



Author and Mahongo, Norman Sparrow's head tracker, with Cape buffalo bull taken near Mozambique border in 1978.

# Make Mine a Sidehammer Rifle

## The old design is functionally superior for the serious big game hunter.

by JACK LOTT

FROM HUMBLE beginnings as a "serpentine" or "cock" to hold the match of a matchlock, on up through the wheellock, snaphaunce, flintlock and percussion sidelock, the external sidehammer is indelibly associated with the muzzleloader. It may surprise many readers, but it is fair to state that during the breechloader era, probably more sporting guns have been made with external hammer sidelocks than all other types. This production continues apace in Europe, Asia, Africa, and the Western hemisphere, in shops from the crudest native village smith in Africa, the Liege makers of "trade guns," U.S. replica muzzleloaders, on to exquisitely crafted Italian double-barreled hammer shotguns.

My interest in outside hammer

guns is 25% aesthetic and 75% practical, and limited mainly to double rifles of "double screw-grip" underlever action, but also W. W. Greener's famous "Treble Wedge-Fast" sidelock shotgun action. For certain forms of hunting big game in close cover, experience has taught me that no other action compares functionally with this double screw grip in a double rifle action.

The main reason for the continued demand for outside hammer shotguns and rifles long after the advent of Anson & Deele's hammerless action was convention. The double screw grip gun had achieved perfection after a long evolution. The only "improvements" were top levers and ejectors, which complicated and weakened the bar of the action with cuts and slots

for under bolts and cocking levers, as well as eliminating the unique solidity of this design. Such "improvements" mainly involved shotguns since double rifles of large caliber required more action strength and outside-hammer double rifles therefore are normally of extractor-only conventional underlever design.

Such great shotguns as Lord Walsingham, the Marquis of Ripon and King George V were superb shots, all brought up with sidehammer guns. They amassed unbeaten shooting records of game with them. To them and their peers, the hammerless action was an effete heresy and needless fad like Harlequin spectacles on Tarzan.

For many gunmakers, the continued demand for sidehammer double

rifles in cordite persuasion, was welcomed for two reasons; it held the increased pressures of smokeless better than the new hammerless designs and required no design or tooling changes, which in turn kept production costs low. In addition, the Indian school of big game hunting regarded this design as a *sine qua non* for dangerous game in thick jungle. Right up to 1920 there are extant many photos showing elephant, buffalo and lion or tiger with both a modern Mauser and a heavy hammer rifle leaning against the trophy.

Sentiment and aesthetic considerations aside, there are technical advantages to the screw-grip hammer action not found in other designs. First is the absolute tightness of the screw-grip action. This is because it is the *only* action which tightly locks the barrels down against the action bar. In all other double or single, hinged drop-barrel actions, such as the popular top lever hammerless types, the locking system must have ample clearance all around the locking members so that the gun opens easily by turning the top lever or other release. These tolerances are closer in best quality guns, due to careful hand fitting, but cheaper hammerless guns have just enough tightness to permit opening and closing minus obvious clatter that might spoil a sale.

Once slight wear occurs, all this inherent looseness can result in an ac-

cumulated headspace on firing, which in the case of shotguns isn't serious until it becomes flagrant, but with rifles, the same headspace can cause head separations. This slight clearance, needed in even the finest hammerless double guns for easy opening, acts as a sort of head start, when full pressure takes up all gaps and the top of the standing breech opens in a hinging action away from the barrels. This is called "going off the face," and is why so many double shotguns and rifles have extra bolts at the top of the standing breech, intended to preclude or limit this tendency. I have examined more loose fine used English shotguns than tight. Most hammerless double rifles of quality are tight, due to the lesser number of rounds fired, and the extra bolting and reinforcement of the action bar as compared to shotgun actions.

The screw-grip sidehammer action on the other hand, is a much stronger proposition than *any* hammerless action, because the barrels are clamped down tightly to the action bar's "water table" so that no gap occurs at the instant of firing. This not only eliminates the springing of the action bar and bolts, as with hammerless guns, but on firing, all elements of action and barrels hold tightly together as if a unit.

With my best Holland 577 screw-grip underlever sidehammer rifle I have yet had to size a case, and have

been reloading the same eight cases over and over, with only crimping after firing. The cases fall out of the chambers like new ones. Part of this is, of course, because the 577 3-inch case is a straight taper, which causes less side pressure case expansion than a bottle-necked design. Mostly it is due to the absence of stretching from that action/barrel flexing.

The manual cocking and plain extractors eliminate internal action cuts for the cocking levers, and with a back action design, there are no cuts in the action bar for the main springs. This action bar is more rigid and creates a shallower profile than hammerless types of identical calibers, as well as providing a lighter gun.

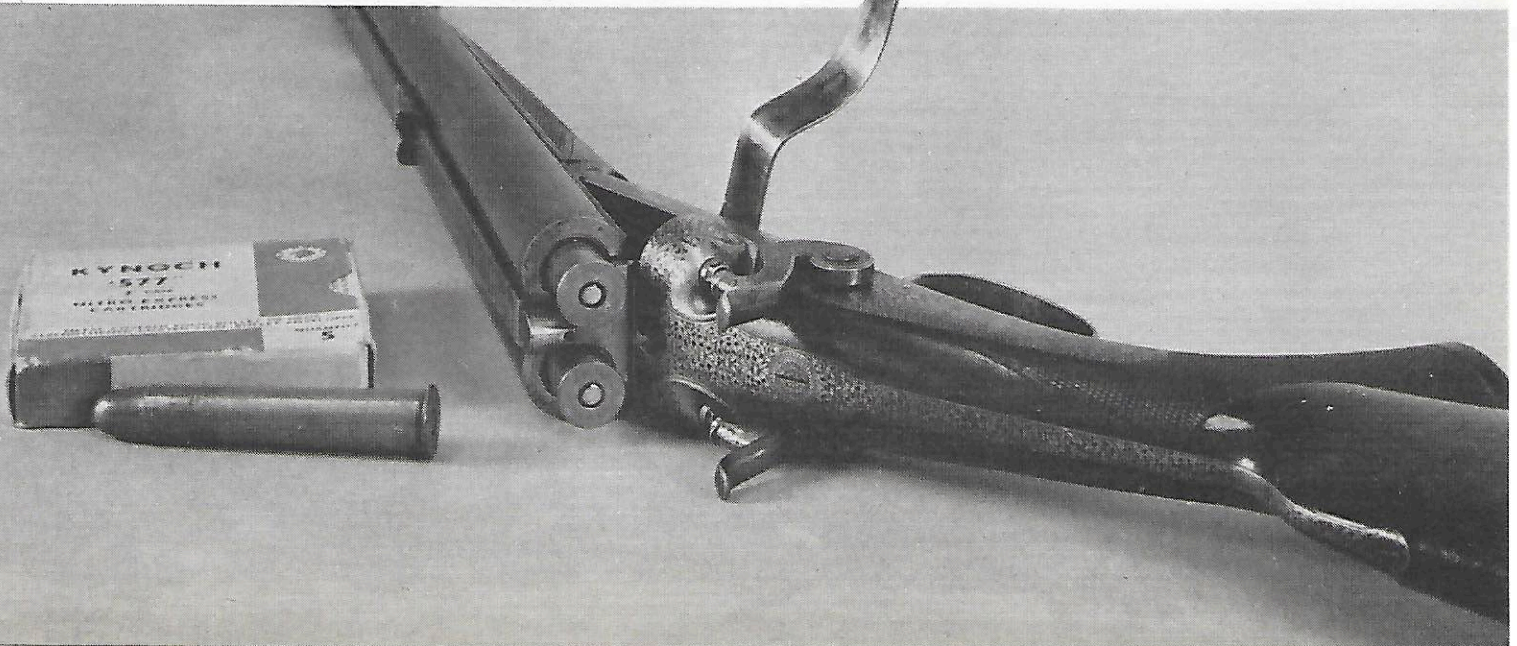
In the early stages of Anson & Deeley and hammerless sidelock action development, after the advent of cordite, there were many actions fractured at the angle of the standing breech and water table, until reinforcing bulges and internal web thickness increases were incorporated, plus the diverse third fasteners or rib extensions, such as the dollshead.

This great action was the most popular design for black powder double rifles made in Great Britain during the latter third of the Victorian era and was the only external hammer design to make the transition to smokeless. It required no design changes other than thicker barrels at the breech end, shallower rifling for

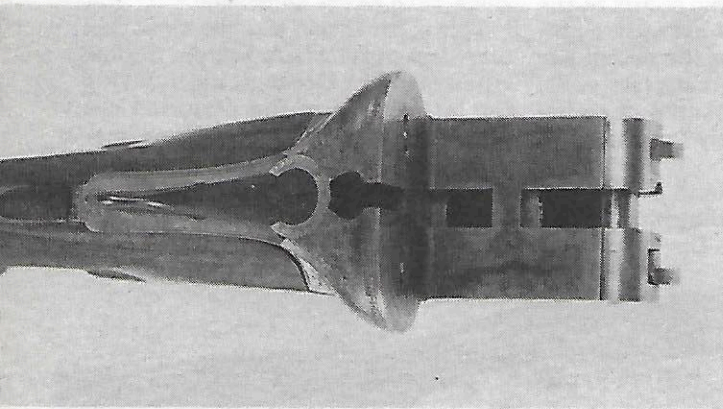
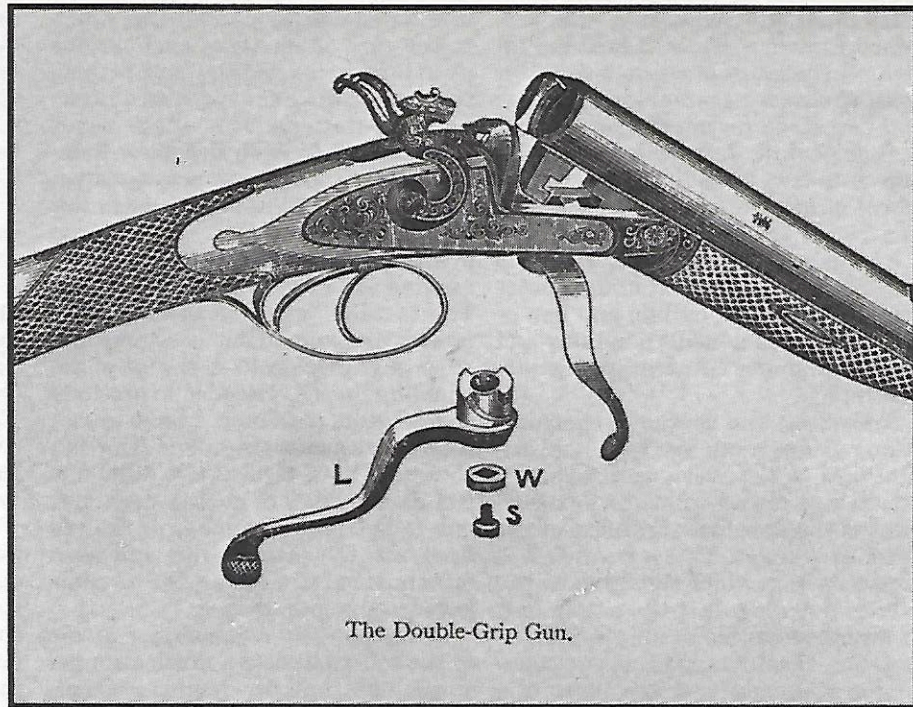


Author's 577 back action double hammer rifle weighs 12 lbs. with 26-inch barrels. It is Lott's favorite heavy rifle for dangerous game.

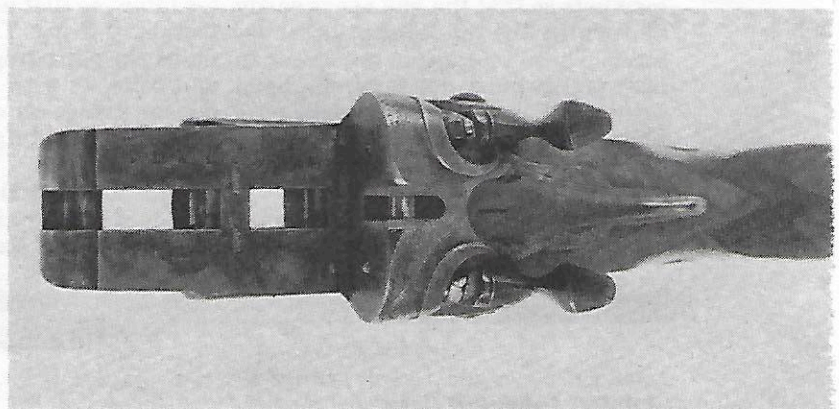
Close-up of breech end of Holland & Holland 577 3-inch back action double hammer rifle showing extended tang for reinforcing grip, underlever open.



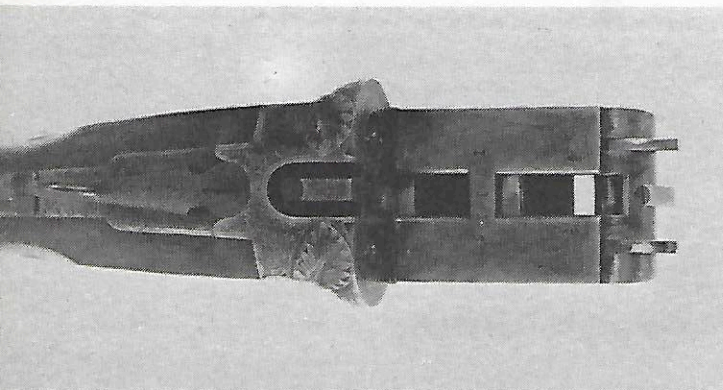
Line engraving of Henry Jones' double-grip underlever action as widely produced in Britain from about 1870 to 1930. It was the tightest hinged barrel action because it screwed the barrels tight to the action body. From W.W. Greener's "The Gun, and Its Development."



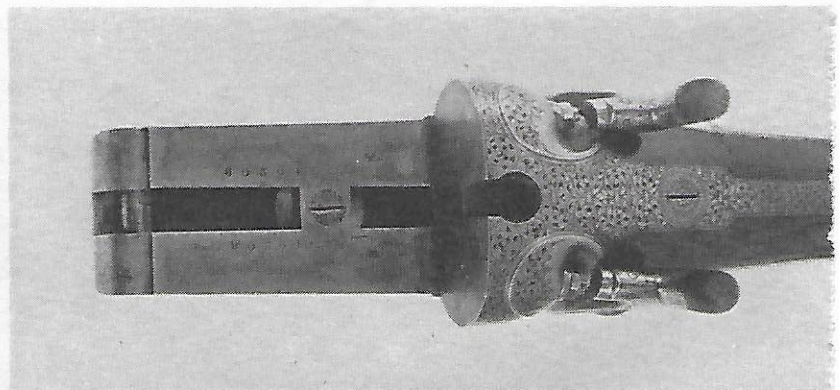
Anson & Deeley boxlock action of 12-bore "Jungle Gun." Bar is undercut for sliding Purdey underbolts and knuckle has large cuts for cocking levers. In addition, the action body is hollowed out for the lock mechanisms.



Greener Treble Wedge-Fast bar action sidehammer top lever action. Action bar is strong for weight since no cuts exist for ejectors, but internal slots for sliding underbolts weaker bar.



Bar action sidelock of Rigby 450 best quality sidelock ejector has bar undercut for sliding underbolts and knuckle cut out for cocking levers. Action is stronger than boxlock, but theoretically weaker than a back-action hammerless sidelock.



This rebounding hammer back-action is strongest of all, since the action bar has no slots for underbolts or mainsprings. When locked, barrels are clamped tightly.

jacketed bullets and higher sights. The action's inventor did not receive public credit for his outstanding conception, yet it, almost alone, required no modification to hold the much increased pressures of cordite. This design is called "inert," one in which the barrels drop via hinge, but locking, or bolting is accomplished without internal mechanism by a manually operated lever.

It was invented by Henry Jones, a Birmingham gunmaker, and patented in 1859 as No. 2040. Unfortunately, Jones did not profit from his extremely popular invention because he let his patent lapse on September 19th, 1862, by failing to pay a 50-pound stamp duty to keep it in effect for another 4 years. Sadly, it is probable that Jones, an independent soul, could not afford it, since it is known that he went bankrupt four years later and the contents of his home at Key Hill House, Hockley, were sold.

Such a celebrated gunmaker as W.

W. Greener, who also was a prolific popular author on guns and gunmaking, disposed of Jones' contribution thusly in his fifth edition of *The Gun and Its Development*, stating, "This important improvement was effected by a Birmingham gunmaker who omitted to patent this modification."

Greener was not given to more than faint praise for another maker's work and tried to prove that Jones' action was unnecessarily strong because the line of force from the explosion was in line with the bore thereby not requiring the tight clamping-down effect of the double screw-grip action. Greener overlooked the downward flexing of action bars and the many failures of hammerless actions at the angle in the early days of cordite. He also overlooked the plain truth that the in-line thrust transferred from cartridge head to breech face is reciprocated by a tendency to open the action due to the hinging of action with barrels. This effect is secondary to the

in-line thrust, but demands a strong action bar to keep flexing to a safe minimum, which again is a virtue of Jones' solid steel action bar.

Jones apparently lived to be 100 or more and upon achieving his "century" did receive recognition in the press and the gift of a "purse of gold," containing 21 sovereigns, subscribed to by Birmingham's gunmakers, including W. W. Greener. Readers interested in learning more about shotgun and double rifle action development should read Ian Crudgington and D. J. Baker's fine book, Volume One of *The British Shotgun*, Barrie & Jenkins, Ltd., London.

Such ultra-fine external hammer shotguns as the Famars Castore 270 cock on opening via the top lever and are ejector guns. Such guns are as strong, no more or less, than hammerless guns of equal quality and metallurgy. This is because the hammers must be cocked exactly like those of a hammerless gun, with all the internal



Cape buffalo taken by author in 1974 near Chiredzi River, Rhodesia, with 577 back-action Holland & Holland hammer rifle. First shot with 750-grain steel jacket solid wounded buff in raking shot through left flank and into right shoulder muscle. Buff downed with shot in right flank through left shoulder as he turned to charge.

parts and milling of slots and drilling of holes this requires. However, such guns, aside from their obvious beauty, do have one mechanical advantage over hammerless guns, in that they can be uncocked by hand, then silently cocked at will, and when cocked, the hammers are visible cocking indicators.

Loaded hammerless double guns cannot normally be carried uncocked, so are invariably carried loaded, cocked and safety on. By loading when the gun is disassembled, most hammerless guns can be loaded uncocked, but having no hammer blocks as with rebounding sidehammer locks, they can conceivably fire if jarred enough to overcome hammer and/or firing pin inertia. The rebounding hammer lock of the sidehammer gun can however be carried uncocked, the safest condition of all, and the condition of the locks, cocked or uncocked, is always visible or can be felt at night. No doubt, rebounding sidehammer guns have been fired "accidentally," but no gun is foolproof. Regardless of safety features, it is the cocked gun which poses the greater danger of accidental discharge. The sidehammer gun can be carried loaded and closed, whereas hammerless guns should really be carried broken for equal safety. As the uncocked hammer gun is mounted, the right hammer is cocked. This takes practice, but so does working a bolt at shoulder or flipping coins.

Naturally, the *uncocking* of a hammer gun requires care so that the releasing thumb doesn't slip, but when the uncocking is done as it should with action broken open, the process is entirely safe. Earlier types of hammer actions did not have rebounding hammers and were less safe. The better British pre-rebounding hammer types did have safety bolts for each hammer, which must be pushed into place for safe carrying of this type of gun when loaded. Other external hammer guns with no such hammer safety slides, no rebounding hammers, and only half-cock notches are definitely unsafe to carry loaded and action closed, since a fall or a slip while cocking or half-cocking can easily result in an accidental discharge. The only remedy for those who intend shooting such inherently unsafe hammer guns is to carry them broken and loaded until ready to use. Such guns with worn sears and cocking notches are ready for repair or retirement as decorators.

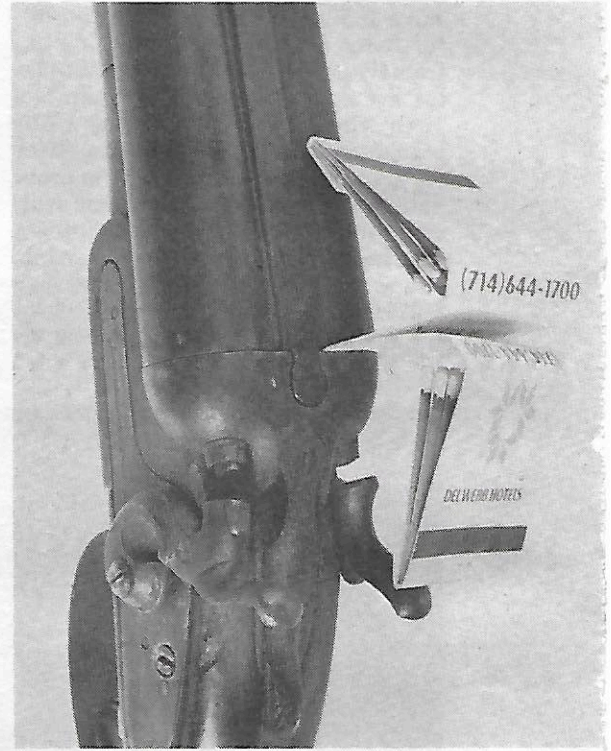
Some instances have been reported of uncocked outside hammer guns and rifles accidentally firing when a ham-

mer has caught on some object such as a fence rail, wire or a branch. With rebounding hammer actions which have steel blocking bars to block hammer fall unless the triggers are pulled, such a thing would be almost unheard of. There are many non-rebounding hammer guns around of poor to mediocre quality, mostly cheap European shotguns such as were imported by the thousands during the 50-year period before World War I. Hammer guns by their nature demand more of the shooter, both in cocking and in handling. The shooter must thread his way through thick cover, and if in doubt about it, should carry the loaded gun broken. Carrying the gun with the muzzle always elevated will not only be the safest position, but will make the barrels and undersurface of the gun a solid barrier to any object coming in contact with hammers, cocked or not. In case of a fall, a loaded and uncocked rebounding hammer gun is safer than a cocked and loaded hammerless gun with safety on.

More often than not, silence is more important than rapid fire in close cover hunting since the hunter normally approaches concealed and upwind so only a foreign sound can give him away. With a hammer gun, one can silently cock one or both hammers, by holding back the trigger as the hammer to drawn back, then easing the hammer forward against the released trigger to engage the cocking notch. If the game still runs off, the locks can be uncocked, and then the hammers are in a rest position, well above the firing pins and blocked from forward movement. This is the only external hammer system to be considered in this context of safety, called "rebounding hammers," as most breech-loading hammer guns will have. Regardless of what type of gun one carries, the usual safety rules apply, and then, despite an accidental discharge, the muzzle is pointing up and/or away from others.

Many European hammerless shotguns and rifles have cocking indicators so that even in the dark the condition of the locks can be felt. With hammer guns, the hammers themselves are the cocking indicators, and in addition, these "rabbit ears" are easily cocked in cold weather. The opinions of experts such as the late Major Sir Gerald Burrard, Bart., D.S.O. and John Taylor are worth repeating. Burrard in his classic *Notes On Sporting Rifles* said, "There is only one snag about the safety mechanism on hammerless actions, apart from the liability of the rifle being jarred off by a fall, and this is the

slight "click" made when pushing the safety slide forward. I have already mentioned the manner in which wild animals can hear and locate some very slight metallic sound which would be almost inaudible to humans. This is probably because it is a new or strange sound, since no sudden contact with metal occurs either in the jungles or on the mountain side except through the agency of man. This



This 19th century Belgian bar action top lever opening shotgun has long "gone off the face." Such looseness is the result of poor fitting, poor material and an action bar undercut for sliding bolts.

slight "click" may be just enough to warn an unsuspecting animal or provoke a wounded one to charge."

Burrard fails to mention another source of alarming noise from the hammerless double rifle. When you have fired your first barrel at an animal it is essential to reload the fired barrel before moving from the spot. When opening a hammerless double rifle with one or both chambers fired, the "ping" of the ejectors or in the case of a non-ejector rifle, the "click" of the tumblers in cocking as the barrels are dropped, is more than enough to reveal one's position to a wounded animal. At best this will warn the animal and at worst, it will enable a sharp-eared tiger, lion, leopard, elephant,

buff or gaur to locate and charge his hunter.

John "Pondoro" Taylor, in his classic work *African Rifles & Cartridges* commented; "I am very fond of the double hammer action because of the absolute silence with which it can be loaded and cocked. I know of more than one man sitting up at night for man-eating tiger who scared off his beast by the 'click' of the safety as he prepared to shoot with a hammerless rifle. If you draw back the hammer on a hammer rifle while holding back the trigger and then let the trigger go; you will have cocked without a sound of any sort. Then there is the delightful ease with which the breech opens; powerful double rifles are fitted with powerful main springs to obviate any possibility of a misfire; those springs have to be compressed as the breech of a hammerless action is opened and the locks cocked. There is nothing of that with the hammer rifle — you cock with your thumb, one lock at a time. I would happily finish the remainder of my career with nothing but best-grade double hammer rifles. Incidentally, such weapons can occasionally be picked up second hand at very low prices, not because the hammer action is no good, but simply because fashion favors the hammerless. If you get such a chance, provided the weapon is in good condition, you need not hesitate. It will satisfactorily answer any questions you are ever likely to ask it."

Taylor, like many hammer gun users, disliked cocking both hammers, based on a false belief that hammer guns are more prone to double discharge than hammerless guns. Hammer guns have cocking notches and sears just like hammerless guns. If the cocking notches or sear surfaces are worn or poorly fitted, then any type of gun is capable of being "jarred off." I have never experienced a double discharge with hammer guns, but have with two double hammerless rifles of good make. Underlever guns are fast to reload with minimal practice, since the barrels are cammed down as the underlever is pulled out, and there are no mainsprings to compress as the barrels are dropped, and closing is aided by a final camming action.

Not long ago, I enjoyed an extended trip to Southern Africa, and during a Rhodesian safari, used my Holland 577 3-inch underlever hammer rifle on Cape buffalo near Mozambique. Ranges were all under 25 yards in thick mopani and thorn bushveld, where only a slight foreign sound can give away the hunter. I was accompa-

nied by Norman Sparrow, professional hunter, and Mahongo, the head tracker, a Shangaan. After a long sporing-up of three big bulls from where they had rolled in a mud wallow, and after losing the spoor several times, we arrived to within some 20 yards of their resting place. It was an overcast day with intermittent drizzle, and about the ugliest possible atmosphere to seek battle with that tank of the bushveld, the Cape buffalo. We had crawled some 25 yards to a dubious screen of bush that concealed us only when our heads were down. I could see the tremendous spread of one bull's horn tips extending from either side of a small mopani which he was shaking violently to remove mud from his head, but I couldn't see anything else. I refused to guess at the rest of his body nor whether his boss was hard.

To his right was another huge bull with shoulders and head visible broadside. Norman told me to take him, so I eased back the right hammer of the big Holland, then the left, while holding back the triggers. The 577 was cocked without a sound, which at that range, no matter how slight, would have sent them away at a gallop. Slowly I eased myself into a kneeling position and aimed the Holland at the shoulder, then with a roar, the cordite flash blurred a final glimpse of the buffalo thundering to the left out of sight.

We jumped up and ran to the departing spoor, then slowed to a careful crouching walk looking for telltale blood spoor, but it was nowhere to be seen. A sickening feeling of failure came over me as I contemplated how I could have missed so big a target at 20 yards. Just then we hear a bovine cough ahead and left. Norman and Mahongo signalled me to follow in a running crouch to the left of the sound and off the spoor. You don't follow a wounded buffalo's spoor right past his place of ambush unless you enjoy Cape Buffalo Roulette. We dropped flat and began a slow crawl towards the direction of the cough, Norman creeping with his 404 Mauser, Mahongo carrying my 450 Rigby double sidelock ejector and myself like a four-legged crab with the 577 in one hand.

I was signalled down flat as Norman watched for the bull, then he motioned me forward and, still crawling, up to a low bush ahead of him. I had previously reloaded the Holland, and painfully raised up on my knees with the 577 pointing ahead, until but 30 feet away I could see the blackness of the bull's head and neck extending from his ambush hide, facing away on

his trail in the direction from whence he had come. In a flash my mind returned to thick bush off the Revui river in Mozambique, September 18, 1959, when a wounded buffalo bull ambushed me, tossing me three times. That bash-up required four 458s and seven 375s before the furious beast expired.

I was determined to not let that happen again. The front bead nestled down in the wide "V" open rear, and centered the black barrel of his neck when the 577's 100 grains of cordite and 750-grain solid steel-jacketed bullet thundered. Automatically I opened the action in one movement, extracted the empty which fell out, slipped in another 750-grain solid, closed it and cocked again silently. I then rose and ran to the left of the buff's thicket. At the shot he had disappeared from view and I wanted to cut off any retreat to another ambush or break a possible charge, but it was unnecessary.

As I reached a broadside position adjacent to his hide, I saw his black mass stretched out in a disorderly matt of blood and trampled grass. Mahongo's exultant shout of victory came just as I had rounded the corner of bush where he fell. I stood in silent awe of the importance of sound; the buff's cough which told us where he was, and the absence of sound when I reloaded and cocked the big Holland hammer rifle. Despite the enormous wound through the lungs, the bull had not bled at all until arriving at his last stand where those great gouts of lung blood revealed the cause of his cough. This story would probably have ended very differently had I been armed with a hammerless double with its distinct "click" of a safety slide and cocking action.

Norman Sparrow called up the two Africans of our group who had stayed well behind as he, myself and Mahongo spored up the buff, telling them to bring up the Toyota safari vehicle. As I contemplated the massive, now prostrate but still formidable looking, buffalo. I remembered how when we were close to them before my first shot, that I had handed my fine 450 Rigby double sidelock ejector to Mahongo and taken over the elderly 577 Holland hammer rifle. That Rigby 450 is the finest hammerless double ejector rifle I have ever owned, and its presence as a second heavy rifle increased my confidence in approaching such dangerous game, but I was glad I had taken over the old 577 hammer rifle during the last act of this little bushveld drama. ●