

Shotgun Notes

Winchester Announcement of a Double Shotgun, Model 21

By CAPT. CHAS. ASKINS

I AM giving in the following paragraphs the Winchester announcement of their new double gun. They say, to begin with, "No better gun at any price—a light gun for heavy loads." Then:

"Here is an American-made double gun bearing the Winchester proof mark; a gun the lover of fine arms will appreciate. This is the only gun manufactured in America which is made from materials developed, specified, and tested in the makers' own highly organized laboratories; and which, before being offered for sale, is required to endure tests as great and searching as are applied to Winchester repeating shotguns.

"THE FRAME of the Winchester double gun is made, not of the usual case-hardened material, but of Winchester proof steel, treated to have a tensile strength of over 90 tons per square inch. It will show no evidence of yielding at the breech after a lifetime of shooting with the heaviest modern loads.

"LOCKING BOLT SYSTEM: There is a widespread belief that when a double gun is fired the locking device is subject to a heavy strain. In a properly constructed gun this is not so. In proof of this we have fired heavy loads in the Winchester gun with the locking bolt removed, the barrels being held down by the hand alone. With a frame as strong and well designed as the Winchester frame, a single sturdy locking bolt is amply sufficient. No top lock being necessary on the Winchester double gun, we are able to leave off all rearward projections on the breech of the barrels which interfere with the easy loading or removal of the shells.

"LOCKING BOLT: Is a single longitudinally sliding wedge-action bolt, housed immediately beneath the breech face of the frame, and wedging into a cut in the rear face of the barrel lug, which forces down the breech of the barrels firmly on the frame table under the stress of the ample, coiled bolt spring, but is so designed that it can neither stick nor permit the breech to open.

"As ordinarily constructed, a bolt having an incline sufficiently steep to prevent sticking will jar loose under heavy loads, and if made with an incline so oblique as not to jar loose, will stick. To overcome this, Winchester uses a stop screw, located in the locking cut of the barrel lug, and easily accessible when the gun is opened, which limits the travel of the locking bolt, thereby preventing sticking, and which permits adjustment after long use to take up any trivial looseness due to wear.

"BARRELS: Each barrel, with its half lug, is a single integral mass forged from one billet of Winchester proof steel, treated to have a tensile strength of 115,000 pounds per square inch, bored and finished with the precision for which Winchester has always

been famous. Scientific methods, developed by Winchester experience and skill, maintain an unusual uniformity of barrel-wall thickness. The barrels are dovetailed together in a mechanical interlock, which is far superior to brazing or any other union, for there is no distortion or destruction of the temper and strength of the barrel metal by the terrific heat of brazing. The two half lugs thus united form the locking lug of the barrel unit. Thus the locking bolt acts directly on the barrels themselves.

"TOP RIB: The hollow matted top rib fits tightly over an upward projecting lug integral with the barrels at the rear, thus greatly strengthening the attachment of the top rib and permitting it to be one continuous piece from breech to muzzle.

"BARREL STOP: In the forward part of the barrel lug is a floating barrel stop. This is the member that prevents the breech from opening too far. When the breech is opened, this floating stop tilts and rotates slightly as it reaches the stop shoulders of the frame, so that the surfaces always meet evenly. Thus no excessive wear can be thrown on any narrow surface or edge, nor can any bruising or battering, due to violent opening, take place. The barrel stop is practically unbreakable, thus avoiding the weak point in the structure of most breakdown guns.

"TOP LEVER: In the Winchester double gun there is a niche cut into the face of the standing breech to expose the upper end of the bolt catch when the barrels are removed, and a simple pressure will push the bolt catch down, allowing the top lever to swing back to a central position.

"STOCK AND FORE END are made of selected black walnut. The stock, in addition to the regular mode of fastening to the frame, has two unusually broad, deep, and thick tenons, which support it rigidly and independently, thus preventing accidental splitting or loosening.

"FORE-END UNIT is attached to the barrel by the usual flexible retainer, whose compression, when in place, takes up the slight looseness due to wear; and in addition, by a sturdy fore-end catch which prevents accidental displacement.

"The standard 12-gauge gun has 30-inch barrels, left full choke, right barrel modified, and weighs about $7\frac{1}{4}$ pounds. This is the gun that will be furnished, unless otherwise ordered. Other bore combinations can be furnished, also barrel lengths of 26 inches, 28 inches, and 32 inches. Interchangeable barrels can be supplied. In all cases extra barrels must be fitted at our factory.

"The stock is equipped with hard-rubber butt plate. The length is 14 inches to front trigger; drop at heel, $2\frac{1}{2}$ inches; at comb, $1\frac{9}{16}$ inches. Stock and fore end are hand-somely checked.

"Orders for guns lighter than standard can

not be accepted, except that guns with 26- and 28-inch barrels will be about 4 and 2 ounces lighter, respectively, than the standard. Handmade stocks can be furnished to practically any dimensions the customer desires.

"The gun will be furnished in 12-gauge only at present. Patents have been applied for and are now pending to protect all the new inventions embodied in this gun."

The above description as given by the Winchester company is pretty complete, and not much need be added to it. The issue of a double gun by a great firearms company like the Winchester is of itself an event. It might mark a turning of the road, or some might consider it a beating back. Such a gun as this, except for the fine Winchester material, has been in use for fifty years. Certain improvements have been made, however, by the Winchester, such as the locked fore-end catch, the floating barrel check, the method of releasing the top lever when the barrels are removed, and the long frame, with stream lines forward. I have not dismantled the piece; but the action from outward appearances seems to be the Anson and Deeley, an old and favored action in England and on the Continent. The top rib without extension into the frame is the design commonly advocated in England for high-grade guns.

The absence of an extension rib is what will impress people more than anything else about the gun. There is a difference of opinion in England regarding this system, one set of experts stoutly maintaining that no extension rib is required on a shotgun, while other first-class gunmakers, like Westley Richards and Greener, are just as positive that extension ribs bolted through are absolutely essential to long and sound life. In any event, the Winchester company has done away at one sweep with all the inventions that American gunmakers have made in fifty years. Whether or not the Winchester is right, and all the other American shotgun builders wrong, time will tell.

The Winchester double gun differs from those made in Europe in one respect. The frame is very long—longer than the frames of any of our guns—while foreign-made guns are usually shorter than ours in the frame. The extra distance between joint and bolt adds to bolting strength, and at the same time should make the piece harder to cock. However, this gun cocks very easily, the weight of the barrels raising one hammer. The only gun I know of which cocks more easily is the Fox. The frame is solid at the bottom, not hollowed out greatly to contain the mechanism, and no doubt is a very strong one, even aside from the splendid material of which it is made.

This gun should lend itself to the building

of very light American double shotguns. It is true that the company has advised that they will not accept orders for guns lighter than the standard, and standard arms with 26-inch barrels should weigh 7 pounds. I take it, however, that with the arm lightened forward by the shorter barrels, a gunsmith could hollow out the stock and bring the weight down to the standard English 6½ pounds. I'd prefer that my gun weighed more, but others will differ with me; and there is a tendency now to go to light double guns, both in this country and abroad.

The fitting of steel to steel and wood to steel in this gun is very good indeed. The stock is a good one in shape, and the grip is right. Because of its thin barrels and generally racy appearance the gun appears to be longer than it is. It balances well with 30-inch barrels, and will both balance and look just right with 28-inch barrels.

IMPROVED SHOT

For many years we went along pretty well content with chilled shot. For that matter I suppose the old-timers of Fred Kimble's day didn't ask anything better than soft shot. They used larger shot than we do, and killed when they hit. However, soft shot have gradually been displaced by chilled, and the only reason I can now see for soft shot is that they are cheaper, and they work well in light loads. I have a suspicion, though, that in small sizes, like 8's and 9's, at medium ranges, the soft shot produce a worse wound on birds than chilled, and are a trifle more deadly—not that much difference is to be seen, for any kind of shot kill at short range, if they land. Nevertheless, when we wanted close and even patterns we were told to use chilled shot. Everybody said the hardened shot were the best, and they were. Chilled shot are simply lead, with tin or other metal harder than lead, added.

A number of years ago Henry Sharp, an English ballistician, invented or designed shot still harder than chilled. These shot were pronounced superior to common chilled; but English ammunition loaders refused to use them because they cost more. The fact never has been disputed that patterns fall off badly because of deformed shot. It was confidently believed that, if every shot pellet left the muzzle in the same round and uninjured form in which it went into the cartridge, we would come very close to getting 100-per-cent patterns. One-hundred-per-cent patterns are not to be had so long as injured shot leave the muzzle and sail away like chips thrown into the wind. Of course, then, we have been trying to get away from pellet injury within the bore.

The first thing that would occur to any of us is that the gun was doing the mischief; so improve the gun. Kimble's old muzzle-loader showed patterns that no modern gun could duplicate; so we inquired why. The muzzle-loader had a very large bore, it used large shot, the column of shot was short, and

the black powder was large in grain and slow in starting; and of course the gun had no forcing cone. That forcing cone gave us the first hint, and various forms of cones were experimented with by one investigator and another, with a certain amount of success; but in the end nothing was accomplished. A certain form of improved cone would work well with a certain load, but the gun-builders had to deal with all kinds of loads, and found that they couldn't get away from the so-called forcing cone, or lead between chamber and true bore. In England a chamberless gun was invented—one with a chamber the same size as the bore, or bore the same size as the chamber. It worked, with heavy loads, in thin brass shells, with black powder. Smokeless powder could be used, of a quick-burning brand, with an abnormal shot charge on top of it, driving the shot at low velocity; but not much is heard of the chamberless gun today, and nothing in this country. In America, in an attempt to reduce cone action, we developed the overbored guns, and these improved patterns to a certain extent, and are now the best 12-bore guns we have for charges of shot exceeding an ounce and a quarter. That ended the improvement of the gun. Something had been accomplished, but we still lacked a great deal of reaching those 100-per-cent patterns.

The next hint that we got from Kimble and his muzzle-loader was in regard to powder. He used a powder which, while it delivered the shot with sufficient velocity, was slow in starting the charge, but burned throughout the length of a long barrel. None of us wanted Kimble's black powder—wouldn't tolerate it—but we did want a smokeless that acted just like it. Progressive powder did approach his compound, and resulted in a decided improvement in pattern and velocity; a very marked improvement.

The powder people had done their part, and we were fairly content with the progressive-powder ammunition and overbored shotguns. However, those 100-per-cent patterns were still in people's minds, and particularly in the minds of the ammunition-makers—who have always led the way, for the matter of that. If progressive powders would not throw perfect patterns, and the gun could not be improved further, then what was left except the shot? The mischief was being done to the shot, anyhow. The result of this reasoning is that we now have two brands of copper-coated shot—Western and Peters—and we will have others.

The Western Cartridge Co. came out first, I believe, with their Lubaloy shot; shot coated with copper or something like it, the same as a jacketed bullet. These shot have led to a further improvement in patterns, and I think the end is not yet in sight. We have the shot, if we can only learn exactly how to use them, how to load them, and the precise form of choke which will best handle them.

You see I say that, *if we can find the best choke, and form of choke*, further improve-

ments in pattern should result from the use of copper-coated shot. I do not know this positively, but am merely surmising. I did not get as close patterns from the Cutts Compensator using the heavily choked tubes and Lubaloy shot as I did from tubes having less constriction. The factory suggested that for the Super X load and copper shot, the tubes with less choke might uniformly throw the closer patterns. Mr. Riggs of the Western Cartridge Co. asked me if I had noticed that copper shot stepped a gun up about one degree of choke—that is, an improved cylinder barrel might throw a modified pattern. I had noticed in testing one gun with a plain cylinder barrel that it threw a very good improved cylinder pattern. Then my Super Fox, which is not choked as heavily as some other like guns, threw an 88-per-cent pattern with copper No. 4 shot. It might be that a little less choke is demanded than is the case with common chilled shot. I think that when copper-plated shot come into common use we will learn exactly the choke required to reach a good 90 per cent, anyhow. Bert Becker, the old Fox man, now building guns, made an arm for Nash Buckingham, which they claim is patterning above 93 per cent with copper shot No. 4.

My own gun showed an average pattern of 57 per cent at 60 yards; this for a few shots. A longer string should have reduced that percentage, which is abnormal.

Just to get away from the big guns, I am giving the results of using ordinary chilled and Lubaloy shot, in a 16-gauge Ithaca, as copied from "Modern Shotguns."

Super X, 6c, 1½ ounces, 275 pellets, 16-gauge, 30-inch circle:

40 yards	60 yards
197	115
216	132
202	91
225	112
200	115

Average 208=75.64 % Average 113=41.09 %

Super X, Lubaloy, 1½ ounces, 425 pellets, No. 7½, 16-gauge:

40 yards	60 yards
346	187
320	198
348	185
350	178
331	186

Average 339=79.76 % Average 187=44 %

These are rather higher patterns in Lubaloy than are commonly thrown by a 12-gauge trap gun with 7½ shot, it is to be noted; and while No. 6 shot should normally throw higher patterns than 7½, yet the larger shot fell well under in percentages in this test. The improvement might well be ascribed to copper shot; and the manner in which the Lubaloy shot carry on to 60 yards indicates less pellet injury in the bore.

Now let the cartridge factories go to it, always with the idea of eventually giving us 100-per-cent patterns for long-range guns; and may the devil take the hindmost!