the members of its affiliated organizations. Rifle club matters in each State have been handled by the Adjutant General's Office and by the N. R. A. State Secretary. The Adjutant General, however, while always willing to do everything in their power to further rifle practice, have been compelled to do whatever they have done as additional business in already overly busy offices. The State Secretaries, on the other hand, drawing no salaries, have always been men with other vocations, who, of necessity, could devote but so much of their limited time to rifle club affairs. Even under such conditions the Adjutants General and the State Secretaries have rendered great and valuable services.

But the time has come when each State should realize that rifle practice is more than a mere past-time, that it is a recreation which permits of encouragement as a clean sport and at the same time makes hundred-fold returns.

Texas has evidently realized that a State which fails to encourage rifle practice among its citizens is overlooking a wonderful asset.

The bill in the Texas Legislature when enacted into law should be a potent factor in putting Texas well toward the top of the marksmanship list within the next few years.

It is true that State Secretaries and Adjutants General will continue to do their best for the cause of rifle practice, and that the Federal Government, having already provided a free issue of arms, under the directions of a Federal Director of Rifle Practice, will hardly do less in the future.

Yet, it is equally true that the State which assumes the responsibility of teaching its citizens to shoot will obtain direct and positive results greater than those which can be expected from distant Federal aid.

One of the best features of the Texas bill is that it does not stop with providing an instructor of rifle practice. It further provides for the enlargement of the State range at Camp Mabry.

RIFLE CLUBS FOR THE EXEMPT

THE fact that conscription is likely to draft into the National Army men between the ages of 21 and 35, which will undoubtedly levy a heavy toll upon the class of citizens who are generally the most active in rifle club affairs, should be no deterrent in the organization of new clubs, and the further spread of the gospel of straight shooting.

The National Rifle Association, membership in which has never carried military obligations, has never limited its clubs to young men and boys. Every man capable to shooting or of learning to shoot, has been welcome, and men of family past the ordinary military age have, in the past, done much toward encouraging rifle practice in the communities in which they lived.

Now, as never before, the country needs proficient riflemen. Before the present crisis has passed the age limit of men wanted for active service will unquestionably be increased. The man who, although past thirty, or even thirty-five, and who can shoot, is of much greater value to his country than the man of similar age who cannot shoot.

And then there is the question of instruction. The weight of years which might preclude a man from service in the ranks, proves no bar to his employment as an instructor on a school of musketry firing line, and if competent instructors can be obtained from the ranks of civilians exempt from active service, many men who are physically fit for active service may be released to go to the front.

A rifle club composed of men who are just past military age is in process of formation in Vandergrift, Pa. These men in organizing declare their object as being the education in marksmanship of all citizens who can be induced to join their organization, and the performance of the duties of a home guard, since none of them are subject to military duty.

It would be well if each community, where a rifle club has not already been formed, could have such an organization.

ABOLISHING THE ARMY AND THE NATIONAL GUARD

WHEN the National Guard is drafted into the National Army its state status will cease: there will no longer be a National Guard. It is doubtful whether it will ever be rehabilitated.

Legislation has accomplished many changes in the organization and status of state troops during the past few years, but the most radical of all, and that which has sounded the death knell of this institution is carried in the bill providing for a temporary increase in the armed forces of the United States.

When Secretary Baker was being cross-questioned before the House Committee on Military Affairs, during the consideration of this measure he was asked whether the provisions of the bill would give him power at the close of the war to discharge every member of the National Guard as well as the enlisted personnel of the army. He replied in the affirmative declaring that a cessation of hostilities

would terminate all enlistment contracts, and if the National Guard were to exist again, the states would have to rehabilitate it.

It is likely that with the end of the war, if not before, legislation will be vigorously pushed to establish universal military service in order that an army personnel be provided to take the place of the men mustered out. There is no such hope, however, for the National Guard.

Thirty Years Ago On the Firing Line

Being short sketches of men who a generation back burned black powder; hand-loaded their own shells; seated bullets apart from the cartridge which contained the charge; made high offhand scores on the Creedmoor target, and kept alive for posterity, the art of marksmanship.

No. 6—J. A. HUGGINS

J. A. HUGGINS, one of the prominent members of the Pittsburgh Rifle Club, three decades ago was preaching a sighting doctrine which many riflemen of the present have found of untold help in placing center shots with the light going fast at the tag end of a protracted match. That doctrine was the one of lining up front and rear sights while both eyes are open.

J. A. Huggins became possessed of his first rifle when he was fifteen years old. It was a primitive muzzle-loading affair, but with it he developed such accuracy that in his later shooting years he was wont to declare that, barring the greater practicability of breech loaders, the old muzzle-loading type was quite as accurate.

The shooting rules which Huggins compiled for his own guidance may still hold suggestions of value, or at least interest, to the student riflemen of the present. In an interview published in 1885, he said:

"I believe that much of my success in shooting is due to the fact that I use but one rifle almost exclusively and one kind of ammunition. Many shots are continually experimenting with different rifles and ammunition—a practice which I believe is greatly to their detriment. How-

ever, should it be found desirable to use several rifles, the weight and trigger pull in each should be as nearly uniform as possible.

"I use a 35-50-33 6½ P. G. Ballard, although I sometimes shoot a Stevens rifle with the same ammunition. I have tried the new 55-grain Ballard shell, but consider it too thin for durability; besides, I can see no advantage in the 5 extra grains of powder. I have little confidence in express charges for fine target work. I have always obtained the best results with heavy bullets and a small charge of powder.

"In shooting, I hold from 8 to 10 seconds and seldom hold a second time. The practice of sighting two or three times before you pull is merely a force of habit, and it is a bad one at that, for the more you encourage it the worse you become.

"I have frequently noticed that men who hold long in practice will hold still longer in a match, so that when they do have the courage to pull they are tired and unsteady and will consequently do poor shooting.

"I always sight with both eyes open and never cover my left eye, for I find that I can see the bull's-eye much clearer in this way and with less strain upon the

eye than by the usual custom of closing one eye and opening the other."

The feature of Huggins' shooting was his ability to make a high average with a great number of consecutive shots, which gave to him the reputation of being one of the steadiest and most reliable team-match men of his day.

He frequently made runs of more than 10 consecutive bull's-eyes, and in shooting his long strings wild shots were seldom found. One of the best evidences of his skill is to be found in the score of a match shot in 1885, which called for 50 off-hand shots on the Massachusetts Decimal Target. Out of the 50 shots, only one struck outside of the 7 ring, which was 10¼ inches in diameter—the first shot and that a close 6. On August 24, 1884, Huggins entered a match shot on the High Bridge Range of the Pittsburgh Club and in which the Painter Prize Cups were the trophies. The course of fire also called for 50 shots on the decimal target, off hand.

In this match, Huggins made a total score of 417, averaging 83.4 out of a possible 100 for every 10 shots. It figured by Creedmoor mount 240 out of a possible 250, averaging by 10-shot count 48 out of 50. Out of the 50 shots, 40 were bull's-eyes.

URGES WARSHIPS OF CONCRETE

THAT the warships of the future will be of reinforced concrete is the astounding statement made by Frank Whipperman, secretary-treasurer of the Mid-West Cement Users' Association, as reported by the *Omaha World Herald*. Mr. Whipperman declared that such ships will ultimately decide the present war. He was backed up by G. B. Appo, president of the Association, and other members who spoke at a recent convention of the organization.

Concrete barges are usual, concrete ships are common, and concrete battleships are being tried out by Italy, the cement men said.

"This war will be decided on the sea," argues Mr. Whipperman. "More than one great naval battle will be fought. Many ships will be sunk. The nation that can replace her battleships fastest will win the second battle.

"It takes three years to build a steel battleship. It might take four or five months to build the steel form for a reinforced-concrete battleship. After the form is made, a battleship will be ready after the concrete sets for twenty-eight days.

"The forms can be taken off a battleship at the end of five days. Give the workmen five days more to take down the forms, put them together again, and fill them again with concrete.

"From one steel form a nation can

construct a battleship hull every ten days! Think of that! Where will the nation be that keeps on constructing steel battleships, which take three years to build?"

Reinforced concrete, they say, is as strong as steel. Reinforced concrete is being used in place of steel for targets, they say, because it is more durable. Why not use it in place of armor plate?

The cement experts claim that ordinary reinforced concrete is as pliable as steel. A new invention, a liquid which concrete soaks up, makes it far more pliable, flexible, and impenetrable than steel.

According to Mr. Appo, the Government pays \$400 a ton for steel armor plate. A concrete battleship could be

built, he says, for \$20 a ton. Without equipment a battleship hull, armored, built of concrete, could be built for from one-sixth to one-third the cost of a steel hull, the cement experts claim.

The experts claim that concrete battleships would be easily repaired. Whenever a shell should penetrate the armor plate—which they are not prepared to admit it will—it would be a simple matter to put an iron plate over the outside of the vessel, pour concrete into the breach from the inside, and then "set" the concrete by steam. The patch would be complete and perfect within four days.

NAVY WANTS DRAUGHSTMEN

THE U. S. Government is anxious to secure many capable ship draftsmen, because shipbuilding work in the present crisis, undertaken at navy yards, is being retarded by a shortage of such men. The Civil Service Commission in making the call asks that all persons qualified for such work communicate with its offices throughout the country, regardless of their private interest, urging that in the national crisis every person with the knowledge should use it where it will be

of the most value to the Government. All shipbuilding and repair companies in the country have been appealed to to give some of their draftsmen. The appeal also is being circulated to technical schools, to the American Federation of Labor, engineering and technical journals and societies of marine draftsmen and naval architects. Applicants will not be assembled for examination, but will be rated upon the elements of physical ability and education, training and experience. Those found qualified will get employment at once. Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, post office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Custom House, New York, N. Y., New Orleans, La., Honolulu, Hawaii; old Custom House, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be properly executed, excluding the medical certificate, and should be filed with the

Commission at Washington as soon as possible. The compensation in the several grades are as follows: I., \$3.28 to \$4 per diem; II., \$4 to \$5.05; III., \$5.04 to \$6; IV., \$6.

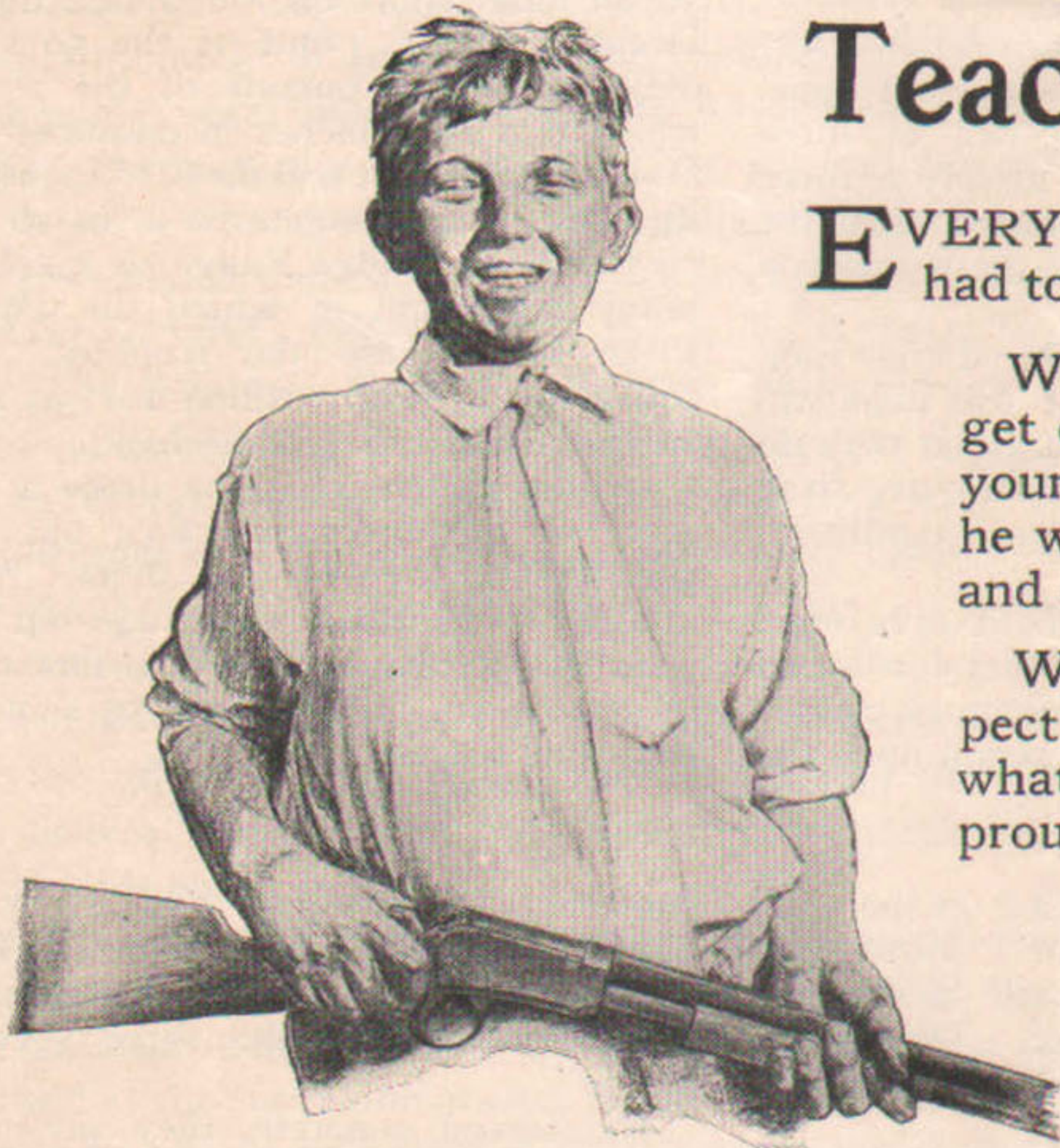
IN PEACE AND WAR

This war is changing all of our oldest institutions. In more peaceful days the typewriter repair man came in, turned a screw, untangled the ribbon, wrote: "Now is the time for all good men to come to the aid of their party," and went his way.

But times are different. The repair man entered the office this week and wrote: "A quick movement of the enemy will jeopardize six gunboats." —New York Evening Post.

The Colonel (furiously).—I understand that someone at the mess the other night referred to me as a blithering old idiot.

The Adjutant (apologetically).—I'm sure, sir, none of the junior officers would speak so disrespectfully. It must have been someone who knows you quite well.—Cassell's Journal.



Teach Your Boy To Shoot

EVERY boy instinctively loves a gun. Most fathers have had to listen to the plaintive appeal "Dad! I want a gun!"

When you start to teach your boy to shoot, you will get closer to him than ever before. Not only will the young fellow acquire manly habits and self-control, but he will learn to handle firearms with safety to himself and others.

When your son asks for a rifle, he will naturally expect a Winchester. His boy friends will surely ask what kind of a rifle his father selected. Fix it so he can proudly answer, "A Winchester, of course!" Every man and boy knows that the Winchester is the best—the most accurate and reliable.

A father should welcome the chance to become his boy's "Pal" by teaching him how to shoot. It may be very valuable knowledge some day.

Ask your dealer to show you the complete line of Winchester .22 caliber Rifles: Repeaters, Single Shot and Automatic.

All styles and prices to suit all tastes and pocket books.

Winchester Repeating Arms Company

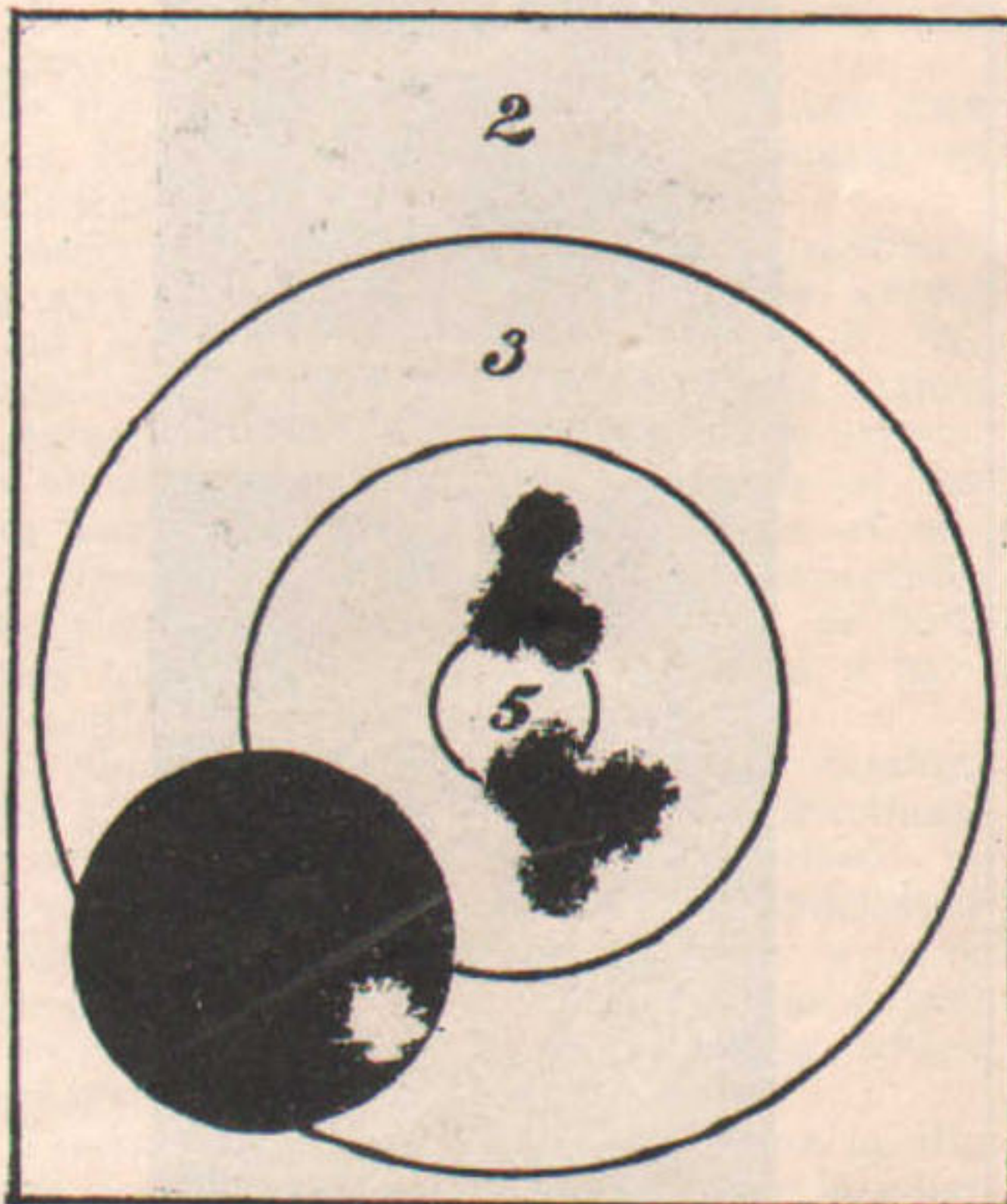
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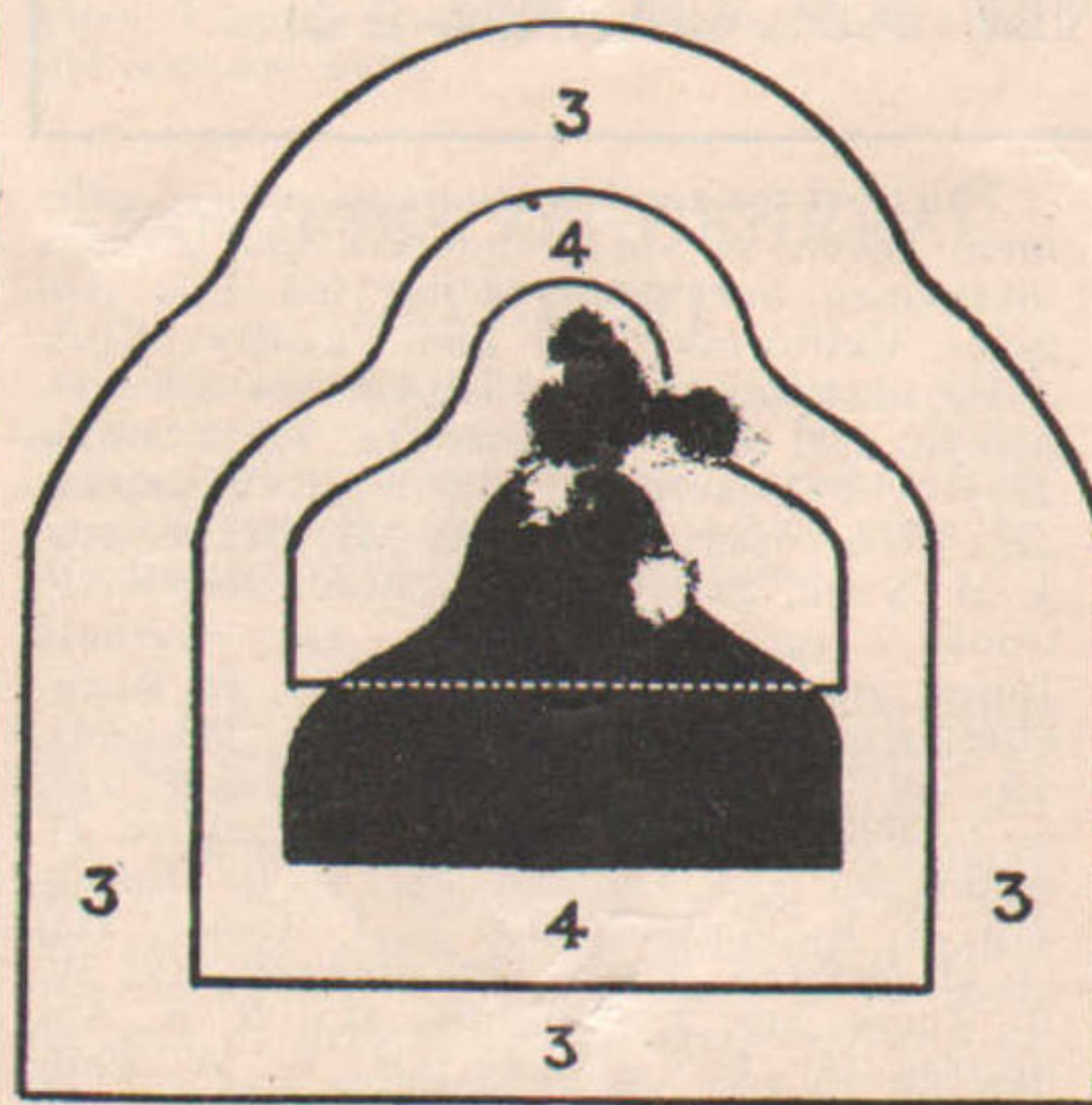
AT THE TARGETS!



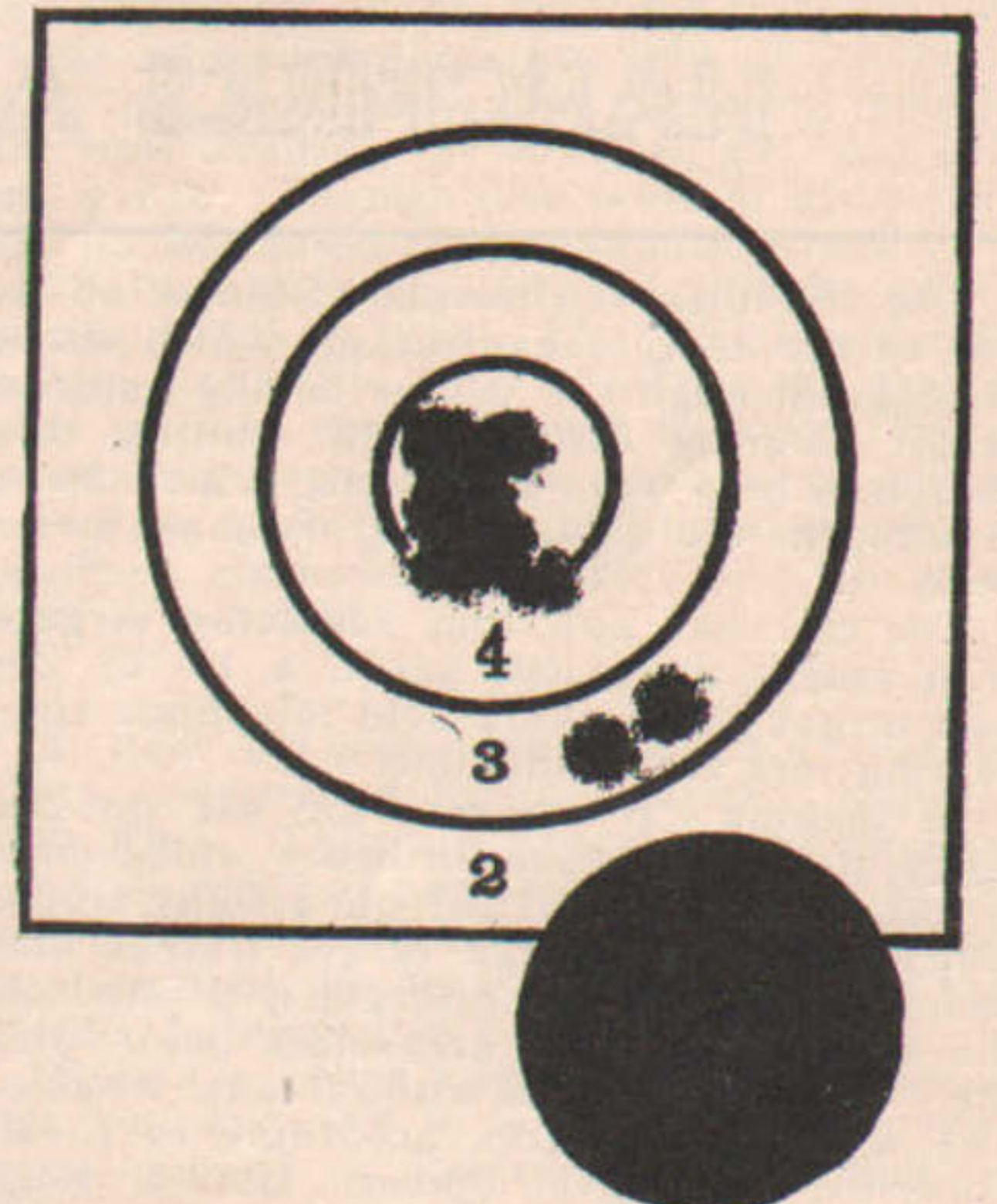
Practice on Reduced Targets Grows in Popularity



Score of 45 out of possible 50 points, made in rapid fire by C. J. Foltz on Winder Target, calling for sight adjustment to equal an elevation for 300 yards and for a 15 mile wind from 3 o'clock.



"Possible" shot by Foltz, on Winder target, approximating conditions at for 300 yards, rapid fire.



"Possible" shot by W. K. Perdue, on Winder 500-yard target, approximating conditions accompanying a 10-mile wind from 8 or 10 o'clock. Two shots in the 3-ring are "sighters."

WHERE a few years ago rifle club members were prone to regard practice on the reduced army targets as a waste of time so far as practical results were concerned, many clubs today find in this expedient a valuable aid toward keeping their members in shooting trim.

A good many months ago the Houghton, Michigan, Rifle Club made this kind of indoor shooting a part of its regular 'tween-season program, and now the Canton, Ohio, Rifle Club has fallen in line.

The Canton Club has just finished putting its membership through the modified army course on reduced targets, using .22 calibre rifles with service sights, and taking into consideration both elevation and windage problems. Here are the scores out of a possible 250:

C. J. Foltz, 300 yds. S. F., 45; 500 yds. S. F., 50; 600 yds. S. F., 47; 200 yds. R. F., 50; 300 yds. R. F., 50. Total, 242.

W. K. Perdue, 300 yds. S. F., 44; 500 yds. S. F., 50; 600 yds. S. F., 47; 200 yds. R. F., 50 and 300 yds. R. F., 50. Total, 241.

W. A. Shorb, 300 yds. S. F., 49; 500 yds. S. F., 49; 600 yds. S. F., 42; 200 yds. R. F., 48; 300 yds. R. F., 49. Total, 237.

H. Miller, 300 yds. S. F., 42; 500 yds. S. F., 43; 600 yds. S. F., 48; 200 yds. R. F., 50; 300 yds. R. F., 50. Total, 233.

W. Lightfoot, 300 yds. S. F., 43; 500 yds. S. F., 45; 600 yds. S. F., 43; 200 yds. R. F., 47; 300 yds. R. F., 49. Total, 227.

F. Swartz, 300 yds. S. F., 44; 500 yds. S. F., 47; 600 yds. S. F., 42; 200 yds. R. F., 48; 300 yds. R. F., 45. Total, 226.

J. C. Foltz, Jr., 300 yds. S. F., 43; 500 yds. S. F., 45; 600 yds. S. F., 41; 200 yds. R. F., 49; 300 yds. R. F., 45. Total, 223.

P. Kistler, 300 yds. S. F., 46; 500 yds. S. F., 47; 600 yds. S. F., 44; 200 yds. R. F., 46; 300 yds. R. F., 50. Total, 223.

J. C. Foltz, Cr., 300 yds. S. F., 42; 500 yds. S. F., 42; 600 yds. S. F., 42; 200 yds. R. F., 45; 300 yds. R. F., 49. Total, 220.

G. O. Moon, 300 yds. S. F., 40; 500 yds. S. F., 47; 600 yds. S. F., 36; 200 yds. R. F., 48; 300 yds. R. F., 48. Total, 219.

E. M. Swartz, 300 yds. S. F., 44; 500 yds. S. F., 44; 600 yds. S. F., 42; 200 yds. R. F., 45; 300 yds. R. F., 38. Total, 213.

G. W. Brant, 300 yds. S. F., 45; 500 yds. S. F., 42; 600 yds. S. F., 35; 200 yds. R. F., 40; 300 yds. R. F., 49. Total, 211.

G. Cernick, 300 yds. S. F., 42; 500 yds. S. F., 45; 600 yds. S. F., 22; 200 yds. R. F., 49; 300 yds. R. F., 50. Total, 208.

W. K. Perdue, Secretary of the Canton Rifle Club in discussing the results obtained from this course says:

"For a long time our club was handicapped by having no indoor range of our own, and it was only through the courtesy of the Captain of the local National Guard company that we were able to hold our weekly shoots.

"When he was ordered to the border we were again without a place to shoot. Finally we secured a room in the basement of one of the city buildings, but we only have a 50-foot range. This cut us out of the N. R. A. indoor matches but we had a home of our own.

"The next thing in order was to make fifty-foot shooting attractive to the members.

We cast about for something a little different than just a straight bullseye target and finally landed on the reduced army targets for the fifty-foot course. All these targets have wind problems on them, and the instructions for shooting over this course are just the same as over the outdoor course.

"We discovered that by using these targets and compelling the members to use military sights on their small-bore rifles, that it was excellent practice to keep one in form for the outdoor 'stuff'. And then take the beginner. He comes down to our 'shootin'-gallery' and stands around with his hands rammed down in his pockets until some one hails him and says: 'Would you like to try a shot or two?' 'Yes,' he says; 'but I never shot like that,' and nine times out of ten when we get him rigged up and all ready, he finds out that—he can't shoot like that—right off either. But he is interested and next time we start him in right.

"First we test him with a sighting bar. Next he is taught the correct positions with the use of the sling strap and particular stress is laid on getting these positions correctly. Then comes the trigger squeeze and finally the actual shooting.

"Even then if a new man does not show up very good and still insists that he don't 'flinch'; we prove it to him by slipping in a dummy shell and when he snaps on it—well, once is usually sufficient.

"In shooting over this course we use the same terms in directing the fire that are used on a regular range. Rapid fire is conducted in a like manner and the rules that govern an outdoor range also hold good here.

"A new man, knowing nothing about the military style of shooting, after firing over our indoor course all winter goes to the range in the spring in possession of knowledge that is going to materially assist him in making a good score.

-He knows how to adjust his windguage.

"He knows which way to move it to correct a three at nine o'clock. If the coach tells him that he is canting his piccc, he doesn't look around with a blank stare, but immediately corrects it without even taking his cheek from the stock.

"When he takes his place on the firing line at two or three hundred yards for rapid fire, he knows what is expected of him, and is familiar with the work.

"After we shoot through the course as outlined above, all members who have made sharpshooter or better take up the work at eight hundred and a thousand yards. Here is where the 'cant' shows up in good form, because the counting bull is about seven inches above the sighting bull at a thousand yards. And if they don't learn to keep their gun held plumb any place else, they learn it here.

"We keep interest in our club up to a pretty good pitch by holding back what is coming next and about the last thing I hear on leaving the club room of a Thursday night is—'Hey! What's on for next Thursday?' I didn't tell 'em, Mr. Editor, but I don't mind telling you, that it will be shooting at a thousand yards with a fish-tail wind. I'll let you know the results some time later."

HANGFIRES AND RICOCHETS

The Needles, California, Rifle Club is one of the many organizations which shoot straight through the winter on the outdoor range. During the past few months, this club has held several shoots, which have resulted in the qualification of many members.

The club has now four revolving targets with ranges up to 600 yards, a 12- by 20-foot target house and a field telephone connecting pits and firing line.

In making "B" targets for use on the range, the club is using ordinary wall-board, 6 feet square and nailed on a light frame which is bolted to the target frames and counter balanced. The target is painted on the wall board with greaseless paint, and the "stickers" adhere without any trouble. The wall-board targets, according to E. L. Forsythe, executive officer, last a long time and are easy to put up or remove as there are but 4 bolts to each frame.

Those qualifying during the shoots at the Needles Club include: Sharpshooter, F. H. Giles, on skirmish run, 86; O. E. Searson, 159; V. F. Shafer, 150, and E. L. Forsythe, 173, and marksman, J. H. McGinnis.

Eleven members and one visitor shot at the Boyles rifle range in a recent shoot of the Jefferson Rifle Club of Birmingham, Ala.

T. K. Lee led with 93 per cent, followed by DeFuniak and Reid, who each made 90 per cent. Reid, however, had one two in his first string, thus putting him in third place.

T. K. Lee has also been doing some experimenting with light re-loads for the Springfield in order to get practice indoors. He reports that he has obtained good results with 11 grains of Marksman powder and a 117 grain lead bullet. He says: "This makes a mighty nice gallery load, is entirely smokeless, makes less noise than a .22 long rifle and hundreds of shots can be fired without cleaning the rifle. After a long consecutive string, but little residue is found in the barrel."

Thirty-three qualifications as expert riflemen, seven as sharpshooters and five as marksmen are reported by the Los Angeles, California, Rifle and Revolver Club.

Those qualifying as expert are: G. A. Morse, 228; J. F. Talbott, 212; P. J. Willis, 212; C. T. MacAleer, 213; P. J. Wiseman, 215; P. M. Casady, 215; W. H. Burne, 214; J. M. York, 223; G. C. Boynton, 218; T. F. Cooke, 219; Tom Jordan, 219; Garfield Jones, 210; R. P. Umsted, 228; J. E. Rockhold, 210; J. E. Siefert, 221; C. J. Whitney, 229; W. E. Potter, 229; R. J. Fraser, 238; E. C. Price, 235; W. R. Jackson, 224; A. H. Aikin, 219; J. S. Colbath, 234; D. R. Dickey, 215; B. E. Willard, 213; V. F. Grace, 234; O. H. Scriven, 224; A. Pachmayer, 217; W. R. Ruess, 210; J. Laughlin, 233; R. E. Anderson, 213; F. C. Payne, 221; W. W. Phillips, 210; H. C. Miles, 216.

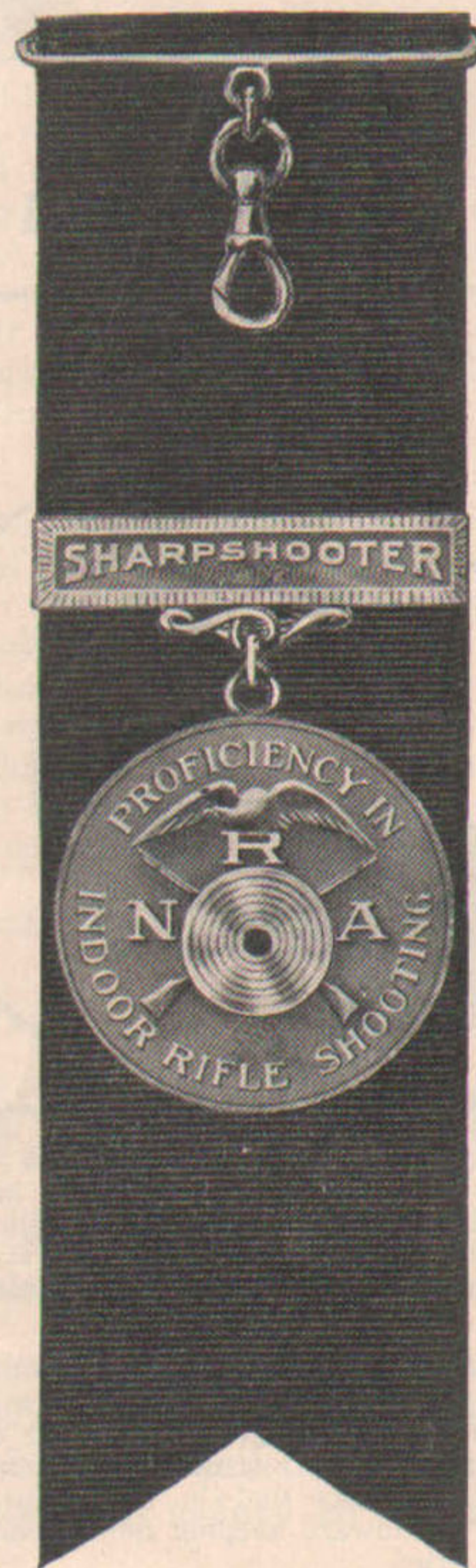
Those qualifying as sharpshooter are: P. L. Peroni, 207; F. W. Rinkensberger, 198; L. T. Baker, 198; F. J. Leavitt, 206; L. M. Baughman, 208; C. S. Brown, 203; Alfred Wright, 197.

Those qualifying as marksmen are: D. F. Zook, 175; A. T. Gosborn, 188; H. S. Ryerson, 183; W. A. Thompson, 188; L. P. Clark, 182.

In spite of having been unable to obtain the use of the Camp Lincoln range until after November 1, on which date the National Guard shooting season ended, the Springfield, Illinois, Rifle Club succeeded in qualifying one expert rifleman, 13 sharpshooters and twenty-four marksmen. The expert is C. C. Yoakley.

The highest score on the sharpshooters' course was also made by Mr. Eldred, with a total of 177 out of a possible 200. Carl Reisch was a close second with a total of 175. The highest score in rapid fire on this course was made by Secretary Livingstone, with 90 out of a possible 100, while President Yoakley leads in the slow fire with 94 of a possible 100.

Qualifying Scores Win Watch Fobs



BRONZE and silver-plated watch fob medals are offered by the N. R. A. for proficiency in indoor, small-bore shooting.

A score of 85 standing and 90 prone entitles the rifleman to the marksman's bronze decoration.

A score of 90 standing and 95 prone wins the sharpshooter's silver-plated decoration.

Ten shots are fired from each position, with a rifle weighing not more than 10 pounds and equipped with any sight which does not contain glass. The distances are 50 feet or 75 feet as desired.

The shooting must be done on registered targets which can be obtained at a cost of 20 cents for each target.

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Off Hand From the Clubs

More Concerning The "Ringed" Barrel

By A. P. LANE

SOMETIME ago I wrote a few paragraphs on the subject of why gun barrels burst. It appeared in the February 1st issue of ARMS AND THE MAN and in the March 8th issue. C. B. Linder jumped on my neck good and proper.

In the April 14th issue of ARMS AND THE MAN, E. C. Crossman adds a few remarks on the subject under discussion.

Lately I have been doing a little investigating and I find that whether right or wrong I am in pretty good company. Dr. F. W. Mann on page 74 of his famous book, makes a statement with regard to a ringed barrel. "It showed, however, that the center of the ring was between the bullets at point of impact where compression of air would naturally take place. Either the lead, the air, or both acting together, produce a pressure No. 4 barrel could not withstand."

In the Marlin Arms Company's catalog, page 111, I find with regard to obstructions, this: "If fired under these conditions, in almost every instance the air is compressed at the point of obstruction, giving a very high pressure at this point, causing the barrel to swell and forming a bulging ring which destroys the accuracy of the barrel."

"I asked Dr. W. G. Hudson's opinion on the matter and he says that air pressure is what does the business while H. M. Pope the barrel maker, says the powder pressure does it so it is evident that you can believe what you please.

Of course, these quotations do not, by any means, prove that I was right, but they tend to show—as does Crossman's article—that there is a decided difference of opinion on the subject and it seems to be a question of picking the theory you like best and believing it—like religion.

Linder's argument on volume of air is not a specially good one as applied to a solid obstruction such as a bullet because it is obvious that if you compress any given volume of air down to nothing, you get an infinite pressure and certainly the volume of air must be pretty nearly compressed to that point before the two bullets can fuse into each other. Crossman makes a remark about compressing air until it becomes a liquid, but I do not think that, under the conditions given, the air could become liquid simply because the laws of physics show us that the temperature rapidly increases at each decrease in volume, and also that there is a critical temperature below which air cannot be liquified regardless of the pressure applied. Linder also states that he believes that the whirl of the gases cu's away the rifling at the point of the bulge. This, of course, is among the possibilities, but it seems to me that it is more logical to believe that the simple expansion of the barrel draws the rifling out flat just as the wrinkles are removed from the surface of a prune when soaking in water has stretched the outside skin.

There is no question but what the pressure on a barrel is greatly increased when the bullet is stopped in its course but it is almost impossible to arrive at any conclusion that will apply to all kinds of firearms owing to the difference in the characteristics of every factor which enters into each equation.

As far as I can see there are only three forces that can cause a barrel to bulge. They are: air pressure, the swedging of the bullet, or the actual powder pressure, and judging from all the dope I can get on the subject, it is just as though three men started out to accomplish a given piece of work. If one of them loiters in a near-by saloon or falls down a coal hole, the work will probably be done just the same.

All joking aside, it may be that my article stated only one side of the argument and I am glad to have such experts as Linder and Crossman take the trouble to put me right when I appear to stray from the straight and narrow path.

INQUIRIES OF GENERAL INTEREST

In this column will appear excerpts from requests for information and for official interpretations, made to the National Rifle Association, the replies to which may be of a generally informative nature.

Q. Has any restriction been placed upon the sale of ammunition from the arsenals as the result of the international situation?

A. No restrictions on the sale of ammunition has been published up to this time, and the arsenals appear to be honoring requisitions. The only restriction placed so far upon the sale of arms has been the rescinding of the purchase privilege in the case of the old 45-70 Springfields, which now, instead of being purchased outright, have to be held as club property.

Q. Where can a mould for casting lead bullets for reduced loads be obtained?

A. The Ideal Reloading Tool Company has recently reported that after a long delay, owing to difficulty in obtaining raw materials, the company is now able to fill orders. It is not advisable to use a lead bullet if the reduced charge carries any appreciable quantity of powder, since the rifling of the service arm is likely to strip the bullet. The charge used by the Government for reduced load outdoor work—either 9.1 grains of Bull's-eye or 16.7 grains of du Pont Rifle Smokeless No. 1—is too powerful for the lead bullet.

Q. Does the .22-calibre Krag require a supplemental adapter for use in the chamber?

A. The small-bore Krag rifle is chambered for the .22-calibre cartridge. The Springfield .22 calibre, however, requires an adapter.

Q. Are telescope sights permitted in Watch Fob shooting?

A. The conditions of this match call for sights which do not contain glass.

Q. Is not the hand-operated gun better or more dependable than the auto-loader?

A. It's just about "six of one and half a dozen of the other." Even if you consider the hand-operated actions best, you must remember that an auto action eliminates the human error—it operates just the same whether the hunter is nervous or not—whereas the sportsman may work a lever or forearm slide fumblingly and cause the action to jam or fail to feed properly.

(Concluded on page 116)

Sighting Shots

President H. C. Snow, Secretary Fred Newcomb, Executive officer Ray S. Thomas and William J. Wood, of the Upton, Massachusetts, Rifle Club, have started to put the range of the Upton rifle club into shape for the beginning of the shooting season. The range was shifted to the right of where it was last year, and good shooting stands are now available at 200, 300, 400, 500 and 600 yards. Thomas also worked in the pit and got the target carriers in good shape.

The ranges were surveyed and the intervening brush cut off. Everything possible will be done this year to induce the young men to join the club and to make every member a better shot. Already 40 members have been put into eight teams, with a qualified marksman assigned to each as a sort of instructor.

A new concrete pit 50 x 12 x 9 feet is being constructed by the Topeka, Kansas, Rifle Club. This will provide room enough for four racks of two targets each and which will enable the club to accommodate as many as a hundred shooters and give them all the powder burning they desire.

Plans are being made for several shoots this summer and it is very probable that something of an interesting nature will be doing every week. The auxiliary clubs that have been organized in surrounding towns are all active and it is expected that they will stage competitive shoots here.

The St. Marys club has shown more real enthusiasm than any of the others and several local members are afraid Topeka will have to do some tall hustling to keep St. Marys from getting ahead of her.

A home guard contingent is being organized in Bloomfield, N. J. The organization will probably organize as a rifle club, and is contemplating affiliation with the N. R. A.

Clubs Admitted to N. R. A. Membership During the Past Week Include:

CIVILIAN.

Arizona.

Kelvin Rifle Club—Homer Brown, secretary; Frank Gross, president; J. L. Pascale, vice-president; T. B. Barrowdale, treasurer; P. J. Brazell, executive officer. Membership, 25.

Oatman Rifle Club—W. K. Smith, secretary; Wallace Keith, president; H. Simmonds, vice-president; F. O. Gartner, treasurer; J. C. Ulmer, executive officer. Membership, 21.

California.

Banning Rifle Club—C. G. Potter, secretary; R. H. Samuels, president; F. M. Butler, vice-president; W. E. Eli, treasurer; J. L. Liebric, executive officer. Membership, 35.

Cutler Rifle Club—J. W. Flood, secretary; Henry All, president; George Goldman, vice-president; J. L. Moffett, treasurer; C. H. Yagle, executive officer. Membership, 30.

La Jolla Rifle Club—Ivan Rice, secretary; Oliver Rodgers, president; John W. Hannay,

vice-president; Frederick L. Brown, treasurer; Colton Reed, executive officer. Membership, 22.

Hawaii.

Ewa Rifle Club—James A. Hattie, secretary; A. M. McKeever, president; J. B. Laing, vice-president; W. G. Matthias, treasurer; George E. Newman, executive officer. Membership, 39.

Idaho.

American Falls Rifle Club—O. E. McDougall, secretary; Ben W. Davis, president; Roland Evans, vice-president; W. R. Griswold, treasurer; R. A. Danner, executive officer. Membership, 35.

Iowa

Central Rifle and Revolver Club—(Des Moines)—T. H. Winfrey, secretary; B. O. Spear, president; B. M. Smith, vice-president; R. A. Martin, treasurer; A. T. Carter, executive officer. Membership, 24.

Cherokee Rifle Club—Vaughn Jones, secretary; R. G. Rodman, president; George E. Taylor, vice-president; Harrison C. Steele, treasurer; L. A. Wescott, executive officer. Membership, 43.

Maine.

Saco Rifle Club—Harry C. Quinby, secretary; Waldo A. Ricker, president; Percy S. Davis, vice-president; Lloyd B. Fenderson, treasurer; Harold W. Sanborn, executive officer. Membership, 607.

Maryland.

Federalsburg Rifle Club—Clellie E. Turner, secretary; Henry B. Messenger, president; George H. Jeffery, vice-president; Charles H. Smith, treasurer; Thomas Kemp, executive officer. Membership, 150.

Massachusetts.

Newburyport Defense Rifle Club—W. A. Kinsman, secretary; Henry S. Learned, president; E. W. Eaton, vice-president; Charles S. Grey, treasurer; George M. Langdon, executive officer. Membership, 59.

Mississippi.

Brooksville Rifle Club—J. M. Guinn, secretary; J. N. McMorries, president; F. M. Hairston, vice-president; L. J. Batte, treasurer; W. B. Bell, executive officer. Membership, 31.

Montana.

Troy Rifle Club—Graham Fletcher, secretary; D. F. Fewkes, president; J. R. Hughes, vice-president; L. A. Hosea, treasurer; L. F. Gable, executive officer. Membership, 33.

New Hampshire.

Dublin Rifle Club—Harry F. Mason, secretary; John A. Gleason, president; Clesson E. Gowing, vice-president; Alfred H. Childs, treasurer; Edwin G. Kemp, executive officer. Membership, 30.

New Jersey.

Fanwood Rifle Club—Arthur H. Hay, secretary; Edward P. Meeker, president; H. D. Bonnell, vice-president; H. H. Knight, treasurer; John S. Strouse, executive officer. Membership, 67.

Greystone Park Rifle Club—Winfield J. Taylor, secretary; Britton D. Evans, president; Marcus A. Curry, vice-president; Elam F. Srygley, treasurer; G. B. McMurray, executive officer. Membership, 75.

Lincoln Park Rifle Club—C. Hoagland, Jr., secretary; F. J. Horn, president; Louis Schwarz, vice-president; Clifford Watson, treasurer; Alfred R. MacLaughlin, executive officer. Membership, 31.

National Rifle Club of Newark—E. Beesley, secretary; H. Baer, president; B. Miller,

vice-president; F. H. Eichenlaub, treasurer; F. Scherer, executive officer. Membership, 33.

West Essex Rifle Club (Caldwell)—Walter G. Brandley, secretary; Howard M. Cook, president; J. Roland Teed, vice-president; Personette G. Baldwin, treasurer; Lewis G. Patten, executive officer. Membership, 35.

New Mexico.

Fort Sumner Rifle Club—J. D. Gillespie, secretary; H. R. Parsons, president; J. E. Pardue, vice-president; G. W. Carr, treasurer; J. M. Copley, executive officer. Membership, 50.

New York.

Knickerbocker Rifle Club (New York City)—John Preston Phillips, secretary; Carlos de Zafra, president; Gerard T. Remsen, vice-president; Richard Oliver Phillips, Jr., treasurer; Walter E. Richards, executive officer. Membership, 10.

Mattituck Rifle Club—C. P. Hawkins, secretary; Raynor D. Howell, president; W. Raynor Wickham, vice-president; James H. Rambo, treasurer; Edward Gallagher, executive officer. Membership, 20.

Poughkeepsie Provisional Company Rifle Club—C. W. H. Arnold, secretary; Robert F. Polhemus, president; Herbert Gurney, vice-president; Walter Wesley, treasurer; George B. Waterman, executive officer. Membership, 142.

Unadilla Rifle Club—Hugh F. Peattie, secretary; A. E. Pixley, president; J. S. Seacord, vice-president; Joseph H. Brown, treasurer; Frank M. Tyson, executive officer. Membership, 77.

North Carolina.

Johnston County Rifle Club (Smithfield)—F. Hunter Creech, secretary; George Rosston, president; Lacy John, vice-president; O. P. Dickerson, treasurer; Paul H. Eason, executive officer. Membership, 40.

National Chowan Rifle Club (Edenton)—W. S. Harney, secretary; C. S. Vann, president; T. H. Shepard, Sr., vice-president; R. W. Boyce, treasurer; W. S. Summerell, executive officer. Membership, 51.

Oklahoma.

Konawa Rifle Club—E. Douthit, secretary; C. B. Hyde, president; F. P. Swan, vice-president; O. A. Nation, treasurer; G. C. Millsap, executive officer. Membership, 66.

Pennsylvania.

Edgewood Rifle and Revolver Club (Edgewood Park)—T. D. Donohoe, secretary; Thomas Donohoe, president; Alfred Cooke, vice-president; Hugh Sanford, treasurer; Edwin Ramage, executive officer. Membership, 12.

Monessen Pythian Rifle Club—A. W. Blackburn, secretary; W. S. Robins, president; J. C. Ashton, vice-president; W. H. Moore, treasurer; E. A. Wells, executive officer. Membership, 100.

Passenger Department P. R. R. General Office Rifle Club (Philadelphia)—W. McHain, secretary; H. E. Werneke, president; R. B. Kingsbury, vice-president; L. F. Enriken, treasurer; L. E. Angle, executive officer. Membership, 25.

Pocono Home Defense Rifle Club (Swiftwater)—J. B. Hamblin, secretary; H. C. Lockwood, president; Christopher Bly, vice-president; Henry Cruse, treasurer; Arthur M. Slee, executive officer. Membership, 41.

Sayre Rifle Club—Russell A. Miller, secretary; Fred W. Lease, president; Harry Zellar, vice-president; Leon B. Shedden, treasurer; George Miller, executive officer. Membership, 14.

Rhode Island.

Portsmouth Home Guard Rifle Club—Howard A. Pierce, secretary; Reginald C. Vander-

bilt, president; Arthur A. Sherman, vice-president; William H. Bone, treasurer; Borden C. Anthony, executive officer. Membership, 32.

Texas.

Eastland Rifle Club—Walter Gray, secretary; W. A. Martin, president; H. E. Lawrence, vice-president; L. A. Hightower, treasurer; Albert Woods, executive officer. Membership, 45.

Fannin Home Guards Rifle Club—Robert T. Brewer, secretary; William W. Herring, president; W. A. Springall, vice-president; J. A. Bain, treasurer; Chas. Ramloch, executive officer. Membership, 35.

Ottine Rifle Club—Leland S. Wood, secretary; L. F. Karnstadt, president; W. B. Kaye, vice-president; A. G. Fehlis, treasurer; John L. Norwood, executive officer. Membership, 54.

Sugar Land Rifle Club—T. P. Jackson, secretary; G. D. Ulrich, president; F. H. Bergstrom, vice-president; A. C. Palmer, treasurer; T. P. Jackson, executive officer. Membership, 24.

Yorktown Rifle Club—Robert W. Eckhardt, secretary; S. P. Breeden, president; Aubrey Dunn, vice-president; O. W. Ehlers, treasurer; Edwin F. Viereck, executive officer. Membership, 35.

Washington.

Albion Rifle Club—A. W. Frederick, secretary; O. D. Crawford, president; C. C. Johnson, vice-president; Ralph Bryan, treasurer; C. I. Roberts, executive officer. Membership, 20.

HIGH SCHOOL

Kansas.

Wichita High School Rifle Club—Glenn Parks, secretary; Robert Moore, president; Harold Williams, treasurer; Elliott Ranney, captain; Carl E. Evans, S. L. Nye, N. R. A. Judges. Membership, 135.

Maryland.

Wicomico High School Rifle Club (Salisbury)—J. Walter Mitchell, secretary; Donald Baysinger, president; Lane Holland, treasurer; Paul C. Hoopes, captain; J. D. Carey, N. R. A. Judge. Membership, 32.

Texas.

Forest Avenue High School Cadet Rifle Club (Dallas)—Lawrence H. Douthit, secretary; Horace T. Scott, president; William H. Potts, treasurer; Johnston Crawford, captain; Major B. H. Connor, N. R. R. Judge. Membership, 121.

BOYS' CLUB

Colorado.

Olinger Cadets Rifle Club (Denver)—M. Thomas Murray, secretary; W. F. Bates, president; Otto Arnold, treasurer; H. Mitchell, captain; Capt. B. M. Lake, N. R. A. Judge. Membership, 56.

PREPARATORY SCHOOL

District of Columbia.

Army and Navy Preparatory School Rifle Club—R. D. LaGarde, secretary; C. V. Evans, president; A. M. Gruenther, treasurer; Wm. H. Wenstrom, captain; R. D. LaGarde, N. R. A. Judge. Membership, 28.

LIFE MEMBERS

Henry H. Cummings, Boston, Mass.
John W. Peck, Rochester, Minn.
Hermann A. Uhl, St. Louis, Mo.
John B. Carse, New York City.
Jesse E. Pope, Washington, D. C.
Lawrence J. Pope, Washington, D. C.
H. E. Bushnell, New Jersey.
Dr. Wm. de F. Voorhees, Brooklyn, N. Y.



REVOLVER AND PISTOL

New Cavalry Course For Army Automatic

By "HAIR TRIGGER"

NEW courses for automatic pistol practice have been recommended for use in the United States Cavalry. A manual of the pistol has been compiled, and a demonstration of both course and manual have met with the approval of experienced officers under actual war conditions.

These are some of the positive results which followed exhaustive tests of the .45 automatic made during the stay of Pershing in Mexico.

Together with sundry important recommendations as to the mechanical improvement of the pistol to meet service conditions, the findings of the board appointed to conduct the tests have been officially submitted, and may lead to the establishment of a course of pistol firing, adapted especially to the instruction of officers and men in the mounted arm along lines calculated to be of the greatest practical use in actual warfare.

That the tests were conducted, and that "the very positive results obtained during this (the Mexican) campaign in mounted attacks with the pistol in the hands of even average shots, clearly indicate its possibilities if handled by troops well trained in its use" are the first bits of definite official information which has seped out to give evidence that the army has actually taken stps to ascertain accurately just what may be expected of the quick-firing hand gun under service conditions.

For the first announcement of the likelihood that a sincere effort will be made not only to develop the pistol, but to educate men in its uses, the proponents of the automatic as against the supporters of the "Six-Gun" are indebted to Lt. Col Lawrence J. Fleming, Fifth Cavalry, U. S. A. In the current issue of the *U. S. Cavalry Journal*, Col. Fleming treats the question at great length.

According to Col. Fleming, the matter of testing the cavalry automatic under war conditions was undertaken by Col. De R. C. Cabell, Chief of Staff, Tenth Cavalry, under orders from Maj. Gen. Pershing, commanding the punitive expedition.

General Orders No. 60, issued from Pershing's Headquarters November 1, 1916, enjoined all officers of the cavalry with the expedition to reply to a questionnaire, drafted to develop a consensus of opinion upon many hitherto moot questions respecting the automatic, and which had remained undetermined since the advent of the pistol as the official cavalry small arm, more than two

years ago. The questionnaire was designed to precede the actual tests to be conducted by a board appointed by General Pershing.

As a result of the canvas a majority of officers agreed that the cavalry should be armed with the automatic; that more clips should be provided in the troopers equipment than at present; that leather clip pockets should be substituted for web; that a dust-proof holster is unnecessary; that a .22 calibre automatic pistol of the same size, weight and shape of the service arm should be provided for training purposes; that all cavalry regiments should conduct compulsory pistol firing once a month during the open season, and that there was no difficulty encountered during the punitive expedition with the functioning of the arm.

With the results of the questionnaire as a basis, daily experiments in firing the automatic, mounted and dismounted, were conducted. From the experiments, the proposed course of pistol fire for the cavalry, which differs radically from that prescribed for the Army generally, as well as the cavalry manual of the pistol were born.

Some of the findings of the Board, as contained in the report submitted to General Pershing following the tests, will be found interesting by civilian pistol enthusiasts. Among the findings of the board are:

That the difficulties and danger of charging with the automatic either in line or columns have been greatly exaggerated, but that mounted especially, the pistol must be handled definitely and with decision and one should know what he is going to do with his pistol before he moves.

That it is not advisable to practice firing dismounted with the pistol beyond 100 yards, as beyond that the point of aim is too far off the target.

That firing kneeling is more accurate than off-hand, provided the off-hand position is maintained as nearly as possible and the elbow only rested on the knee. Any attempt to assist with the left hand or to change the relation of hand, wrist and arm, give poor results. The reason is the change in the jump of the pistol. The kneeling position with left knee on the ground, left foot to the rear, right arm resting on right knee is one easily gotten into or out of on the run, gives greater accuracy and presents a smaller target. The prone position did not prove satisfactory.

That in firing automatic fire, the arm must be held straight without locking the elbow.

In their definite recommendations members of the Board included these suggestions:

That monthly payments be given for qualification in pistol firings as for the rifle, experts to receive \$3 additional each month, and "first class," \$2.00 additional each month, provided that qualification conditions be such that a reasonably good shot can attain "first class" and only a fine shot "expert."

That the slide stop catch on the pistol be extended toward the rear about one-half inch so that it may be more easily reached by the thumb when operating it.

That the magazine be made stronger at the upper edges where the tips are curled over so as to hold the cartridge down and guide it (while the slide pushes it forward) until the bullet enters the chamber. When the tips become opened out from any cause the front end of the cartridge springs up too soon, striking the upper rear end of the barrel and jamming. This serious defect can be easily remedied by making the tips of the magazines and the portion of the sides below the tips so strong that no ordinary use will deform them.

In a number of cases the magazine base has broken out where the rivets fasten the base to the sides. This fastening should also be made stronger.

That the shape of the hammer head be modified so it will not pinch the hand immediately behind it when firing. The skin is caught between the hammer and the shoulder of the grip safety.

That the hammer be so arranged that it can be let down without slipping. Change hammer so that when down against the firing pin the hammer axis is to the rear of the pivot on which hammer rotates.

The magazine pocket should be of leather and with a simple stud and button hole fastener similar to that on the holster.

The 1916 model pistol holster which has no swivel seems satisfactory.

That eight automatic pistols Cal. 22, same weight, size and shape as the Col. 45, be issued to each organization for training purposes.

(To be Concluded.)

Indoor Match Results Published.

The annual indoor championship contest of the United States Revolver Association was held March 31 to April 8, inclusive.

Supplies for the different matches, seven in all, were furnished Ancon, C. Z., Baltimore, Big Rapids, Mich., Denver, Dallas, Durango, Col.; Havana, Cuba; Milton, Wis.; Montpelier, Montreal, New Haven, New York, Philadelphia, Pittsburgh, Portland, Ore.; St. Louis, San Francisco, Seattle, Springfield, Mass.; Toledo, Toronto, Van Alstyne, Tex., Worcester, Youngstown and Zolfo, Fla.

With railroad transportation in confusion and targets not yet received from six shooting centers, the highest scores to date for championship and novice matches are:

MATCH A. Target Revolver.

Dr. B. J. Oschsner, Durango, Col.; Colt arm, hand load	451
Dr. W. E. Quicksall, Philadelphia; S. & W. .38. U. M. C.	450
Capt. A. H. Hardy, S. & W.; Peters	446
Dr. J. H. Snook, Columbus; Colt, Peters	441
A. M. Poindexter, Denver; S. & W., Peters	437

MATCH B. Target Pistol.

P. J. Dolfen, Springfield; S. & W., Western	471
A. P. Lane, New York; S. & W., U. M. C.	468
Dr. J. H. Snook, Columbus; S. & W., Peters	462
Dr. W. E. Quicksall, Philadelphia; S. & W., U. M. C.	459
J. J. Agutter, Seattle, S. & W., U. S.	456

MATCH F. Pocket Revolver.

Dr. J. H. Snook, Columbus; Colt, Peters	202
Dr. J. L. Bastery, Boston; Colt, U. M. C.	199
A. P. Lane, New York; U. M. C.	196
J. A. L. Moller; Colt, U. M. C.	195
Dr. B. J. Ochsner, Durango, Col.	193

MATCH G. Novice Match.

(Either pistol or revolver allowed, a limited re-entry, possible 250.)	
R. C. Bracken, Columbus; S. & W., Peters	227
A. A. Yungblut, Cincinnati	225
I. S. Reynolds, Chicago; S. & W., U. M. C.	218
J. Warnock, Springfield, Mass.; S. & W., Western	217
Bruce C. Wilson, Toledo; S. & W., Winchester	217

J. B. CRABTREE,
Sec'y-Treas. U. S. R. A.

Old Timers Discuss the "Short Gun"

THREE "old timers" spread considerable good dope across the pages of the present U. S. R. A. Bulletin. They are Dr. S. J. Fort, of Catonsville, Md., Dr. S. I. Scott, and Dr. George E. Cook, who won the National Individual Pistol Championship of 1916, as well as the U. S. R. A. pocket revolver championship match just closed.

Dr. Fort is out boosting for a .22 calibre automatic pistol match, and outlines a tentative course of fire which should prove interesting. He says:

"The .22-caliber automatic pistol is a fine young thing of its kind, and notwithstanding its self-loading principle and short barrel is quite capable of making close groups with deliberate aim. I think I remember an anvil chorus when the New Springfield appeared with its short barrel and the same may appear, in fact has appeared as a criticism of the littlest Colt, but let us not worry about any such failing, if failing it be, but see if we can't dope out a scheme by which its true function in life may be brought out as well as make a welcome innovation to the deadly monotony of accumulating high scores with a longer barrel and better sights.

"Why not have a card target twelve inches square for indoor shooting and print on its immaculate white bosom a round black bullseye just three and one-half inches in diameter. Nothing more and nothing less. Count a hit in the black as 5, and a hit anywhere else the same as a miss. Shoot 5 shots in eight seconds and as many five-shot strings as may be considered enough, say five, or twenty-five shots in all.

"Charge the large sum of five cents per target, or twenty-five cents per entry, and let anyone with a grouch or a bad score shoot three entries and no more.

"Have one merchandise prize for each State, making not less than five entries, and five merchandise prizes for the five high men from the combined entries.

"I think that three consecutive cards ought to be called a score and re-entries be required to shoot three fresh cards for each entry, with no combining of good cards from each attempt.

"Such a match might prove of interest and draw attention to the little sputter-gun, moreover opening the way for an outdoor match with the .45. In either or both

events let the entry fees be sufficient to cover the actual expenses of targets and prizes but nothing more."

Dr. Cook's remarks anent the advantages of revolver practice as a recreation are based upon a wide experience.

"Revolver shooting as a recreation has many advantages over the rifle, and I have noticed that one is seldom so used up after an afternoon with the hand gun as he is after being pounded with a modern high-power rifle," declares the 1916 pistol champion.

"A point that will appeal to many of us is the difference in the expense account of the two arms, and when it comes to reloading the revolver has all the advantages on its side.

"Lately I have been using a dry-goods box filled with sawdust as a butt, and my lead is recovered free from grit and impurities, the sawdust all burns out in the melting pot, helping to reduce the oxide of lead that might form; and then, too, the bullets are already alloyed with tin. It is best, however, to add a little pure tin to the mixture from time to time, otherwise the alloy will get excessively hard. This leaves the only expense for primers and powder, as the cost of lubricant is negligible.

"For the .38 S. & W. Special I still like Bull's-eye best, but in the .44 Special No. 3 Dupont seems to be king of them all.

"With the old Russian shell, Bull's-eye worked fairly even, but the .44 Special has a little too much space, and I noticed some irregular pressures. I have been loading 33 grs. of H Fg Black Dupont powder in the .44 special shell behind the regular bullet, and I get a penetration of nine or ten white-pine boards 7-8 inches thick, whereas a slug-type bullet gives only five or six boards' penetration, but with a lot of upsetage. Either of these loads would prove reliable for those who wish to hunt with a revolver.

"I shall experiment with the Dupont against black powder for penetration and give results later. I can say that black powder as I load it beats Bull's-eye in any load of the latter that I dare use in the .44 Special, and as to accuracy, black powder is hard to beat if a damp bristle brush is run through the barrel pretty frequently.

"A little gun that has appealed to me lately is the S. & W. perfected .38 with 3/4-inch barrel, and when loaded with the .38 Colt N. P. cartridge, with its flat, pointed 150-grain bullet, it almost steps into the middle-weight

class as a puncher, and I was about to tell the scores I made with it at 50 and 100 yards, but someone might not believe them. I hardly did myself when I shot them, so will keep quiet, for wasn't it Benjamin Franklin who said: 'Two men can keep a secret provided one of them is dead,' and Balzac who said: 'A man can do most anything and get away with it provided he doesn't talk about it afterward.' Bringing Balzac's name into this discussion has me so mixed up that I don't know what kind of powder I was writing about. Surely it wasn't 'talcum powder,' was it?"

Under the caption, "Revolver Hints," Dr. Scott says:

"In these stirring times, when one's blood is nearing the boiling point, it may be wise for the young man or the middle-aged candidate for rifle shooting to have a primary knowledge of handling the short gun.

"First of all, not to allow it to point towards his friend or companions for an instant, even when he knows it is empty and harmless. I am impressed with an incident of my early career, when a member of our hunting club slipped on the ice and, though the hammers were down, the gun was fired by the hammer striking the ice (it was a rebounding lock). After coming together at night, the party who had had the accident made a point of talking to the members about it and thanked me for the advice and ruling we had made, and said he would never cease to be grateful to me for suggesting it, for as he slipped the idea came to him to turn his gun, thereby saving the life of one of our friends, for a full charge of buckshot passed to one side.

"The art of aligning the sights correctly is the most important part of shooting, and will soon demonstrate its value to the candidate after he has learned the art of holding the gun and releasing the trigger without flinching, which should be learned by snap practice with the empty revolver, as that is about the only way to demonstrate flinching to the novice.

"The use of the little gun is of great value to the young man who hopes some day to be proficient with the rifle. Firearms are dangerous, and should be taken hold of under proper instructions, and with a sincere desire on the part of the candidate to avoid any breach of propriety or accident that would mar his recollections in after life."

INQUIRIES

(Continued from page 113)

Q. What marking disks are recommended for use on the 200-yard and 500-yard ranges, Target B?

A. For the 200-yard practice short range disks should be used. For the 500-yard range, the mid-range disk.

Q. How do the ammunition factories determine the velocity of a charge of shot?

A. By an instrument known as an electric chronograph. It is a very complicated and delicate piece of machinery. Roughly speaking it measures the time that the bullet or shot charge takes to travel over a range the length of which is known. This figure found, it is a simple matter to calculate the speed of the bullet or shot charge in feet per second.

Q. Do government officers ever inspect ranges and coach matches?

A. Pending legislation will probably provide machinery for the inspection of civilian ranges.

Q. What is the standard make of range telescope in use in the U. S. Army?

A. There is no particular standard of range telescope for the army. The glasses which have given the best satisfaction appear to be the Warner & Swasey Telescope, made in the United States, and the Bardou, made in France and the Lordbury, an English glass.

Q. Is it necessary to use the battle sight in rapid fire, when shooting the old course, 200 and 300 yards, Target D?

A. The Small Arms firing regulations, specifies the use of battle sight in shooting this course.

Q. What is the best method of keeping up the interest of rifle club members in the organization?

A. There is but one rule which will apply to every club; that is devise and stage matches frequently, drawing the conditions so that the poorer shots in the club will stand a chance of winning trophies as well as the better shots.

Q. If unburned powder grains can be seen in the bore of a rifle when smokeless powder is used, does it mean that the load is too heavy?

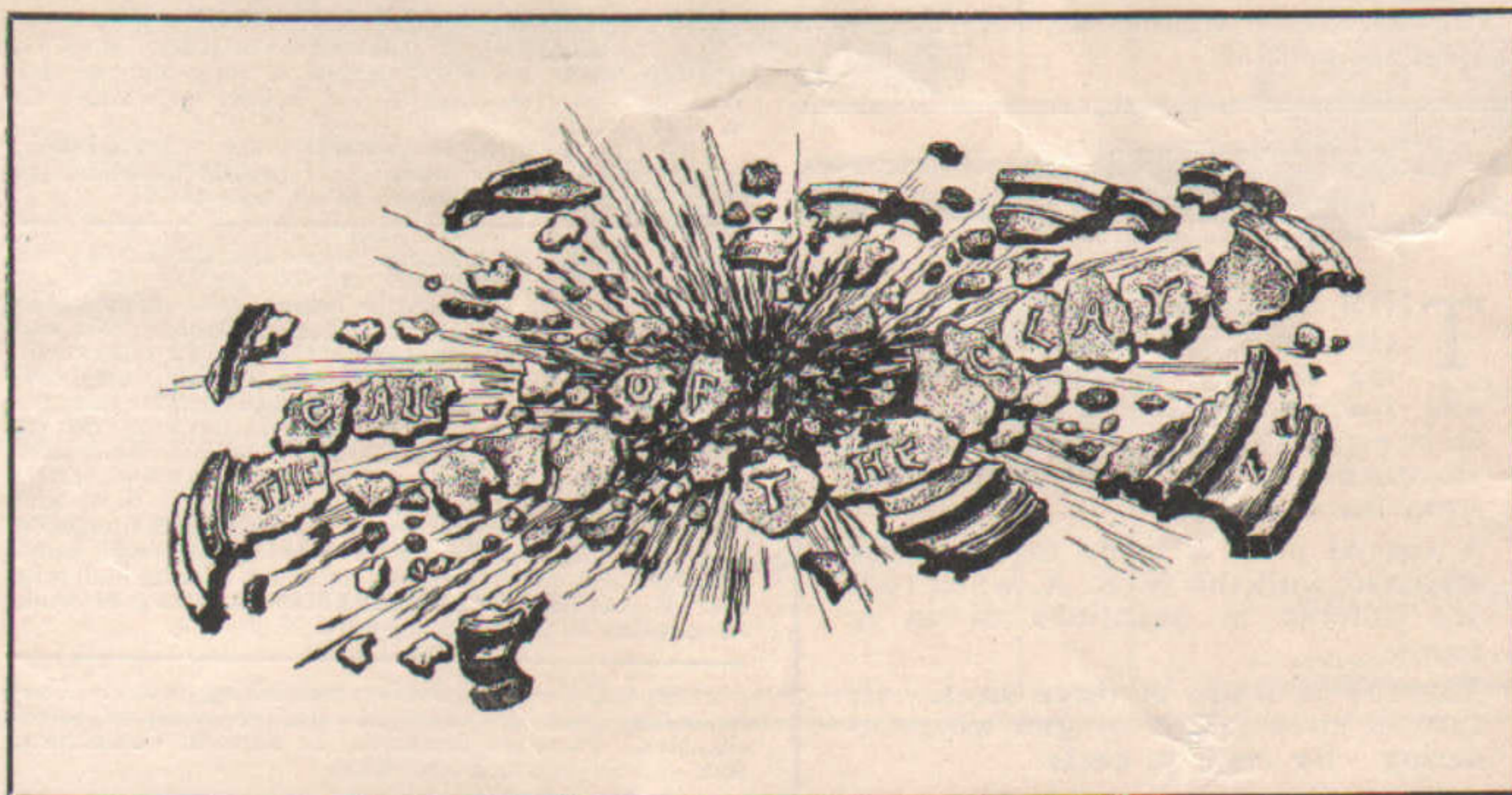
A. One of the queer things about smokeless powder is that—other conditions remaining the same—the more powder you put into a cartridge, the faster the whole charge burns. Many cartridges are loaded with a powder that gives just the right amount of pressure when a few grains of powder remain unburned in the barrel.

Q. Is the residue of smokeless powder acid or not?

A. It is decidedly acid and that is why corrosion starts in the barrel. If the residue were neutral or slightly alkaline there would be very little trouble in caring for the interior of the barrel on any firearm.

Q. For what purpose is the Halyard streamer used?

A. The Halyard streamer is used for indicating windage.



“Beginners’ Day” Develops Shooters

ABOUT the best piece of promotive work for the sport of Trapshooting in years was the inauguration of the “Beginners’ Day” idea. Tried for the first time in 1915—during the month of May—6,784 men and 522 women appeared at 523 gun clubs and shot at clay targets for the first time.

The scope of the idea was broadened somewhat last year in allowing the shoots to take place during May and June and allowing men and women who had not shot at more than 500 targets to participate for the Beginners’ Day trophies. In 1916 these events were conducted by 773 clubs and 11,625 persons participated.

In order to make these beginners’ days attractive trophies are given—a silver watchfob to the man and a silver spoon to the woman making the best score. To interest the clubs two trophies are given in each State—one to the club that gets out the greatest number of beginners and another to the club who gets out the second highest total. Two trophies are also given in each of the Canadian provinces.

Records are maintained to show how the clubs fare. The Piquette Rod and Gun Club, of Danbury, Conn., got out the greatest number of shooters in 1913, with the Portland, Ore. Club second. Last year the Hawthorne Club, of Chicago, was high, with the Brookville, Miss. Club second. Illinois got out the largest number of beginners—688, with 58 women. Pennsylvania got out the greatest number of men—628—and the Keystone State also conducted the greatest number of shoots—86.

The 1917 beginners’ day events should outclass those of the past two years. The same provisions are made for the club trophies and to the men and women shooters. According to the announcement, a beginner is one who has not shot at more than 500 targets before April 1. The shoots will be held during May and June. Many clubs will conduct more than one shoot so as to give attention to people who wish to shoot, but cannot make their time fit the one particular date.

It is suggested that beginners’ day events be at 25 targets, in strings of five, and that the targets be thrown straightaway and not more than 35 yards. As beginners’ day events are club boosters and builders as well as aids to trapshooting, clubs are asked not to put on any other events the day they have beginners’ shoots. This will allow the veteran trapshooters to give attention to the novice and instruct him—or her—in the proper method of shooting.

These beginners’ day events have put an

end to that oft-repeated saying of years ago, “I would like to shoot, but I do not care to make a show of myself.” Every one is on equal terms in the beginners’ day events, and the experienced amateurs and professionals are only too glad to give the beginners every attention.

These are the days when we all should know how to handle firearms—and no better chance was ever given Americans than beginners’ days. Accept the opportunity while it is here. P. P. C.

Why Shells Are High.

Smokeless powder doesn’t cost one cent more today than it did two years ago, notwithstanding the fact that ammunition has greatly advanced in price in that period.

There are excellent reasons for the advance in the price of ammunition. Here are the reasons for the boost:

The principal materials used in the manufacture of ammunition are copper, spelter (zinc), lead, mercury, paper, brass and antimony. Copper cost 14 cents a pound in 1914, and today it sells for 35 cents. This is an increase of 150 per cent. Spelter has jumped from 8 cents a pound in 1914 to 25 cents now, about 212 per cent increase. Lead has increased over 85 per cent. Mercury two years ago sold for \$40 a flask, now it brings \$350. Paper has increased about 200 per cent., and is next to impossible to get. Wads have increased 40 per cent., and sheet brass has advanced 200 per cent. since the early part of 1915. Antimony, used for hardening bullets and chilling shot, is another commodity that has advanced more than 200 per cent.

Thus you have the reasons for the advance in shells from 65 cents to \$1 a hundred in the past two years. Every one is familiar with the high wages being paid at present to expert mechanics and cartridge making requires the very best grade of workmanship and materials of the highest quality. If the cost of material and labor goes up, the cost of ammunition must also increase, or else the standard of quality must be lowered—and this latter the manufacturers will not do.

A 30-30 cartridge looks simple—just a one-piece brass tube, closed at one end, a bullet at one end and a primer at the other, and in between a load of smokeless powder. To look at it, you may think that it didn’t cost much to make, but that’s because you are not familiar with the number of operations that have to be performed on the brass shell alone, to say nothing of the bullet or primer.

A round, flat, rather thick disc of brass is gradually turned into a cartridge by a

process of drawing and annealing, repeated many times. Each operation must be just right or the finished cartridge will not be the right size. The jacket of the metal cased bullet is made in the same way as is the shell, and then powerful punches ram the lead core into the jacket and finish the bullet to exactly the right size. The little primer cup is punched out of a small copper disc, filled with the proper priming material, and seated in the head of the shell.

Through all the processes of manufacturing and assembling, scrupulous care has to be used to see that absolutely no defective pieces get by the inspectors.

Ammunition must be made right or it is worse than useless. The success of your hunting trip depends on the reliability of your cartridges. A squib load or a misfire may result in the loss of a big moose and spoil the trip.

Plans Made For “G. A. H.”

The South Shore Country Club, of Chicago, Ill., the blue ribbon country club of America, is staging the Grand American Trapshooting tournament this August, and this trapshooting tournament by the way is the blue ribbon event of that sport and is already planning for the comfort of the 1,000 or more expected entrants.

Everett C. Brown, president of the South Shore Club, is very much interested in the event, and he contemplates furnishing the trapshooters quite some entertainment of a high class nature while they are away from the traps. An entertainment committee comprised of one member of every Chicago gun club will soon meet and plan for the occasion. Mr. Brown contemplates, too, on having some of the best American swimmers give exhibitions in the South Shore Club’s outdoor pool daily at noon and to follow this with track and field athletics by the best performers of the middle West. It is the idea of Mr. Brown to put on these events for the benefit of the men and women who are out of the competition for an hour or more.

Committees selected from members of the Chicago gun clubs are now touring the adjacent States interesting the trapshooters in the tournament. Last year Illinois sent more than 200 trapshooters to St. Louis. It is expected that Illinois will turn out more than 500 for the classic at the South Shore Club. It is the feeling that the additional publicity will bring about 500 at least from the other States.

Sixteen traps are to be erected, with Lake Michigan as the background. Five of these traps will be ready the first of June, five or more on the first of July and the remainder the week previous to the tournament. Ten of these traps will be used in the Grand American events, two by the professional shooters, two by the women and two “joker” traps. It will be a great week in trapdom.

Shooting Improves Rural Lad.

The wholesomeness of life in the country with its attendant hard work in the open air is never more manifest than at the traps when the country boy, fresh from the farm, pits his nerve and clear sightedness at the big trapshooting tournaments against that of the topnotchers.

In the ranks of the aforesaid topnotchers are to be found a majority who shoot once or twice a week throughout the season until, when the big tournament is on, their muscles and nerves are trained to a mechanical perfection. The country boy, however, has no such training and many of them let six months or more slip by before they find an opportunity to face the traps for a little practice.

Nevertheless, it is these same bronzed

and brawny Americans who offer constant surprises to the gallery and contestant at the State trapshooting classics and the old-timer cannot but wonder what the result would be if the farmer lad in connection with his clean, homely life had his weekly issue with the animated targets.

It is true that the hand trap is fast finding its place on the farm and who knows but that this combination—the farmer boy and the hand trap—will develop in this country a shooting talent that will make present-day scores seem mediocre.

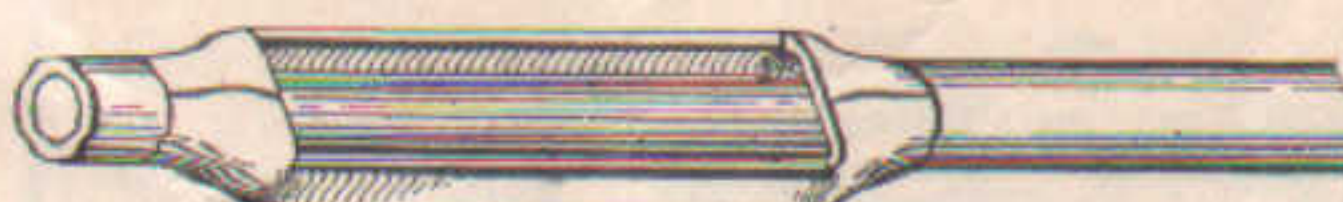
Scattering Shot

Little Iowa leads in the number of trapshooting tournaments registered with 58 for the year.

The South Country Shore Club, of Chicago, where the Grand American trapshooting handicap will be staged, has added five traps to its equipment, so that the people of Chicago may become familiar with the club before the handicap takes place.

The first of the "Maplewood 100" shoots was won by Daniel J. McMahon, of the New York A. C. He broke 99 at Lakewood.

The women of Middletown (N. Y.), have formed a rifle club.



THIS is a new, one-piece, rifle cleaner with a brass cloth-carrying head on a coppered Bessemer rod, mounted free for rotation. It is especially adapted to the use of absorbent cotton. Will clean Krag from the breech.

A special price is made to rifle clubs affiliated with the N. R. A. when rods are ordered in quantities of 10 or more.

The rod is made in three sizes. Be sure to state caliber of gun when ordering. By mail, 50 cents.

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Each subscriber of **ARMS AND THE MAN** is entitled when his subscription is paid up for one year, to one free insertion of a half-inch want ad in this column.

All he needs to do is to send in the advertisement for insertion at the same time calling attention to the date when his subscription was paid.

FOR SALE—Rifle trunks, marine and British shooting bags, imported telescopes, British cleaning rods and brushes, shooting glasses, rifle rests, British micrometers and verniers, telescope rests, Marble cleaning rods and brushes; locking front sight protector and rear sight cover, Hoppe No. 9; bull's-eye score books, Marine score book, sweat bands, elbow pads, the adjustable shoulder pad, gun covers, "Never Nickel" lubricant. Mottor paste, rim oil, Winchester oil, barrel gauges, Marble field and rifle cleaner, cleaning patches, all kinds and calibers of brushes, Spitzer greaser, Mobile lubricant, Ideal micrometer, B. S. A. Rifle Saftipaste, Elliott ear protector, gun bore wicks, revolver and pistol rods, rifleman's Favorite sight, black; barrel reflectors, officers' hat cords. Send for catalog and price list. P. J. O'Hare, Importer and Manufacturer of Shooting Accessories, 33 Bruce St., Newark, N. J.

FOR SALE—Easy finding real killing power. Useful tables for rifle hunters and revolver or pistol shooters, \$6.00 the hundred. L. Ramirez Casablanca, Box 57, Bayamon, Porto Rico.

FOR SALE—Marlin Model 1897, .22 calibre, brand new. Write for description. P. R. Westover, Frugality, Pa.

WANTED—Mould to cast 32-40 bullet about 125 grains. Ronald Lindsay, Box 230, Quebec, Canada.

WANTED—Springfield rifle in good condition. Give price and full particulars. G. Nichols, Room 400, Newton Bldg., St. Paul, Minn.

WANTED—33 Power Bardou telescope in good condition. New or second hand. Chas. H. Pool, 1425 Iowa Ave., Hollywood, California.

A New Pistol Powder!

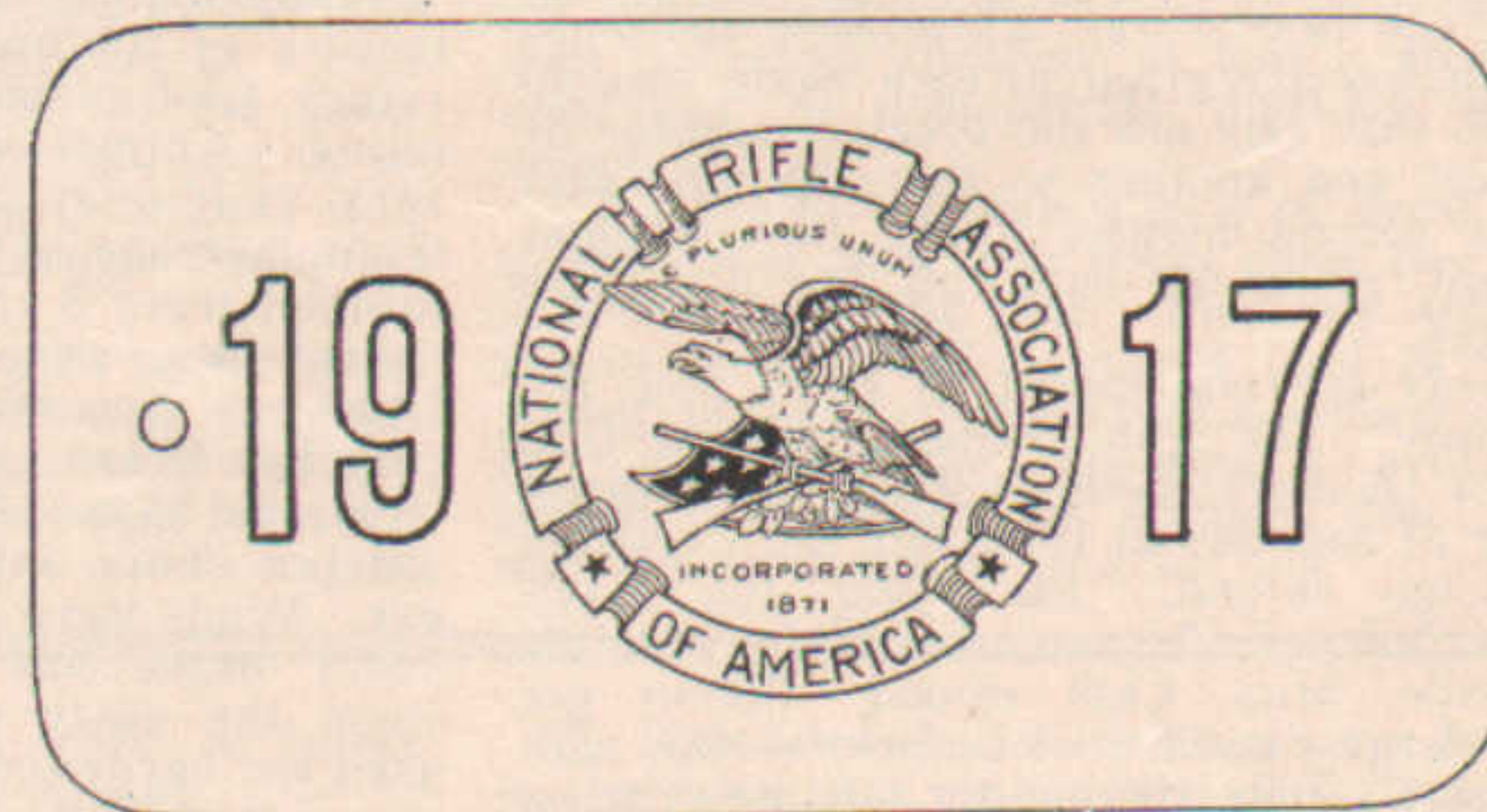
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[A dense, nitrocellulose powder
Cool-burning Non-erosive Accurate
Easy to load
For revolvers and automatic
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THIS size and cut of membership card, seal and year tinted in rifle green, makes an attractive and valuable credential for club members when black print is used over the tint. Many rifle clubs used cards of this pattern in 1916. More should take advantage of their possibilities in 1917.

The cards are sold to rifle clubs at the low cost of \$1.00 the hundred.

ARMS AND THE MAN
WASHINGTON, D. C.

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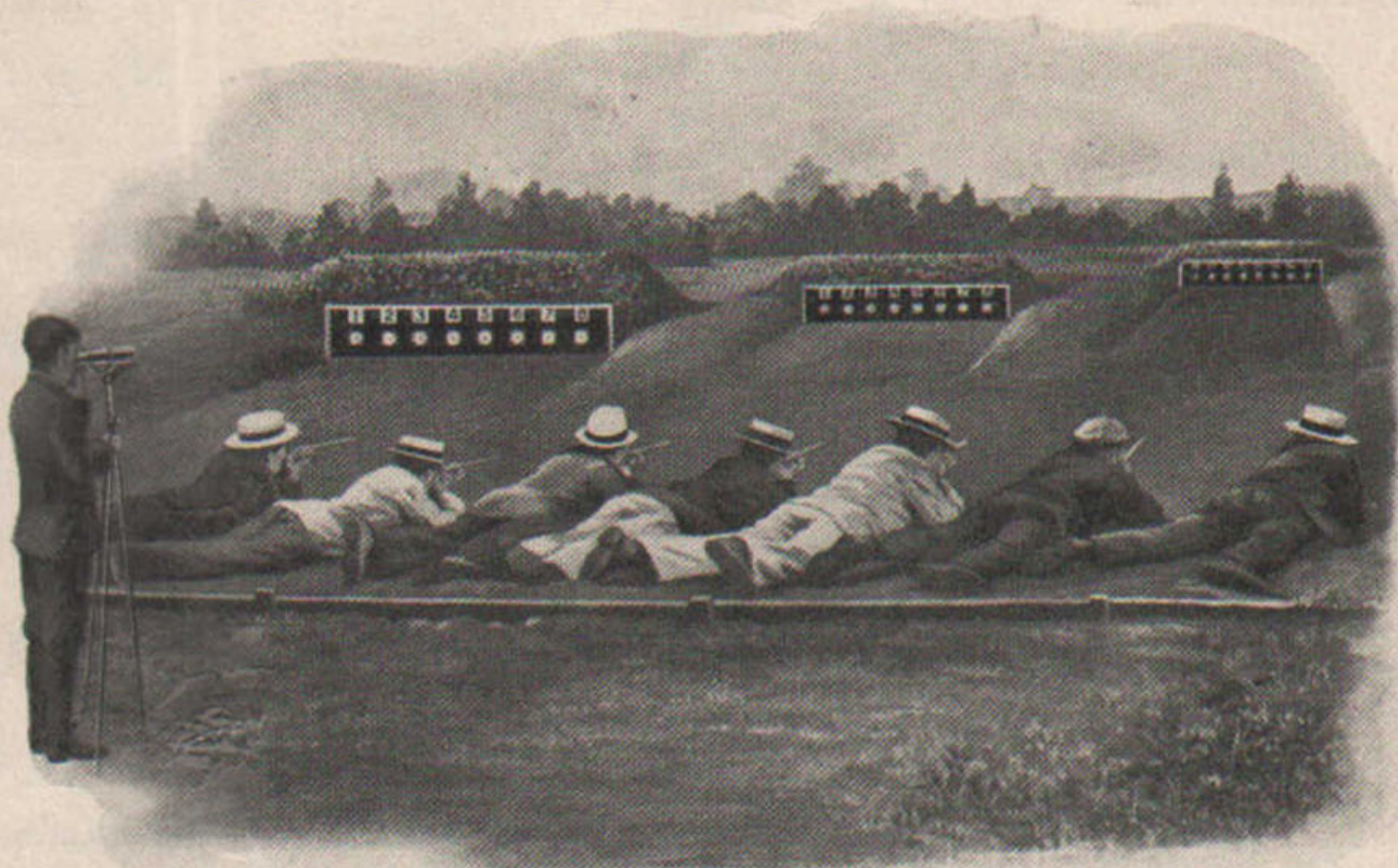
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The Outdoor rifle shooting season will soon be here. Have you a 25, 50 or 100-yard range with target butts like those shown in the illustration? If not, it is time to start building such a range.

We will be glad to help you with information and advice and tell you how to build your indoor and outdoor rifle ranges upon the most approved lines. Likewise, with respect to the proper shooting equipment—that is, the best rifles, sights and ammunition to use in order to obtain the maximum of results in target shooting.



Incidentally, Remington UMC .22 short and long rifle Lesmok cartridges have the approval of a majority of the leading small bore shooters.

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ARMS AND THE MAN

Advertising Department

Washington, D. C.

Enos A. Mills, in writing of the wolf packs of the West, says:

"On one occasion in Southern Colorado I saw a herd of cattle standing in a circle, with their heads outward. A number of wolves were attacking them. By leaping unitedly—first at one, then at another—they finally frightened one victim out of the circle of safety."

The criminal is a wolf in human form. He hunts in packs, and seeks his victim in the out-of-the-way places—alone—beyond the interference of the police and the lights of the city—on a street—the country road—the isolated autoist—the curve, miles from a house, darkened by the overhanging trees—the lurking place of the human wolf—the modern hold-up man.

An obstacle appears in the roadway—your hands are busy with the brakes—a masked figure springs upon the running board—your hand slips from the lever to the grip of the COLT, and the wolf slinks back into the darkness.

Better be sure a COLT is there.

Why not add one to your car equipment TODAY?

A COLT can only be fired when the trigger is purposely pulled

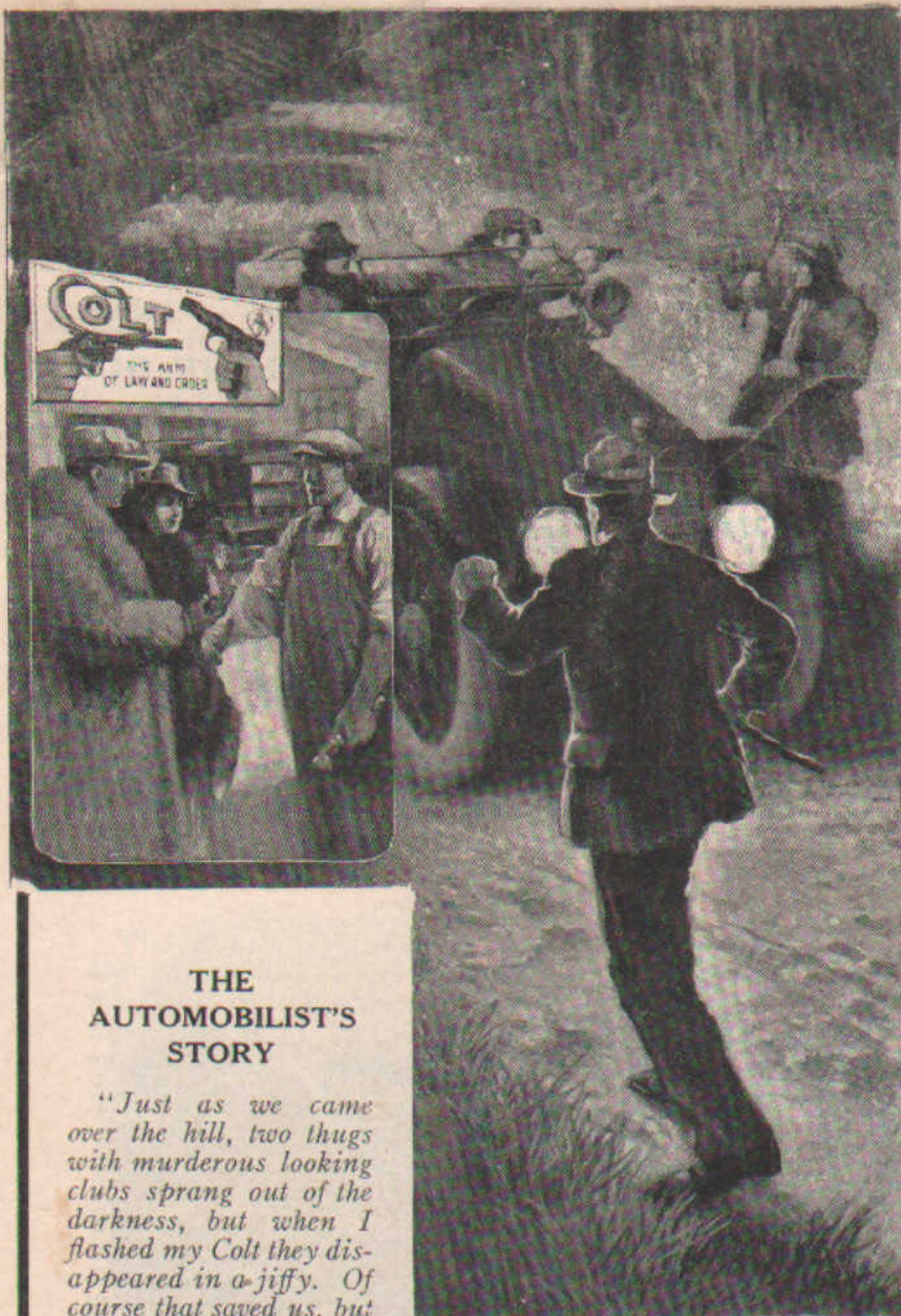
Automatically safe—automatically certain—in use or disuse. The quickest to get into action, but obeys only one command—the feel of your hand on the grip and your finger on the trigger.

Cannot be jarred or jolted into action. Impossible to forget to make it safe, but instantaneous in its response to your command.

REMEMBER there are fifteen different styles of Colt Revolvers and Automatic Pistols in calibers .22 to .45. See general catalog.

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COLT'S PATENT FIRE ARMS MFG. CO.
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"Just as we came over the hill, two thugs with murderous looking clubs sprang out of the darkness, but when I flashed my Colt they disappeared in a jiffy. Of course that saved us, but believe me the Colt is a mighty necessary part of an automobile equipment nowadays. I wouldn't be without one in my car."

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